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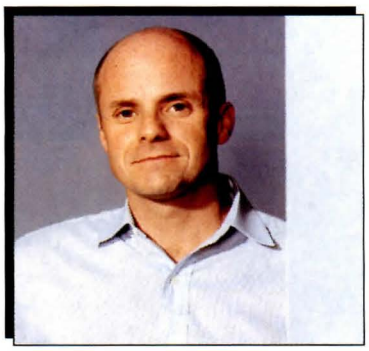

NATURAL STATE

BY C.C. SULLIVAN

Humor in politics isn't a bad thing, except when it's unintended. Our national slide away from sound environmental policies, for example, needn't be tinged with the silliness implied by the names of certain federal initiatives introduced in the last year or so. "Clear Skies" is my favorite, a moniker given to the relaxing of controls on industrial pollution. And then there's "Healthy Forests," which describes a plan to expand logging activities on public lands. (Orwell wouldn't have flinched: In Oceania circa *1984*, ignorance was strength, and war was peace.)

The outcome of such programs is no laughing matter, of course. But if our national leaders—and the public agencies charged with the care of our land, water, and air—truly believe that these new programs are in our country's best interests, they should be more up front about why. Perhaps the Bush administration thinks that modifying rules for pollutant discharges will give our economy a boost; if that's the case, call the project "Discharges for Dollars" or "Emission Economics." And if we're concerned about imports of Brazilian and Russian timber, call the logging plan "America's Forests First."

Either way, most Americans quickly recognize the intent of recent changes to mature environmental policies like the Clean Air Act. Rather than viewing ecological imperatives as an engine of economic growth, national leaders are falling into the classic yet passé fable pitting industry against environment. Consider last year's proposal to modify tax rules so businesses could write off the entire cost of a three-ton SUV (but still only about $10,000 for a fuel-efficient car—including the popular new gas-electric hybrids). Do the prospects of our auto industry hinge on boosting sales of recreational trucks? Hardly. Triumphant manufacturers will adapt their products and processes to our evolving natural sphere (for example, Toyota, Ford, and Honda).

The recent behavior of our national government runs counter to the beliefs held by many architects (and many of their patrons) that our future will be cleaner, not dirtier, and tend toward the use of renewable resources. A few architects have even bridged the fields of design and environmental consulting, helping industrial clients transform their infrastructures and output for a sustainable—and prosperous—future.

DESIGNER LABELS

After a national spree of poking fun at a certain Berlin-based designer's basic-black outfits and space-age eyewear, at least a few practitioners have paused to reconsider what our dress says about our professional identity. At one end of the spectrum, the dot-com bust and post-September 11 traumas of recession and war have led many to reach deeper into their closets for the oddly comforting suits, ties, and pearls that many mothballed in the 1990s. At the other end is a slacker-driven slide toward the slapdash, with its own gravity-induced momentum. Informal work wear has created dilemmas that are only exacerbated in fields that bridge art and commerce. At many design firms, principals in slick new ensembles secretly grumble about their project teams sporting weekend attire more suited for cleaning out the garage.

Architects are, for the most part, practical dressers without a lot of discretionary dollars. Yet, we're stirred by certain elements of garb—color, ensemble, pattern, texture—and clothing serves as an indicator of taste, creative quirk, stylistic affinity, or client base. Without getting overly introspective, it's fair for us to wonder what all this means. The real issue is that in architectural practice today, image is everything—and image is nothing. This paradox, as old as the profession, suddenly takes on new weight when celebrity architects change the public's perception of what makes architecture happen. To build great buildings, as we well know, a designer needs neither fashion statement nor star factor; but in the increasingly pivotal fight for publicity, our true capabilities are too often cloaked with carefully crafted illusions.

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Form Follows ... the Sun

I appreciate the support and critical discussion *Architecture* has afforded sustainable design recently but disagree with C.C. Sullivan's comment in "Freak-Show Green" (April 2003, page 50): "Like the engineering disciplines, [sustainable design] is not a determinant of form, but rather an input, or overlay." In our practice, and in my teaching at Woodbury University, I stress the critical relationship between solar orientation and sustainable criteria and the shaping of architectural form. If we segregate appropriate technology as a separate discipline like we have in engineering, then we will have missed the opportunities to create green architecture that is significant on its own.

Warren W. Wagner
Venice, California

Green with Displeasure

The negative subtitle included with my article on LEED undermines my point and casts a negative light on the rating system, which was not at all my intent (April 2003, page 45). I described LEED's shortcomings, while also making it clear that the system has had a positive impact on the industry.

Nadav Malin
Brattleboro, Vermont

Safety Artist

The editorial "Sprinklers Save Lives" was way off base (April 2003, page 9). I am both a practicing architect and a board member of a nonprofit art association. We have a gallery—assembly occupancy—which hosts an exhibition every three weeks; we're thrilled to get 150 people at an opening. We have five exits, a panic device, a fire-alarm pull station, illuminated exit signs, a supervised, hard-wired fire-alarm system, and emergency lighting—and a mortgage to pay for them. A sprinkler system, including a compressor and dry pipes in the unheated attic, would cost up to $20,000—half our annual budget—and wouldn't increase occupant safety. What would really save lives is prompt, evenhanded enforcement of current laws.

Dennis R. Wyckoff
Bristol, Rhode Island

Not Continuing

Thank you, Bay Brown, for saying out loud something many of us have been grumbling about (March 2003, page 49). Salvadore

04 | 2003

Poulton's quote is exactly what I wrote in my resignation letter to the AIA: For the practicing architect, continuing education (CE) happens every day on the job, contributing far more than any AIA-sanctioned program I've attended. The hassle and expense of keeping up with CE requirements is almost impossible without firm support—for employee architects, up to $2,000 for dues and seminars. I thank the California Architects Board for its sense to buck the trend by not tying CE to licensure. The marketplace will weed out the incompetents among us on its own.

Douglas Roberts
Pasadena, California

Bay Brown expresses the frustration felt by architects faced with frivolous CE requirements. When Kentucky's professional board began to examine the prospect of CE in 1995, only three other states required it. Up to that time, the AIA had been outspoken in its opposition to states individually requiring CE, even though the institute had decided to require it for membership. Supporting state-mandated CE would have enhanced the prospects of architects using those hours to maintain their AIA membership. It is easy to see that the institute had a vested interest in pushing CE.

Charles L. Witt
Winchester, Kentucky

Corrections

Architect Carmen Suero's name was misspelled in "Reviving Dead Malls" (April 2003, page 42). Also, a rendering of Houston's Main Street (May 2003, page 29) should have credited Ehrenkrantz, Eckstut & Kuhn Architects. The editors regret the error.

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SARS EFFECTS

China has been a hotbed of development and a land of opportunity for American architects, but the SARS virus is affecting how they work in the region. Kohn Pedersen Fox (KPF) is currently involved in about 10 projects in Shanghai and Beijing, including the world's tallest building, the Shanghai World Financial Center. Founding partner Gene Kohn says that SARS is limiting KPF's travel to China, hindering architect-client communications and construction site visits, and delaying the decision-making process. "Obviously, it's going to slow down construction," says Kohn. Fiona Qian, director of business development for CH2M-IDC China, a Beijing-based partner in the Consortium for Olympic Venues there, reports that experts visiting from abroad are now being quarantined for a minimum of 10 days before leaving China, which further delays project schedules.

On the upside, Kohn reports that his firm is learning how to reduce travel costs through video conferencing. Ellerbe Becket—which was shortlisted for the Olympic stadium design competition for Beijing—is now part of a team with China State Construction and Engineering, a large development agency, that, in light of SARS, is researching "how to work more creatively with less travel," relays Ellerbe Becket's Doug Smith. Smith reports that they have reduced in-person meetings with a tool called WebEx, an Internet-based conferencing system that lets users view a document simultaneously while also talking on the phone. He believes that this method is more effective than video conferencing when the information being exchanged is largely graphic. While both Kohn and Smith extol the effectiveness of remote meetings tools, "at some point," says Kohn, "you need to be there." **Anna Holtzman**

GROUND ZERO: FINDINGS AND FUNDING

With Studio Daniel Libeskind's $330 million design on the way and local developer Larry Silverstein emerging as the lead rebuilder of the former World Trade Center (WTC) site, attention has turned to its memorial competition—and the rancorous tussle between Silverstein and insurer Swiss Re. Silverstein, who bought a 99-year lease on the towers in July 2001, already holds insurance proceeds of $1.3 billion in escrow, which he claims are earmarked for the freshly dubbed "Freedom Tower," Libeskind's 1,776-foot spire, and its 2008 debut.

At 2.6 million square feet, Freedom Tower would replace about a quarter of the lost commercial space. However, Silverstein faces a weak market, a skeptical public (by a recent poll, 57 percent don't want a record-breaking skyscraper), and huge rent and mortgage payments. More important, still in contention is whether Swiss Re owes Silverstein an additional $3.5 billion or $7 billion. Preliminary judgments favored the insurance company, and an appeal set to begin July 22 could last well into the winter.

Central to the insurance appeal are new findings from investigations into the towers' demise. One Silverstein-commissioned study by structural engineer Matthys Levy, a founding partner of Weidlinger Associates, used simulated airplane and building structures to reenact the initial moments of the collapse. The towers' cores and hat trusses helped the buildings stand as long as they did, says Levy. On the other hand, an eight-month-old investigation by the National Institute of Standards and Technology (NIST) revealed that the Port Authority of New York and New Jersey, owner of the WTC site, may not have performed basic fire tests of the building's novel fireproofed steel assemblies. Without the test data, says NIST, it is hard to know whether the towers performed as designed and as codes required.

While the WTC was not required to meet city and state codes, Levy says the towers were "extremely well built and rugged," and that the collapses were caused by the failure of the columns, not the floor trusses. NIST investigators, however, are considering the possibility that the jet-fuel fires weakened some of the lightweight floors. Weidlinger's analysis showed that flying debris from the impacts scraped fireproofing off columns, but that the floor structures remained intact while the buildings stood.

Once the collapse was initiated, says Levy, "gravity took over," and the four sides peeled away "like four petals off a flower." **C.C. Sullivan**

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LONDON DEBATES RENZO PIANO TOWER

Plans to build Europe's tallest building in London, which heritage defenders claim will ruin the British capital's historic skyline, lie in the balance following the conclusion of a month-long public inquiry. Opposition from English Heritage, the government's historic buildings watchdog, triggered last month's investigation into the Renzo Piano-designed 1,000-foot-high, 66-story mixed-use London Bridge Tower. The building, which would be Piano's first significant project in the United Kingdom, has been dubbed the "shard of glass" because its angular form will be clad in panels of transparent glass.

English Heritage argues that Piano's proposal would not only interfere with legally protected views of St. Paul's Cathedral—long accepted as the U.K. capital's architectural focal point—but also open the floodgates to high-rise development in the city's historic core. "It massively usurps the cathedral as the symbol of the city," says the organization's chief executive Simon Thurley.

A spokesman for Sellar Property Group, the building's developer, defended the skyscraper, which is planned for a site next to London Bridge railway station on the River Thames's relatively undeveloped South Bank: "Approval would send out the signal that London is a twenty-first-century capital and a world city."

A final report setting out the inquiry inspector's recommendations will be forwarded to Deputy Prime Minister John Prescott, who is responsible for the decision on the project. **David Blackman**

- The 2003 Rome Prize winners have been announced. Reed Kroloff, former chief editor of *Architecture*, was among the award recipients in the design category. J. Yolande Daniels, Richard M. Olcott, and Linda Pollak won in the category of architecture.

- Larry Silverstein is reportedly talking to firms including Pei Cobb Freed, Kohn Pedersen Fox, and Norman Foster in an effort to bolster his team of architects for the World Trade Center site. According to the *Daily News*, the developer wants architects "with experience designing office towers"—a reference to Daniel Libeskind's lack thereof.

- The Frank Lloyd Wright Foundation is closing its 43-year-old architectural practice, Taliesin Architects.

- Big jobs at big firms: Paul F. Jacob was named chairman of RTKL, and Patrick MacLeamy was appointed chief executive officer of HOK.

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FED COURTS: JURY'S OUT

The U.S. General Services Administration (GSA), has discovered that, on average, federal courthouses cost more per square foot and take longer to build than similar state judicial projects. These facts are the result of a study initiated by the GSA following substantial increases in federal courthouse construction costs for fiscal years 2000 to 2002.

The inquiry reviewed five federal projects against five comparable state projects. The study attributed the 12 to 13 percent differential in price (about $20 per square foot) to several factors: Federal projects face more than 20 mandates—from recycling to subcontracting plans—in the construction procurement and execution process. Second, the materials specified for federal courthouses tended to be of a higher, more durable quality, a by-product of building to 100-year standards, versus 30 to 40 years for state courthouses. Floor area per courtroom was also higher for the federal projects.

Enhanced security requirements for the structural, as well as interior and exterior, building systems of federal courthouses, however, contributed most to the dollar increases. "Prior to the 1995 Oklahoma City bombing, we were budgeting about $8 a foot for security," explains Paul Chistolini, deputy commissioner, GSA Public Building Service. "Now it is closer to $28 to $30 a foot." Comparable security enhancements were not required or used on the state courthouses studied.

Mandates for federal judicial projects are not likely to change any time soon, but one area pointed to in the study could stand for improvement: Federal courthouses require about a year more for the entire process than their state counterparts. "Time is money," says Richard Barnett, director of government relations for law firm Kilpatrick Stockton, which was contracted by the GSA to perform the study. Much of what contributes to drawn-out schedules cannot be changed—the lengthy budgeting process of the federal government, for example. However, Barnett notes the GSA's RFP process "has a document that is quite daunting and costly for contractors to respond to; there are features that could be streamlined, while still maintaining an equitable selection process." **Emilie W. Sommerhoff**

- Efforts to save the Marcel Breuer-designed Armstrong-Pirelli Building in New Haven, Connecticut, from IKEA have failed. Demolition, which is now complete, began in April.
- New York City's MoMA and PS1 Contemporary Art Center have selected Tom Wiscombe as winner of the Young Architects Program. Wiscombe will realize his "urban beach" project in PS1's courtyard this summer.
- An Association of Art Museum Directors survey shows a commitment to sustaining public service despite a weak economy. Of 128 museums, 87 responded that they are moving forward with planned expansion projects.
- Two Seattle architects have succeeded in having the city's 1962 monorail designated a landmark, obstructing the development of a new monorail.
- The first Urban Land Institute Student Design Competit-ion awarded Harvard Graduate School of Design first place for its proposed approach to the area around South Capitol Street in Washington, D.C.

CULTURE CITY

Graz, a small city in the shadow of the Austrian Alps, makes art and architecture its top priorities.
by Paul Bennett

With its translucent blue plexiglass and teatlike skylights, Peter Cook and Colin Fournier's Kunsthaus, a new museum in Graz's center, is causing the kind of architectural stir that brings in the tourists.

On the far side of the Alps, at the beginning of the plain that slopes down into Slovenia and Croatia, sits Graz, Austria. With a population of 220,000, Graz is a small city, but it may be the most happening place in all of Europe this year. In a typical month this past winter, the city hosted the Marinsky Theater for a three-week sojourn of nonstop concerts, an exhibition of contemporary architecture curated by Zaha Hadid, stagings by a theater company from Mozambique, and a retrospective of the Graz-born photographer Inge Morath—all cultural events that you'd expect to see in Berlin or London. And for the past year, jackhammers have provided a constant background din as the city builds four major works by international designers, including Archigram patriarch Peter Cook's first realized building, an island by Brooklyn, New York-based artist Vito Acconci, and a convention center by Graz-based Klaus Kada.

So why this incredible concentration of creativity and new construction? Because Graz is this year's Cultural Capital of Europe, a designation given by the European Union (EU) that annually singles out a city (or several) as a hot spot for cultural events. Next year's cities will be Genoa, Italy, and Lille, France; Cork, Ireland, has been selected for 2005. The program is intended to help spur tourism, and nomination comes with a $1 million subsidy, which most cities use to advertise themselves and mount summer festivals. Graz has gone a step further: Matching the EU's grant with $56 million of its own, the city has put together a mind-boggling array of events lasting the entire year.

"The idea is clear: to tell people about Graz," explains Manfred Gaulhofer, the financial director of Graz 2003, the name given to the quasi-public agency established to manage the year's events. But while tourism numbers are up this year, Gaulhofer admits that if it were only about selling hotel rooms and "I Love Graz" T-shirts, the city would never have spent so much money on the project. "We see the investment in culture as an investment in the city. ... Culture is a basic element of everyday life. If you don't live in a cultural environment, you don't live," he believes.

An hour car ride from Vienna, Graz has historically had a strong manufacturing base largely serving the automobile industry. In recent years, this work has faded, replaced by big growth in high-tech. Graz has lured a few German technology companies, which has prompted the city to further invest in its cultural infrastructure, including $57 million for building projects garnered from the EU, the Austrian government, and the regional government of Styria, of which Graz is the capital, as well as from private sources.

ATTENTION SEEKERS

Architecture lies at the heart of Graz 2003. The most visible project is certainly the Kunsthaus, a modern art museum on the edge of the Mur River designed by Peter Cook and Colin Fournier, Cook's colleague at London's Bartlett School of Architecture. The choice of Cook, who has written much more than he's built, drew attention to the scene here. Due to be completed in August, with its blue blob form reminiscent of a supine nursing animal, the museum already presents a stark contrast with the quaint, pitched-roof Hapsburg cityscape that surrounds it. While it may be controversial, the building has already generated the kind of international buzz that tends to vindicate outrageous architecture. Some of the excitement has

HARRY SCHAFER

faded, however, as construction realities have blunted Cook's original idea: A pixelated, semitransparent skin that displays messages had to be scrapped for lack of a viable technology. It was replaced by translucent blue plexiglass. Behind the skin, flourescent rings can be programmed with messages, but under the rings is a solid steel wall that stops light from penetrating the structure, as was originally intended.

In the shadows of the Kunsthaus is an architectonic steel island designed by Vito Acconci. Floating in the river and connected to each bank by hinged ramps, the island contains a café and a public piazza that doubles as an amphitheater. Formally striking, the work is also a popular success. Locals and tourists alike are flocking to this new piece of urban real estate, to see and be seen.

GRAZ SCHOOL

These two projects by international designers take their place beside several new works by local architects, within an architectural context that is already as vibrant as any in Europe. Graz made a name for itself as a center for architecture in the 1970s, when a group of dissatisfied architecture students at the Graz University of Technology locked their professors out of the classrooms and "declared war on mediocrity." From this was born the "Graz School," and in the intervening years, a number of young, idealistic architects have flocked to the city. Today there are over 300 architectural offices, which have survived largely on the munificence of an enlightened municipal government, which has invested heavily in architecture.

In the 1970s, architects here indulged in a period of playful irreverence exemplified by a rectory designed by Graz School scion Gunther Domenig, which looks strikingly similar to the Kunsthaus. In the 1980s, architects experimented with various permutations of postmodernism, and today the Graz scene has settled into a deep Miesiology—a refined but expressive modernism.

One of the most important commissions of the last few years is Klaus Kada's 11,000-person-capacity Stadthalle. The convention center, which was completed in late 2002, is characterized by a roof almost 500 feet long that rests on four massive pillars and cantilevers 130 feet out across the street. The walls of the structure are all retractable, allowing it to be converted into an indoor/outdoor arena. The steel roof, exposed concrete, glass walls, and emphasis on volumetric spaces all typify Graz architecture today.

The building that is most representative of the city's current architecture is Helmut List Hall, a venue for contemporary symphonic music designed by Graz-based Markus Pernthaler. The hall is a renovation of an abandoned warehouse near active train tracks. Pernthaler's challenge was insulating the space from the trains' vibrations. His solution was to lay a massive slab of concrete behind the building, creating a sort of subterranean barrier between it and the tracks. Comprising exposed concrete, steel mesh, and glass, aesthetically the building is understated but rich. It is a quiet statement of the exuberance that runs beneath the surface of Graz.

While some residents wish they could turn the architectural clock back to the city's Hapsburg days, most people like Graz's modern architecture in part because the scale of the buildings doesn't overwhelm their context. There are very few overly large buildings in the city, and even Kada's Stadthalle, designed to draw attention to itself as a large mass, has a human scale and relates well to the landscape.

HARRY SCHIFFER

Despite a roof that cantilevers 130 feet over the street, the new Stadthalle designed by Klaus Kada maintains a human scale.

DESIGNING WITH LESS

"Exuberance costs too much," qualifies Irmfried Windbichler, an architect who came to Graz in the early 1980s and has watched the city's economy ebb and flow. Despite the current flurry of activity, Windbichler says that Graz, like much of Europe, has felt the pinch of a tightened economy in the past few years, and that important and large commissions are becoming rare. One big cause of the downturn, he says, are the austerity measures foisted on countries like Austria by the EU as part of its zero percent deficit requirements. In order to reach this, and maintain it, formerly booming towns like Graz have had to decrease their prolific spending. Special projects like Graz 2003 notwithstanding, the city has been experiencing a three-year slowdown.

And there are other clouds over the region. Graz has been losing population to a series of new suburbs on its periphery. Karl Niederl, head of the city's environmental department, says that unregulated development of American-style strip malls and big-box retail has been fueling sprawl; if it continues unchecked, the newly refurbished city center, with all its new art and architecture, will become merely a stage for urban events, rather than a living city.

But Niederl's pessimism needs context. His office presides over one of the most progressive environmental policies in all of Europe. Over half of Graz's buses run on "biodiesel," a fuel made from vegetable and animal oils. And despite his concern about suburban sprawl, Graz has only lost 10,000 people in the last five years, and the center is still heavily inhabited.

Windbichler optimistically believes that the current economy only provides for a challenging design problem. "Many of us, especially the young ones, are truly optimistic now that the money is gone," he says with an ironic smile. "The Cultural Capital [designation] is great; it alleviates our inferiority complex. But the interesting challenge for us is to invent architecture that is affordable while at the same time of a high quality. This is an opportunity for new ideas and solutions. And I think Graz can make an important contribution."

Paul Bennett is a freelance writer based in Rome. A former senior editor of *Landscape Architecture*, he has written several books on architecture and landscape architecture.

CAD: FRIEND OR FOE?

There is no arguing that computer technology has revolutionized the way architects design, but it is not all good, say some. From the earliest adoption of CAD in the 1970s, there has been a professional camp that believes hand drawing is the fundamental way to design. As part of a study funded by the Graham Foundation for Advanced Studies in the Fine Arts, I surveyed 40 practitioners in the Washington, D.C., area to evaluate the impact of computers on the profession. I discovered that, today, many are less worried about the computer's cognitive or romantic shortfalls, but have very practical concerns.

Of course, productivity has increased substantially because of computerization, but this does not mean all phases of the architectural process have been given due diligence. With commissions often going to the lowest bidder who can produce the fastest, perhaps the most fundamental step—the design phase—is being compromised. "Productivity in producing documentation is radically increased; productivity in design is increased in the sense that you have much greater ability to visualize," says Douglas Palladino, an architect in RTKL's Washington, D.C., office. But he warns that it is difficult for the design phase to keep pace with the speed of productivity in documentation, so design "leaks" into other phases.

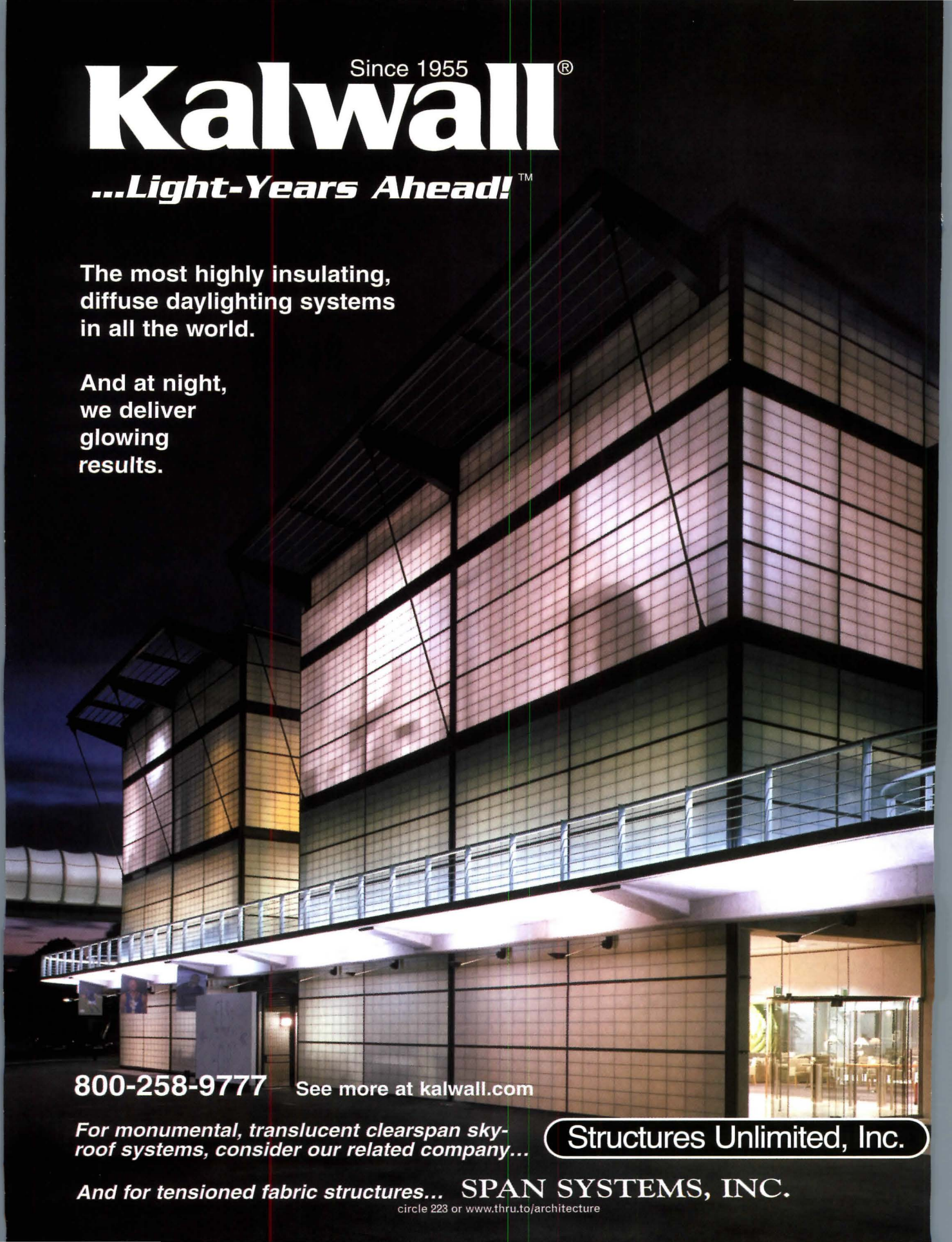
FICTITIOUS DOCUMENTS

The construction document phase poses the greatest risk for error, because of a tendency among junior architects to "cut and paste" to assemble documents. Computerization has amplified the problem by allowing designers to think they can use the standard details that CAD provides. Because the drawings look perfect, designers think they are accurate. More than once in his office, says Ken Wilson, a principal with Envision Design, an interior architecture firm, "someone would pull standard details for everything. They'd be used as placeholders, and they'd show the plan, the reflected ceiling plan, the power and electrical plan, the details. At first glance, you'd think they had finished the drawings already, but none of it was right."

Desktop and, worse, laptop designing also present the problem of working in a scaleless environment. CAD was described by one designer as "seeing the project in small pieces, as if you were looking through a toilet-paper tube." Unlike hand drawing, the architect rarely sees the entire layout until it is printed. Designers zoom in and out on their virtual sheet, sometimes losing track of both scale and layout. "On a building that might cover a quarter of an acre, you can go down to the size of a doorknob," says Richard Storck, an associate vice president with RTKL. "There is a loss of perspective on the big picture and too much focus on details."

Wilson has found that printing out drawings and redlining are necessary to ensure the same integrity as hand drawing. "The construction documents were really random, because [the architects] never saw the whole drawing," he says. "So we've tried to correct that by saying, 'Okay, let's do the plan, and then let's plot it. And then let's redline it. And then let's go back to the computer and draw it.' "

While no architect queried in this survey would want to return to the T-square days, the consensus is that the limitations of CAD and other design and presentation software need to be considered when architects are learning how to use them. **Barbara Allen**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GIVING BACK

Architects are finding many ways to help needy communities at home and abroad. by Bay Brown

Volunteers with the international organization Shelter for Life built 10,000 houses in the Kurdish portion of northern Iraq before leaving the country for safety reasons in 1996. The group hopes to be back in Iraq soon, working on projects like this one.

The war in Iraq has prompted disparate responses, but politics aside, many architects want to help the Iraqi people as they rebuild their country. As the dust settles, the United States, the United Nations, and other entities are still vying for control over various elements of the country's reconstruction, as well as deciding who will foot the bill.

Bechtel, the construction giant based in San Francisco, has been awarded an initial $35 million capital construction contract from the United States Agency for International Development (USAID)—the total payment could go up to $680 million over the next year and a half—to rebuild the country's damaged infrastructure. USAID is also preparing to award contracts to nonprofits for small-scale reconstruction efforts as well. It is still undetermined who will be responsible for rebuilding individual schools, hospitals, community centers, and housing, but the intent is that the work of the nonprofits will complement Bechtel's efforts.

While damage in Iraq was less severe than anticipated prior to the onset of the war, there is still considerable destruction—some due to looting—and opportunity for architects who want to help. At the same time, altruistic-minded architects can find a wealth of volunteer opportunities to help communities in need here in the United States.

WITHOUT BORDERS

A number of nonprofits are gearing up for work in Iraq, among them Builders Without Borders (BWB), an international organization founded in 1999 with a North American base in New Mexico. With volunteers including architects, engineers, and contractors, as well as people not in the A/E/C field, BWB (www.builderswithoutborders.org) specializes in affordable housing both domestically and abroad, emphasizing sustainable structures built with locally available materials. Current projects include affordable housing in Afghanistan, Israel, Mexico, South Africa, and a number of Native American communities in the United States. In Afghanistan, BWB is working with another group, Shelter for Life (SFL), which focuses on medium- to long-term shelter solutions for refugees and disaster victims abroad. SFL (www.shelter.org) has already built 9,000 houses in Afghanistan, with 30,000 more planned for Kabul. Generally, BWB provides technical assistance to improve designs, while SFL oversees construction and provides the labor. Since its founding in 1979 in Wisconsin by Christian volunteers, SFL has worked on infrastructure projects, emergency relief distribution, and community development in Afghanistan, Angola, Burundi, Honduras, Kosovo, India, Iraq, Pakistan, and Western Sahara. In the 1990s, the group constructed 10,000 houses in the heavily Kurdish region of northern Iraq before being forced to leave for safety reasons in 1996. Today, SFL volunteers are of all faiths and include architects, engineers, and those experienced in construction, as well as those with little experience.

Architects Without Borders (www.awb.iohome.net), an international organization with a two-year-old North American division, has largely concentrated on providing training in sustainable reconstruction and development, so that their work will have lasting effects beyond a given project. Its members are currently

COURTESY SHELTER FOR LIFE

working on a women's health clinic in Nigeria under the auspices of the United Nations, as well as on houses constructed with straw bales on Indian reservations in California. In Africa, the volunteers have taught locals how to build with rammed-earth technology that is well suited to windy, rainy, earthquake-prone areas. Architects Without Boarders volunteers, an equal mix of students and professionals, can work from a distance or on site to teach construction methods, says Craig Williams, the organization's North American director. The group is eager to work in Iraq once the division of labor has been determined, he adds.

While the war in Iraq resulted in far fewer refugees than anticipated (tents were erected for 350,000 on the Iranian and Syrian borders, but only a few thousand took shelter there), the larger problem in the area is the plight of 2.5 million refugees remaining from the 1991 Gulf War and last year's war in Afghanistan, according to architect Cameron Sinclair, executive director of Architecture for Humanity, a New York City-based organization he founded in 1999 to provide architectural solutions to humanitarian crises. Most of these refugees are living in makeshift homes made of found materials, says Sinclair. There remains a need for transitional housing, and Sinclair is hopeful that designs his organization has developed for such housing in Kosovo might be implemented in Iraq.

DOMESTIC RESPONSIBILITIES

Architects interested in pro-bono work in the United States can find projects through community design centers (CDCs) across the country that offer their services to low- and moderate-income individuals or communities. Two groups that connect volunteers with CDC-sponsored projects are: the Association for Community Design (communitydesign.org) and Design Corps (designcorps.org). Most CDC projects are collaborations between nonprofit, neighborhood-based organizations and municipal, state, regional, and federal agencies.

In Washington, D.C., the Washington Architectural Foundation, a CDC, has provided pro-bono services including a new downtown plan for La Plata, Maryland, after a tornado leveled the town's central business district in April 2002. According to Todd Ray, principal of local firm Studio 27 and team leader for the 20 or so volunteers on the La Plata project, the group worked with the community to design and implement a plan in accordance with the incentives for smart growth issued by Parris Glendening, then governor of Maryland. As a result, the area became more dense, going from one-story to two-story buildings. New buildings were brought up to the property line to create a uniform street façade, and street furnishings were introduced. Additionally, requirements for on-street parking were reduced, going from an asphalt-heavy suburban model to an urban model emphasizing pedestrian traffic.

A Habitat for Humanity complex in West Seattle designed by Olson Sundberg Kundig Allen Architects has been lauded by the city for its innovative design.

As work like this shows, the growing number of relief organizations focused on design and construction in the United States reflects a heightened sensitivity to the increasing number of people around the world living in adverse conditions. In Iraq, it remains to be seen whether the U.S. government will be able to apply the same diligence in postwar planning that it has in its military strategy. The encouraging news is that, while spurred by natural and man-made tragedy, a number of organizations are in place working to help provide shelter and other essential amenities to people in need—both here and abroad. ▬

Urban Habitat

In Seattle, volunteers from Olson Sundberg Kundig Allen Architects, a firm known for high-end residential projects with a focus on sustainability, designed a pro-bono project for Habitat for Humanity, the international faith-based organization that builds homes for low-income families through sweat equity and volunteer labor. Used to a wealthy clientele, Olson Sundberg was enthusiastic to try its hand at low-income housing. With Rick Sundberg as the principal designer, the architects produced a community of 10 houses in a contemporary style, rather than the craftsman-style houses that Habitat usually constructs in the area. As a group, the houses are varied but complementary, each having shed roofs, natural ventilation, and south-facing sunscreens. The houses were designed with two layers of outdoor space: a common green and small semiprivate yards for each house. In order to amass enough open space for the common, a parking lot was created instead of traditional single-family parking. ▬

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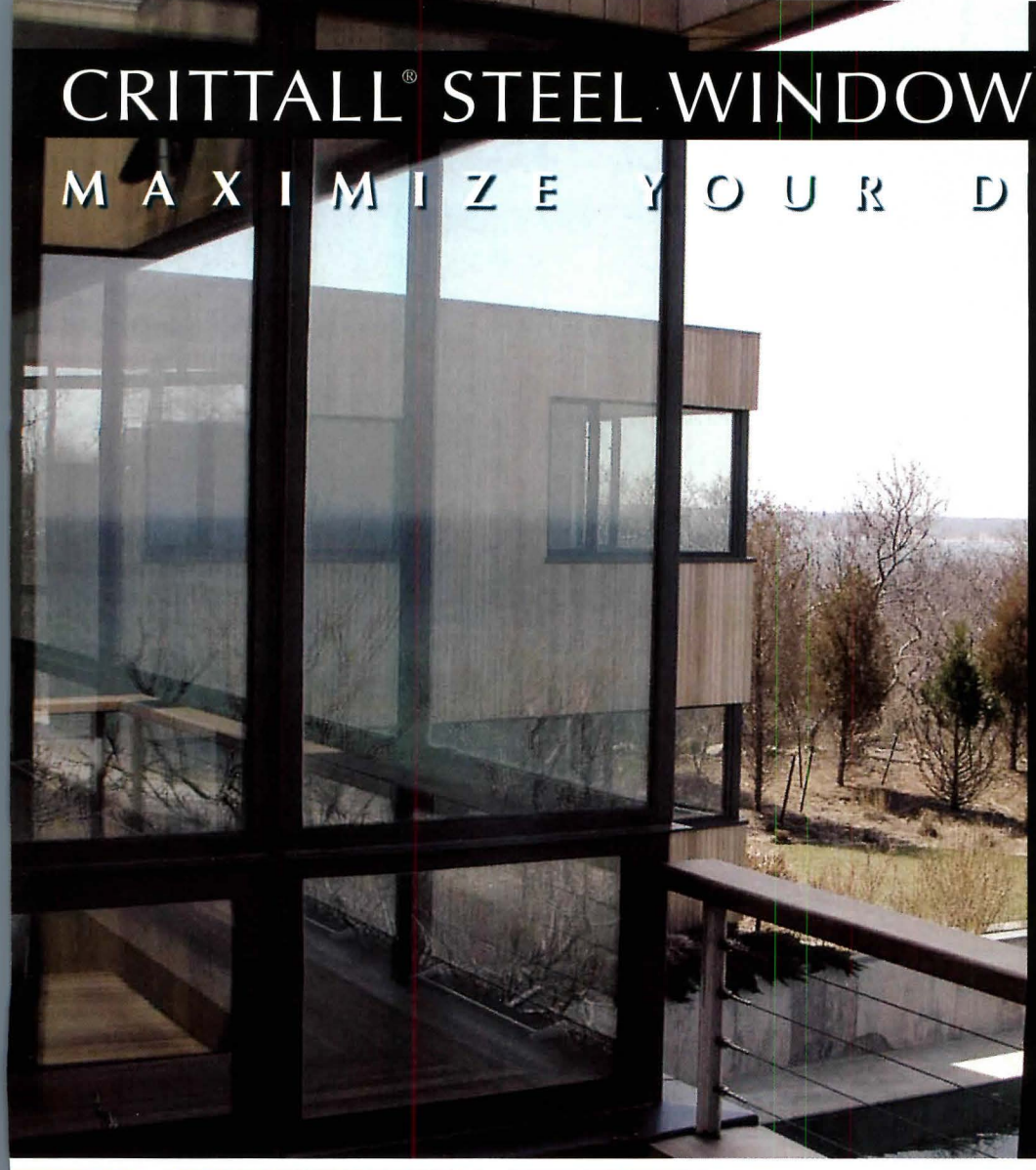

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1. Take a few minutes to review the list of building material manufacturers appearing in the ballot section following this page.

2. To vote for those manufacturers that best meet the criteria detailed on this page, locate their assigned number and circle it on the ballot page at the end of the section.

3. Then simply fax your ballot to 646-654-5816. Your response must be received by July 1, 2003 in order to have your vote counted. Only official ballots published by the magazine or downloaded from Architecturemag.com will be accepted.

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Select the manufacturers who have provided you and your projects with the best:

1. Value
2. Durability
3. Customer Service
4. Design

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For EACH category, which ONE manufacturer has provided you and your projects with the best value, durability, customer service and design? (Choose ONE MANUFACTURER for EACH CATEGORY)

MASONRY

Masonry/Brick

1 Belden Brick Company
2 Boral Bricks
3 Boston Valley Terra Cotta
4 Bowerston Shale Co
5 Carolina Ceramic
6 Clayton Block Company
7 Eldorado Stone Corporation
8 Elgin-Butler Brick
9 Endicott Clay Products
10 Eurocobble
11 Glen-Gery Corporation
12 Haddonstone
13 Hanover Architectural Products
14 Hanson Brick and Tile
15 Hy-Lite Products, Inc
16 Kepco+
17 Lafarge
18 Laticrete International, Inc
19 Lehigh Portland Cement Company
20 MAPEI Corporation
21 Master Builders, Inc
22 Mortar Net USA
23 Real Brick
24 Rictex Brick
25 Shildan
26 Spectra
27 Trenwyth Industries Inc
28 The Proudfoot Company
29 Vetter Stone Company
30 York Manufacturing, Inc

Concrete/Concrete Materials

31 Bomanite
32 Davis Colors
33 Haddonstone
34 Invisible Structures
35 L.M. Scofield
36 Lehigh Portland Cement
37 Maxxon
38 Patterned Concrete
39 Solomon Colors
40 The Proudfoot Company
41 Xypex Chemical Corporation

THERMAL & MOISTURE PROTECTION

Building Insulation

42 Atlas Roofing Corp
43 Bayer Corp
44 BBR Remay
45 Celotex Corp
46 CertainTeed Insulation Corp
47 Dow Chemical Corp
48 G-P Gypsum Corp
49 Homasote Company
50 Insulation Corp of America
51 Johns Manville
52 Knauf Fiber Glass
53 Marathon Roofing Products
54 Owens Corning Fiberglass
55 Typar Housewrap
56 U.S. Gypsum

Shingles, Roof Tiles & Roof Coverings

57 Atlas Roofing Co
58 Bird Co
59 Celotex
60 CertainTeed
61 Eternit
62 GAF
63 James Hardie Building Products
64 Monier Lifetile
65 Tamko Roofing
66 U.S. Intec Inc
67 U.S. Tile
68 Vande Hey- Raleigh Architectural Tile
69 Vermont Structural Slate Inc

Metal Roofing & Wall Panels

70 Alcan Composites
71 Alcoa Building Products
72 American Buildings/AMS
73 Benchmark Architectural Systems
74 Bethlehem Steel Corp
75 Butler Manufacturing
76 Centria
77 Copper Sales
78 Englert
79 Epic Metals
80 Follansbee Steel Corp
81 Fry Reglet Corp
82 Garland Co
83 Integris Metals
84 Kalwall
85 MBCI
86 McElroy Metals
87 Merchan & Evans
88 Metecno-Aluma Shield
89 Metecno-API
90 Metecno-Morin
91 Metl Span
92 Petersen Aluminum Corp
93 Revere Copper Products
94 RHEINZINK America, Inc
95 Varco Pruden

Membrane Roofing

96 Burke Industries
97 Carlisle Syntec Systems
98 DuPont Dow Elastomers
99 Duro-Last
100 Firestone Building Products
101 GenFlex Roofing Systems
102 Johns Manville
103 Sarnafil Roofing
104 Stevens Roofing Systems

EIFS Systems

105 Dryvit Systems
106 Finestone
107 Georgia-Pacific
108 Parex Inc
109 Senergy Inc
110 SonoWall
111 Sto Corporation
112 TEC Specialty Products
113 TEIFS Wall Systems

Metal Doors & Frames

114 Adams Rite Mfg
115 Ceco Door Products
116 Chase Doors
117 Chicago Metallic
118 Cline Aluminum Doors
119 Eckel Industries
120 EFCO
121 Ellison Bronze
122 Essex Industries
123 Forms & Surfaces
124 Hope's Windows
125 I-R Security and Safety
126 Kawneer Company
127 Overhead Door Corporation
128 Peachtree Doors & Windows
129 Premdor
130 Simonton Windows
131 Technical Glass Products
132 Timely
133 Traco
134 Tubelite
135 Wausau Window & Wall Systems
136 YKK AP America

DOORS & WINDOWS

Wood & Plastic Doors & Frames

137 Acorn Window Systems
138 Algoma Hardwoods
139 Alterna
140 Andersen Windows
141 Chase Doors
142 Cline Aluminum Doors
143 Doorcraft
144 Eagle Window & Door
145 Eckel Industries
146 Eggers Industries
147 Graham Architectural Products
148 Hy-Lite
149 IWP
150 Jeld-Wen
151 Kolbe & Kolbe Millwork
152 Marlite
153 Marshfield DoorSystems
154 Masonite
155 Morgan
156 Nord
157 Pella Corporation
158 Pozzi Wood Windows
159 Reilly WoodWorks
160 Rubbair Door
161 Therma-Tru
162 Traco
163 VT Industries

Entrances & Storefronts

164 Acorn Window Systems
165 Ceco Door Products
166 CertainTeed Corporation
167 Cline Aluminum Doors
168 Cornell Iron Works
169 Crittal Windows
170 Dorma Glas
171 EFCO
172 Ellison Bronze
173 Essex Industries
174 Hope's Windows
175 Kalwall
176 Kawneer
177 Major Industries
178 Marshfield Door Systems
179 O'Keefes
180 Pilkington
181 PPG Industries
182 Solutia
183 Technical Glass Products
184 Traco
185 Tubelite
186 Vistawall Architectural Products
187 Visteon
188 Wausau Window & Wall Systems
189 YKK AP America

Metal Windows

190 Crittall Windows Ltd.
191 Custom Window Company
192 EFCO
193 Graham Architectural Products
194 Hope's Windows
195 Kalwall
196 Kawneer
197 Moduline Window Systems
198 Peerless Products
199 Timely Industries
200 Traco
201 Tubelite
202 Wausau Window & Wall Systems
203 YKK AP America

Wood Windows

204 Andersen Windows
205 Caradco
206 Case Window and Door
207 CertainTeed
208 Custom Window Company
209 Eagle Window & Door
210 Hurd Millwork Company
211 Kolbe & Kolbe Millwork
212 Marvin Windows & Doors
213 Megawood
214 Norco
215 PBC Clad
216 Peachtree Doors & Windows
217 Pella Corporation
218 Peter Kohler Windows
219 Pozzi Wood Windows
220 Summit
221 Tischler und Sohn
222 WeatherShield
223 Windsor Windows & Doors
224 Zeluck Incorporated

Skylights

225 Andersen Windows
226 Construction Specialties, C/S Group
227 Duo-Guard Industries
228 Extech
229 Fabric Structures
230 Kalwall
231 Major Industries
232 Miclor
233 Naturalite Skylight Systems
234 Polygal U.S.A.
235 Schott
236 Solatube International
237 Structure Unlimited
238 Suntuf Inc.
239 Traco Skytech Systems
240 Velux-America
241 Vistawall Architectural Products
242 Wasco Products

Hardware

243 Accuride International
244 Adams Rite Mfg
245 Arakawa
246 Construction Specialties- C/S Group
247 Dorma Architectural Hardware
248 Dorma Glas
249 Dor-O-Matic Closers
250 DynaLock Corporation
251 Essex Industries
252 Forms & Surfaces
253 Fusital
254 Hafele America
255 Hewi
256 I-R Security and Safety
257 Jackson Corporation
258 LCN Closers
259 Marlite
260 Nanz Custom Hardware
261 Pemko
262 Rocky Mountain
263 Schlage Lock
264 Sugatsune America
265 Valli & Valli
266 Von Duprin
267 Yale Commercial Locks & Hardware
268 YKK AP America
269 Zero International

Access Door & Panels

270 Acudor Products
271 Cierra Products
272 Karp Associates
273 Milcor Inc
274 Nystrom Products
275 Precision Ladders
276 The Bilco Company

Glass

277 Cesar Color
278 CertainTeed Corporation
279 Joel Berman Glass
280 Leucos USA Inc
281 Madico
282 Meltdown Glass
283 O'Keefes
284 Pilkington
285 PPG Industries
286 Schott
287 Solutia
288 Technical Glass Products
289 Viracon
290 Visteon Corporation

Glazed Curtain Walls

291 Benchmark Architectural Systems
292 EFCO
293 Kalwall
294 Kawneer
295 Major Industries
296 PPG
297 Tubelite
298 Vistawall Architectural Products
299 Wausau Window & Wall Systems
300 Westcrowns

Translucent Wall & Roof Systems

301 Duo-Guard Industries
302 Kalwall
303 Major Industries
304 Suntuf Inc.

FINISHES

Gypsum Board

305 BPB Celotex
306 Collins-Truwood
307 Georgia-Pacific
308 Johns Manville
309 Lafarge Gypsum
310 National Gypsum
311 Temple Inland
312 United States Gypsum
313 W.R. Bonsal Company

Gypsum Fabrications

314 Custom Castings Northeast
315 Formglas
316 Hyde Park Fine Art of Mouldings
317 Monumental Construction & Moulding Co.
318 Pittcon Industries
319 Plastglas, Inc

Ceilings

320 Alpro
321 Altro
322 Armstrong
323 BPB Celotex
324 Ceilings Plus
325 Chicago Metallic
326 Eckel Industries
327 Ecophon Certainteed
328 Epic Metal
329 Fry Reglet
330 Gage Corp
331 Georgia-Pacific
332 Gordon
333 Hunter Douglas Architectural Products
334 Illbruck Architectural Product
335 Johns Manville
336 National Gypsum
337 Novawall Systems
338 Owens Corning
339 Sound Seal
340 USG

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r EACH category, which ONE manufacturer has provided you and your projects with the best value, durability, customer service and design? (Choose ONE MANUFACTURER for EACH CATEGORY)

eramic Tile
41 American Marazzi Tile
42 American Olean/ Daltile
43 Ann Sacks
44 Crossville Ceramics
45 Florim, USA
46 Graniti Fiandre
47 Imagine Tile
48 Laufen Int'l

esilient Flooring
49 Amtico
50 Armstrong
51 Azrock
52 Centiva by International Floors of nerica
53 Ceres
54 Colbond
55 Congoleum
56 CSSI Resilient Surfacing
57 Domco
58 Endura Flooring
59 Flexco
60 Forbo
61 Johnsonite
62 Kentile
63 Lonseal Flooring
64 Mannington
65 MAPEI
66 Marley-Flexco
67 Maxxon Corp
68 Mondo USA
69 Pacific Polymers International
70 R.C. Musson Rubber Co
71 Roppe
72 Tarkett
73 Toli

ubber Flooring
74 Azrock
75 Burke Mercer
76 Dodge Regupol
77 Endura
78 Johnsonite
79 Lonseal Flooring
80 Marley Flexco
81 Nora
82 Pawling
83 R.C. Musson
84 R.C.A. Rubber
85 Roppe
86 Tuflex

minates, Plastic
87 Abet
88 Formica
89 Georgia-Pacific
90 Nevamar
91 Wilsonart International

minate Flooring
92 ABET Laminati
93 Arborite
94 Bruce Commercial
95 Formica Flooring
96 Lamin-Art
97 Mannington Commercial
98 Nevamar
99 Pergo
100 Pionite
101 Wilsonart International

rpet Tile/Modular
102 Bentley Mills
103 Bonar
104 Collins & Aikman
105 Flexco
106 Interface Flooring Systems
107 Lees
108 Mannington Commercial
409 Miliken Carpet
410 Mohawk Industries
411 Shaw

Carpet Fibers
412 BASF
413 DuPont Antron
414 Monsanto Contract Fibers
415 Wools of New Zealand

Paint/Stains & Finishes
416 Benjamin Moore & Co
417 Carlisle Coatings & Waterproofing
418 Devoe Paint
419 DuPont
420 Duron Paints & Wallcoverings
421 ICI Dulux Paint Centers
422 PPG Paints & Coatings
423 PROSOCO
424 SealMaster
425 Sherwin Willams
426 Valspar

Broadloom
427 Beaulieu
428 Bigelow
429 Blue Ridge
430 Durkan
431 Harbinger
432 J & J Commercial
433 Karastan
434 Lees
435 Mannington
436 Masland
437 Milliken
438 Mohawk
439 Monterey
440 Patcraft
441 Prince St.
442 Shaw

SPECIAL CONSTRUCTION

Air Supported Fabric Structures/Cable Systems
443 Air Structures American Technologies
444 Birdair
445 Cascade Coil Drapery
446 Chemfab Corp
447 Clamshell Buildings
448 DuPont
449 Feeney Wire Rope and Rigging
450 Kalwall
451 Pfeifer Cable Structures
452 Seco South
453 Shade Concepts
454 Sprung Instant Structures
455 Structures Unlimited
456 Sullivan & Brampton

Security Access & Surveillance
457 Ademco
458 Alvarado Manufacturing Co
459 Automatic Control
460 Byan Security
461 Checkpoint Systems, Inc
462 Controlled Access
463 Dynalock Corp
464 Essex Industries, Inc
465 I-R Security and Safety
466 Schlage
467 Sensormatic Corp
468 Siedle Company
469 Von Duprin

MECHANICAL

Plumbing Fixtures
470 Acorn Engineering
471 American Standard
472 Bobrick
473 Bradley Corp
474 Chicago Faucet
475 Curvet USA
476 Duravit
477 Geberit Manufacturing
478 GROHE America
479 Haws Corporation
480 Kohler
481 Kroin
482 Rohl
483 Sloan Flushmate
484 Sloan Valve Company
485 Toto USA

Kitchen & Bath Hardware
486 Bobrick
487 Dornbracht
488 Ginger
489 Hafele America
490 Kohler
491 Kroin
492 Moen
493 Price Pfister
494 Rohl
495 Sloan Valve Company
496 Soho
497 Toto USA
498 Valli & Valli

CONVEYING SYSTEMS

Elevators/Escalators
499 Access Industries
500 Atlantic Lifts
501 Atlas Elevator
502 Concord Elevator
503 Fujitec America
504 Inclinator Company of America
505 Infinite Access
506 KONE
507 National Wheel-O-Vater
508 Otis Elevator
509 Pflow
510 Schindler Elevator
511 Thyssen Dover Elevator
512 ThyssenKrupp Elevator

ELECTRICAL

Lighting
513 Advent
514 Alkco
515 Allscape Lighting
516 ALS-Architectural Lighting Systems
517 Altman Lighting
518 American Glass Light
519 Architectural Area Lighting
520 Ardee
521 Artemide
522 Baldinger
523 Bartco Lighting
524 Bega
525 Birchwood Lighting
526 B-K Lighting
527 Boyd Lighting
528 Bruck Lighting
529 Capri
530 Color Kinetics
531 Columbia Lighting
532 Condaz
533 Cooper Lighting
534 CSI
535 D'ac
536 Davis Muller
537 Dernier & Hamlyn
538 Elite Bohemia
539 Elliptipar
540 ERCO
541 Engineered Lighting Products
542 ESTILUZ, INC
543 Exceline
544 FAD Lighting
545 Flos
546 Focal Point
547 Foscarini
548 Gardco Lighting
549 GE Lighting
550 Hadco
551 Halo
552 Hoffmeister
553 Holophane
554 Hubbell
555 ILEX
556 Insight Lighting
557 Iris
558 Juno
559 Kim Lighting
560 Lam
561 Ledalite
562 Leucos USA
563 Leviton
564 Lightolier
565 Litecontrol
566 Lithonia
567 Lighting Services Inc
568 LUCEPLACE USA, Inc
569 Lucifer Lighting
570 Luminis
571 Lutrex
572 Lutron
573 Luxo Corp. US
574 Luxo Italiana
575 Martin Professional
576 Metalumen
577 Nessen
578 Nora Lighting
579 NouVIR Research
580 O Luce
581 Osram Sylvania
582 Peerless
583 Philips Lighting
584 Prescolite
585 Prisma
586 Prudential Lighting
587 Rudd
588 Selux
589 Sirmos
590 Specialty
591 SPI
592 Spring City Electrical Manufacturing Company
593 Supervision
594 Targetti
595 Tech Lighting
596 The Watt Stopper
597 Unilight
598 Vantage Controls
599 Visa Lighting
600 Winona
601 Zumtobel Staff

FURNISHINGS

Furniture Systems
602 Allsteel
603 American Seating
604 Haworth
605 Herman Miller
606 HON
607 KI
608 Kimball Office
609 Knoll
610 Nova
611 Paoli
612 Steelcase
613 Stone Dimensions
614 Teknion

Seating
615 Allsteel
616 American Seating
617 Haworth
618 Herman Miller
619 HON
620 Humanscale
621 Keilhauer
622 KI
623 Kimball Office
624 Knoll
625 Steelcase
626 Stylex
627 Vitra

Casegoods
628 Allsteel
629 Bernhardt
630 Bretford
631 Hale Manufacturing
632 Harden Contract
633 Haworth
634 Herman Miller
635 HON
636 KI
637 Kimball Office
638 Knoll
639 Meridian
640 Paoli
641 Steelcase

Outdoor Furniture
642 Barlow Tyrie
643 Brown Jordon
644 Earth Care
645 Knoll
646 Landscape Forms
647 Lloyd Flanders
648 McGuire
649 Smith & Hawken
650 Wabash Valley
651 Weatherend
652 Woodard

Solid Surfacing
653 Avonite
654 DuPont Corian
655 Formica
656 Fountainhead
657 Nevamar
658 Swanstone
659 Wilsonart

Wallcoverings
660 Bolta
661 The Designtex Group
662 Eurotex
663 Genon
664 Innovations in Wallcoverings
665 J.M. Lynne
666 Koroseal
667 Lanark
668 Maharam
669 Wolf Gordon

COMPUTER/SOFTWARE

670 @Last Software
671 Autodesk
672 Autodessys
673 Bentley Systems
674 CAD-1
675 Datacad
676 Graphisoft
677 Nemetchek
678 Revit Technology
679 Wind-2 Software

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MASONRY

1	2	3	4	5	6	7
8	9	10	11	12	13	14
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29	30	31	32	33	34	35
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THERMAL & MOISTURE PROTECTION

42	43	44	45	46	47	48	49	50	51	52	53	
54	55	56	57	58	59	60	61	62	63	64	65	
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126	127	128	129	130	131	132	133	134	135	136		

DOORS & WINDOWS

137	138	139	140	141	142	143
156	157	158	159	160	161	162
175	176	177	178	179	180	181
194	195	196	197	198	199	200
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144	145	146	147	148	149	150	151	152	153	154	155	
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SPECIAL CONSTRUCTION

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MECHANICAL

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CONVEYING SYSTEMS

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ELECTRICAL

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FURNISHINGS

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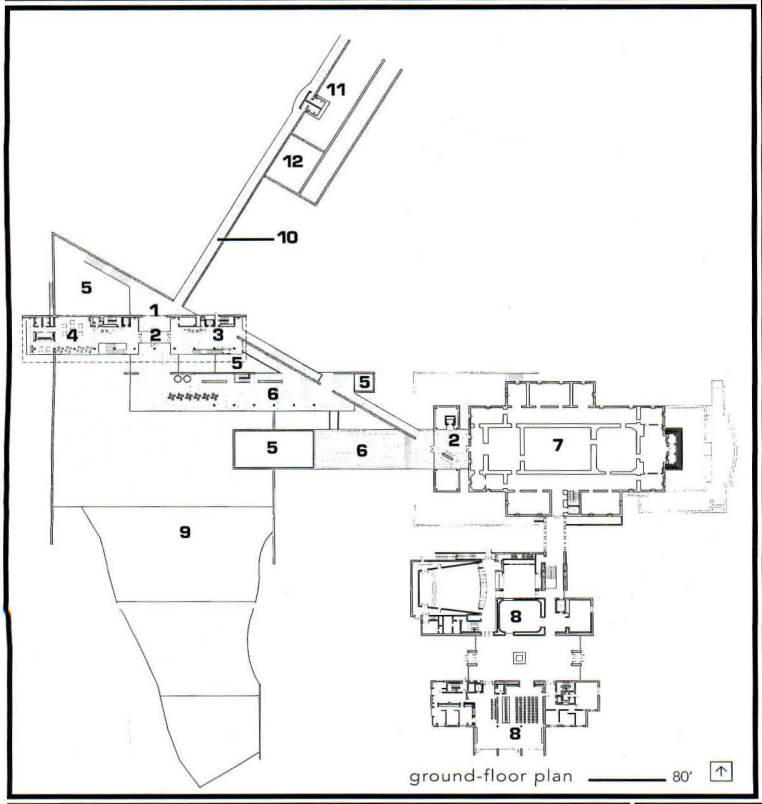
Please fax ballot to 646-654-5816 or download ballot at architecturemag.com.

1 entry
2 foyer
3 reception
4 café/retail
5 void
6 terrace
7 gallery/original museum
8 1973 addition
9 reflecting pool
10 walkway
11 restrooms
12 loading dock



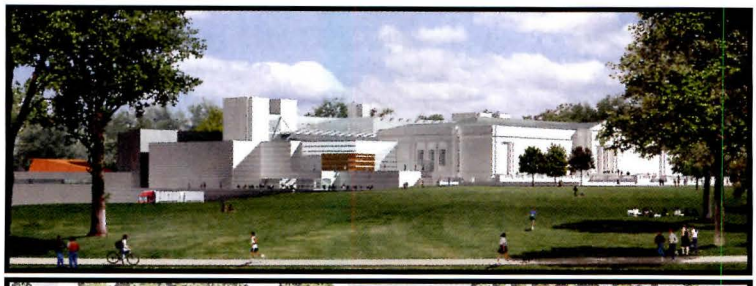
ground-floor plan 80'

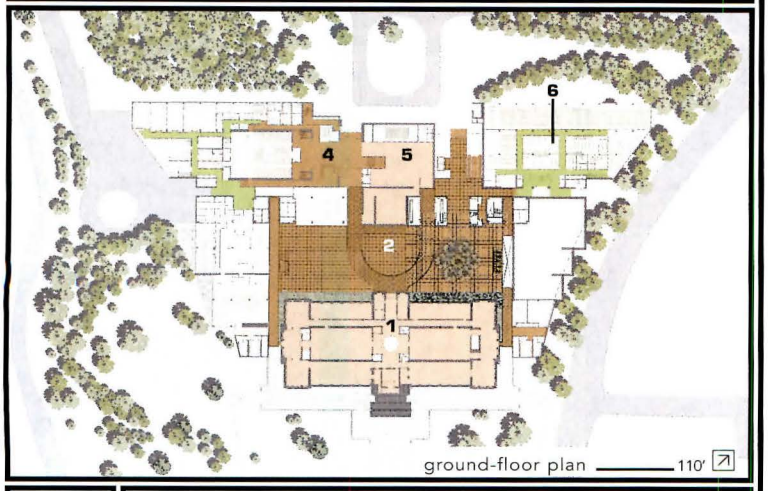
TADAO ANDO ARCHITECT & ASSOCIATES AND GENSLER | STERLING AND FRANCINE CLARK ART INSTITUTE | WILLIAMSTOWN, MASSACHUSETTS

The renowned Japanese architect Tadao Ando only recently began working in the United States, having completed the Museum of Modern Art in Fort Worth, Texas, this year (see "Texas Two-Step," page 48) and the Pulitzer Foundation in St. Louis in 2001. He is now gearing up for his first building in the Northeast.

On the grounds of the Sterling and Francine Clark Art Institute, a museum in the Berkshire Mountains associated with Williams College, Ando's new center for visitors, graduate studies, and conferences employs the architect's signature materials and strikingly simple geometries, although his usual concrete is replaced by white granite. In order to preserve the landscape of the Clark campus, the center is 75 percent below grade; subterranean gallery spaces are enlivened by courtyards and light wells. This requirement influenced the selection of the architect: Ando's expertise in creating meditative, light-filled, below-grade spaces is apparent in a number of his designs.

Designed with Gensler serving as architect of record, the building includes 11,500 square feet of new gallery space, as well as classrooms, meeting rooms, a restaurant, café, bookstore, and giftshop. The addition appears as a rectangular two-story structure to the north of the institute's neoclassical main building, designed by Daniel Perry in 1955. Ando has also created a new lobby for Perry's marble building that will reestablish the grandeur of the classical entry sequence, which was compromised when a new wing was added in 1973. A reflecting pool located in front of the new center and the main building will serve as a unifying landscape element for the entire campus. The quiet minimalism of the visitor center and the new atrium juxtapose pleasingly with the neoclassical frippery of the main building, and the granite contextualizes the project. Seen from the reflecting pool, the new structures, which loom larger than the original structures behind them, are pure Ando, their stark forms and play of light, water, and glass promising a luxurious sensuousness and breathtaking perspectives. **Julia Mandell**



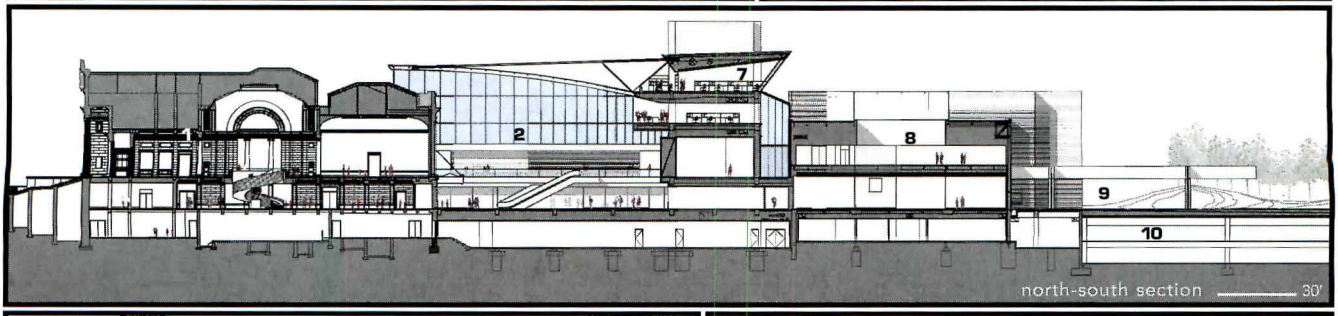


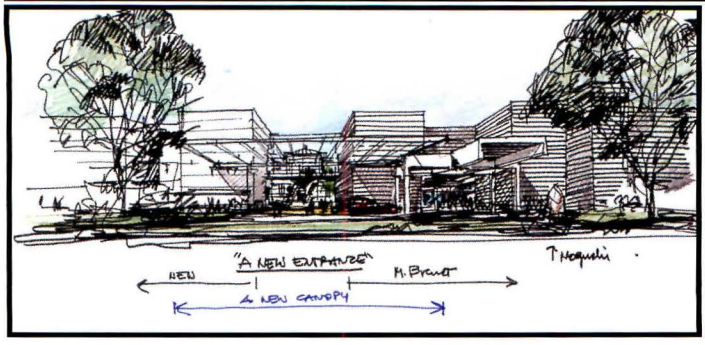
1 galleries/existing museum
2 great court
3 auditorium
4 information
5 orientation center
6 library
7 offices
8 galleries
9 entrance
10 parking

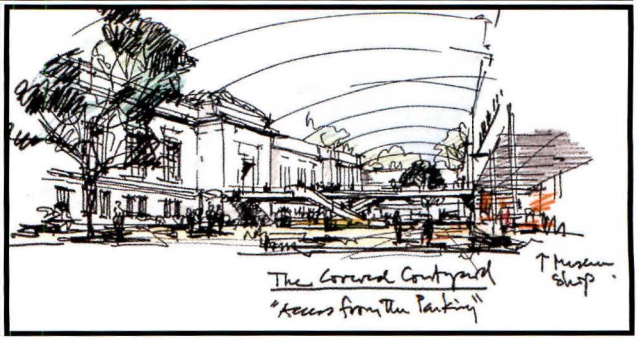
RAFAEL VIÑOLY ARCHITECTS | CLEVELAND MUSEUM OF ART | CLEVELAND

Like many institutions founded in the early twentieth century, the Cleveland Museum of Art long ago outgrew its 1916 beaux-arts home in the city's University Park neighborhood. Over the years, multiple additions and interior alterations added space, but resulted in a confusing array of circulation routes. The need for ease of movement, to enhance exhibition areas and amenities, and accommodate a family-oriented education center, prompted the museum's trustees to commission a major reorganization and expansion project. Housing the third-largest collection in the United States (following the Metropolitan Museum of Art in New York City and the National Gallery in Washington, D.C.), the Cleveland museum will boast a total of 559,000 square feet when completed in 2008.

The redesign by Rafael Viñoly Architects reconfigures circulation routes, reorganizes galleries, and improves the efficiency of existing spaces, while adding new elements that both increase the square footage of exhibition and common areas and tie together the older pieces of the museum complex. Most significantly, the architect's insertion of two curvilinear wings and a glass-covered courtyard provides a clear connection between the original marble-clad museum and a 1971 Marcel Breuer addition clad in granite bands; two previous additions, dating from 1958 and 1983, are to be removed. The new wings, clad in translucent glass, will wrap the east and west ends of the original, while forming the edges of the 38,000-square-foot courtyard, known as the "great court," which serves as the main lobby, a sculpture garden, and a gathering space for receptions. **Abby Bussel**

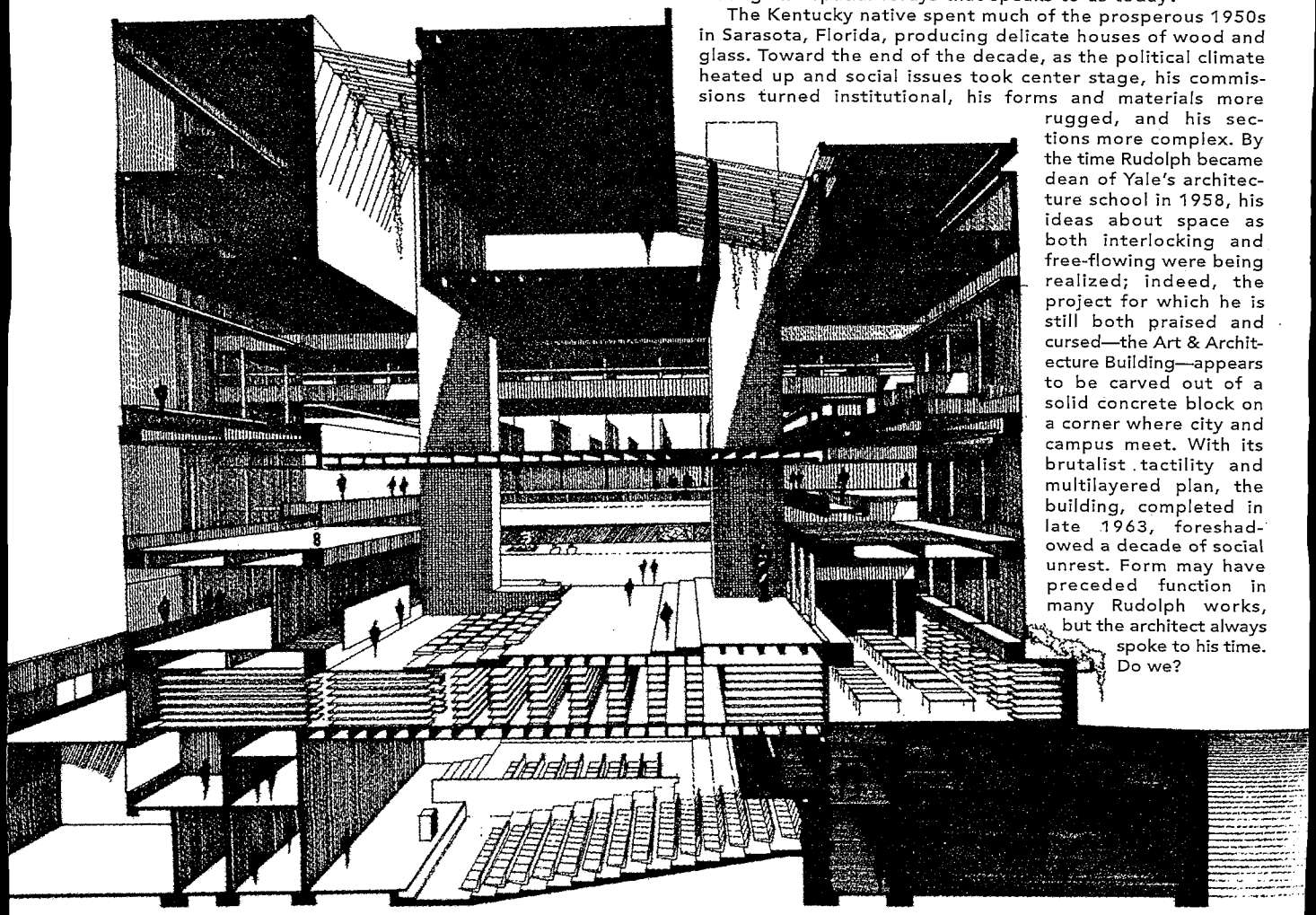






+ART ARCHITECTURE

Forty years after the completion of his Art & Architecture Building for Yale University—and amid a flurry of recent and just-issued books on the enigmatic practitioner-teacher—it is surprisingly timely to contemplate Paul Rudolph's ideas in the context of a much-changed, but equally combative world. What is it about his thinking and spatial forays that speaks to us today?



The Kentucky native spent much of the prosperous 1950s in Sarasota, Florida, producing delicate houses of wood and glass. Toward the end of the decade, as the political climate heated up and social issues took center stage, his commissions turned institutional, his forms and materials more rugged, and his sections more complex. By the time Rudolph became dean of Yale's architecture school in 1958, his ideas about space as both interlocking and free-flowing were being realized; indeed, the project for which he is still both praised and cursed—the Art & Architecture Building—appears to be carved out of a solid concrete block on a corner where city and campus meet. With its brutalist tactility and multilayered plan, the building, completed in late 1963, foreshadowed a decade of social unrest. Form may have preceded function in many Rudolph works, but the architect always spoke to his time. Do we?

Healy Guest House (1950), Sarasota, Florida

Rudolph Revisited

On the road from Sarasota to New Haven, Paul Rudolph's work was more evolutionary than revolutionary.
by Mark Alden Branch | photographs by Adam Friedberg

On November 9, 1963, just two weeks before the Kennedy assassination, Paul Rudolph's Art & Architecture (A&A) Building at Yale University in New Haven, Connecticut, was dedicated in a heady celebration attended by a who's who of American architecture. Rudolph, who in 1961 was hailed by *Progressive Architecture* as "the popular press's ideal choice for the role of American form-giver of the Space Age," was at the critical apex of his career, and the building, a tour de force of spatial complexity, was greeted with the kind of excitement that more recently accompanied the opening of the Guggenheim Museum in Bilbao.

Forty years later, the reputation of the building—and Rudolph's mid-career work in general—has been through the familiar critical cycle: unalloyed enthusiasm, vehement criticism from a younger generation, and finally, grudging respect. The A&A Building, now under the watch of Yale architecture dean Robert A.M. Stern, has just begun to emerge from years of punishment and partitioning by administrators desperate for more space. Since the university's art school escaped from the building three years ago, Stern has overseen the removal of many of the walls that, since the early 1970s, had obscured Rudolph's original vision. At the same time, a recent renovation of Rudolph's Temple Street Garage, also in New Haven and completed the year before the A&A Building, affords a new look at a wonderfully sculptural and surprisingly humane essay in brutalism.

Umbrella House (1953), Sarasota, Florida (above and below)

Like many people, I am more familiar with these buildings than with Rudolph's early, largely residential, work in Sarasota, Florida, and what little I have known of those projects has always made me wonder how Rudolph got from point A—delicate, light, experimental modern houses that echo the contemporary Case Study Houses in Southern California—to point B—the massive concrete forms of the A&A Building, the parking garage, and numerous other brutalist works of that period in his career, both here and abroad. But a closer look at the houses, which were recently collected in *Paul Rudolph: The Florida Houses* (Princeton Architectural Press, 2002), reveals that although the A&A Building was in some ways a dramatic departure for Rudolph, there are themes even in his earliest houses that would continue until his death in 1997 at age 79. (Rudolph's post-A&A career is also getting its due in a new book, *Paul Rudolph: The Late Work*, out this month from Princeton Architectural Press.)

IMPLICATIONS OF EXPERIMENTS TO COME

A native of Kentucky, Rudolph integrated what he had learned as a student at Auburn University and Harvard (where Walter

Sanderling Beach Club (1954), Sarasota, Florida

Gropius was then dean) to create, in and around Sarasota, a series of houses that found elegance in the functionalist vocabulary of modernism. What is most exciting about these houses is their constant play between inside and outside. Taking advantage of the warm climate, Rudolph—in some cases, with his partner Ralph Twitchell—explored ways to bring the outdoors in, both visually and literally. For example, Twitchell and Rudolph's Healy Guest House (1950) is a simple pavilion with walls largely of glass on two sides and wood jalousies on the other two sides, one of which faces a bayou. By moving the louvers, the house—often called the "Cocoon House" because of its sprayed-on roofing material, a military product called Cocoon—can be tuned for light, view, and breeze.

The Umbrella House, completed three years later and after Rudolph went out on his own, extended this indoor-outdoor play, pairing a box-shaped enclosure with a large pergola that reached over the house to define outdoor space. (The pergola is gone now, leaving the house even more boxlike.) An especially interesting aspect of this design is the way Rudolph began to shape interior space, carving a double-height living room out of the box and incorporating balconies and level changes in the spaces surrounding it. This house as much as any hints at the themes that would enthrall him in the A&A Building.

By the mid-1950s, Rudolph was attracting more public work. His Sanderling Beach Club (1954) was of a similar scale to his houses, treading lightly on the beach with enclosed and open spaces alike resting under shallow vaults. But his two high school projects in Sarasota, though just two years apart in their completion dates, seem to stand on either side of a divide in his work. Riverview High School (1958) employs the light tectonics and steel-and-glass aesthetic of his earlier work (the wonderful floating bus-shelter planes that hang from the higher roofs are worthy of Donald Judd); the addition to Sarasota High School (1960), on the other hand, is about depth and mass, its concrete sunshades and folded roof planes reflecting Rudolph's increasing interest in Le Corbusier's contemporary work.

Riverview High School (1958), Sarasota, Florida (above); Sarasota High School (1960), Sarasota (below)

COMPLEXITY AND CONTRADICTION IN CONCRETE

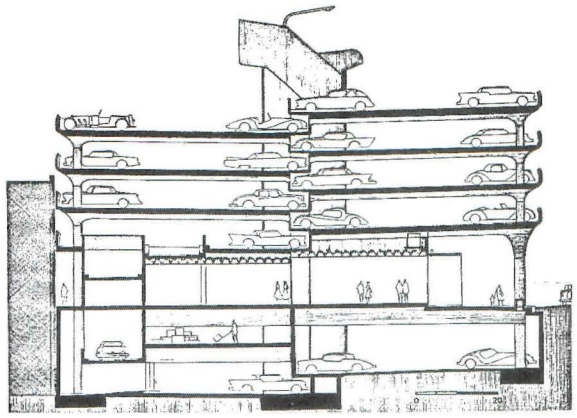
By the time Sarasota High School was completed, Rudolph was at Yale, where he had been appointed chairman of the architecture department in 1958. Almost immediately, he got the commission to design the A&A Building, an unusual arrangement that gave him remarkable freedom. His early schemes looked much like Sarasota High, only taller. But over time, the composition came to be less about planes and more about a play between solid and void. Although the Connecticut climate was not hospitable to a literal blurring of indoor and outdoor, he pursued an increasingly complex form that—despite the massiveness of its concrete walls—resists being read as a single object. It is clear from his drawings, though, that Rudolph wished the building were not hampered by the need for enclosure: He drew as if the windows were not there, or were completely transparent. Many have said that the A&A Building would make a good ruin, and Rudolph likely would agree.

Inside, the architect got his best chance to explore the spatial ideas he had hinted at in the Umbrella House. The building's major interior, now an exhibition area but originally used for very public juries, is a two-story atrium with space leaking out in all directions, as if he were trying to find out just how far he could go without losing the sense of a room. A window looks over the arts library one

Temple Street Garage (1961), New Haven, Connecticut (above and below)

floor below, and another window in that space looks west to Chapel Street. In every direction, space trails off behind a pier or over a balcony. But the building's Piranesian intricacy was of little consolation to students who complained of the rough-edged concrete walls and the unpleasant working conditions. In the aftermath of a mysterious 1969 fire, the building was remodeled with what could only be described as a vengeance, burying Rudolph's spaces alive.

Rudolph resigned his post at Yale soon after the A&A Building was completed, but he left behind several projects in and around the city. Often overlooked among lesser brutalist efforts in downtown New Haven is the Temple Street Garage (1961), a two-block-long, six-level car park built to serve a now-defunct urban mall and adjacent department stores. Limited by its program, it doesn't have the spatial complexity of some of the architect's other works. But what is surprising, given the knocks Rudolph has taken for the inhospitability of the A&A Building, is that the garage is so inviting, from the sidewalk arcade to the short flights of open steps between the split-level floors (no creepy enclosed stairwells until you approach street level). And in this case, Rudolph was able to ignore the problem of enclosure almost

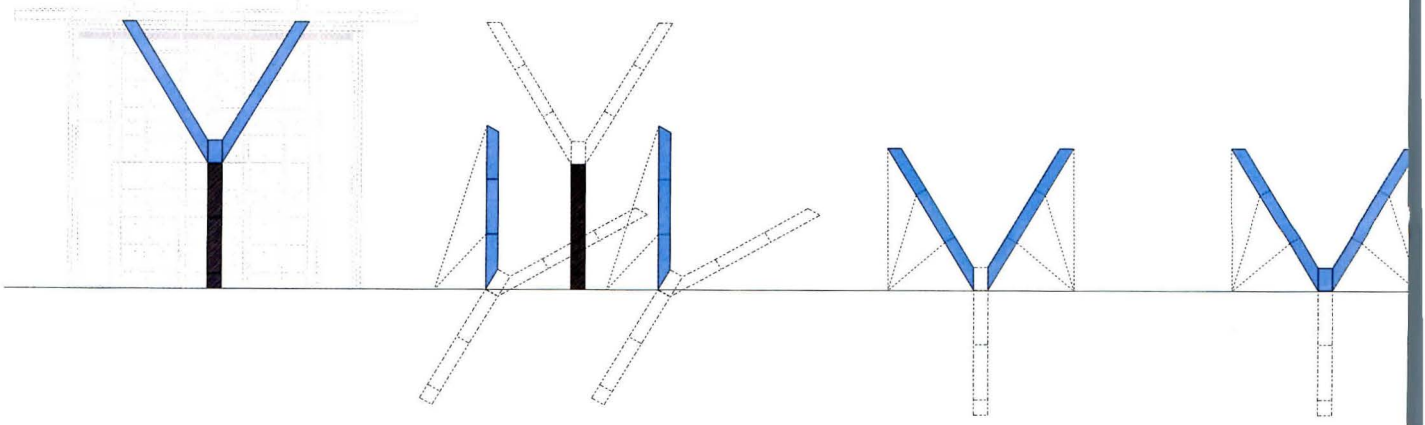


Yale University, Art & Architecture Building (1963), New Haven, Connecticut (above and below)

entirely—the building is open at the sides, leaving the curved, car-hugging concrete half-walls to an ever-changing interplay of light and shadow with the voids. Here Rudolph built his ruin.

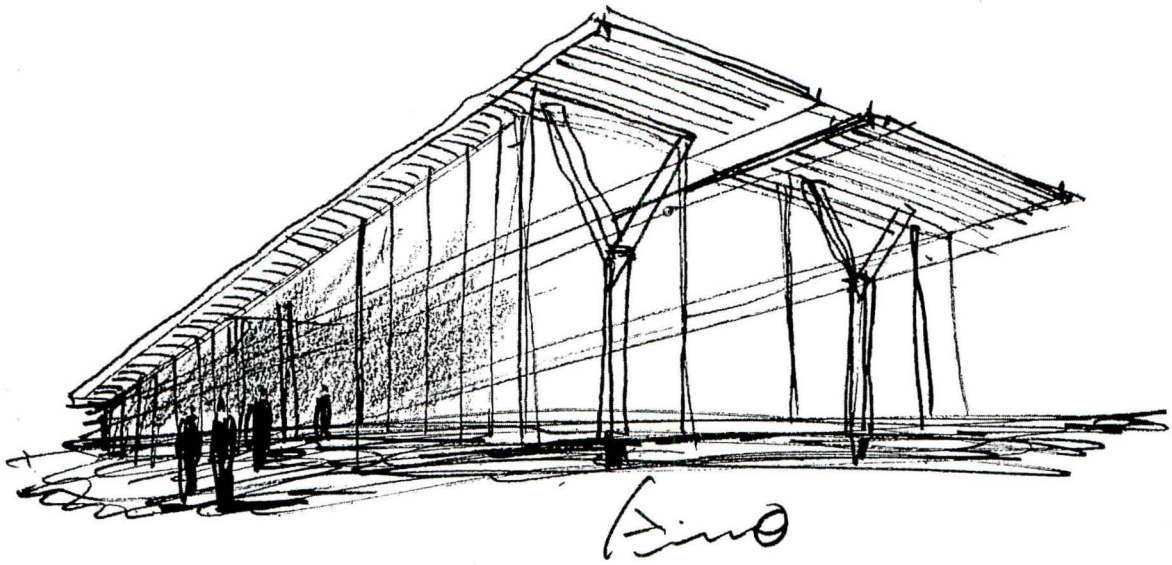
Although he continued to build—most notably in Asia—after his brutalist mid-career period, Rudolph faded from prominence rapidly as the 1960s wore on. Seen as a symbol of modern arrogance and self-absorption to postmodernists like Robert Venturi and Charles Moore (his successor at Yale), Rudolph did not seem relevant to post-Camelot America. Now, though, maybe we can look back on Paul Rudolph at a safe distance from the architectural politics of his own time and find what is to be learned from his work. By starting with an understanding of his early, more accessible projects, even those who can't bear the oppressive weight of his Corbusier-inspired 1960s forms may unearth in them the same fresh explorations of space first realized during the Sarasota years.

Mark Alden Branch, executive editor of the *Yale Alumni Magazine*, writes frequently about architecture and design.



texas two-step

A museum in Fort Worth marries American discipline and expediency with Tadao Ando's unique brand of modernism—in the long shadow of Louis Kahn's Kimbell. **by Larry Albert | photographs by John Edward Linden**

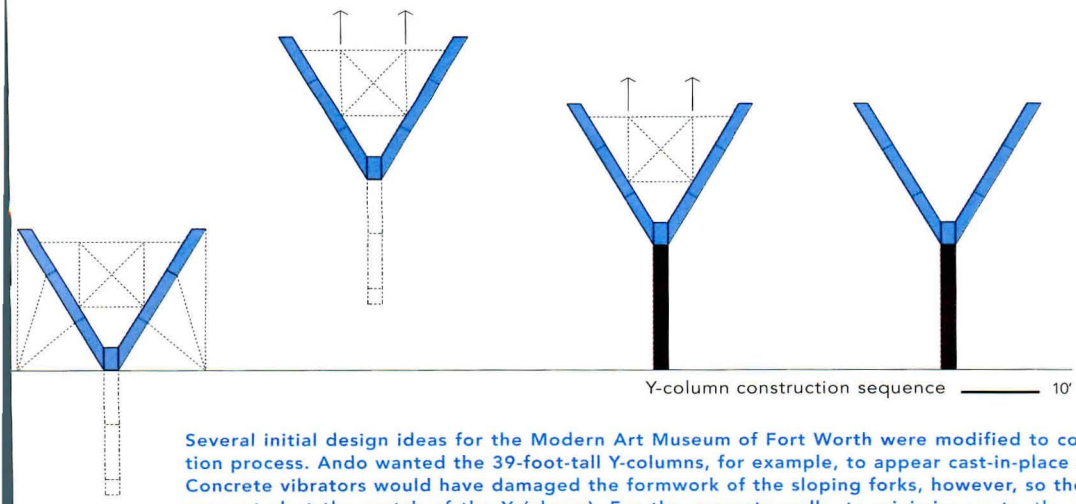


Newspaper publisher Amon Carter famously promoted Fort Worth as the city "where the West begins." But just a few blocks from the museum that bears his name, another institution—Texas's oldest art museum—began its own recent quest for national stature by looking to the East. The museum hired a self-educated, Pritzker Prize-winning architect from Osaka—a former prizefighter renowned for creating rich, serene environments from the humblest of materials. From Texas, the museum assembled an American team of well-respected consultants and construction professionals, headed by an architecture firm with considerable experience realizing locally the inventions of high-profile designers from Europe and the eastern United States. The result, the new Modern Art Museum of Fort Worth, was born from the collision of their two very different kinds of genius.

The Modern, as it is called, creates a new eastern gateway to the city's growing cultural district, a short drive west from downtown. Competition for attention in this neighborhood—let alone in the global art scene—is formidable. Across busy Camp Bowie Boulevard from the site sits a Texaco station, where at dusk only the letters T, A, and O light up. Above it, a billboard announcing a "lobster rodeo" waves a friendly hello. And then there's that gem a block to the west, one of the greatest buildings of the last century: Louis I. Kahn's Kimbell Art Museum.

LAYERED SHELTER

Six years ago, Tadao Ando wowed a competition jury and the public with a crystal-clear scheme for the museum's new home that featured six parallel glimmering pavilions (a clear reference to the Kimbell's six bays) set off by a pond. The four gallery pavilions, half the length of the other two, were described as "concrete boxes" to sheath and protect the art. Wrapping them was a delicate wall of glass. Ando referred to the circulation space between these two layers as an *engawa*, a porch space common to traditional Japanese architecture, at the water's edge.



Several initial design ideas for the Modern Art Museum of Fort Worth were modified to conform to demands of the construction process. Ando wanted the 39-foot-tall Y-columns, for example, to appear cast-in-place and uncompromised in appearance. Concrete vibrators would have damaged the formwork of the sloping forks, however, so the segments were cast vertically and connected at the crotch of the Y (above). For the concrete walls, to minimize costs, the contractor built smaller sections of formwork and made more frequent pours than is the typical practice in Japan, and used stronger forms to minimize the number of form ties. To match the pattern Ando had specified, however, alternating rows of tie holes were formed by dummies.

The concrete and glass were only the innermost elements in a series of landscape enclosures—the pond, expanses of grass, a concrete wall, and a stand of trees—that Ando indicated would shelter the art within the site. It was this strategy of layered enclosure—not the treelike imagery used in early models but later abandoned—that led Ando to label his design "an arbor for art."

A NATURAL SETTING

Much of the magic promised in Ando's original scheme comes to life in the completed building. A walk through the front entrance brings the first of several moments in which grand, centered interior spaces look out onto equally grand but oblique views of the outdoors. Across the 40-foot-tall lobby and beyond a dramatic bridge linking second-floor galleries to curatorial offices above, floor-to-ceiling glass frames a view of the water beyond, on which the galleries, viewed in profile, appear to float.

The three gallery pavilions (one was cut to meet the construction budget) stretch from east to west, offering a loose metaphor for the breadth of the Modern's global ambitions. Inside, the spaces never upstage the art; their spareness invites focus, on one work at a time. But the galleries' most significant success is the way they bring an experience of the outdoors into the hermetically sealed confines of a contemporary museum. Slip into a sheath of streaming daylight that sneaks from around the corner and seems to bounce into the tinted plexiglass of an untitled Donald Judd sculpture, for example. You'll find yourself in a tall, bright space crossed gently with a grid of soft shadows, reflected sunlight glimmering on deep concrete walls, a view of the pond and the city center beyond. The view doesn't completely shut out the clamor of Fort Worth's posturban landscape, but up-ends and reframes it between the Y-shaped column at the end of each pavilion and the distant towers of downtown.

You're likely to find visitors looking at the view across the pond with the same intensity they bestow on the art. Respites on these porches are not distractions; they fit comfortably into a visit.

MOVING TO TEXAS

Ando was a builder before he became an architect; the studied simplicity of his projects has always relied on a careful understanding of construction methods. Over three decades, he has developed a rich vocabulary of forms by paying close attention to how materials are put together—in Japan. With the Modern, his third and largest U.S. commission, Ando had to adapt his work to a building culture that has very different skill sets and inclinations, while negotiating obstacles of language, culture, and distance. The U.S. part of the team, headed by Houston's Kendall/Heaton Associates, worked hard to bring its understanding of Ando's vision to life—using American materials.

Translating ideas into places is the basic work of architects, but the process is rarely straightforward. How much, for example, should the team have attempted to replicate Japanese construction techniques in Fort Worth? Should new details worked out in the development of the museum have been directly expressed, or should the architects have tried instead to match the *image* of Ando's initial vocabulary, regardless of the construction methods used? This last question was pivotal. The competition fixed images of the completed building—and of the architect's earlier work—for client and public both. Would the power of Ando's work lose anything in translation?

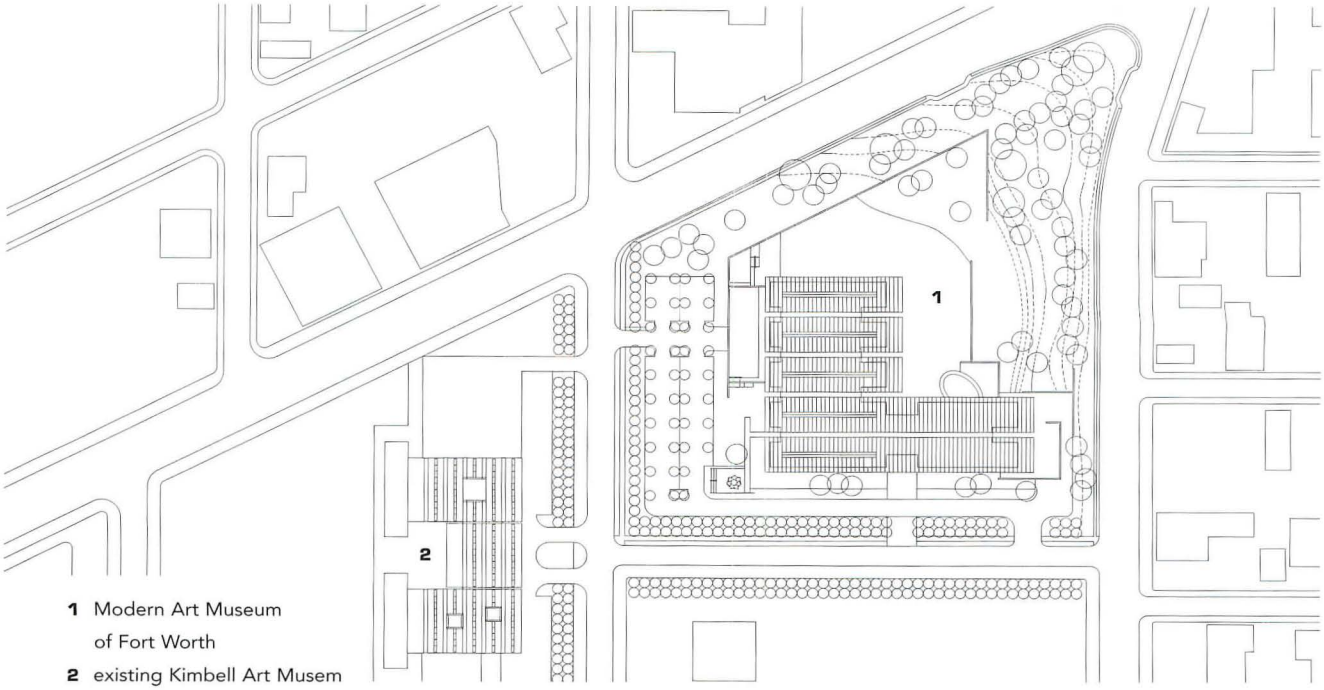
In a few instances, discussions within the project team focused explicitly on this issue. One camp fought for a certain purity in the building's cross-section—arguing, for example, that a concrete roof should be made entirely of concrete. Others questioned the value of using refined surfaces where they would never be seen. "Americans don't like wasting time fussing with things that are covered up," says one U.S. team member.

Ando emphasizes that moving the Modern from concept to construction was a collaboration, not a translation of a fixed and inflexible image. It was realized, in his words, by "one team," with each member "bringing a different expertise."

By all reports, Ando was amenable to suggestions and many changes put forward by other team members. "When we do construction outside Japan, the local techniques may be different," says Ando, "but the logic and the concepts behind the techniques are ready to form themselves into yet another good solution if you are keen enough to look at the context."

MATERIAL DIFFERENCES

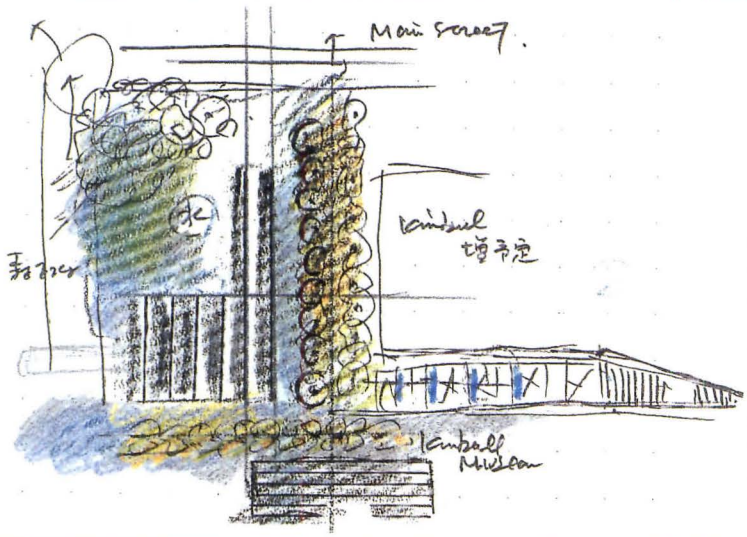
Pristinely finished expanses of concrete are virtually unknown in the United States. But achieving the smoothness and sharp edges Ando specified turned out to be less of a problem than keeping the color consistent. A number of walls had to be refinished with a cement slurry after the forms were removed. The client, in fact,



1 Modern Art Museum of Fort Worth
2 existing Kimbell Art Musem

site plan 125'

Call and Response



Tadao Ando's design for the Modern Art Museum of Fort Worth riffs on the pavilion organization of its distinguished neighbor; differences in scale and material account for the dissimilar results. Louis I. Kahn's Kimbell Art Museum, finished in 1972, pulls beauty out of a juxtaposition of surfaces—travertine next to concrete, for example—but the new Modern reveals its elements one at a time, showcasing their individual qualities.

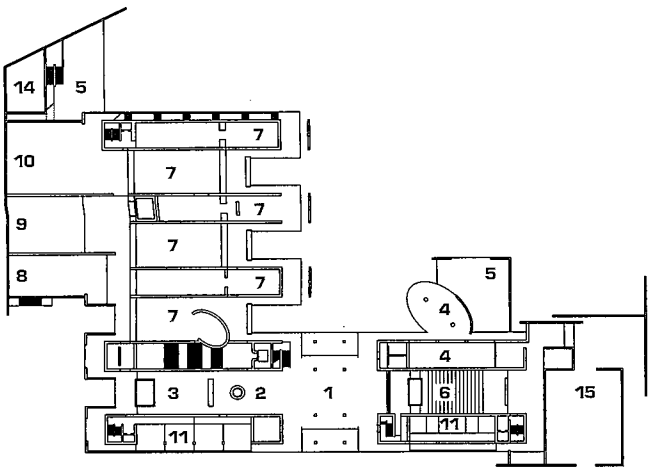
The Kimbell's regular grid of arched bays suits exhibits that invite comparisons between works of art. The much vaster spaces of the Modern seem more conducive to studying solitary works. This distinction works well for both institutions, given the time periods the museums cover: from antiquity to the twentieth century for the Kimbell, and after 1945 for the Modern.

One of the new museum's most dramatic spaces shelters a single work—Martin Puryear's *Ladder for Booker T. Washington*—under diffuse natural light. The drama inside Ando's building encourages visitors to narrow their focus; outside, amid a noisy and distracting semiurban environment, the Modern exhibits its own repose.

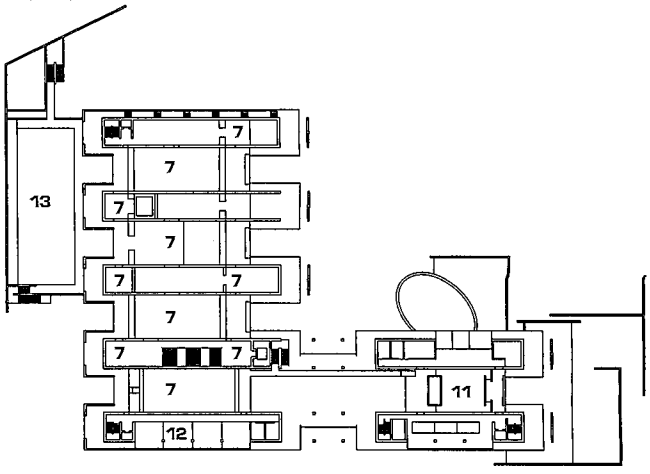
proved pickier about the concrete finish than the architect, at one point requiring the contractor to rebuild a wall Ando's office had already deemed acceptable. To keep labor costs manageable, the contractor minimized the number of form ties in the concrete, employing smaller sections of stronger formwork and pouring more frequently than is typical in Japan. To match the indentation pattern Ando had specified, alternating rows of tie holes were formed by dummies.

If the team followed a consistent philosophy in fleshing out the design, though, it is hard to pin down. Like the dummy tie holes, some details betray a desire to match expected appearances, even when the original reasons for them had drifted away: glass-fiber-reinforced-concrete panels in the second-floor ceiling, finished to blend in with the cast-in-place concrete, for example, and sealed louvers atop curtain walls. On the other hand, an opposite logic seems to have guided other moves: center portions of the "concrete boxes" for art that Ando had described in his original scheme were replaced with a more prosaic and flexible assembly of concrete columns, gypsum board, and concealed ductwork for air conditioning—a resolution that provides the function but not the appearance of the original proposal.

In the roof, however, the team alighted on one of those "other good solutions" Ando describes. After investigating nearly 20 different assemblies, the team settled on a cast-in-place system of flat roofs

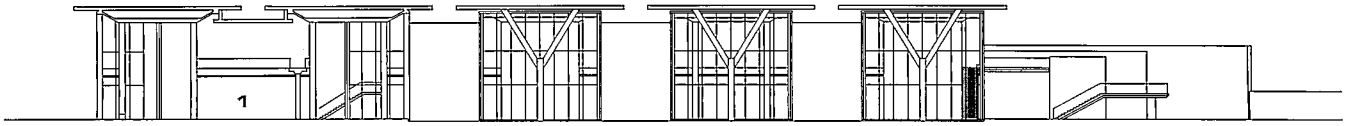


first-floor plan

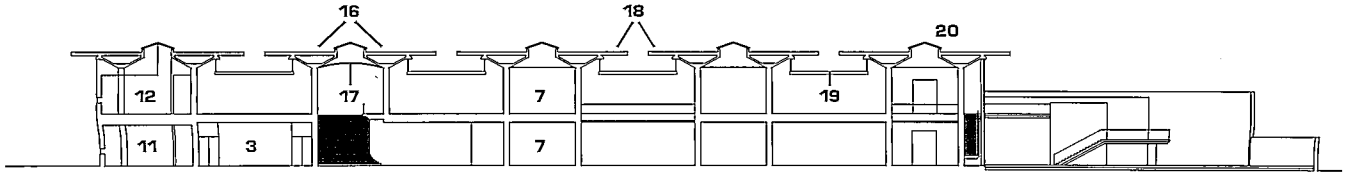


second-floor plan ——— 60′

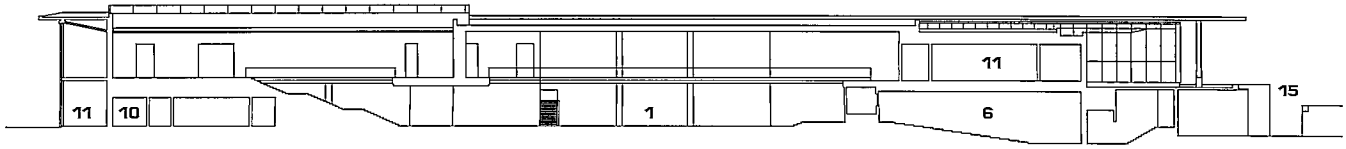
1 entrance hall
2 information desk
3 museum shop
4 café
5 terrace
6 auditorium
7 gallery
8 workshop
9 loading dock
10 storage
11 offices
12 classrooms
13 sculpture terrace
14 mechanical plant
15 parking
16 folded-plate torsional roof
17 diffuser
18 sunshades
19 suspended roof with clerestory
20 skylight
21 aluminum sill
22 aluminum panel
23 steel-tube column
24 floor grille
25 aluminum sill
26 shade cable guide
27 insulated glass
28 painted steel columns
29 aluminum panels
30 fiberboard sheathing and insulation
31 aluminum fins



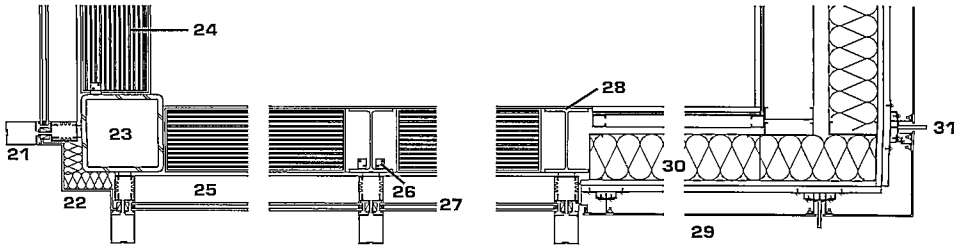
north-south section through entrance hall



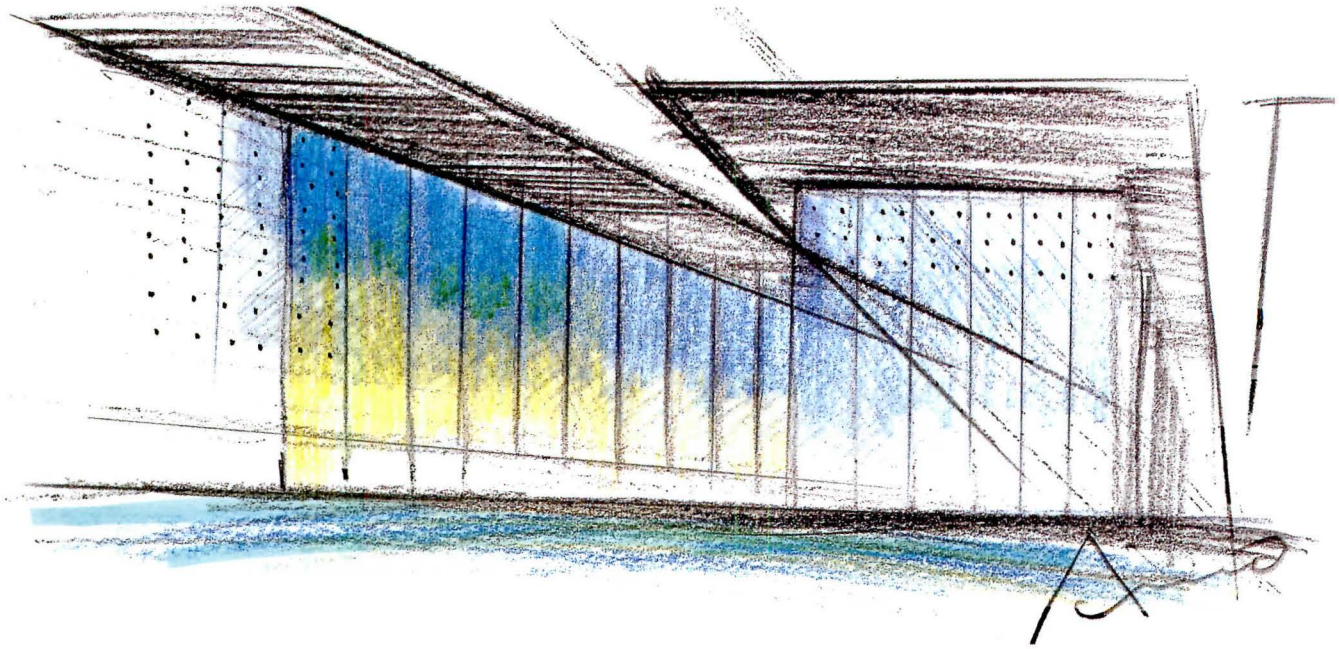
north-south section through galleries



east-west section through auditorium ——— 26′



curtain-wall details (plan) ——— 10″



Ando's initial concept sketches and models showed the Y-columns inside a delicate glass wall (above). The columns later moved outside a bulkier curtain wall backed by large steel columns (facing page). Inside, central sections of the gallery walls, originally conceived as concrete, were built of gypsum board and plywood on metal studs.

supported by folded plates that sacrificed nothing to typical American expediency and came with an unexpected bonus: additional torsional strength, which allowed the engineers to eliminate beams that would have intersected the skylights. Other material substitutions proved direct and painless, such as the use of bead-blasted and anodized aluminum panels in place of the galvanized steel Ando had used at the Museum of Gojo Culture in Nara, Japan.

Not every realization was so direct. The diaphanous glass curtain shown in early models and drawings helped communicate the qualities of successive envelopment Ando envisioned for the site. But the curtain wall that was built is considerably more bulky. Light bounces off the three layers of glass with a slight bluish tint. To counter wind loads, every vertical mullion is backed by a floor-to-ceiling, 8-inch-deep steel column, painted to blend in with the mullions.

PAVED PARADISE

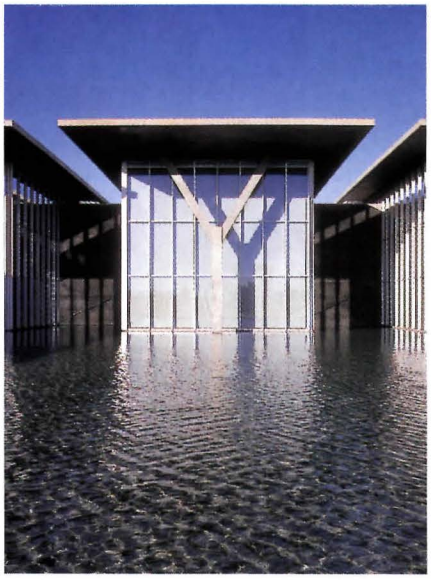
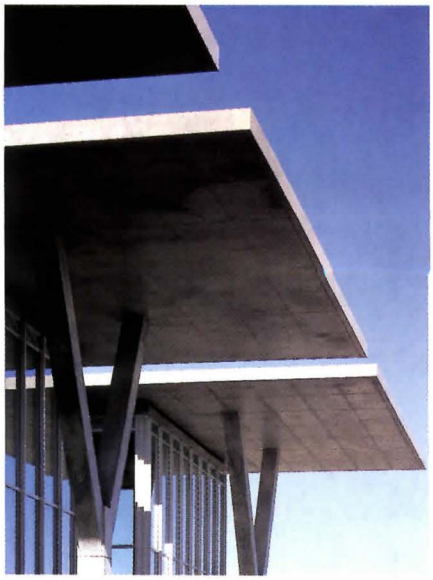
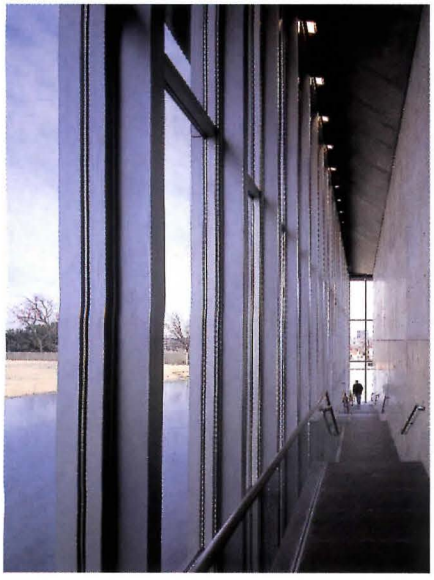
The new Modern has brought international attention to the museum's collection, and has proven wildly popular with visitors. But if you want to fall in love with this building unreservedly, do not cross the street and enter the Kimbell: The magical splay of light across Kahn's vaulted ceilings is unmatched. And looking back as you return, you'll be struck by the Modern's banal parking lots—long stretches of uninspired concrete that lend the museum complex the cast of a suburban office park.

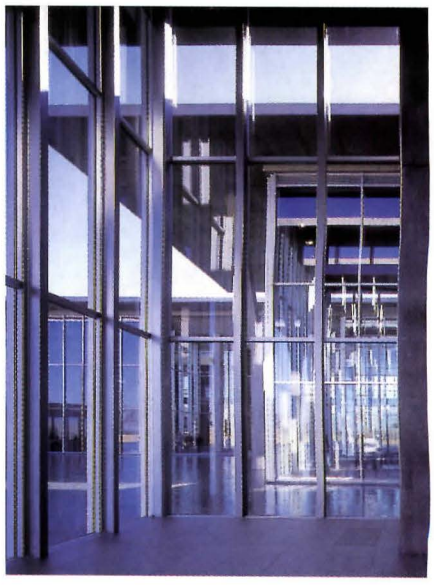
Lowly parking lots are not a bad image to keep in mind, though, when you consider what Ando and his project team have accomplished in Fort Worth. Looking at the museum from the opposite side, across the pond, you might imagine that the pavilions, once trapped beneath a hard, flat surface, have risen from the water. What used to be parking surface is now roof. The upraised arms of the Y columns are less serene than heroic. They lift thick slabs of concrete, the most mundane of materials, above the level of art.

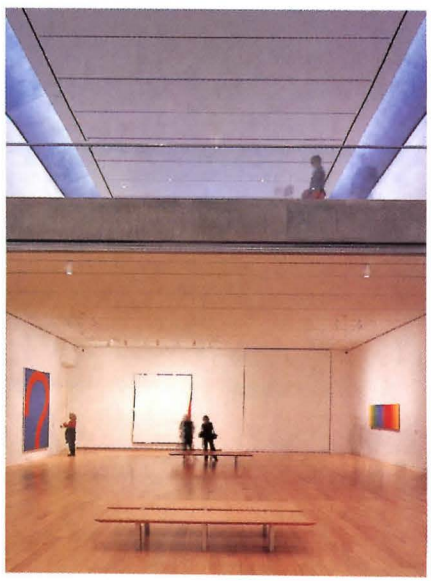
Larry Albert is an architect at Murphy Mears Architects, Houston, and a member of the editorial board of *Cite* magazine.

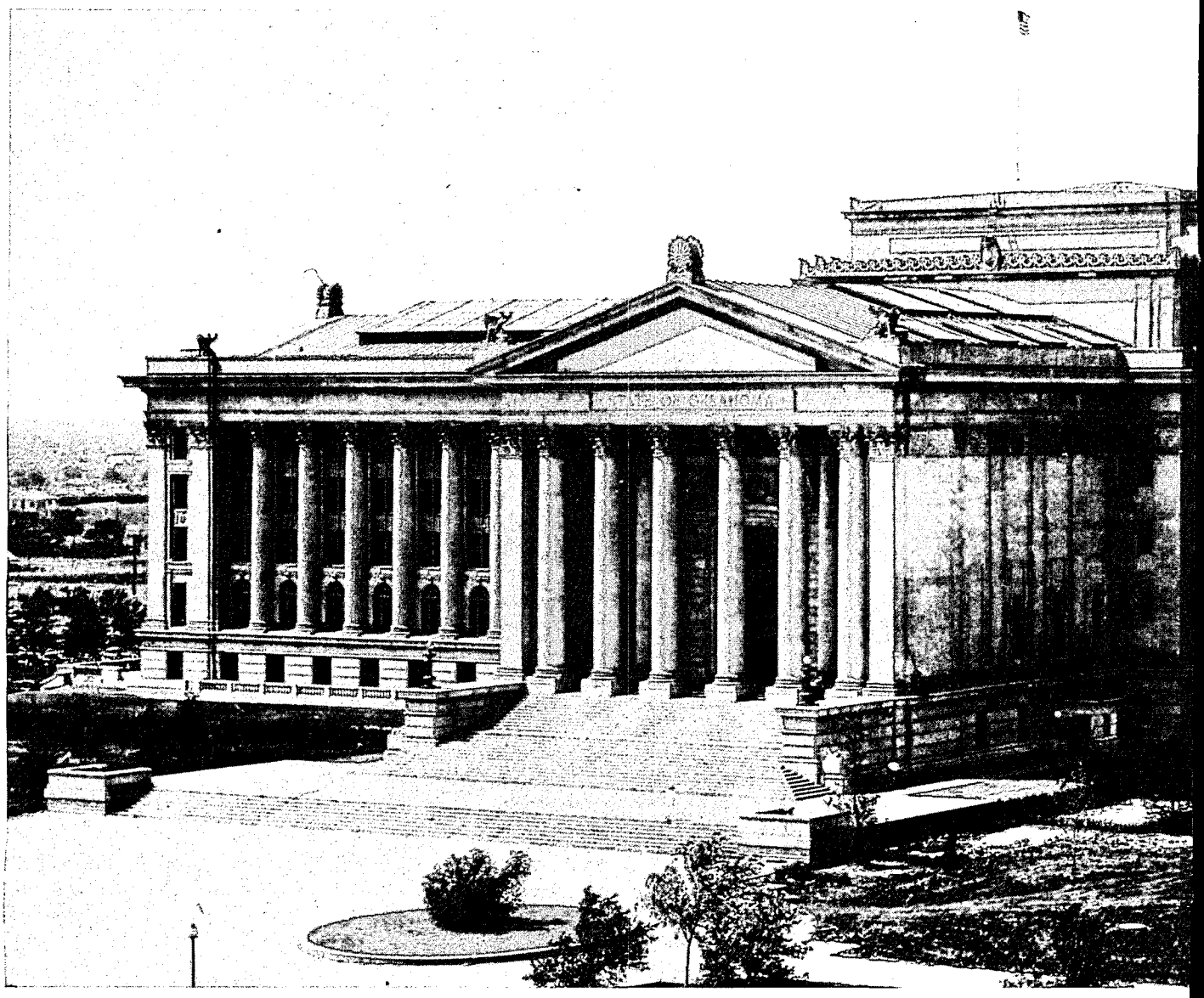
Modern Art Museum of Fort Worth (MAMFW), Fort Worth, Texas
client | MAMFW, Fort Worth, Texas **owner's representative** | MPA Foundation—Peter Arendt (director of design and construction) **architect** | Tadao Ando Architect & Associates, Osaka, Japan—Tadao Ando, Masataka Yano, Kulapat Yantrasast (project team) **architect of record** | Kendall/Heaton Associates, Houston—Larry Burns, Rollie Childers, Nobuhiko Shoga, Jory Alexander (project team) **consulting architect** | Richard Fitzgerald & Associates **landscape architect** | SWA Group **engineers** | Thornton-Tomasetti Engineers (structural)—Leo Galletta, David Spires (project team); CHP & Associates (M/E/P); Huitt-Zollars (civil) **consultants** | George Sexton Associates (lighting); Waterscape Consultants (water features); Peter M. Muller (curtain wall); Frank Clements Associates (food service); Cerami & Associates (acoustics); Pentagram Design (graphic design) **general contractor** | Linbeck Construction **area** | 160,000 square feet **cost** | $65 million

Specifications
structure | reinforced concrete **roofing** | modified bituminous membrane; insulating concrete with polystyrene insulation board; stainless-steel flashing; exposed concrete soffit with water-repellant coating; painted linear aluminum louvers with 24-inch linear glass-fiber-reinforced-concrete (GFRC) edge tubes; aluminum skylights **exterior walls** | exposed architectural concrete; glass wall; aluminum panels **floors** | 6-inch white-oak planks, plain sawn; granite panels; stainless-steel floor grilles **paving** | stone, wood **curtain-wall system** | extruded anodized aluminum mullions and louver panels; steel columns with metallic paint; anodized aluminum enclosure with motorized shade, sprinklers, and wall-washers **curtain-wall, skylight, and clerestory glass** | clear low-emissivity insulated glass, with interlayer UV-filter film **clerestory windows** | aluminum louvers **ceilings** | exposed architectural concrete; fritted translucent film on aluminum frame; GFRC panels; painted gypsum board; recessed aluminum slot diffusers **interior walls** | exposed concrete; painted gypsum board on plywood substrate; painted hardwood wall base with air-intake slot **pool** | gravel base; precast-concrete wall panels **lighting** | recessed light tracks; fluorescent lamps





TOPPED OFF

The Oklahoma State Capitol finally gets its dome. BY MARK ALDEN BRANCH

Construction delays on government projects are nothing new, but just last November the state of Oklahoma put the finishing touch on its capitol building—89 years after the groundbreaking. The Oklahoma City architecture firm of Frankfurt-Short-Bruza Associates (FSB) fleshed out a single sheet of drawings in the original construction documents to build a 157-foot dome atop the building, creating a focal point for state pride as Oklahoma anticipates its centennial in 2007.

Since its dedication in 1917, the neoclassical building by the Oklahoma firm of S.A. Layton & S. Wemyss-Smith had awaited the dome that had been designed for it but scrapped when materials shortages during World War I made its cost prohibitive. Instead, the building's rotunda was topped with a shallow interior saucer-dome of plaster and stained glass that was not visible from the exterior. Attempts to arouse interest in constructing the original design came up every decade or so, but money problems and a lack of public support—many Oklahomans felt the absence of a dome made their capitol distinctive—had always prevailed.

But in 1998, Governor Frank Keating, who opined that the domeless capitol looked like "a Bulgarian veterans hospital," commissioned a feasibility study for a dome and began active solicitation of private donations. The money turned out to be readily available: Individual and corporate donors, enticed by the prospect of having their names in raised letters at the base of the inner dome, funded more than 90 percent of the $20.8 million cost of the project.

COURTESY ARCHIVES AND MANUSCRIPTS DIVISION, OKLAHOMA HISTORICAL SOCIETY

OLD FOOTINGS, NEW MATERIALS

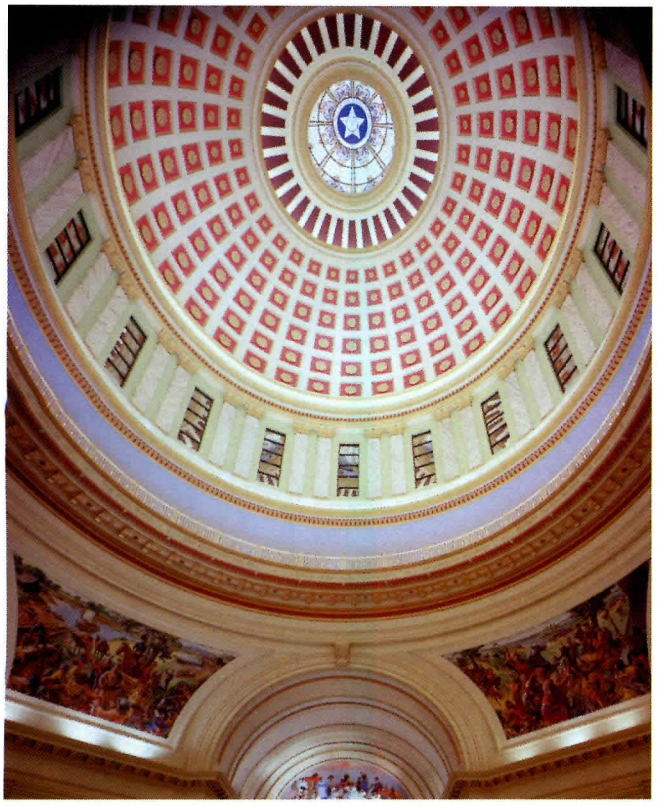
FSB's first challenge was to determine whether the dome could be built on the existing structure. Going back to the original construction documents, the architects found two sets of specifications for footings and structural framing at the center of the building—one set to support the full-sized dome, the other for the lighter saucer-dome. Luckily, investigation of original construction photographs and of the structure itself proved that the footings, columns, and "ring beam" of the rotunda had been built to support the larger dome, making the new project feasible.

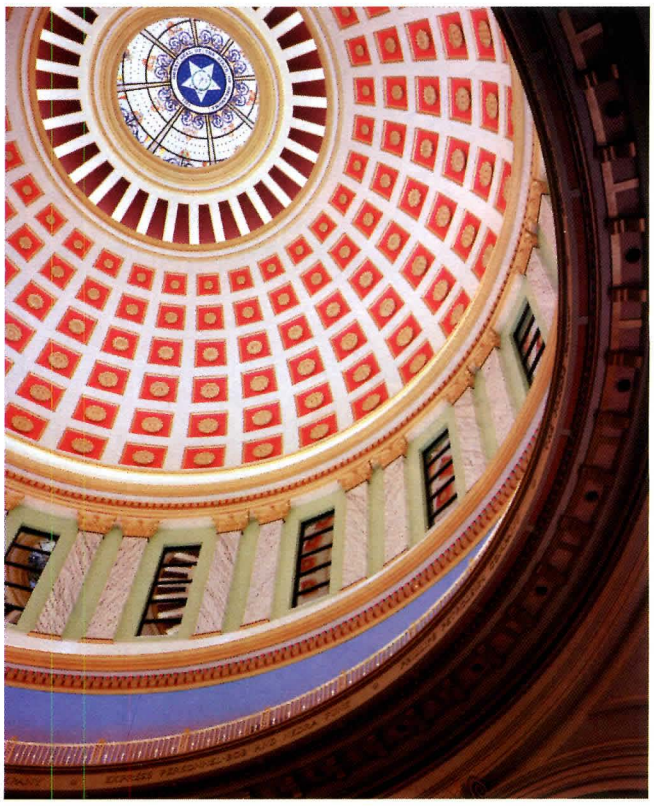
With that question out of the way, the firm and its design-build partners, contractors Flintco and Manhattan Construction, set to work figuring out how to translate the sparse information from the original blueprints into built form. The biggest changes were to the materials: A steel structure was used instead of concrete, and the dome was clad in cast stone instead of the Indiana limestone of the rest of the building. The saucer-dome structure was removed and replaced with a temporary roof during construction.

AS GOOD AS NEW

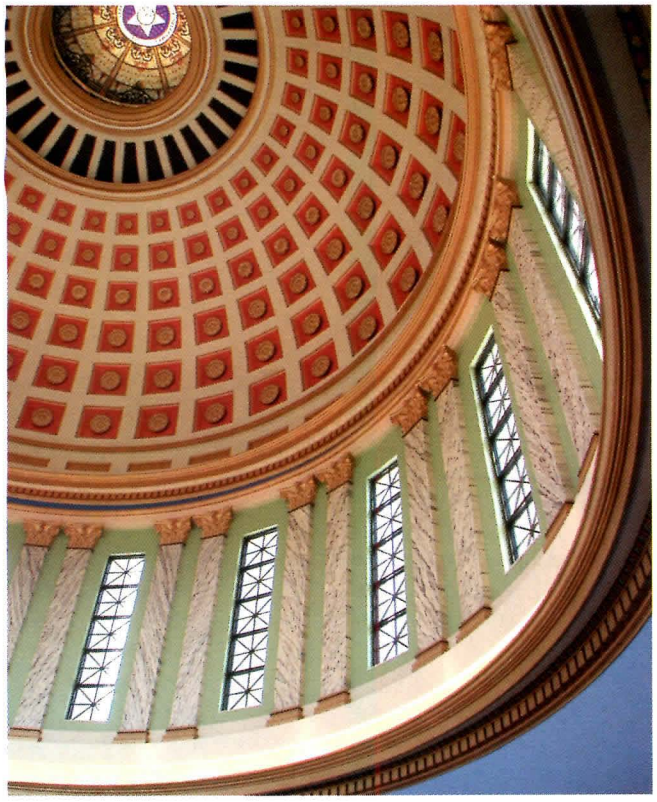
The result is a structure scarcely distinguishable as new construction and true to the original drawings of the dome. On Oklahoma City's very horizontal horizon, the capitol is now prominently visible from the freeways that traverse the city. Atop the dome, where the original architects indicated a 13-foot, indeterminate sculpture, stands a taller figure of a Native American warrior created by state senator Enoch Kelly Haney, a noted Native American artist of the Seminole tribe. (The state's beginnings as Indian Territory are an integral part of its identity.) Inside, the straightforwardly neoclassical forms of the inner dome are given a regional spin with bold colors inspired by the state wildflower, gaillardia or "Indian Blanket."

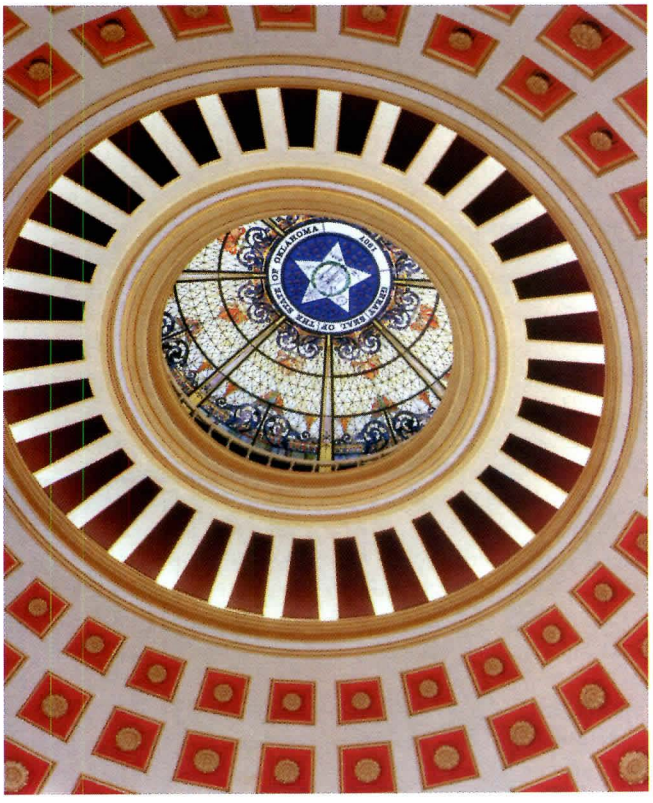
Aside from this exuberant color scheme, which would surely have given Messrs. Layton and Wemyss-Smith pause, FSB's architects took a self-effacing attitude about the job. Partner Jim Bruza says that the idea of doing a more modern interpretation of a dome was barely considered. *"We weren't trying to make an architectural statement,"* he says. "From the beginning, we said that this project was not one of addition, but completion."



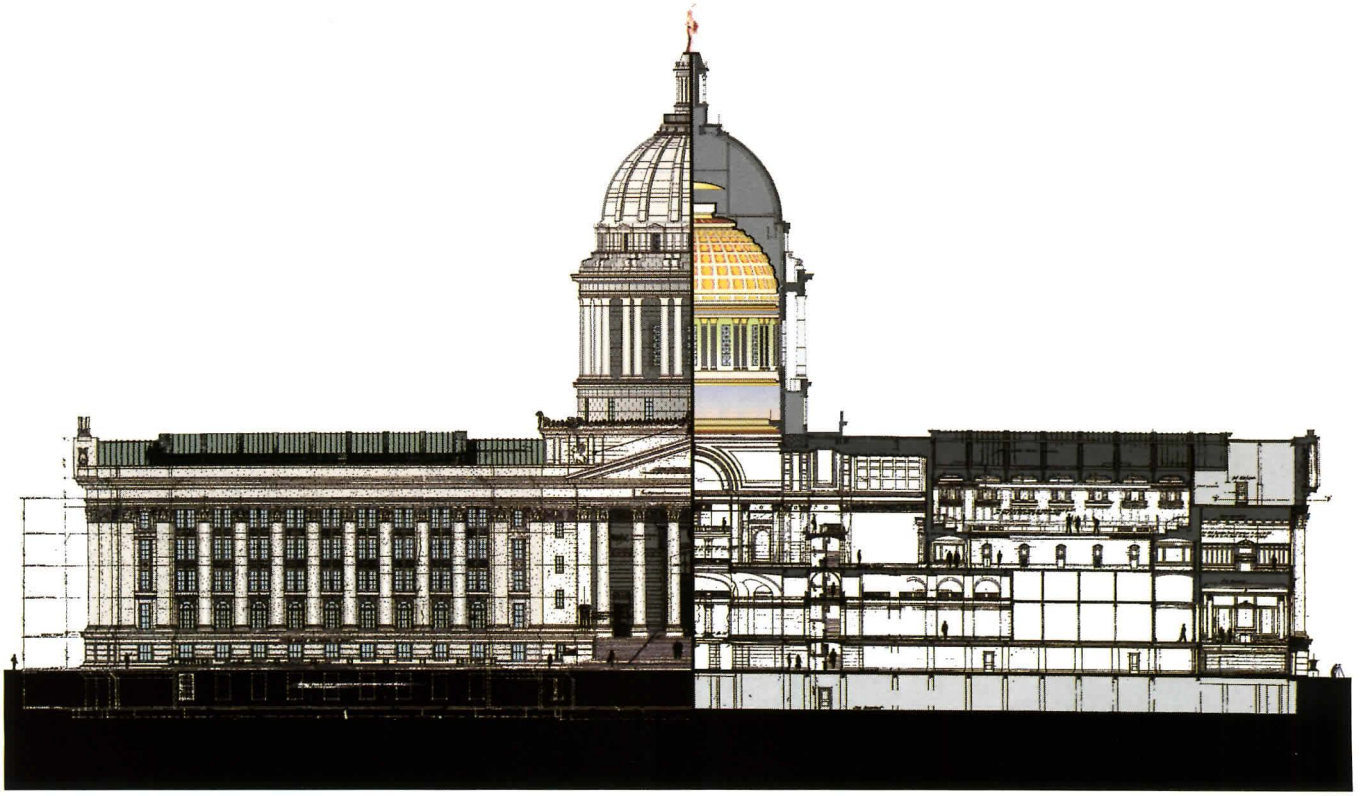


Photographed in 1936 (previous pages), the Oklahoma State Capitol was not the only state capitol without a dome, but it is the only one that had been designed for a dome that was never built. The fanciful color scheme inside the newly built 157-foot dome (this page) contrasts surprisingly with the pristine white exterior, recalling similar contrasting interior/exterior schemes used to invoke awe and wonder in Baroque churches. Though made of different materials, the new steel and cast-stone dome (facing page, bottom) blends with the Indiana limestone of the 89-year-old capitol building. The architects saw the project as one of completion rather than addition.





BOTTOM LEFT: MARGRET N. BRUZA



south elevation / east-west section 30'

Oklahoma State Capital Dome, Oklahoma City

client | State of Oklahoma **architect** | Frankfurt-Short-Bruza Associates, Oklahoma City—Jim W. Bruza (principal-in-charge); Fred C. Schmidt (project director); Tom W. Moore (project architect); Dwight L. Rosenbaum (specifications); Oscar Majors (construction administrator) **engineers** | Timothy J. Dolf (structural); Liane R. Ozmun (mechanical); Patrick R. McCarty (electrical) **consultants** | Jerry Day (plumbing); Arthur L. Sanders (waterproofing); Keith Yancey (lighting); Kendra L. Jones (interiors); Margret M. Bruza (graphics) **general contractors** | Manhattan Construction—John Jamison (executive director); Flintco—Ken Smith (superintendent) **cost** | $20.8 *million*

photographs by Greg Hursley, except as noted

Specifications

concrete | Arkansas Precast Corporation **metal** | H&M Steel **insulating glass ornamental window units** | Knox Glass **masonry** | Structural Stone **bronze railing** | York Metal Fabricators **modified bitumen roofing** | Oklahoma Roofing and Sheet Metal **metal doors** | Construction Building Specialties **ceiling systems** | Casting Designs **paints/stains** | Jay Griffin Painting **stained-glass canopy** | Triffo's Glass Arts **lighting** | Hydrel (flood lights); Engineered Lighting Products (cove lights); Lithonia (dimmable fluorescent strips); Color Kinetics (programmable LED fixtures); Watt Stopper, Horton Controls (lighting control system)

THE CONTRARY CONTEXTUALIST

Site and art inform two projects by British architect Tony Fretton.

by Liane Lefaivre | photographs by Hélène Binet

Tony Fretton's Red House on London's Tite Street strips bare the Georgian geometry of its neighbors (facing page). Faith House, a crossdenominational retreat, applies a similar design approach in rural Dorset (above).

One could say that Tony Fretton is a site-specific architect. His first building, the celebrated Lisson Gallery for contemporary art in London (1992), was praised because of the way it refused to dress itself up, choosing instead to adapt to the vernacular of the commercial street on which it is located, using a reflective glass façade to mirror its surroundings.

Two recent projects by Fretton, a townhouse called Red House on London's Tite Street and Faith House, a spiritual retreat in Dorset, are also contextualist; however, understanding their idiosyncratic connection to site requires more than a cursory glance. They each have a particular way of relating to their tradition-laden surroundings. They both refuse to simulate the past with pastiche, "as if in a masked ball," in the words of urban theorist Lewis Mumford. They share an ambivalence that is at the heart of critical regionalism: a simultaneous commitment to and analytical distance from place. While they refuse to mimic their surroundings, neither do they flout their context. They are somewhere "in between," to use a phrase of Dutch architect Aldo van Eyck's.

WHEN PLACE INFORMS ORDER

In her views of Red House and Faith House, photographer Hélène Binet captures a device that both buildings share, a superficial strangeness. The blank red stone façade of the Tite Street house, for example, at first glance stands in jarring contrast to other houses in the London suburb of Chelsea. They are clad in brick; it is not. They are ornamented; it is not. They are picturesque; it is not. Its spare, severe quality, evocative of minimalist sculpture, is at odds with its neighbors.

But the oddness is superficial. A closer reading reveals that the building is as typical as any other on Tite Street. The difference is that it has been stripped of its superficial markings, laid bare, reduced to its underlying essential Georgian neoclassicism. As such, it does not so much deny as distill the architecture of its surroundings, stripping it of the familiar stylistic conventions that mask its underlying geometrical proportions. By its very presence the house asserts that tradition need not be static. A historic street can be adapted without losing its character. One might even say that the house is more true to the site than a vernacular pastiche would be. The sense of place becomes a sense of order.

Faith House in Dorset is not really a house at all. With a multiuse hall for meetings and exhibitions and space for contemplation, it is an institutional building modeled on a house. Run by a cross-denominational foundation called Holton Lee and set in sprawling, rugged countryside, three hours south of London by train, Faith House is a charitable trust devoted to empowering disabled people through contact with nature. Faith is the name of one of the founders, and it was built in her memory.

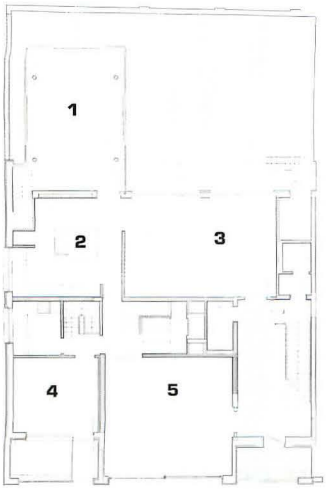
Faith House's relation to its architectural surroundings is similar to that of Red House. Here, too, a sense of order supplants pastiche: The proportions of the building are those of the traditional stone structure next door reduced to bare essentials, like one of artist Dan Graham's minimalist sculptures. As opposed to urban Tite Street, however, this site is an open, rural landscape, and Fretton's building opens up to it completely on one side through a top-to-bottom glazed wall. The reality of site is the determining factor in the design of the structure. This strategy is something the architect carries out with powerful effect, especially in view of the relatively small scale of the projects.

ARTISTIC INFLUENCES

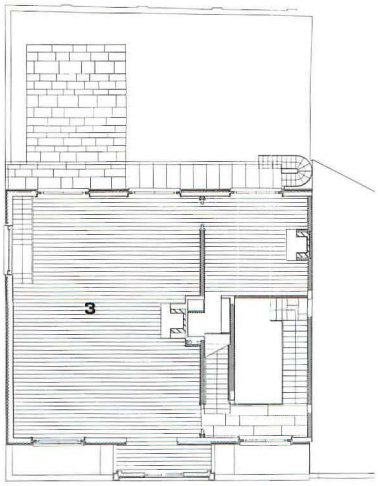
Another aspect that makes both build-

RED HOUSE

At the back of Red House, a glass-enclosed dining room extends into a garden (above, left). The dining room ceiling bears a pattern representing woven fabric by artist Mark Pimlott (above, right).

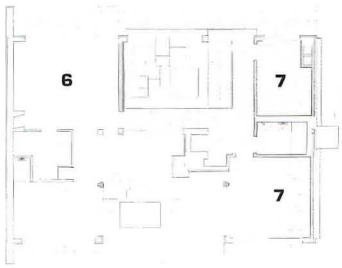


ground-floor plan

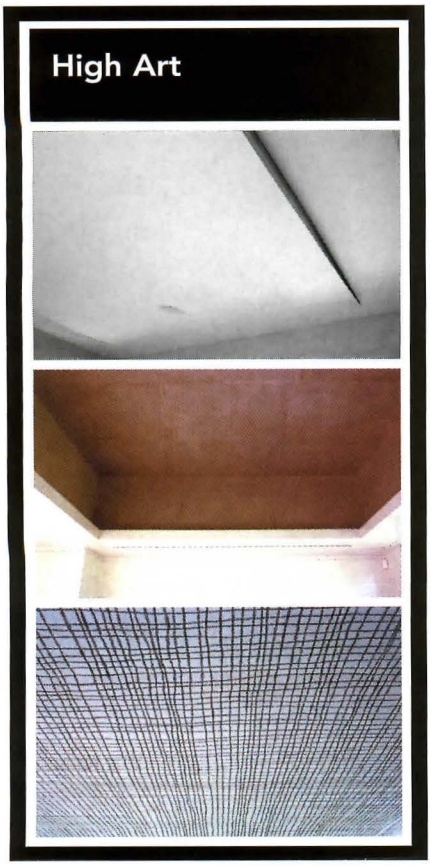


first-floor plan

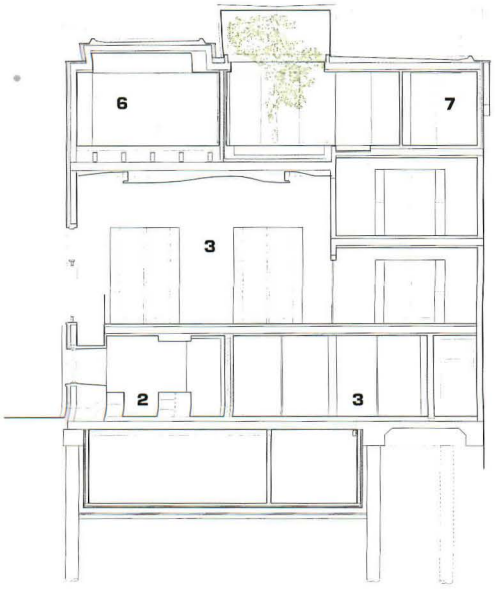
1 dining room
2 kitchen
3 living room
4 service apartment
5 garage
6 bedroom
7 guest room



third-floor plan 12'



Artist Mark Pimlott transforms several ceilings at Red House, including a slit plaster living room ceiling, a cofferlike bedroom ceiling, and a patterned dining room ceiling (above, left). The double-height living room (above, right) was designed for art and sculpture.



northwest-southeast section 9'

LEFT TOP, CENTER, BOTTOM: COURTESY STUDIO MARK PIMLOTT

Red House, London

client | name withheld **architect** | Tony Fretton Architects, London—Tony Fretton (principal); Jim McKinney, Tom Russell (project architect); Judith Brown, Emma Huckett, Matthew White, Matthew Barton **location** | Hendrine den Hengst, Glen Lowcock, Myrka Wyzniewski, Klas Ruin, Heather McQuillan Parker, Simon Jones (project team) **landscape architect** | Julie Toll Landscape and Garden Design **interiors** | Studio Mark Pimlott—Mark Pimlott (principal); Andrew Barr **engineers** | Price and Meyers (structural); Fulcrum Engineering (services) **project manager** | Gardiner & Theobald Management Services **consultants** | Davis Langdon & Everest (quantity surveyor); Harrison Goldman (stone); Anthony Blee Consultancy (planning); John Barrow (fireplaces); Wintech (windows) **area** | 6,000 square feet

FAITH HOUSE

A sun porch at Faith house is defined by a setback, while volumes are differentiated by the orientation of the cedar siding.

ings noteworthy is their relation to contemporary art. The client for Red House, a prominent art collector and gallery owner in London, wanted a house suited to displaying his collection, in which the architectural environment would harmonize, rather than compete, with the art: He didn't want a mini Bilbao. As for the director of Faith House, his ultimate goal is to turn Holton Lee into a center for something he calls "disability art," artwork by people with mental and physical disabilities.

It is no coincidence that both clients chose Fretton, who is exceptionally familiar with the world of contemporary art. Perhaps because of his keen understanding of the field, he is also an architect who makes no claim of being an artist himself. However, this does not keep him from importing stylistic devices developed by artists into his architecture. He states that his models are Christopher Wren, Palladio, and Mies. But other references also come up repeatedly in conversation, including minimalist and conceptual artists Carl Andre, Donald Judd, Robert Morris, Sol Lewitt, and Dan Graham.

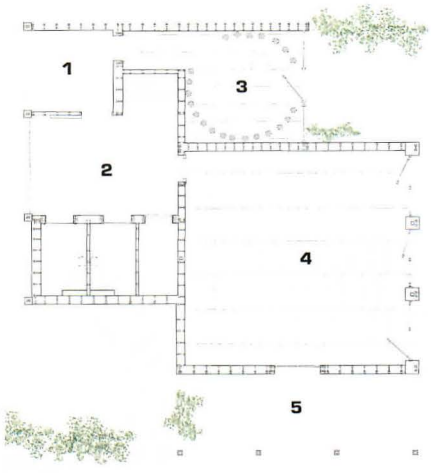
Red House, like the Lisson Gallery, is a felicitous environment for displaying art—the 18-foot-high ceiling in the living room, which is lit by enormous windows, is ideal for large art works, and the more intimate rooms for smaller works. Faith House also showcases its artworks to their greatest advantage: Its exhibition space is a white box; with one glazed façade to the north, the works receive diffused natural light.

WHEN ARCHITECTURE BECOMES ART

Fretton likes to collaborate with artists, and has been fortunate in these two projects; both clients have encouraged him to do so. The result is a harmonious spirit that reigns in the interiors of the two buildings. At certain points, the boundary between art and architecture is blurred. At Red House, he collaborated with Richard Clark, an artist who is known for painting walls. He has painted one room silver and one gold. At Faith House, artist Diego Ferrari is making photo murals of sky scenes for the ceilings of the contemplation room.

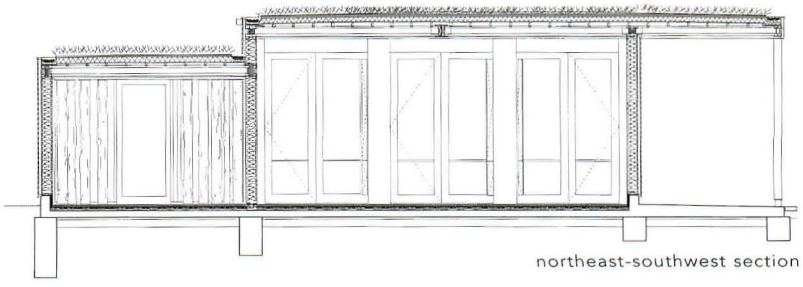
But the blurring is at its most poetic with the work of Mark Pimlott, at Red House. As with artist James Turrell's collaboration with architect Leslie Elkins at the Live Oaks Quaker Meeting Hall in Houston, Pimlott defies the surface that we usually think of as ceiling. The garage ceiling, for example, is made of stretched plastic. Touch it and it ripples, like a pool of water turned upside down, reflecting the cars beneath it. The main reception room ceiling also has a counterintuitive, buoyant quality.

A door on the southwest-facing veranda reveals a wall of glass doors with views from the assembly room eastward over the open landscape.

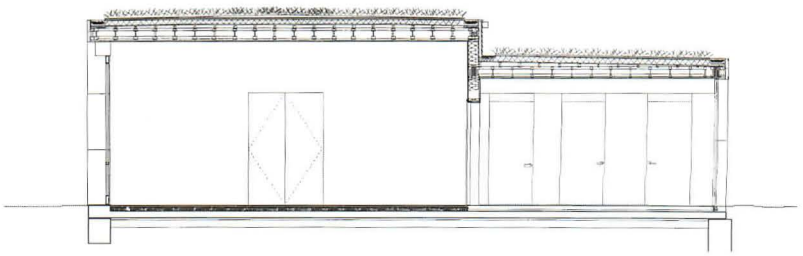


plan 6′

1 entry
2 lobby
3 quiet room
4 assembly room
5 sun porch



northeast-southwest section



northwest-southeast section 6′

Faith House's proportions reflect those of its neighbor, while its east windows open the assembly room to the landscape (above and facing page).

Made of fibrous plaster, which is light and amenable to sculptural effects, its surface is slit like a painting by Lucio Fontana, and the different strips billow as if in a breeze. Concealed in their depths is invisible wallwash lighting for the large paintings. The dining room of the house is a glass pavilion that extends into the back garden. Here, the theme of airy lightness appears once again. The ceiling is a large linen canvas, on which is painted a pattern that represents a loosely woven fabric. Above the bed in the master bedroom, the ceiling is a concrete coffer in a painted plaster setting, quoting the architecture of a beloved neobrutalist house by Denys Lasdun in which the client was raised. Touching on a theme more common in art than in architecture, the coffer is also tomblike.

Fretton is part of a long line of architects who have traversed the border between art and architecture, using the cross-pollination to expand their own field: Gerrit Rietveld reused neoplasticism in the design of his Schroeder-Rietveld house; Peter and Alison Smithson were inspired by the art brut of Jean Dubuffet, and Aldo van Eyck by artist Kurt Schwitters's Merzbau project; Robert Venturi and Denise Scott Brown made pop architecture inspired by pop art; and many other architects have extended their own fine-arts explorations into their built works. At Red House and Faith House, with the help of artists like Clark, Ferrari, and Pimlott, Fretton is taking the exchange between art and architecture a step further.

Faith House, Dorset, England
client | Holton Lee **architect** | Tony Fretton Architects, London—Tony Fretton (principal); Jim McKinney, Klas Ruin, Emma Huckett, Matthew Barton, Matthew White, Diego Ferrarri (design team) **engineer** | Price and Meyers (structural) **contractor** | Unicorn Construction **surveyors** | Poynton Scrase (quantity); Meridian Surveys **consultants** | Holton Lee (access); Max Fordham (sustainability) **subcontractors** | Woodbeare (timber); Britannia Security Shutters (security shutters); Gorvin (sod roof) **area** | 1,650 square feet **cost** | $257,000

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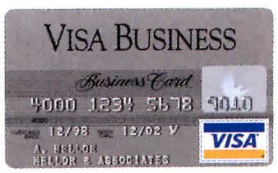


It's everywhere you want to be.

An impressive glass-encased lobby now offers visitors a new way to enter the Austin Convention Center: Below the muted blue glass screen created by sculptor Jamie Carpenter (which offers shade for the western exposure) is an understated doorway into the 90-foot-high vestibule (below). On the northern face, slender steel blades supported by the roof structure hold up six tiers of "shingled" fritted glass panels, which wrap behind the blue glass sculpture (left). Lightweight glazing arms connect the glass walls to columns set 6 feet inside the perimeter.

VISION PANELS

PageSoutherlandPage | Austin Convention Center Expansion | Austin, Texas

by C.C. Sullivan

Things of glass have no aura.

—WALTER BENJAMIN, "EXPERIENCE AND POVERTY," 1934

Glass as a means to dematerialize buildings is as much in vogue today as it was 70 years ago, an entrenched prerequisite of neomodernist work. Bucking the trend is the work of assorted and far-flung designers who consider glass a *material* with real and noteworthy properties that may be exploited for both function and delight. One is Lawrence Speck (also a contributing editor to *Architecture*), whose collaboration with PageSoutherlandPage of Austin, Texas, focused on glass technology and aesthetics to expand the themes—and square footage—of the firm's original 1992 Austin Convention Center.

The approach is hardly contrary to the modernist ideal. Inspired by the seminal 1914 tome, *Glasarchitektur*—in which the German philosopher Paul Scheerbart envisaged a world set right by colored glass and double glazing—Speck set out to explore glass "for its substance rather than its absence" and to exploit properties it shares with stone and steel: reflectivity, texture, sleekness, color. Another inspiration was a geological metaphor of glass structures as crystalline forms, an idea epitomized by Mies van der Rohe in his unbuilt Friedrichstrasse glass tower in Berlin.

TRANSPARENT MEANS

To make "glass feel like glass rather than something that's not there," in Speck's words, the designer employs color, angle, texture, and a skeletal support structure in a series of delicate moves concentrated in an airy pavilion at the corner of Trinity and Fourth Streets, a prominent northwest lobby linking exhibition halls to meeting spaces and a ballroom. The composition shuns visual intrusiveness and weight. Vertical piers—articulated with narrow rectangular **concrete bases**, **thin steel shafts** (4 feet deep and only 6 inches wide), and capitals of slender branching struts—are set back from the perimeter and stabilized in their weak axis by "**glazing arms**" and pairs of cables. The columns echo the ***lateral moment diagram***, with joints located where the moment is least demanding.

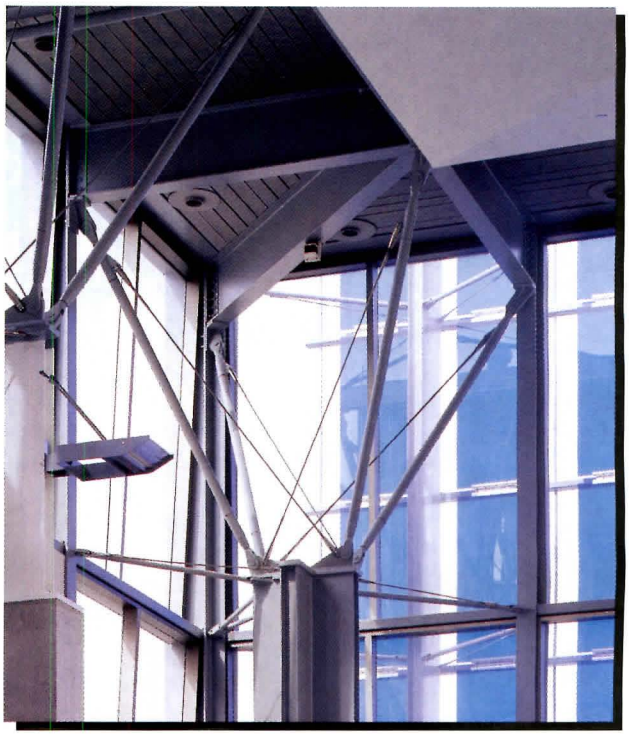
On this canvas, glass is freed to express itself. Facing historic Brush Square, the Fourth Street façade displays a **shingled glass curtain wall** hung from the roof beams. Metal blades, 3/4 inches thick and 18 inches deep, support six ranks of 12-foot-tall **fritted glass** panes anchored flush on thin sills that connect to the struts and cables bracing the perimeter columns. The faceted effect lends solidity to the glassine matrix. Around the corner, a sculptural screen wall of muted blue panels on the west face steals the thunder from its neighbor, providing this bright and often warm exposure with critical shading. (It will also soon incorporate photovoltaic cells as part of a utility demonstration project.) Developed by the architects with sculptor Jamie Carpenter, the translucent blue sheets are supported by an outrigger of four **vertical wall fins** and a grid of lightweight rods, connected at the rear to the shingled façade blades by struts and cables.

A NEW FRONT DOOR

While it is prominent, the corner pavilion encompasses but a tiny fraction of the expanded convention center, which has

An intriguing structural approach complements the glass pavilion: Vertical piers of concrete bases and 4-foot-deep-by-6-inch-wide steel shafts resolve into branching struts that support two roof beams each; at the corner condition, an X-shaped column is found. Stabilizing the columns in their weak axis are struts and cables that connect to the curtain wall (below, right). Similar glazing struts and cables carry the outrigger of blue sculptural glass panels (below, left).

Deep in the convention center's new meeting areas, two glazed walls glow with diffuse daylight reflected off diagonal walls hidden within two multistory light wells (right). (See detail drawing, facing page.)



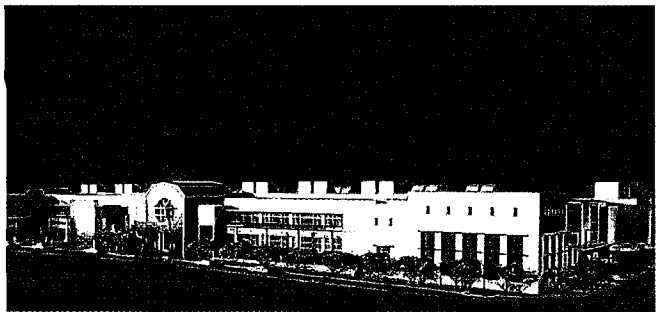
doubled in area to some 810,000 square feet on an annexed parcel only about half as big as that of the original building. To expand the theme of glass materiality and to bring natural light deeper into the large floor plate, Speck tops stairwells with **clerestory**, cuts a large **storefront** alongside an escalator bank to the north, and slices 30-foot-high **light shafts**—Speck calls them "sky wedges"—to draw light deep into two floors of meeting rooms. (The skylit wells bounce light off an angled wall through diffusing panels of **frosted laminated glass**, held in place by small clips on concealed tee supports.) On the Trinity Street façade, a stair tower protruding from the floor plan is wrapped in **stainless-steel mesh** for a different sort of interior illumination.

Like the blue plane greeting traffic from Fourth Street, the draped stair tower functions as a special terminus for the Third Street corridor; the window-walled escalators play a similar role for Neches Street. This conceit is familiar: The original convention center features a prominent rotunda and a corner palazzo to the south, and facing Second Street a celebratory polygonal window below a gambreled roof. These special masses house "authentic elements of the building," says Speck, such as **prefunction or circulation spaces**, and serve as "intermittent landmarks" against background fabric, a simile of historic streetscapes of nearby Sixth Street and Congress Avenue.

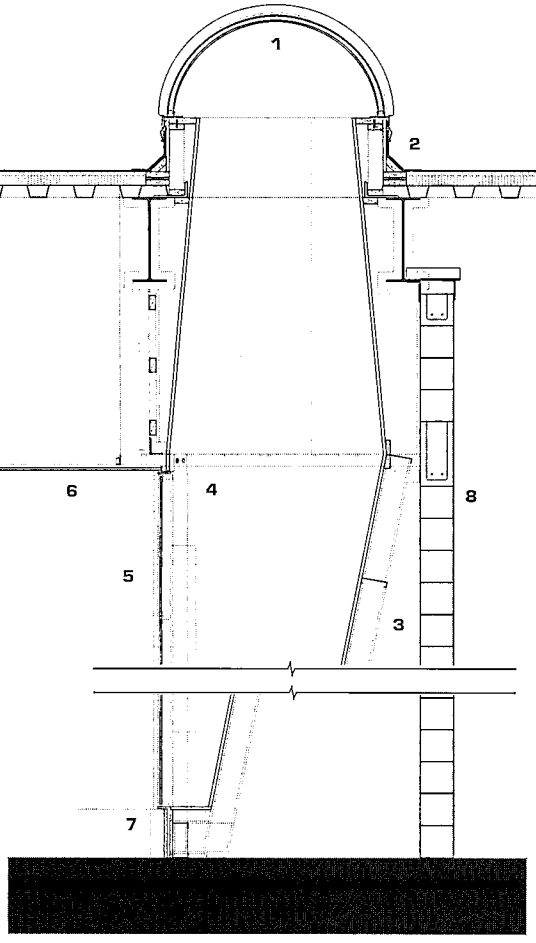
More than simply orienting city dwellers and conventioneers, the new landmark masses help impart the ultramodern image that Austin has promoted in recent years to attract high-tech businesses. The shimmering, novel forms are comfortable alongside their decidedly postmodern predecessors, thanks in part to the diversity and fragmentation of the whole. The glass pavilion speaks to more than Austin's decade-long cultivation of a high-tech economy, however, carrying twin messages of occlusion and inclusion.

LIGHT AND TRUTH

Scheerbart would be pleased with the latter, at least. In 1914, he predicted that glass construction would herald an era of openness and honesty, and modernists clung to the notion for decades.

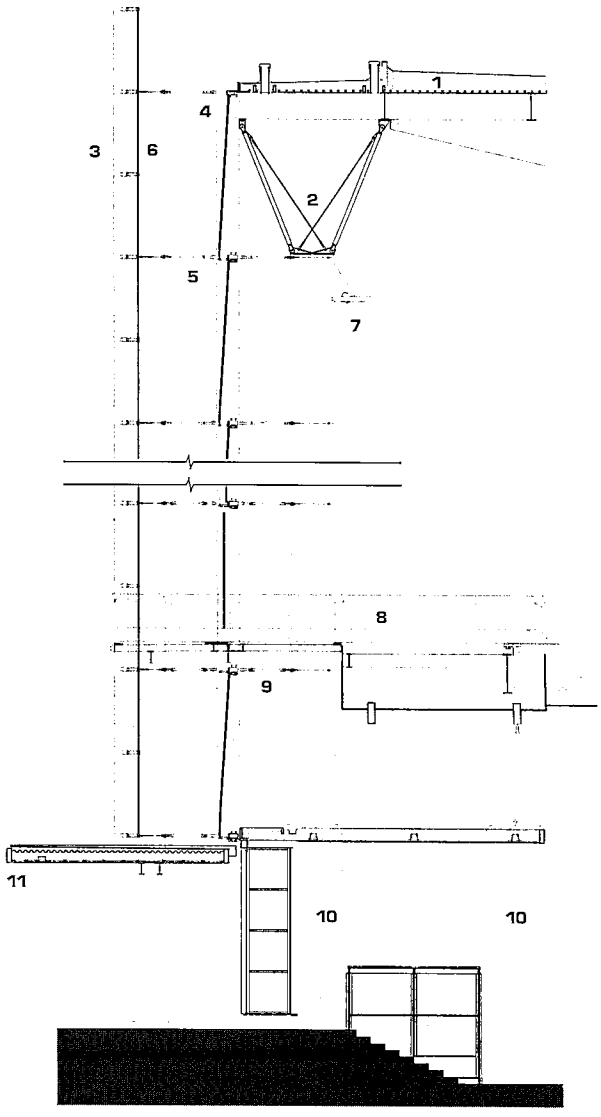


The original convention center project (completed in July 1992 and shown here in a design presentation model) is well known for its lively massing, with visual landmarks and orientation cues at each street terminus (left). The expansion continued the theme, with an updated exterior image and more focus on the interplay of light and glazing systems. At the new entrance area, a sculptural glass screen wall greets visitors (below). Inside, light shafts illuminate glass partitions in meeting room areas.



light well and glass partition detail ——— 18″

1 skylight with safety screen
2 modified-bitumen roofing/insulation/steel deck
3 light-gauge metal framing and glass clips
4 tube steel/aluminum fins and glass clips
5 3/8-inch laminated glass
6 finished ceiling
7 finished floor
8 autoclaved-cellular-concrete partition

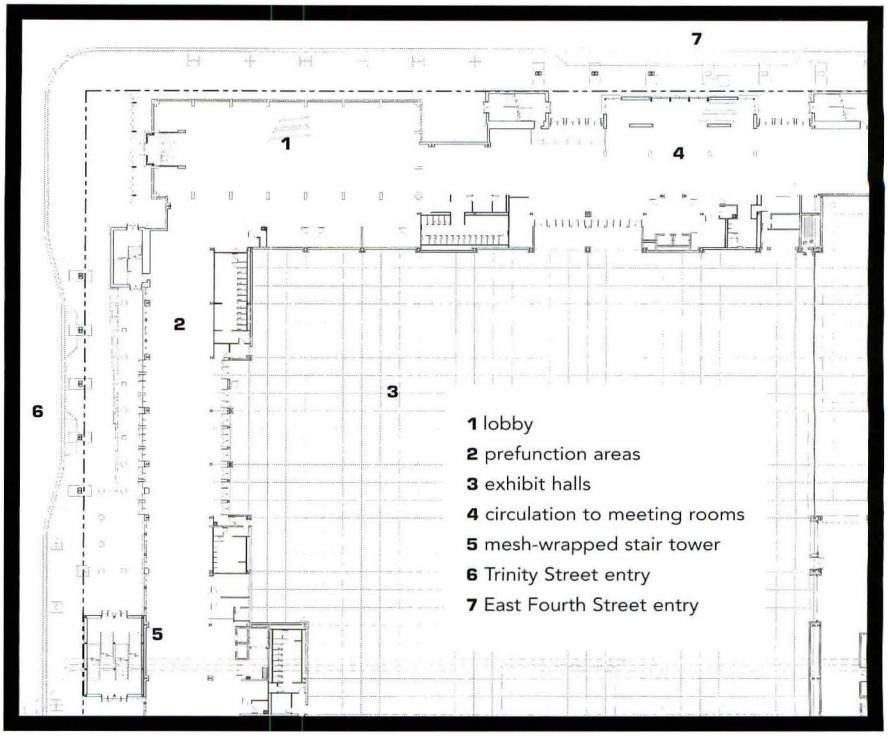


section at new entry with glass screen wall ——— 5′

1 roofing/insulation
2 tree column struts/cables
3 screen-wall colored glass panels
4 steel blade
5 glazing arms
6 steel fin columns
7 light fixture
8 guardrail with cable/glass screens
9 landing with glass floor
10 concrete columns
11 exterior canopy

The new glass pavilion is an impressively bright and airy circulation zone.

Influenced by the philosopher's idea, literary critic Walter Benjamin wrote optimistically that things of glass "have no aura": Rather than the impenetrable mysteries and entombed truths of Victorian life, the modern age would ring in official openness and social honesty. This utopian vision was never fully realized, and the paradox of the glass box that is not transparent seems a suitably ambivalent metaphor for life in the digital age.



partial ground-floor plan 32'

Austin Convention Center Expansion, Austin, Texas

client | City of Austin Management Services—Convention Center Department, Bob Hodge (director); Department of Public Works & Transportation, Architectural & Engineering Service Division, Tom Wood (project manager) **architect/engineer/interior designer** | PageSoutherlandPage, Austin—Matthew F. Kreisle III (project principal); Lawrence W. Speck (design principal); Charles L. Tilley, E. Doug McClain *(project managers)*; Brett Rhode (designer); Ken McMinn, Ricardo Solis, Chad Johnson (project team); Cheryl White, Caroline Rees (interior design); James C. Alvis, Judd Willmann (civil engineering); J. David Ashton (electrical engineer); James M. Peery (mechanical engineer); Robert E. Burke (plumbing engineer); Robert Hill (contract administration) **architectural designer** | Austin Collaborative Venture **associate architects** | Cotera Kolar Negrete & Reed Architects, Austin; Limbacher and Godfrey Architects, Austin **engineers** | Architectural Engineers Collaborative—Chuck Naeve (principal); KLW Engineering (M/E/P); OTM Engineering (data/communications); Rolf Jensen & Associates (life safety); WHM (transportation) **consultants** | Conventional Wisdom (program management); Hicks and Company (archeology); Boner Associates (audio-visual and acoustics); James Carpenter Design Associates/Ove Arup & Partners (daylighting); Jack Evans & Associates (HVAC acoustics); Finehost (food service); The Landscape Collaborative (landscape); Ann Kale Associates (lighting); Kroll Schiff and Associates (security systems); **program manager/estimator** | Gilbane Building Company, Faulkner Construction **general contractor** | SpawGlass Contractors **area** | 400,000 square feet **cost** | $72 million

Specifications

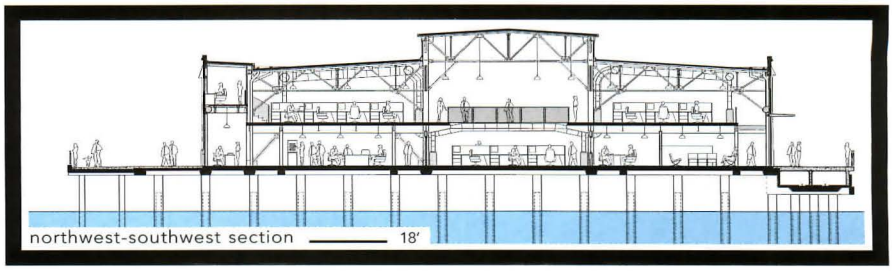
concrete reinforcement | Alamo Iron Works **concrete** | Rainbow Materials **cast-in-place architectural concrete** | Architectural Concrete Associates **precast autoclaved aerated concrete** | Texas Contec **structural steel/decks** | Cives Steel, Beck Steel **steel erection** | Peterson Beckner Industries **concrete block** | Southwest Concrete Products **expansion joint covers** | WST **limestone** | Texas Quarries **granite** | Cold Spring Granite **steel stairs** | Structural Solutions **architectural woodwork** | Quality Woodwork Interiors **specialty glass** | Viracon **waterproofing** | Southwest Sealants **sunscreens/louvers** | CAF Specialties **metal shingles** | Berridge **rainscreen metal panel** | Southern Architectural Systems **roofing** | Siplast **skylights** | Skylights Over Texas **windows** | Steelite **steel doors/frames** | Southern Systems **overhead doors** | DEA Specialties **smoke containment doors** | Ed Flume Building Systems **sound-retarding doors** | Advanced Environmental Concepts **aluminum curtainwall** | Kawneer **walkable laminated safety glass** | St. Gobaine Glass Exprover **acoustical wall panels/interior metal cladding/glass scrim walls** | Environmental Interiors **laminates** | Wilsonart **wall coatings** | Bonsal **fabric wall coverings** | DesignTex; Merdia Meridian **acoustical ceiling tiles** | Armstrong **acoustical wall tiles** | USG Interiors **ceramic tile** | Daltile **tack panels** | Knoll Textiles **vinyl tile** | Mannington Commercial **carpet** | Karastan **elevators/escalators** | Schindler **security system** | Simplex **lighting fixtures** | Lightforms, Rambush, Elliptipar, Lithonia, Neo-Ray, Belfer **exterior lighting fixtures** | Bega

photographs by Tim Griffith

UNDER THE DOCK OF THE BAY

Simon Martin-Vegue Winkelstein Moris | Pier 1 | San Francisco

by Anna Holtzman



The cool water of San Francisco Bay absorbs heat produced by this renovated historic building (top left) through a system similar to geothermal HVAC. Conference rooms for tenant AMB Property Corporation are enclosed in translucent channel glass made of recycled materials (top right).

A dilapidated warehouse on a pier in the middle of San Francisco's bustling waterfront presented unusual challenges to local architecture firm Simon Martin-Vegue Winkelstein Moris (SMWM). The firm was asked to convert the building into high-end office space—a fairly straightforward commission. Design matters were complicated when the firm petitioned for and won landmark status for the stucco-sided building, which is part of a historic district. By adhering to the U.S. Secretary of the Interior's Standards for Rehabilitation, the adaptive-reuse project would preserve the building's original character and qualify for tax credits. However, these limitations incurred several design dilemmas. Explains project designer Dan Cheetham of SMWM, "We needed to have a creative solution to the mechanical system, because there was really no place to put a cooling tower" on the building's highly visible roof.

BAY-WATER GEOTHERMAL

To solve this problem, SMWM and project engineers Flack & Kurtz settled on a system that engineer Clark Bisel describes as "a bay-water-coupled cooling system"—a heating and cooling system similar to geothermal HVAC, but which uses the water beneath the pier as opposed to soil. Bisel further clarifies: "We put a heat exchanger in the bay. The cold water in the bay provides a way to transfer the heat from the building to some other source." Before installing this system, the bay water was tested to insure that its temperature was adequately and consistently cool. The project team also ascertained that the heat the building would transfer to the bay would not significantly disrupt the local ecology, since the water regularly flushes itself out and would thus be able to restore its own natural temperature.

The bay water supports a radiant floor system that both heats and cools. Cheetham says that while radiant slab heating is already widely practiced in the United States, using the same principle for cooling is a newer idea (though already common in Europe). He believes that it will soon gain popularity, because of its energy-saving value and simplicity: "It's a very low-tech thing. It's not rocket science at all."

The slab system does much of the work to keep indoor climates comfortable; however, the floor produces condensation when it becomes too cold. Thus, to supplement the slab strategy, the architects designed a system using the prevailing wind orientation to create a draw of air through the building: Cooling breezes enter through standard-level windows, and warm air is drawn out through higher clerestory windows.

While the project began with an impetus to preserve a unique edifice, it turned into a stellar example of energy-efficient architecture and engineering. Says Bisel, "Often people want a 'green' building just to say that they've done something different. This is a building that has embraced sustainability because it was the best way to do it."

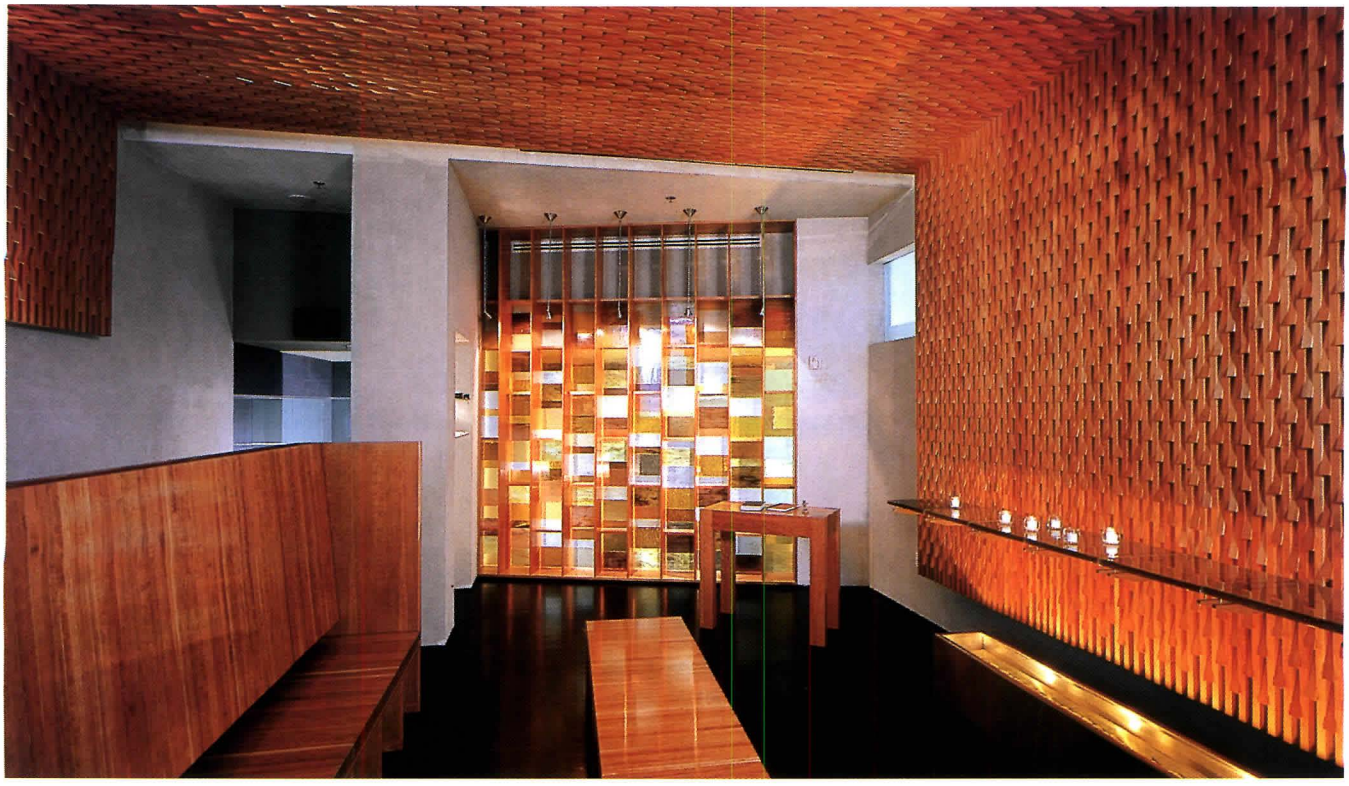
Pier 1, San Francisco

client | AMB Property Corporation, in partnership with the Port of San Francisco **architect** | Simon Martin-Vegue Winkelstein Moris, San Francisco—Cathy J. Simon (principal); Dan Cheetham (project designer); Michael Bernard (project manager); Doug Hoffelt (project architect); Matt Johnson, Barbara Shands, James Koentopp, Louise Louie, Marian Keeler (project team) **engineers** | Rutherford & Chekene (structural); Moffatt & Nichol (marine structural); Faye Bernstein & Associates (associated structural); Flack & Kurtz Consulting Engineers (M/E/P) **consultants** | Tom Eliot Fisch (associate architect); Page & Turnbull (preservation); C&N Engineers (electrical); Charles Salter Associates (acoustics); Debra Nichols Design (signage); John Raeber (specifications) **general contractor** | Nibbi Brothers **construction manager** | Nick Sica **area** | 140,000 square feet **cost** | $45 million

Specifications

glazing | Crittal Windows, Cesar Color, Lamberts (glass); Kalwall (skylights) **doors** | Skyfold acoustical partitions **lighting** | Louis Poulsen, Zumtobel, Elliptipar (interior); Louis Poulsen, Bega (exterior) **elevators** | Dover **plumbing fixtures** | American Standard

RICHARD BARNES



COLLABORATIVE PRAYER

Eskew + Dumez + Ripple | Kate and Laurance Eustis Chapel | New Orleans

by Julia Mandell

Hospitals are not known for their soothing interiors. Housing the hygienic practice of medicine, these sterile spaces usually leave little room for comfort. The hospital chapel, a standard programmatic element, is typically not much better. In their design for the Kate and Laurance Eustis Chapel at the Ochsner Clinic Foundation in New Orleans, however, local firm Eskew + Dumez + Ripple has set a high standard for the project type. By designing decorative pieces in a collaborative process with local artisans, the architects created a detailed interior that is warm and inviting enough to assuage some of the intense emotion that often accompanies hospital visits.

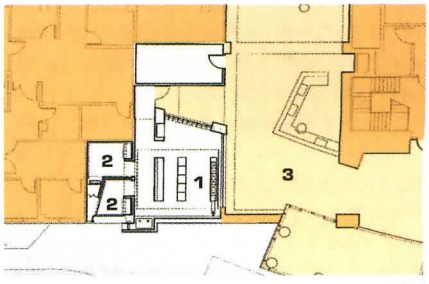
Intricate wood and glasswork add materiality and texture to the space. The most striking piece is a wooden screen that wraps up and around the central area. The "shroud," as the designers call it, was designed to orient the main seating area, creating a sense of intimacy. To introduce texture and to allow light and air through the screen, the architects created a latticework pattern. "We wanted to soften the piece, give it some similarity to a curtain fabric," says Byron Mouton, the project architect.

THINK BIG

The design, which consists of over 5,000 pieces of wood, started in the model shop at the architects' office, where Mouton and the project's design director, Steve Dumez, looked at different patterns and textures in full-scale mock-ups. They then took their final choice to a fabricator, Dean Kageler of Axis Construction, whom they had worked with before and specified in their project bid. "He took our ideas and advanced them," says

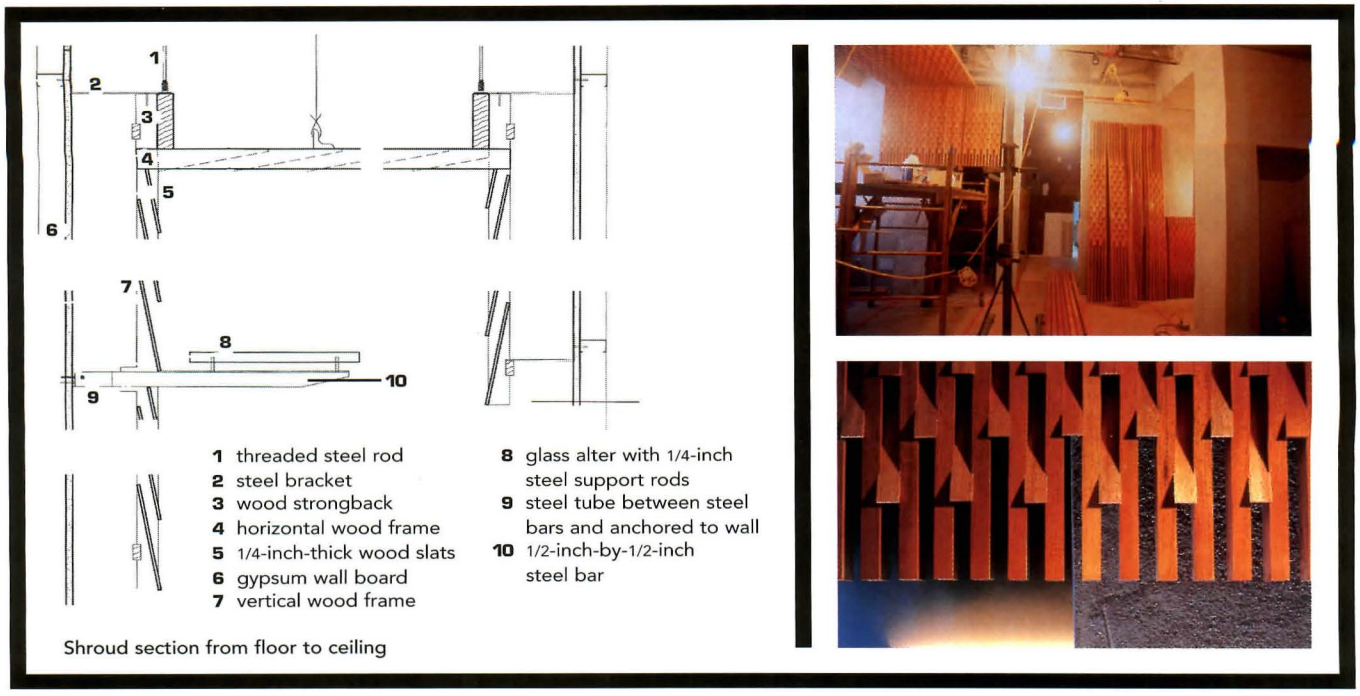
In the Kate and Laurance Eustis Chapel, the architects layered surfaces to build a detailed interior of fine natural materials. The wooden screen, or shroud, that wraps the central gathering space is offset 3 feet from the original concrete ceiling (above); lights above the screen filter through the latticework. In the entry hallway, a raised oak floor signals a radical shift from the sterile hospital environment to a more sensual condition: Not only is the oak a richer surface, but the space underneath resonates with visitors' footsteps, making their presence felt.

1 chapel
2 meditation room
3 hospital lobby



floor plan 15'

TIMOTHY HURSLEY



The shroud, the major spatial element in the chapel, is fastened delicately to the concrete ceiling above it by threaded steel rods and stabilized with steel brackets. The latticework screen (above right) was hung section by section (top right).

Dumez, describing how Kageler devised a way to fit all of the wood together without fasteners. The architects had nailed together pieces of wood for the mock-up, but Kageler routered dados in the full-length runners, slotting in smaller pieces. To cut the grooves, he and his crew "fabricated a template to guide the router along the runners, stacking the wood on an 18-foot-long table," explains Kageler. "There was about a mile worth of dados."

While the woven screen is reminiscent of fabric, the runners do not fold from wall to ceiling, but instead interlock, fitting together like interlaced fingers. The screen was assembled in this way because it hangs suspended from the concrete walls and ceiling using threaded steel rods; the interlocking of the runners stabilizes the sides of the shroud, keeping them rigid. Kageler assembled 1-foot-wide sections of the screen in his workshop and then brought them to the chapel, fitting all of the sections together on site. "The consistency of the pattern is astounding," says Dumez.

Kageler also built benches for the chapel, sandwiching together cherry boards so that their layered edge-grains create a surface with texture and depth. In contrast, the wainscoting in the two meditation rooms is solid cherry paneling, a rich but simple surface. The shroud is Spanish cedar, a wood that Dumez and Mouton chose because it has a color and value similar to cherry, but is softer and has a more even grain, making it easier to work with.

ABSTRACTED PATCHWORK

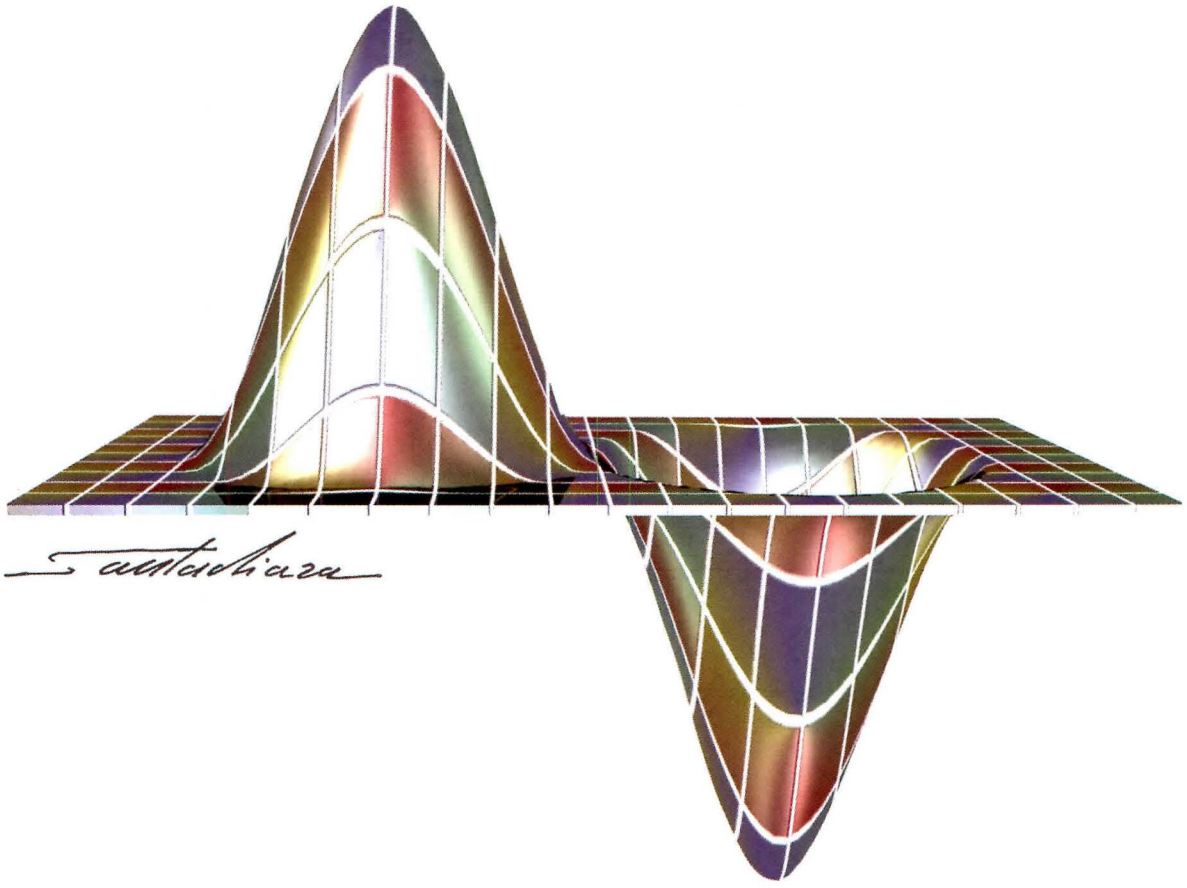
Custom glasswork at the entrance of the interdenominational chapel evokes the tradition of stained glass in sacred spaces, without referencing any particular religious iconography. A large stained-glass interior partition at the entrance is an abstract patchwork of layered colored glass. Beginning with 12-inch squares of glass in six colors, the architects determined a complicated color pattern, cutting them into either two even or uneven lengths and then layering pieces of two different colors on top of one another. They also inserted frosted or colored film between the two colors to further increase variation. The pattern was mocked up in Photoshop in order to make changes quickly during the design stage, and then finalized with glass fabricator Dependable Glass in full-scale mock-ups to better gauge actual light quality.

The fabricators also cast custom slabs of amber glass for the shelf that sits in front of the shroud, which the architects felt would give the work a handmade quality. The slabs evoke tablets, irregularly shaped, with seeding and bubbles in the glass. Like the rest of the custom craftwork in the chapel, the shelf, where visitors place mementos, was constructed with care and respect. "We wanted it to be a space of warmth," says Dumez.

Kate and Laurance Eustis Chapel, New Orleans

client | Ochsner Clinic Foundation **architect** | Eskew + Dumez + Ripple—Steve Dumez (principal); Chuck Hite (project director); Byron Mouton (project designer); Shannon Downey; Sebastian Salvado; Bob Kleinpeter (project team) **engineers** | Smith Seckman Reid (M/E/P) **consultants** | Axis Construction—Dean Kageler (millwork fabricator); Dependable Glass (glass fabricator); Joly's Metal Works (metal fabricator) **general contractor** | Construction South **area** | 1,000 square feet **cost** | $230,000

TOP: ESKEW + DUMEZ + RIPPLE; BOTTOM: NEIL ALEXANDER



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Cyber Sampling

Like other small design firms, the recently established Q Experience of Chicago can allocate only a nominal amount of storage space to physical material and finish samples, forcing its designers to seek information from the many manufacturers websites and building product portals now available on the Internet. Offering an alternative for those with limited office space, **BlueBolt** (www.bluebolt.com), which first offered an online library with 47 types of commercial interior finishes and a search engine last summer, has upped the online ante with two new features: "sample boards" and "design boards."

With sample boards, professionals save products by project and can archive their selections and specifications. Design boards take the process a step further, allowing users to customize product presentations by layering, cropping, and rotating sample images; to save, archive, and print the boards; to insert a product legend that lists brand name, style, color, and other basic specifications; to e-mail boards to clients and colleagues; and to take advantage of annotation tools for project comments.

But can digital images compete with the tactile qualities of real samples? Yes and no. "Eventually, clients want to see the physical samples," says Catherine Severson, one of three partners at Q Experience and a BlueBolt user. The design-board system "gives me enough information to know if I want to order a physical sample," she says, adding that the electronic images on the site are crisp and clear, and that choices of materials and finishes are varied enough to keep the site from being too prescriptive. Moreover, searching by price is "not a resource we've had in the past."

It may be the ability to print out digital design boards, however, that is most beneficial to firms both large and small. It eases the exchange of ideas and preliminary decisions between client and designer; and when included with client meeting minutes, the printout, says Severson, serves as a "visual document" that "makes clients more accountable to decisions they've made." The printouts offer an extra benefit for corporate projects. For the purpose of reordering materials, she hands clients a slim stack of pages, instead of bulky materials binders.

BLUEBOLT
www.bluebolt.com

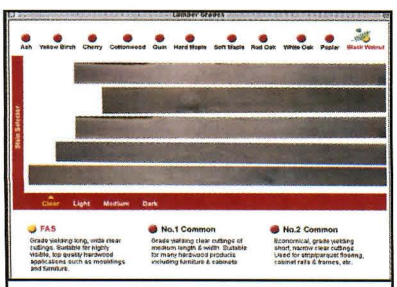
Beyond the need to use her office space efficiently, Severson acknowledges that there simply are not enough hours in the day to meet with all the product representatives who want to visit the office. BlueBolt's "greatest value for a smaller firm," she believes, "is having the quantity of resources at our finger tips. It's one-stop shopping." **Abby Bussel**

The Virtual Spec

ELUMIT
www.eLumit.com

Will the office catalog library become a thing of the past? Bluebolt is not the only online specifications database working to provide architects with a comprehensive collection of sample materials and product information. In the area of lighting, the website **eLumit.com** offers a database and search engine for fixtures. Launched by a group of lighting designers in November 2002, the site lists products, replete with lamping and mounting options, by 30 manufacturers. Once a product is chosen, the site provides spec sheets, photometrics, and application guides that can be held in project folders with multiple-user access for team work. It simplifies shopping for lighting fixtures.

Another virtual trend in specification is online or CD guides to various materials. One such CD, called "**The Finishing Touch**," produced by the Hardwood Council, an industry association, is a comprehensive guide to specifying and finishing hardwood. There are tips on how to choose species and finishes, and details on managing expansion and contraction, among other things. The information is presented well, but the design does not take advantage of the capabilities of the digital realm. The lone virtual component lets users change the stain on a type of wood, a feature that is actually limited: The stains are very similar for every wood. Despite this, the CD provides useful information in a concise, easy-to-use format. **Julia Mandell**



THE FINISHING TOUCH
www.hardwoodcouncil.com

Drawing on Resources Abroad

A 3-D computer model of a home in California is done in New Delhi. Specs for a Midwestern industrial facility are drawn up in Russia. Across the country, a growing number of architects are farming work out to CAD services and satellite offices in developing nations.

"It's economically advantageous," says Robert Hillier, founder and chairman of the Princeton, New Jersey-based Hillier Group. His firm is converting a school into 34 condominiums. The cost for Hillier Group to draw up the documents itself, with mark-ups and other corporate expenses: about $140,000. The figure for a "one-man shop" specializing in apartment houses: $56,000. Hillier had the job done in India for $12,000.

The advantages of employing overseas services extend beyond economics. In the 1990s, Tai Soo Kim Partners of Hartford, Connecticut, operated a satellite office in Seoul, Korea. The firm wanted a presence in the country because it had projects there at the time, but it also found that the Korean office added efficiency. The time difference allowed Tai Soo Kim Partners to work on a project in Hartford during the day, and then send it to the Korean office after hours.

Communication across continents, however, can prove an impediment, so Korean architects in Tai Soo Kim's Hartford office ultimately formed the initial staff for the satellite office. "They had learned our office practices," says partner Whit Iglehart, who believes shared experience is essential to such intercontinental arrangements. Hillier agrees: "We saved a lot of money, but we also had to clean up the drawings." His firm had not been prescriptive enough in exactly how it wanted the drawings done. "We will be clearer on our next project."

"The number of revisions ultimately depends on the complexity of the project," says Kamalrukh Katrak of Chicago architecture firm Panto-Ulema. The company works closely with its office in Bombay for production of construction documentation. Not surprisingly, the Internet has been a major force behind the practicality of overseas drafting. "Apart from building-code information, the Bombay office can find [on the Internet] virtually any of the materials we have access to," says Katrak.

A possible downside to shifting production processes offshore is squelched creative inspiration. "Are you going to say, 'Oh let's not try that detail because the guys in India won't understand it'?" questions Hillier, who worries this could lead to standardization and, ultimately, professional boredom.

Architects must also consider whether their overseas "partners" are benefiting from these relationships—or whether U.S. firms are simply taking advantage of poor nations. The bottom line is the bottom line, at home and abroad. **Jack Klein**

skins that bare a building's soul

If off-the-shelf glazed wall systems offer anything of note to designers, it's a way to dress the assemblies with enough custom tweaks, components, and finishes to make them seem one-of-a-kind. For example, many curtain-wall and storefront systems offer details to accommodate metal architectural mesh—such as the materials made by American metal weaver **Cambridge** (www.architecturalmesh.com)—and specialty glazing units, such as the Pilkington products supplied by **Westcrowns** (www.westcrowns.com) or the brand-new laminated glass with embedded custom graphics made by **Solutia** (www.solutia.com). The architect gets a satisfyingly unique design; clients get a signature look at a reasonable cost, often with special security and energy features built in. This is equally happy news for speculative private projects and budget-constrained public-sector projects.

A new GSA courthouse annex completed late last year in Denver features recycled materials and a highly energy-efficient envelope. Hellmuth, Obata & Kassabaum (with architect-of-record Anderson Mason Dale) fashioned the 321,000-square-foot, 10-story facility to focus on a glass-enclosed public entrance framed by brick and limestone and opening onto a plaza, recollecting a historic courthouse-in-the-square. For the curtain wall and windows, **Wausau** (www.wausauwindow.com) produced a preglazed unitized curtain wall (right). The efficient system helped the courthouse gain LEED accreditation at a reasonable cost (about $78 million for the whole project), thanks to triple insulating glass, oversized-frame thermal barriers, and interior light shelves.

At a new outpatient rehab and office building for Providence Holy Cross Medical Center in Mission Hills, California—a large, single-story solution by the always-creative San Francisco office of SmithGroup—wraps around a court near a central conference room, creating a public outdoor extension of the interior spaces. To enhance the indoor-outdoor feel, cost-effective windows and storefront by **Kawneer** (www.kawneer.com) accompany a corrugated cladding by Alcoa accented by synthetic stucco (center top). The 24,300-square-foot project came in at about $3.5 million.

The use of 10-inch-deep curtain-wall mullions helped give Washington State Convention and Trade Center a dramatic signature element: a new skybridge connecting the meeting facility to the neighboring Elliott Hotel. **Vistawall's** CW 250 system was used for both the skybridge and the building façades, with "captured" outside glazing (center bottom). The manufacturer's medium-stile doors grace entryways framed with the system. Among the benefits of the low-rise curtain wall is a closed-cell PVC foam gasket at the interior weather seal that helps minimize labor costs, and the clean, fastener-free expanses with low-profile corner transitions and subtle built-in vents.

At Genentech Hall in San Francisco, window walls become a signature feature of the building. SmithGroup, with exterior design consultant Zimmer Gunsul Frasca and John Gustafson of Curtain Wall Design and Consulting, created a lab facility that would attract world-class geneticists to the University of California San Francisco. The building's lobby atrium, a large "living room" for the biotech community, is glazed with floor-to-floor aluminum windows by **Werner Systems** (www.wernerengineering.com) with low-emissivity, highly transparent laminated glass (left). The project encompasses 434,000 square feet and cost about $160 million to deliver.

LEFT: MAUER; CENTER TOP: CHARLES SANCHEZ; CENTER BOTTOM AND RIGHT: COURTESY RESPECTIVE MANUFACTURERS

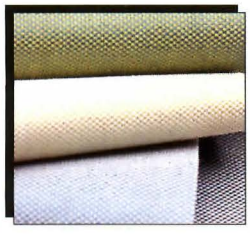
FOR INFORMATION ON CURTAIN WALL AND GLAZING SYSTEMS, CIRCLE 149 ON PAGE 97.

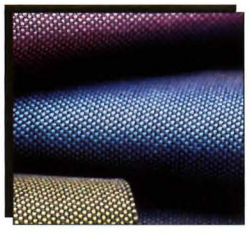
NeoCon narrated

- product: **Replace**
- manufacturer: **Johnsonite**
- website: **johnsonite.com**

Look, no mess. This wall base can be installed without adhesives and, therefore, replaced easily if damaged. No adhesive also means no odor—a helpful attribute in sensitive environments like healthcare, childcare, and hospitality. The product, to be showcased at NeoCon (the annual contract furnishings fair held in Chicago in June), is installed by screwing a carrier track to the wall, onto which the wall base snaps. The system is available in 30 colors.

- product: **Blitz**
- manufacturer: **Maharam**
- website: **maharam.com**





In 2001, Maharam joined forces with Denmark-based Kvadrat, a manufacturer of contract textiles. Each company represents the other in its respective market—Maharam in North America and Kvadrat in Europe. This year at NeoCon, Maharam will promote several new patterns from Kvadrat, including Blitz. Created by Danish textile designer Rikke Ladegaard, Blitz offers a palette of 28 lively colors with an iridescent quality unusual in this class of flame-retardant textiles.

- product: **ChromaSurface**
- manufacturer: **Cesar Color**
- website: **cesarcolor.com**

Reduce at least the visual discomfort of your elevator ride with a new surfacing material. Conceived for the interior walls of elevator cabs, a printed interlayer laminated between two pieces of safety glass creates a sandwich that is both lighter and more durable than granite. Where oft-used granite is subject to dirt because of its porous surface, ChromaSurface can be wiped with ordinary cleaning supplies. The interlayer can feature any image, graphic, or color.

- product: **GeoStone EcoCycle**
- manufacturer: **Crossville Ceramics**
- website: **crossville-ceramics.com**

This glazed-porcelain stone tile is produced with an unfired, reused raw material, which includes dust particles from air-filtration and wastewater-treatment facilities. Four of the five available colors—Wetlands, Marshland, Earth, and Pine Barren—are made of 50 percent-reclaimed material; the fifth, Night Air, of 100 percent. Tiles come in 12-inch-square and 4-inch-by-12-inch versions.

- product: **Moxie**
- manufacturer: **Haworth**
- website: **haworth.com**

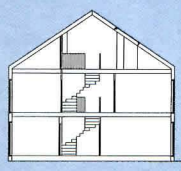
Utility does not have to preclude style. The Moxie furniture system, with its efficient, lightweight pieces, offers users flexibility and functionality; the system's translucent doors and dividers, fun colors, and slick form offer designers the latest in office chic. A stackable spine wall—which encases Haworth's modular cable system—is capable of 90- and 120-degree transitions. Accessories include screens, banners, and toppers for privacy.

ALL IMAGES COURTESY RESPECTIVE MANUFACTURERS

FOR INFORMATION, CIRCLE 150 ON PAGE 97.

Deadline: July 14, 2003

CALL FOR ENTRIES



ARCHITECTURE MAGAZINE'S SECOND ANNUAL
Home of the Year Awards
Honoring Outstanding and Innovative Residences

A five-member jury of distinguished, independent professionals will choose award-winning projects based on:

- overall design excellence
- creativity
- programmatic and site sensitivity
- visual sophistication

Jurors include:

■ **David Salmela,** Salmela Architecture & Design, Duluth, Minnesota ■ **Carlos Jimenez,** Carlos Jimenez Studio, Houston, Texas ■ **Michael Maltzan,** Michael Maltzan Architecture, Los Angeles ■ **Gwendolyn Wright,** Columbia University School of Architecture, New York City

Judging will take place in July 2003. Winning entrants will be notified in August 2003 and their projects published in the November 2003 issue of Architecture.

Entrant

Contact Name

Address

Phone Number Fax Number

E-mail Address

Project Location

Client

Client Phone Number

Fee $150 (first entry) $

$100 (subsequent entries) $

Total $

(Make check payable to Architecture.*)*

I certify that the parties credited executed the submitted project and that it meets all eligibility requirements. I understand that *Architecture* may disqualify any entry that fails to meet submission requirements. I grant *Architecture* magazine sole first publication rights to the project. (Signer must be authorized to represent those credited.)

Signature

Name Date

SEND ENTRIES TO: Home of the Year, *Architecture*, 770 Broadway, New York, NY 10003

DRAWING COURTESY MVRDV

Eligibility

1. The contest is open to architects and other design professionals practicing in the United States, Canada, or Mexico for projects completed only in those countries.
2. There is no limit to the number of projects that any firm or individual may enter. HOWEVER, any project that has previously appeared in a national design publication is NOT eligible and will be disqualified if submitted.
3. Employees of VNU Business Publications are not eligible.
4. Architects and designers must be willing and able to certify that any work they submit is their own creation.

Winning Entries

5. An independent panel of judges will award prizes to projects, at their sole discretion, based on: overall design excellence, including creativity, programmatic and site sensitivity, and visual sophistication.
6. Winners of *Architecture*'s Home of the Year awards agree to grant Architecture magazine first publication rights for their winning projects.
7. Winners must also agree to have their projects, names, and portraits published in *Architecture* magazine and in any other media and must secure permission for publication from their clients. Entrants must be willing to provide materials necessary for publication and exhibition of winning projects.

Awards

8. Judging will take place in July 2003. Winning entrants will be notified in August 2003, and their projects will be published in the November 2003 issue of *Architecture.* Winning projects may subsequently travel as a curated exhibition.

Submission Requirements

9. All projects must have been completed since July 2001.
10. All entries must include clear, comprehensive images of both the interior and exterior of the residence and presentation-quality plans and sections (no more than 24 photographic images).
11. All entries must include at least one photographic image documenting the physical context surrounding the project.
12. All entry material must be firmly bound in binders no larger than 17 inches in one dimension only, to a maximum of 11 by 17 inches (9 by 12 inches preferred). Please avoid fragile bindings, sharp metal edges, etc. Slides should be submitted only as supplementary material. Videocassettes, CD-ROMs, models, and any unbound material in boxes, sleeves, etc., will not be considered.
13. Project Facts Page. To ensure clear communication to the jury, the first page of each entry binder must list project facts under the following headings: Location/Context, Site Characteristics, Zoning Constraints, Client/Program, Construction Systems, Sustainable Features (if any), Schedule, and Cost per Square Foot. This information must include square footage, overall cost, and specific construction materials and systems. All project facts should fit on one page.
14. To maintain anonymity in judging, no names of entrants or collaborating parties may appear on any part of the submission except on entry forms. Do not, however, conceal the identity or location of the project.
15. Please do not send original drawings; *Architecture* accepts no liability for submittals.
16. Each submission must be accompanied by a signed entry form and a check covering the entry fee ($150). Reproductions of the form are acceptable. Complete the entire form and put it in an unsealed envelope attached to the binder's back cover.
17. Please enclose one bound set of 8-½-by-11-inch photocopies of your entry. The first two pages should be copies of your entry form and the Project Facts Page, in that order. Secure the photocopies inside the back cover of your binder.

Entry Categories

18. Identify each submission on its entry form as one of the following:
A. 1,500 square feet (140 square meters) or smaller
B. 1,500 square feet to 5,000 square feet (465 square meters)
C. Over 5,000 square feet (1,524 square meters)
D. Apartment/condominium (individual residences)

Entry Fees

19. An entry fee must accompany each submission. The fee is $150; each entry after the initial entry is $100.
20. Make check or money order payable to *Architecture.* (Canadian and Mexican entrants must send drafts in U.S. dollars.)
21. Fee must be put in an unsealed envelope with the entry form.

Return of Entries

22. Architecture will return entries ONLY if they are accompanied by a self-addressed, stamped envelope. *Architecture* assumes no liability for loss or damage.

Entry Deadline

23. All entries must be received by 5 p.m. EST on July 14, 2003. To ensure timely receipt, *Architecture* recommends using a carrier that guarantees delivery time.

Flat Panel Monitors Are Here

And they offer us the opportunity to revolutionize office design.

SURE, THEY'RE CONTEMPORARY, STYLISH, AND SLEEK. For some corporate clients, that might be enough. But most others are going to demand some real return on investment before they set aside a portion of their IT budgets for flat panel monitors. The good news is that there are very real benefits to be derived from installing flat panel monitors—benefits that show up on the bottom line.

Corporations are already the largest purchasers of flat panel monitors in the United States, especially in the financial industry, where the size and flexibility of flat panel monitors has made them the monitor of choice for trading rooms and stock exchanges throughout the world. But they will soon take over the display market as a whole.

The CRT/Flat Panel Comparison

In North America, flat panel monitors accounted for 28% of the 40.1 million monitors sold last year, and this year that number might well reach 40%. Still, North America lags far behind Japan, where last year, 75% of the 6.8 million new monitors were flat panels. Besides Japan's obvious love affair with any new technology, corporations there have found two very concrete benefits of flat panel monitors: They save space and conserve energy, both of which translate into a savings of cold, hard cash.

In addition to space and energy savings, flat panel monitors don't flicker as much as traditional monitors, known as cathode ray tubes (CRTs). They also tend to be brighter and have less glare than CRTs, making them easier on the eyes for employees who work with a lot of text.

CRTs do still have a few advantages. They provide better screen resolution with an average 17" CRT at 1280 x 1024 resolution. The average flat panel monitor, on the other hand, operates at 1024 x 768. The higher CRT resolution produces a better image quality, which is particularly important to workers who use a lot of graphics and photos. In addition, CRTs have been significantly less expensive than comparable flat panel monitors.

Price differences, however, are quickly narrowing. In 2002, the average price for a 15-inch flat panel monitor was $297, an astounding drop from the average price of $700 in 2001. As major flat panel monitor manufacturers continue to improve the technology and lower their costs, prices are expected to continue to drop. Still, the average price for a 17-inch CRT, which provides about the same viewable space as a 15-inch flat panel monitor, was only *$155 in 2002*.

by Irene Korn

EARNING OBJECTIVES

his article covers the advantages and disadvantages of flat panel omputer monitors for offices, including how they can be used to ealize savings in real estate, furniture, and energy costs, while also nproving the comfort and productivity of employees.

ey points include:

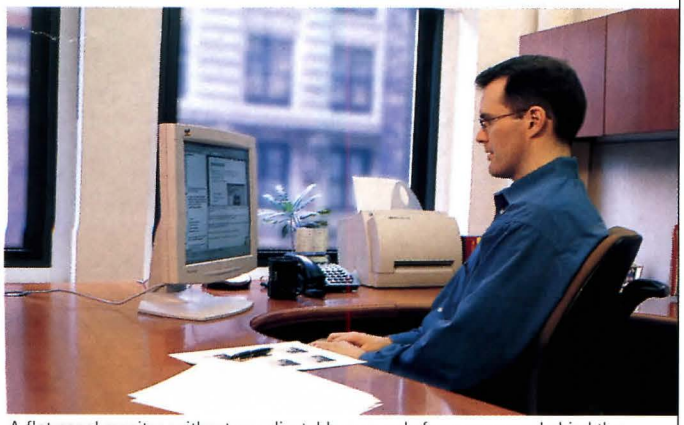
- The advantages and disadvantages of flat panel computer monitors versus CRTs
- The cost savings that can be realized with flat panel monitors when used with adjustable monitor arms
- The health and productivity benefits of converting to flat panel monitors with adjustable monitor arms

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 "Flat Panel Monitors Are Here" or turn to page 85. You must answer 70% of the questions correctly to receive credit for this course.

Flat Panel Monitors Are Here

With a CRT, the user has no usable work space in front of him, forcing him to turn to the right and left to answer the phone, read, write, and perform other normal office tasks.



A flat panel monitor, without an adjustable arm, only frees up space behind the computer monitor and does not result in any additional usable work space.

With the addition of a flat panel monitor arm, space is opened directly underneath the monitor and the monitor can easily be pushed back when the user needs full access to his work surface.

However, most experts agree that flat panel monitors, implemented correctly, can significantly reduce an organization's overall costs.

Flat Panel Monitor Energy and Space Savings

Flat panel monitors reduce energy consumption because they are based on fluorescent lighting technology versus the electron beams found in CRTs. In fact, a study commissioned by IBM and completed by Pittsburgh-based KSBA Architects in association with New York City-based engineers Flack+Kurtz found that flat panel monitors use approximately 60% less energy than the average CRT, resulting in a savings of $26.74 per monitor per year.

The real savings, however, come from more efficient use of the workspace, which translates into lower facility costs. The same study, for example, found that workstations designed for the smaller flat panel monitors can be between 10 and 20% smaller than comparable CRT-based workstations, while still allowing for the same functional work surface area. Less space, quite simply, means less money paid in rent. It can also mean savings in furniture costs and possibly construction costs. The study found that the energy savings combined with the space savings can result in ROIs of 100% or more on the purchase of flat panel monitors.

However, a flat panel monitor does not, in and of itself, create desktop space savings benefits. When a flat panel monitor stands alone on a work surface, the only real space savings is behind the monitor—space that is effectively useless—because the addition of a flat panel does not change the relationship between the user and the monitor. That is, the front of the screen must remain the same distance from the user's eyes as the CRT screen, which is in the range of 20 to 26 inches. In other words, someone who simply puts a flat panel monitor on his or her work space in place of a CRT will not realize any effective gain in usable work space (see photos at left).

The only way to transform that unused space into usable space is with the help of an adjustable monitor arm, the cost of which must be added into the overall equation. Depending on the configuration, adjustable monitor arms typically sell in the range of $125 to $225 per monitor.

Adjustable Monitor Arms

Picture an average knowledge worker at her desk. In the course of the day, she will use the computer, reference documents, write, and use the phone. However, with a CRT taking up all the space in front of her, these four tasks can't be accomplished in the same area. So, she will use the computer, typically in the corner, then shuffle to one side of the corner (to her primary work area) for writing, referencing, and phone use. Then she will shuffle back to the computer, and so on, performing this "work dance" all day long, moving back and forth to complete her daily tasks. With the CRT smack in front of her, one side becomes the

continued on page 8

A flat panel monitor arm enhances the flexibility and collaborative possibilities of a workstation, allowing users to easily move the monitor to share data or images with co-workers and other visitors.

Armed With Technology

Many flat panel monitor arms available today are simply updated CRT arms adapted to support a flat panel monitor. While this provides more space than simply putting the flat monitor directly on the desk, it doesn't make the most of the flat panel technology. When considering a flat panel monitor arm, you should look for the following features:

- Height and depth positioning that are independent of each other (this will maximize ease of adjustability)
- Arm, with monitor attached, should move easily with one hand
- Arm should be strong enough so the monitor doesn't bounce when moved, or when others walk by
- An aesthetically pleasing design
- Easy installation
- Additional options such as a quick release bracket so the monitor can be popped off when service is required; mounting options to meet placement requirements; and products that accommodate several monitors on a single adjustable post.

The Lowdown

According to the KSBA study, cost savings associated with flat panel monitors can include:

- **Rent:** Less rent due to reduced workstation areas; affiliated costs are also lower, including taxes, maintenance, and janitorial
- **Electrical Energy:** Includes less cost to power the monitor, plus less costs for air conditioning due to the reduced heat output of the monitors
- **Furniture:** Smaller and less complex furniture required
- **Tenant Fit-Out:** Reduced costs in completing interior tenant construction
- **Base Building Mechanical/Electrical:** Reduced energy requirements allow for downsized major mechanical and electrical equipment

For Your Health

The way that CRTs work create a number of vision-related problems for users. In fact, some OSHA studies have found that a full 90% of CRT users suffer from Computer Vision Syndrome (CVS), which is characterized by eye fatigue, blurred vision, dry eyes, and headaches. Furthermore, since people with vision-related problems frequently hunch over to see better, CVS is often accompanied by neck, back, and shoulder pain.

One of the reasons that users have problems with CRTs is the "halo" effect, wherein the beam of light from the cathode bleeds around the individual pixels, creating a fuzzy image similar to what you would see if someone was walking toward you with the sun behind them. This causes eye muscles to constantly adjust and focus on the characters, leading to eye strain and fatigue. In addition, each time the CRT refreshes—hundreds of times per minute—it flickers, and although we are not consciously aware of it as we look at the screen, this causes further eye strain.

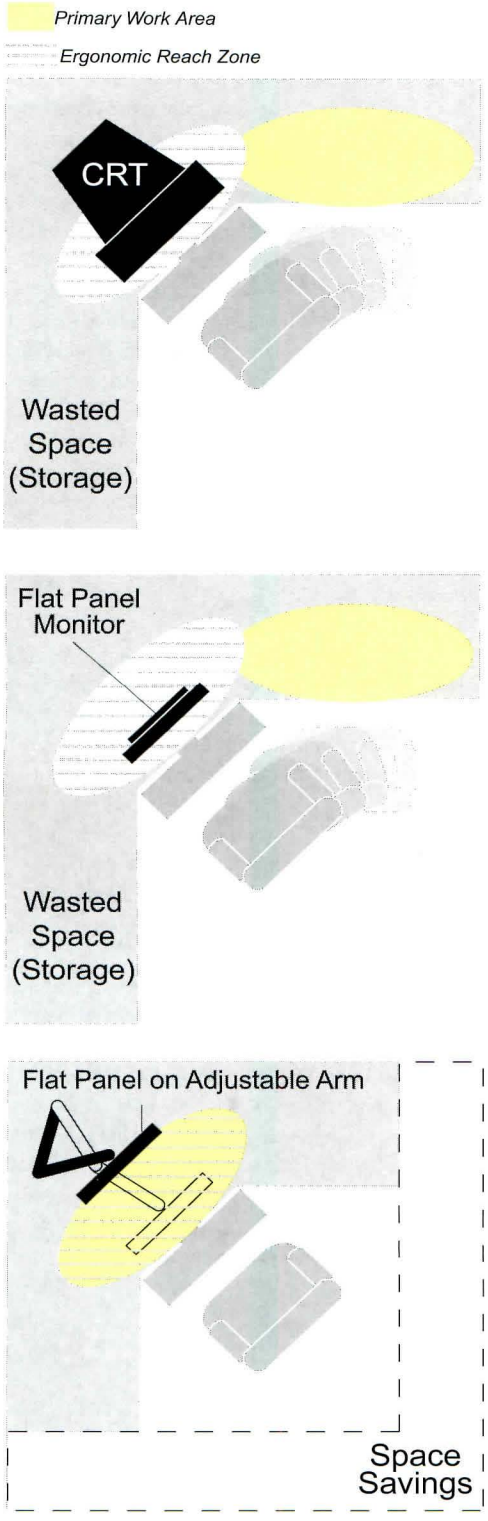
On the other hand, flat panel monitors incorporate a *polarizing* filter, which sharpens the contrast behind the transistors, or pixels, and eliminates any bleeding of light (the halo effect). There is no screen flicker with flat panel technology and the backlight is even throughout the screen with perfect pixel geometry. While the actual resolution of flat panel monitors does not yet equal that of CRTs (though the gap is getting narrower with improved technology), overall flat panel monitors are much easier on the eyes, and so CVS should be less of an issue when flat panel monitors are used.

Also, when flat panel monitors are mounted to an adjustable arm, they can be easily adjusted to the right height for each individual user. Researchers agree that the top line of text on the monitor should be at or slightly below eye level because any portion of the monitor higher than eye level contributes to neck and shoulder strain. Similar problems occur when the monitor is too low. CRTs are difficult to position correctly and in the case of very tall or very short users, can't necessarily be moved into an ideal position at all.

For a downloadable PDF of a full article on the results of the KSBA study, originally published in "SCOpE," go to www.architecturemag.com, click on "Continuing Ed," then "Flat Panel Monitors Are Here."

Flat Panel Monitors Are Here

continued from page 82



primary work area while the other is often used for nothing more than stacking work items. This has always been one of the drawbacks of CRTs, a problem which has increased proportionally to monitor size. The CRT not only reduces work space, but it creates an awkward way of working.

Now, consider the same employee with a flat panel monitor at her desk. With the flat panel monitor in the same position as her old CRT, the usability of her workspace will not have changed. She'll still need to shuffle to one side of the monitor for her writing, referencing, and phone tasks, and then shuffle back to do her computer work. Really, nothing has changed.

Now, add a flat panel monitor arm to the picture and see what happens. Not only is the work surface directly under the flat panel monitor freed up for other uses, but the flat panel monitor can easily be pushed back and out of the way when the user needs access to her full work surface. In addition, from this position, the user has full visibility to her monitor screen while at the same time having space to do her other tasks. She no longer has to perform the "work dance," but instead is able to keep all of her work in front of her in what's called the "Ergonomic Reach Zone."

Design Implications

The above example shows how much more desk space can be made available to the typical worker when a flat panel monitor is paired with a flat panel monitor arm. However, imagine the savings if the workspace was actually designed with flat panel monitors in mind. Corner workstations, which were necessary for the most part because they provided a logical home for space-hogging CRTs, are not required when workstations are outfitted with flat panel monitors. This gives designers a great deal of flexibility to rethink the workspace. Instead of designing workstations around the computer—CRTs have hogged the desktop for over 20 years—they can now tailor designs to the needs of their clients. Workstations can truly be shaped and arranged to meet specific work and collaboration requirements. This will not only allow the designs to better support an organization's people and culture, but will require simpler, less expensive furniture and less space per workstation. This extra space can be used to add common areas or to reduce occupancy costs.

In addition to the space savings, a flat panel monitor arm also increases the ergonomic integrity of the workspace by allowing users to correctly position the flat panel monitor with easy height, depth, and tilt adjustments. Also, the flexibility of monitor positioning can make a workstation more collaborative—employees can easily move their monitor to share data or images with co-workers or visitors.

Conclusion

With flat panel monitor prices continuing to drop, architects and designers now have more freedom than ever to create great workplace solutions for their clients. If used to full effect, this new technology can deliver significant tangible benefits, including cost savings, improved worker health and comfort, better workflow and productivity, and increased collaboration.

TEST QUESTIONS

1. Which of the following costs savings is associated with flat panel monitors and arms?
- a. Less cost to power the monitor, saving on electrical energy
- b. Less rent because of reduced floor space
- c. Smaller and less complex furniture is needed
- d. All of the above

2. What are the characteristics of Computer Vision Syndrome?
- a. Eye fatigue, dry eyes, and wrist problems
- b. Eye fatigue, blurred vision, and headaches
- c. Eye fatigue, blurred vision, and back and shoulder pains
- d. Eye fatigue, far sightedness, and headaches

3. Which is a problem associated with flat panel monitors?
- a. The halo effect
- b. Constant flickering and eye strain
- c. The resolution does not yet equal that of CRTs
- d. They are difficult to position correctly

4. How does a flat panel monitor on a monitor arm provide more space for users?
- a. The flat panel monitor is smaller so it frees up space to the right and left of the computer monitor
- b. It can be positioned closer to the user
- c. It allows the desk space directly in front of the user to be usable
- d. It creates a natural division between areas, allowing for a work area and a stacking/filing area

5. Why doesn't a flat panel monitor alone—without an arm—result in maximum space savings?
- a. The user still has to shuffle back and forth between the monitor and work space to the left and right of the monitor
- b. The only space that's gained is in back of the monitor
- c. The flat panel monitor, alone, occupies as much of the Immediate Reach Zone as a CRT
- d. All of the above

6. Which of the following is not a reason that flat panel monitors are increasing in popularity?
- a. Flat panel monitors with arms save space, resulting in rent, furniture, and other financial savings
- b. Flat panel monitors are better than CRTs for graphics-based applications
- c. Flat panel monitor prices are quickly falling
- d. Flat panel monitors use less energy than CRTs so utility costs are lower

7. How does a flat panel monitor reduce energy consumption?
- a. The smaller screen size uses less energy than the larger CRTs
- b. Fluorescent lighting technology uses 60% less energy than the electron beams in CRTs
- c. Less air conditioning is needed due to the reduced heat output of the monitors
- d. Both B and C

8. Which of the following statistics is not true?
- a. In 2002, the average price for a flat panel monitor was about $350
- b. Workstations designed for flat panel monitors can be 10 to 20% smaller than for CRTs while still allowing the same functional work space
- c. A study by KSBA found that one flat panel monitor can save $26.74 per year in energy costs versus the average CRT
- d. This year, as much as 40% of new monitor purchases will be flat panel monitors

9. Which of the following should you look for in flat panel monitor arms?
- a. Independent height and depth positioning
- b. Extreme stability so the monitor doesn't bounce
- c. A wide range of adjustability
- d. All of the above

10. Which of the following statements is not true about flat panel monitors with arms?
- a. A flat panel monitor arm increases the ergonomic integrity of the work space by allowing users to correctly position the flat panel monitor
- b. A flat panel monitor arm can make a workstation more collaborative, allowing users to share information with co-workers and visitors
- c. A flat panel monitor arm will help reduce the risk of carpal tunnel syndrome
- d. A flat panel monitor arm makes the space-saving promise of flat panel monitors a reality

Flat Panel Monitors Are Here

Successful completion of this test (a score of 70% or higher) will earn 1 AIA/CES LU hour of health, safety, and welfare.

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Go to www.architecturemag.com and click on Continuing Ed to download a PDF of this unit or mark your answers to the test questions at right. Mail or fax the completed form to:

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test>									
	1.	a	b	c	d	6.	a	b	c	d
	2.	a	b	c	d	7.	a	b	c	d
	3.	a	b	c	d	8.	a	b	c	d
	4.	a	b	c	d	9.	a	b	c	d
	5.	a	b	c	d	10.	a	b	c	d

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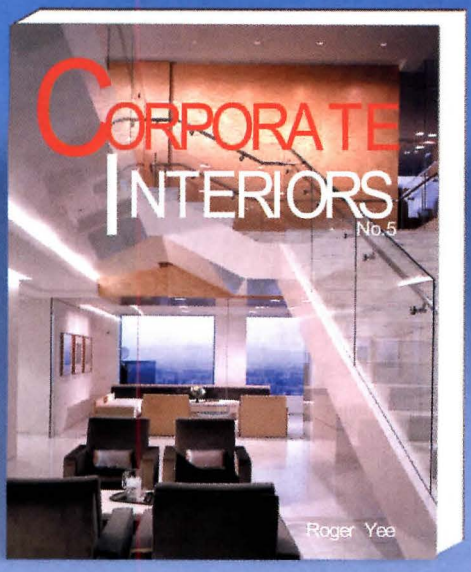
Material resources used: Magazine article

I hereby certify that the above information is true and accurate to the best of my knowledge and that I have complied with the AIA Continuing Education Guidelines for the reported period.

Signature Date

New books from Visual Reference Publications



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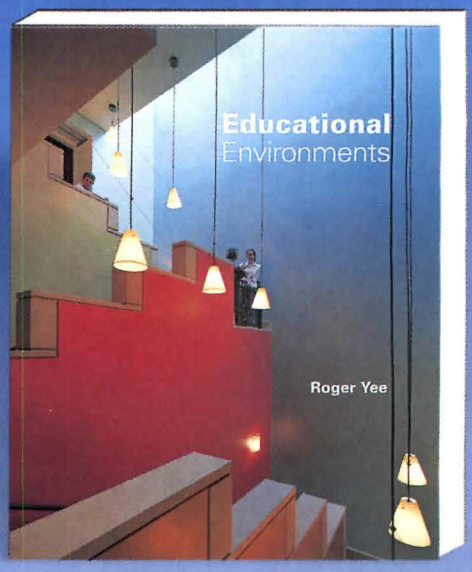

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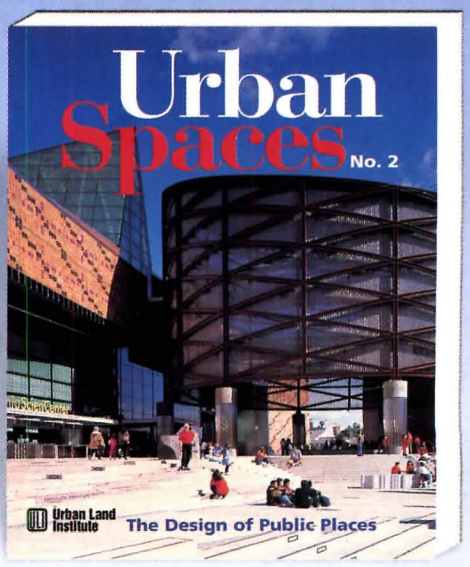

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website: www.visualreference.com

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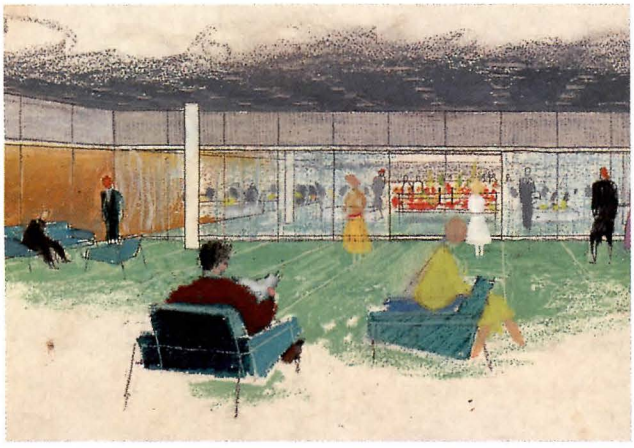
BOOK

Room 606: The SAS House and the Work of Arne Jacobsen | Michael Sheridan | Phaidon A single guest room on the sixth floor of the SAS Royal Hotel in Copenhagen has remained unchanged since 1960, when architect Arne Jacobsen unveiled his immaculately designed interiors for the hotel. *Room 606* reveals the contents of this time capsule, with rare drawings and elegant photography by Paul Warchol and Aage Strüwing. **Anna Holtzman**

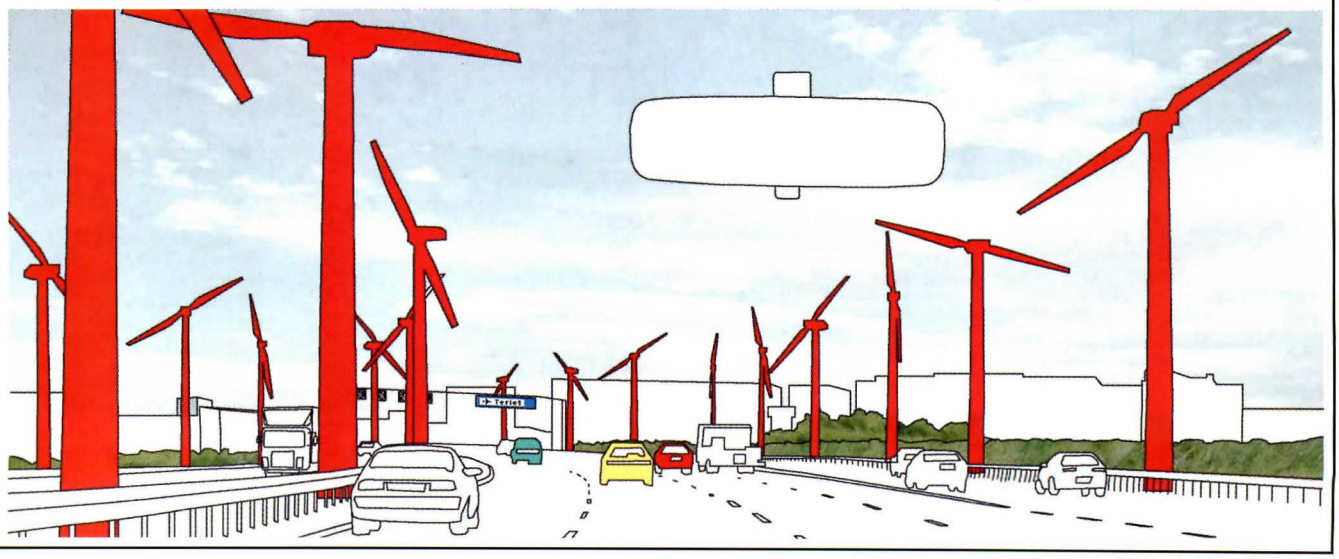


EXPO

Rotterdam Architecture Biennale | www.1ab-rotterdam.nl | Rotterdam | Through July 7 Infrastructure design has been a constant theme of architectural discourse since Vitruvius. Transportation networks, more specifically, have been the subject of architectural writings from Alberti to the end of the eighteenth century, and a preoccupation of architects and planners from Haussmann to Koolhaas. In its inaugural series of lectures and exhibitions entitled *Mobility: A Room with a View*, the Rotterdam Architecture Biennale sets out to address contemporary issues of transportation, now one of the most pressing problems of our times.

The new biennale, curated by Francine Houben of the Delft-based architecture firm Mecanoo, is big, and it takes place at various locations in Rotterdam: the Netherlands Architectural Institute (NAi), the Boijmans van Beuningen Museum, and the Las Palmas warehouse. *World Avenue*, one of the two main exhibitions at the NAi, presents images of traffic jams, overpasses, traffic junctions, superhighways, and subway maps from Tokyo, the Pearl River Delta in China, the Randstad region of Holland, Beijing, and Mexico City. *Holland Avenue*, the other major display, brings together studio work from 10 international design schools on the theme of mobility. Zaha Hadid's class at the University of Vienna, for example, morphed Adolph Loos's Mueller House into a traffic interchange in order to show that the interchange could be just as aesthetically—and spatially—charged.

The romance of automobile travel is still an alluring image for many architects; but for an urban public faced with increasing congestion and limited space, it has worn thin. As architects come together to consider contemporary transportation problems at forums such as the biennale, one truth stands out: Sustainability and technical advances in alternative transportation must take a central role in developing new solutions. **Liane Lefaivre**



TOP: COURTESY PHAIDON; BOTTOM: COURTESY MECANOO ARCHITECTS

THE FIFTY-FIRST ANNUAL P/A AWARDS

The longest-running architecture awards program in the United States—and the only program honoring unbuilt *work*—enters its 51st year. As in past years, a five-member jury of distinguished, independent professionals will recognize unbuilt projects demonstrating overall design excellence and innovation. All entries must be commissioned by paying clients for execution. Judging will take place in September 2003. Winning entrants will be notified in October 2003 and their projects published in the January 2004 issue of Architecture.

SUBMISSION

DEADLINE: AUGUST 26, 2003

Please complete and submit all parts intact with each entry. (See item 15 for instructions.) Photocopies of this form may be used.

Address entries to:
Awards Editor
Architecture
770 Broadway
New York, NY 10003

1 Who Can Enter
Architects and other design professionals practicing in the United States, Canada, or Mexico may enter one or more submissions. Proposals may be for any location, but work must have been directed and substantially executed in offices in those three countries.

2 Real Projects Only
All entries must have been commissioned for compensation by clients with the authority and the intention to carry out the submitted proposal. A project designed for a competition is eligible if it is the one proposal the competition's sponsor intends to build.

3 Architectural Design Entries
Architectural design entries may only include works of architecture scheduled to be completed after January 1, 2004. Indicate the anticipated completion date on the Project Facts Page (see item 10). Prototypes are acceptable if commissioned by a client.

4 Urban Design Entries
Urban design entries must have been accepted by a client who intends to base future development on them. Please include implementation plans and an anticipated time frame with your submission.

5 Verification of Client
The jury's decision to evaluate any submission will be contingent upon Architecture's verification that it meets all eligibility requirements. Architecture will contact the clients of projects selected for recognition. Architecture reserves final decision on eligibility and accepts no liability in that regard.

6 Providing Additional Materials
If the submission should win, the entrant agrees to make available further information and publication-worthy graphic material as needed by Architecture.

7 Publication
Winners of P/A design awards or citations grant Architecture first publication rights for their winning projects while under construction or when complete or substantially complete (at Architecture's discretion). Publication may not coincide with building completion, but Architecture retains first publication rights to the project for up to one year from its completion.

8 Award
P/A award- and citation- winners will be announced at a celebration in New York City in January 2004. Winning projects will be exhibited at that event, and may subsequently travel as a curated exhibition. Winners may be asked to submit a summary presentation for exhibition and travel purposes.

9 Binders
Entries must consist of legibly reproduced graphic material accompanied by adequate explanatory text in English. All entry material must be firmly bound in binders no larger than 17 inches in one dimension only, to a maximum of 11 by 17 inches (9 by 12 inches preferred). Avoid fragile bindings, and any materials which may endanger jurors (such as sharp metal edges). Supplementary documents, such as research reports or urban-design appendices, may be bound separately as part of the same entry. Slides should be submitted only as supplementary material. Video-cassettes, CD-ROMs, models, and any unbound material will not be considered.

10 Project Facts Page
To ensure clear communication to the jury, the first page of each entry binder must list project facts under the following headings: Location, Site Characteristics, Zoning Constraints, Type of Client, Program, Construction Systems, Funding, and Schedule. This information must include square footage, cost, and, where possible, specific materials. All project facts should fit on one page.

11 Documenting the Process
Entries should document the design process, as well as its result. Architecture encourages entrants to include copies of preliminary sketches, alternative preliminary schemes, information on context, precedents for the design, and excerpts from working drawings.

12 Research Behind Projects
We encourage including records of any research performed in support of projects entered.

13 No Original Drawings
Please do not send original drawings; Architecture accepts no liability for submitted materials.

14 Anonymity
To maintain anonymity in judging, no names of entrants or collaborating parties may appear on any part of the submission except on entry forms. Credits may be concealed by tape or other simple means. Do not conceal identity or location of projects.

15 Entry Forms
Each submission must be accompanied by a signed entry form. Reproductions of the form are acceptable. Complete the entire form and insert it intact into an unsealed envelope attached to the binder's back cover.

16 Photocopy
Please enclose one bound set of 8½-by-11-inch photocopies of your entry. The first two pages should be copies of your entry form and the Project Facts Page, in that order. Secure the photocopies inside the back cover of your binder.

17 Entry Categories
Identify each submission on its entry form by type. (See facing page.) Mixed-use facilities should be classified by the largest function.

18 Entry Fees
An entry fee must accompany each submission. The fee is $100 for Architecture subscribers; the nonsubscriber fee is $135, which includes a one-year subscription to Architecture. Each entry after the initial entry is $100. Make check or money order payable to Architecture. Canadian and Mexican entrants must send drafts in U.S. dollars. Fee must be inserted in an unsealed envelope with the entry form (see item 15).

19 Return of Entries
Architecture will return entries ONLY if they are accompanied by a self-addressed, stamped envelope. Architecture assumes no liability for loss or damage.

20 Entry Deadline
Deadline for sending entries is August 26, 2003. All entries must show a postage date as evidence of being in the carrier's hands by August 26. Hand-delivered entries must arrive at Architecture's editorial office (address above) by 5 p.m. EST on August 26. To ensure timely receipt, Architecture recommends using a carrier that guarantees delivery within a few days.

THE FIFTY-FIRST ANNUAL P/A AWARDS

DEADLINE: AUGUST 26, 2003

Entrant

Contact Name

Address

Phone Number Fax Number

E-mail Address

Project Name

Project Location

Client

Client Phone Number

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Fee check one

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Category check one

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CU CULTURAL ❑
ED EDUCATIONAL ❑
GV GOVERNMENTAL ❑
HM MULTIFAMILY HOUSING ❑
HR HEALTH-RELATED ❑
HS SINGLE-FAMILY HOUSE ❑
ID INDUSTRIAL ❑
RC RECREATIONAL ❑
RL RELIGIOUS ❑
UD URBAN DESIGN ❑

I certify that the parties credited executed the submitted project and that it meets all eligibility requirements (1–6). I understand that **Architecture** may disqualify any entry that fails to meet submission requirements (9–20). If this entry wins an award or citation in the 51st Annual P/A Awards, I grant **Architecture** sole first publication rights to the project during construction or when fully complete, the choice of which is at **Architecture**'s discretion (7–8). Signer must be authorized to represent those credited.

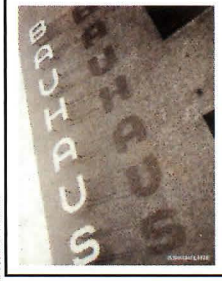
Signature

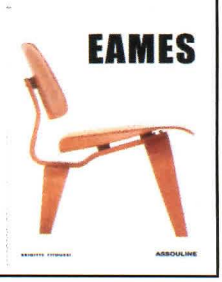
Name

Architecture will feature the winning entries in its January 2004 issue and **Architecture** will provide information on winning entries to local and national media.

EXHIBITION **Inside Design Now: National Design Triennial | Cooper-Hewitt, National Design Museum | New York City | Through January 25, 2004** If you have forgotten how much fun design can be, head over to the Cooper-Hewitt for the National Design Triennial. Inaugurated in 2000, the exhibition showcases a great diversity of work in a variety of design disciplines. This year's show, *Inside Design Now*, is organized around the broadly defined theme of "the realm of the interior," which encompasses everything from clothing and book design to electronic instruments and the artificial heart. On the architectural front, many of the chosen pieces reflect a concern for social causes, including Bryan Bell's luminous designs for mobile housing for migrant workers (below); created by the nonprofit he leads, Design Corps, the dwellings are born of Bell's goal to make custom design available to a wider audience, including those with limited means. Along with the work of Yusuke Obuchi, the Office of Mobile Design, and others, these projects demonstrate thoughtful experiments in social improvement that are both aesthetically sophisticated and mechanically complex. This is just one of many themes in this rich and eclectic exhibition; the majority of the work is fascinating and fresh, with a surprising array of creative approaches. **Julia Mandell**

BOOK **Bauhaus | Xavier Girard; Le Corbusier | Elisabeth Vedrenne; Eames | Brigitte Fitoussi | Assouline** This series looks like a sleek set of primers for Design 101. Each book contains a pictorial guide to a major movement or player of twentieth-century design, as well as a brief introductory text outlining stages of development, history, and context. Concise and pithy, the set is both easy to read and easy on the eyes. **Anna Holtzman**





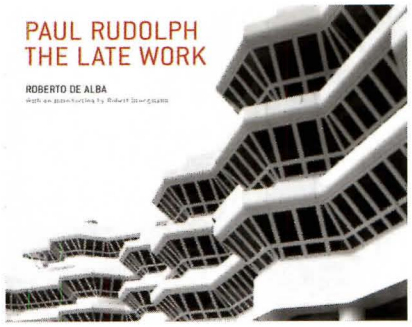
BOOK **Dwellings | Paul Oliver | Phaidon** Plucking examples from all over the world, anthropologist and architecture professor Paul Oliver covers the gamut of native residential building types as he illuminates topics from climate concerns to indigenous rituals. Drawing on his own research, Oliver also covers developments from the last 20 years of research in the fields at large. **Anna Holtzman**

TOP: COURTESY COOPER-HEWITT, NATIONAL DESIGN MUSEUM; CENTER: COURTESY ASSOULINE; BOTTOM: COURTESY PHAIDON

views

EXHIBITION **Of Our Time: 2002 GSA Design Awards | National Building Museum | Washington, D.C. | Through October 19** As funding for many public design projects is threatened in our current political and economic climate, this show celebrates built and unbuilt projects completed or proposed in the past five years under the U.S. General Service Administration's (GSA) Design Excellence Program, which was founded in 1994 to encourage excellence and creativity in civilian federal projects. A 14-member jury invited to preside over this year's awards program looked at categories ranging from architecture to art conservation and graphic design. A citation in the sustainability category went to St. Louis-based Hellmuth, Obata + Kassabaum for their Environmental Protection Agency Research and Administration Facility in Research Triangle Park, North Carolina (below, left), which includes materials made of recycled content and uses 40 percent less energy than similar facilities. Other awards went to projects by Kallmann McKinnell & Wood Architects, Thomas Hacker Architects (below, right), and Morphosis. At a time when embassy projects are being given to construction companies first, with architects a secondary concern, continued support of the GSA's design program is critical. **Bay Brown**

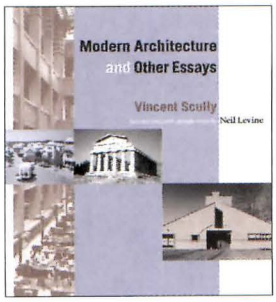
BOOK **Paul Rudolph: The Late Work | Roberto de Alba | Princeton Architectural Press** For the first time in book form, we may revel in the last works of Paul Rudolph's career, including residences, commercial high-rises, and institutional projects.



With many hand-drawn details, diagrams, and plans, the book also contains Rudolph's last interview, conducted by architect and critic Peter Blake. This volume follows *Paul Rudolph: The Florida Houses*, published last year. **Anna Holtzman**

BOOK **Modern Architecture and Other Essays | Vincent Scully | Princeton University Press**

Architectural historian Vincent Scully has written and lectured on architecture for half a century. In *Modern Architecture and Other Essays*, former Scully student Neil Levine selects the professor's most salient essays on such subjects as the plight of the suburbs, architecture and community, and the influence of the fine arts on design. **Anna Holtzman**



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EXHIBITIONS

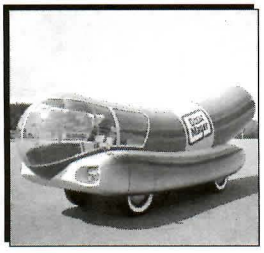
BERLIN
Design Berlin
An exhibition introducing Berlin's most innovative young architects and designers.
VITRA DESIGN MUSEUM BERLIN
www.design-museum.de
Through June 22

CHICAGO
Thomas Struth
A comprehensive show of city portraits that spans the photographer's oeuvre.
MUSEUM OF CONTEMPORARY ART
www.mcachicago.org
June 28-September 28

DALLAS
Starting Places
An exhibition of 20 experimental models by Dallas-based architects.
MCKINNEY AVENUE CONTEMPORARY
www.the-mac.org
June 13-July 13

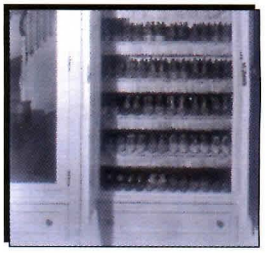
FRANKFURT, GERMANY
Visions and Utopias
Architectural drawings from New York City's MoMA by masters from Frank Lloyd Wright to Frank Gehry.
SCHIRN KUNSTHALLE FRANKFURT
www.schirn.de
Through August 3

MILWAUKEE
Industrial Design
Domestic products and automobile designs by twentieth-century American industrial designer Brooks Stevens.
MILWAUKEE ART MUSEUM
www.mam.org
June 7-September 7



MINNEAPOLIS
Strangely Familiar
An international survey of work by architects and designers that transforms and subverts commonplace objects.
WALKER ART CENTER
www.walkerart.org
June 8-September 7

NEW YORK CITY
Beals, Hervey, and Hewitt
Early twentieth-century architectural photography by three pioneering women photographers.
NEW YORK HISTORICAL SOCIETY
www.nyhistory.org
Through July 13



NEW YORK CITY
U.S. Design 1975-2000
Works by top American architects and designers, including Frank Gehry, Steven Holl, Maya Lin, and Thom Mayne.
MUSEUM OF ARTS & DESIGN
June 19-November 2

NEW YORK CITY
Open
New international projects displaying innovative ideas for public space.
VAN ALEN INSTITUTE
www.vanalen.org
June 11-October 31

PASADENA, CALIFORNIA
Design Biennial
The Pasadena Museum of California Art's biennial roundup of the best design in the state.
PASADENA MUSEUM OF CALIFORNIA ART
www.pmcaonline.org
June 21-September 13

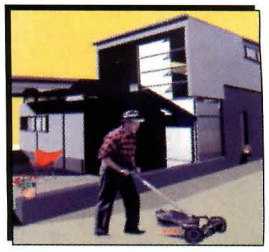
PHILADELPHIA
Simple + Direct
An investigation of furniture design that includes process drawings, photos, and material studies.
DESIGN CENTER AT PHILADELPHIA UNIVERSITY
www.philau.edu
Through August 3

VIENNA
Carlo Scarpa
Original drawings and working models by the late Italian architect.
MAK
www.mak.at
Through September 14

WASHINGTON, D.C.
Architecture Portraits
Portraits of cityscapes reflected in store windows by Washington, D.C.-based painter Joey P. Mánlapaz.
OCTAGON
www.archfoundation.org
Through August 1

WASHINGTON, D.C.
Building Images
An exhibition celebrating the history of architectural photography firm Hedrich Blessing.
NATIONAL BUILDING MUSEUM
www.nbm.org
Through July 27

WINSTON-SALEM, NC
HOME
Proposals by architects for sustainable, low-income housing based on projects by Habitat for Humanity.
SOUTHEASTERN CENTER FOR CONTEMPORARY ART
www.secca.org
Through July 6



EVENTS

BOSTON
Density Conference
The Boston Society of Architects presents a conference titled *Myth & Reality.*
OMNI PARKER HOUSE
www.architects.org/density
September 12-14

JYVÄSKYLÄ, FINLAND
Elephant & Butterfly
The ninth Alvar Aalto Symposium will discuss themes of permanence and chance in architecture.
JYVÄSKYLÄ UNIVERSITY
www.alvaraalto.fi
August 1-3

SAN FRANCISCO
Spark: 03
A conference sponsored by Design within Reach, the California College of Arts and Crafts, and *Dwell* magazine.
CALIFORNIA COLLEGE OF ARTS AND CRAFTS
www.dwr.com/spark.cfm
July 18-20

COMPETITIONS

Home of the Year
Architecture magazine's second annual residential awards program. (See page 80 for details.)
www.architecturemag.com
Deadline July 14

AIA Honor Awards
The American Institute of Architects' annual awards program honoring outstanding built work.
www.aia.org
Deadline August 1

P/A Awards
Architecture's annual awards for unbuilt work. (See page 88 for details.)
www.architecturemag.com
Deadline August 26

James Marston Fitch
A $25,000 research grant for mid-career professionals in architecture or related fields, sponsored by this charitable foundation.
www.fitchfoundation.org
Deadline September 8

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Architectural Area Lighting

The Flex is composed of a lamp, ballast and post top module linked together by two stainless steel arms. The unique design results in greater operating efficiency. The full cutoff Flex fixture offers multiple arm designs and mounting options to form a flexible visual palette.
Circle 107

CrossingGard™ Emergency Response Grille

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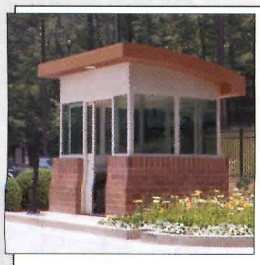

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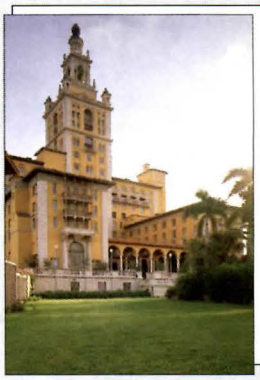

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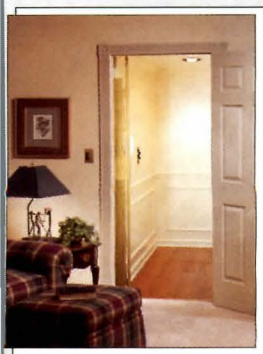

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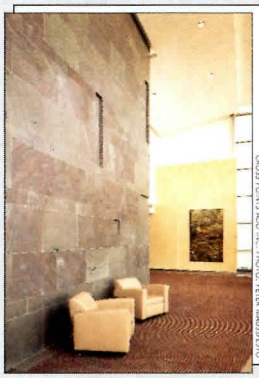

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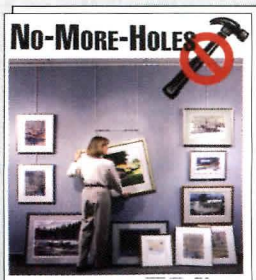

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FREE PRODUCT INFORMATION

RS #	ADVERTISER	PAGE
230	Academy of Arts College	27
49	Alcan Composites USA	15
221	Arakawa	8
53	ARCAT	95
107	Architectural Area Lighting	92
1	Armstrong World Industries	C2–1
—	Autodesk	39
105	B.I.G.	92
101	Bilco	92
235	Cascade Coil Drapery	90
82	Cersaie 2003	74
117	Cornell	92
23	Crittall North America	32
93	Dcota	77
22	EFCO	12
132	Eldorado Stone	92
47	ERCO (regional)	21
73	Eurotex	16
114	FAAC International	92
28	Follansbee Steel	30–31
124	Gagecast	93
121	G Squared Functional Art	93
136	Inclinator	93
137	Invisible Structures	93
158	Italian Trade Commission	13
239	Jeld-Wen	2–3
183	John Wiley & Sons	18
223	Kalwall	28
194	Lehigh Cement	40
229	Lonseal	76
25	Microsoft	25
115	Musson Rubber	93
19	Osram Sylvania	19
187	Pilkington	9
193	PPG Industries	26
114	Prima	94
145	Scofield	93
104	Schott	94
135	Sloan	94
162	Sony Electronics	10
120	Technical Glass Products	94
241	Universidad de Navarra	20
74	USG	C4
106	Vermont Structural Slate	94
43	Visa	66
80	Visual Reference Publications	86
110	Walker Display	94
164	Wausau Tile	22
186	Wausau Window & Wall Systems	C3
69	Wilsonart International	4–5
209	W. S. Tyler	90

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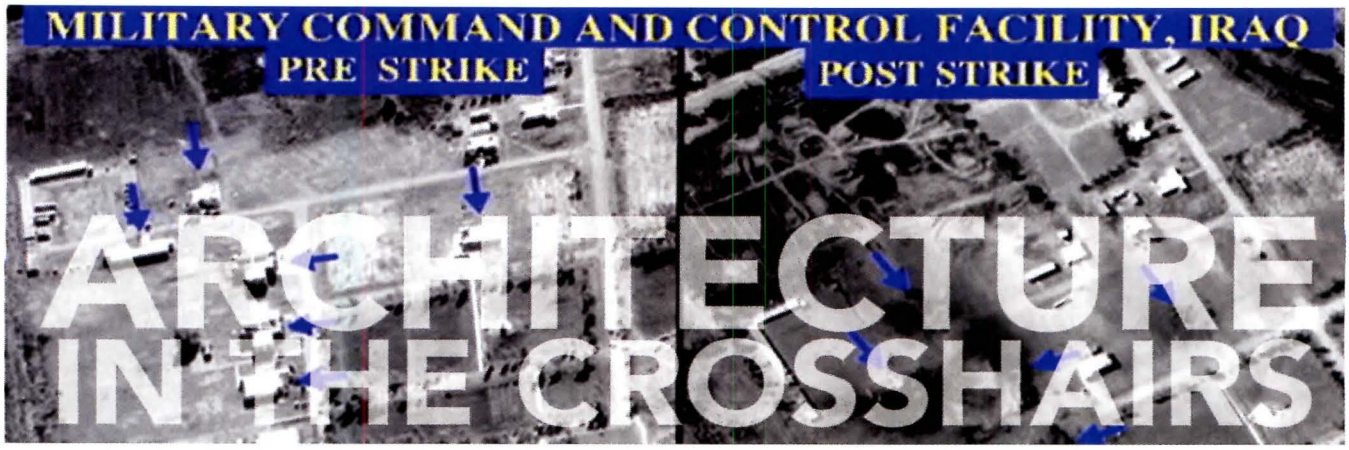

ARCHITECTURE IN THE CROSSHAIRS

Both the U.S. military and Islamic terrorists have made individual buildings the focus of their attacks, a trend that may transform architecture in fundamental ways. by Thomas Fisher

As the September 11 attacks and the Iraq conflict have demonstrated, architecture now stands at the very center of modern warfare, with truck bombs, commandeered planes, and "smart missiles" able to annihilate buildings with unprecedented precision. This "militarization" of architecture—especially architecture that has perceived symbolic or strategic value—will change the way in which we design buildings and cities in the future. It also represents a largely stealth public policy in this country, as the U.S. government has funded the military technology that makes it possible to target cities and buildings and has helped sell it to others, who may someday use it against us.

If you have any doubt about the impact of weaponry on architecture, look at the post-World War II period, during which we rebuilt cities—consciously or not—in ways that resisted the effects of the carpet-bombing and atomic explosions that our military used to such devastating effect during the war. Siting tall buildings in ample open space reduces the likelihood of the firestorms that carpet-bombing creates in dense cities. Likewise, suburban sprawl moves people farther away from the probable ground zero of an atomic attack, via an interstate highway system that Congress once justified for defensive purposes. We won World War II, but we ended up reshaping our own cities as thoroughly as those we destroyed, bringing to mind the old adage that, in war, the victor becomes the victim.

This suggests that we may increasingly become like the Iraqis we just defeated. They developed a number of architectural strategies to resist our precision bombing, and we have much to learn from them, especially now that terrorists have demonstrated themselves capable of doing the same to us. The models for this already exist. Just as the urban ideas of Le Corbusier and Frank Lloyd Wright had defensive value for cities threatened by new kinds of bombing after World War II, so too might the architectural ideas of the 1960s and 1970s prepare us for the threat of precision bombing.

THE DECOY BUILDING

Postmodernism gave us the "billboard building," with the symbolic content of architecture applied to a more modest structure. While meant as ironic cultural commentary, it also suggests an ideal way to create decoy buildings, structures that might have symbolic importance to precision bombers but no real strategic value. Saddam Hussein built lots of palaces that offered us target practice; we might build a faux Washington, D.C., or perhaps keep the real one, and move government operations to some modest metal sheds in Montana.

THE CAMOUFLAGE BUILDING

In his 1977 *Underground Buildings*, architect Malcolm Wells showed us how to inhabit a subterranean world for ecological reasons, but such structures also provide ideal cover for those seeking to evade aerial bombardment. Hussein had all sorts of underground or camouflaged bunkers; does our leadership deserve anything less? Is it time to give the Pentagon a green roof and terraced walls of sod? It certainly fits our new military strategy of using moles.

THE INCONSPICUOUS BUILDING

New Urbanism reminded us of how architecture can reinforce the fabric of a city, but that same idea also lends itself to the avoidance of detection. Hussein's "safe houses" stood as innocuous-looking structures on the streets of Baghdad. We, too, might move our leaders into inconspicuous buildings in the fabric of our cities, like those of our Founding Fathers in Philadelphia. It might even remind our government of its proper role in a democracy.

THE MOBILE BUILDING

Archigram envisioned walking cities and Cedric Price proposed a university in rail cars, but as Hussein understood with his mobile chemical and biological labs, nothing evades detection better than a constantly moving target. Our politicians and other important people already spend a lot of time on the road—maybe we should just keep them there, moving from one airport lounge or hotel room to another, available by cell phone if we want them.

Such ludicrous ideas might spur us to ask why we have let military strategy, *funded* through our taxes and approved by our elected officials, bring the possibility of war to our cities and now to our very homes and offices. We might also ask why architects' own visions of cities, however well intentioned and idealistic, seem to lend themselves so well to military defense. Have our actions as architects had as much effect as those of the Pentagon in turning cities into a battleground? Is it time to stop targeting cities, period?

Thomas Fisher is dean of the College of Architecture and Landscape Architecture at the University of Minnesota.

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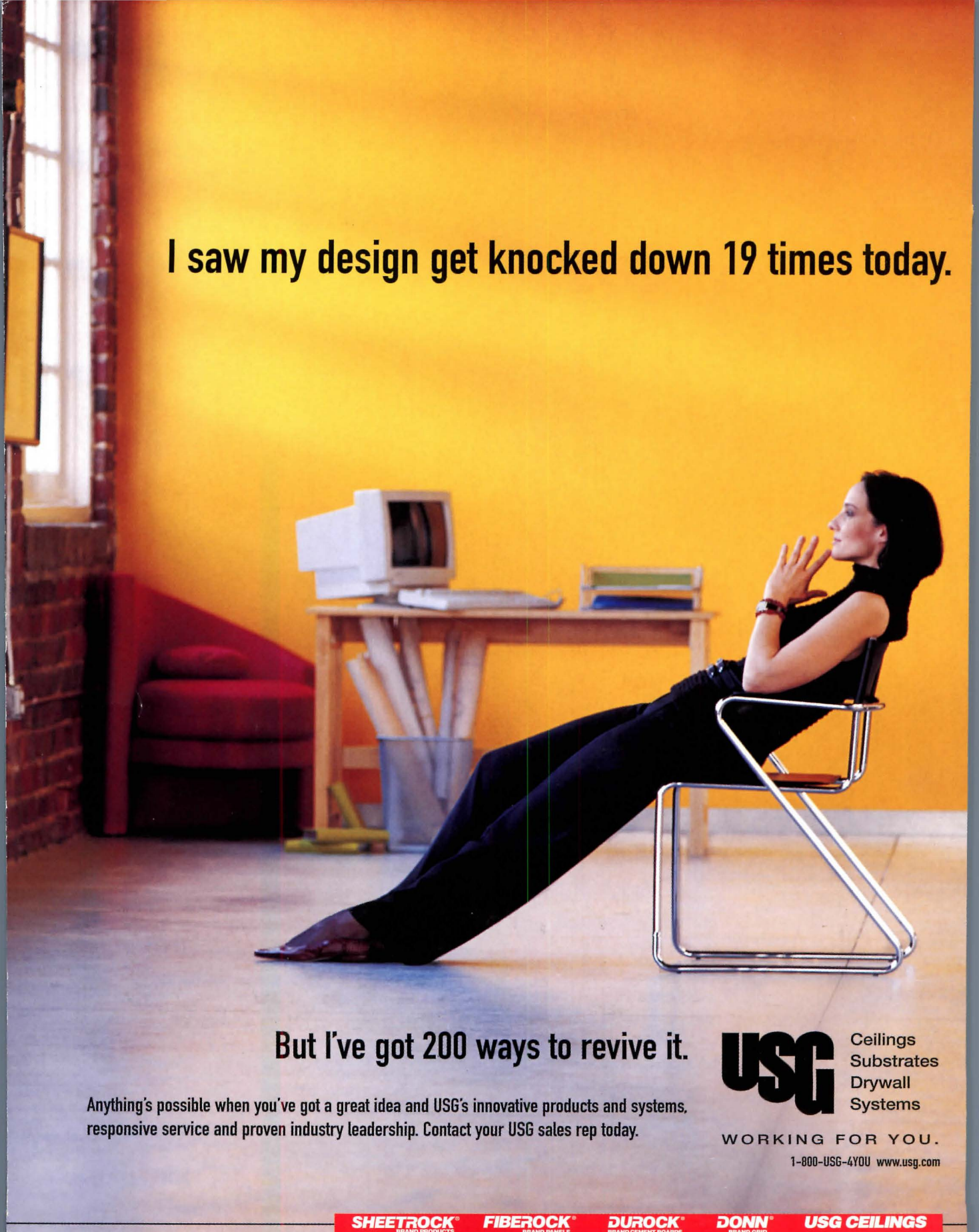
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