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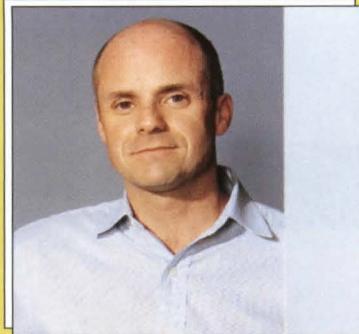
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THOM MAYNE'S RADICAL INCREMENTALISM

BY C.C. SULLIVAN

Thom Mayne has won the Pritzker Prize. Perhaps the world is catching up with this mach-speed genius.

Architects, critics, and design-minded citizens will undoubtedly take this occasion to discover anew Mayne's body of energetic, highly original work. While there's much to inspire us in his buildings, I'd also encourage an exploration of how this unique practitioner works and views his role. Mayne has been noted for taking risks, for integrating varied disciplines, and for experimenting with unlikely materials and new computer techniques. But boiled down to its essential worldview, Mayne's process teaches us a critical lesson.

To explain how, I'll borrow a term shared lately by programmers and social activists: *Incrementalism*. For proponents of the "open-source" movement, this word describes how expert hackers collaborate via the Internet on high-tech software applications by sharing small, accretive chunks of code. In this way, the evolving programs can be tested in various environments on the fly, making the process fast, robust, and reversible. This community views its messy, emergent method as better suited to our fast-morphing world than any static set of constraints. Similar logic occurred earlier to urban planners, who have championed incrementalist approaches for the shifting terrain of neighborhood revitalization since the 1970s. Impressed by its achievements, social theorists expanded on a notion of "radical incrementalism," an idea best defined in Sanford F. Schram's 2000 *After Welfare*: an amped-up, progressive alternative to public-assistance policies in which groups "push for fundamental change by forcing concessions from those in power, taking what incremental gains can be had and using them to build a better future."

Based on these methods and mindsets, I'll argue that Thom Mayne is a radical incrementalist. In his work, he positions himself as a node in a pulsating network of "silent collisions"—to borrow the name of a dance performance from the 2003 Venice Biennale that featured Mayne's scenery—among thinkers, artists, and experts. Rather than wrapping his energy around a Grand Unified Theory of architecture, he operates as a nexus of many ideas and inputs, deftly prioritizing and assimilating them per project needs. He carefully instigates

change through guerrillalike tactics, cognizant that perfection is impractical. And the "finished product"—the diagram, building, or detail—is neither faultless nor final, but rather the most elegant, most remarkable solution available in its time and space.

"If there's a singular broad topic to being a human being today, it's that you somehow have to manage these radical non sequiturs, these conflicting desires," said Mayne in an interview after learning of his award. "It represents a dialogue that's attempting to bring those forces together to some singularity, but it denies completion. The building belongs to the site, but it's also homeless. It's migratory."

Not only is Mayne's process pure zeitgeist, but it is also winning, as his influence and awards attest.

One may object to such distilled labeling, but studying this consummate practitioner's methods serves the profession well. In our work, architects deal with entrenched epistemological challenges of completeness, time, and control. This year's Pritzker laureate shows us how radical incrementalism helps address these limitations and bring the world its best architecture. "A quick sequence of focused, incremental shifts can produce cumulative and radical change that isn't easy to copy," as scientist-author John Seely Brown has observed. Sound like a recipe for breakthrough design?

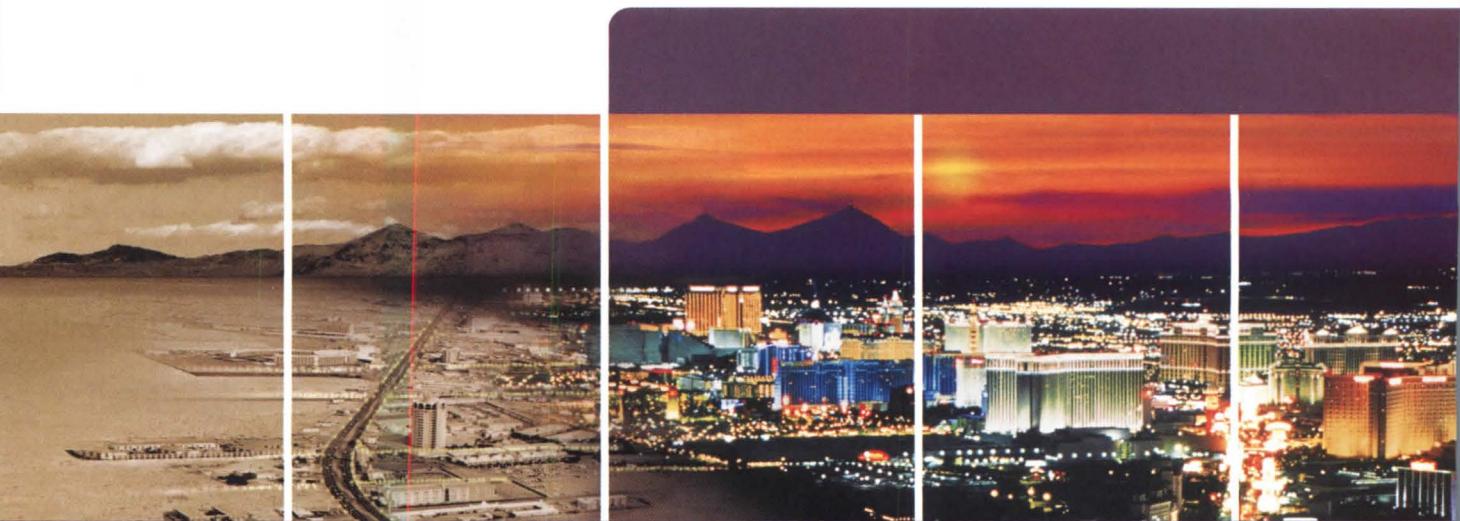
REUSE, YES, BUT NOT WITHOUT MEANING

There are other radical incrementalists out there, and I'd list Japan's Shigeru Ban among them. He visited New York City recently to enjoy his new Nomadic Museum, a 45,000-square-foot structure of stacked shipping containers and paper tubes set on a Hudson River pier to exhibit photographs by Gregory Colbert. The installation will migrate to other ports; Los Angeles is next.

While the project's recycling of 20-foot dry vans may seem trendy, Ban—known for materials research and unusual, intuitive designs—urges architects to carefully avoid the fashion trap of sustainability. "It's important, but it doesn't come first. It has to be more flexible," he explains. "Here, the reuse is particular to this building. I always look for some appropriate material or technology, and there has to be a meaning to the reuse." ■



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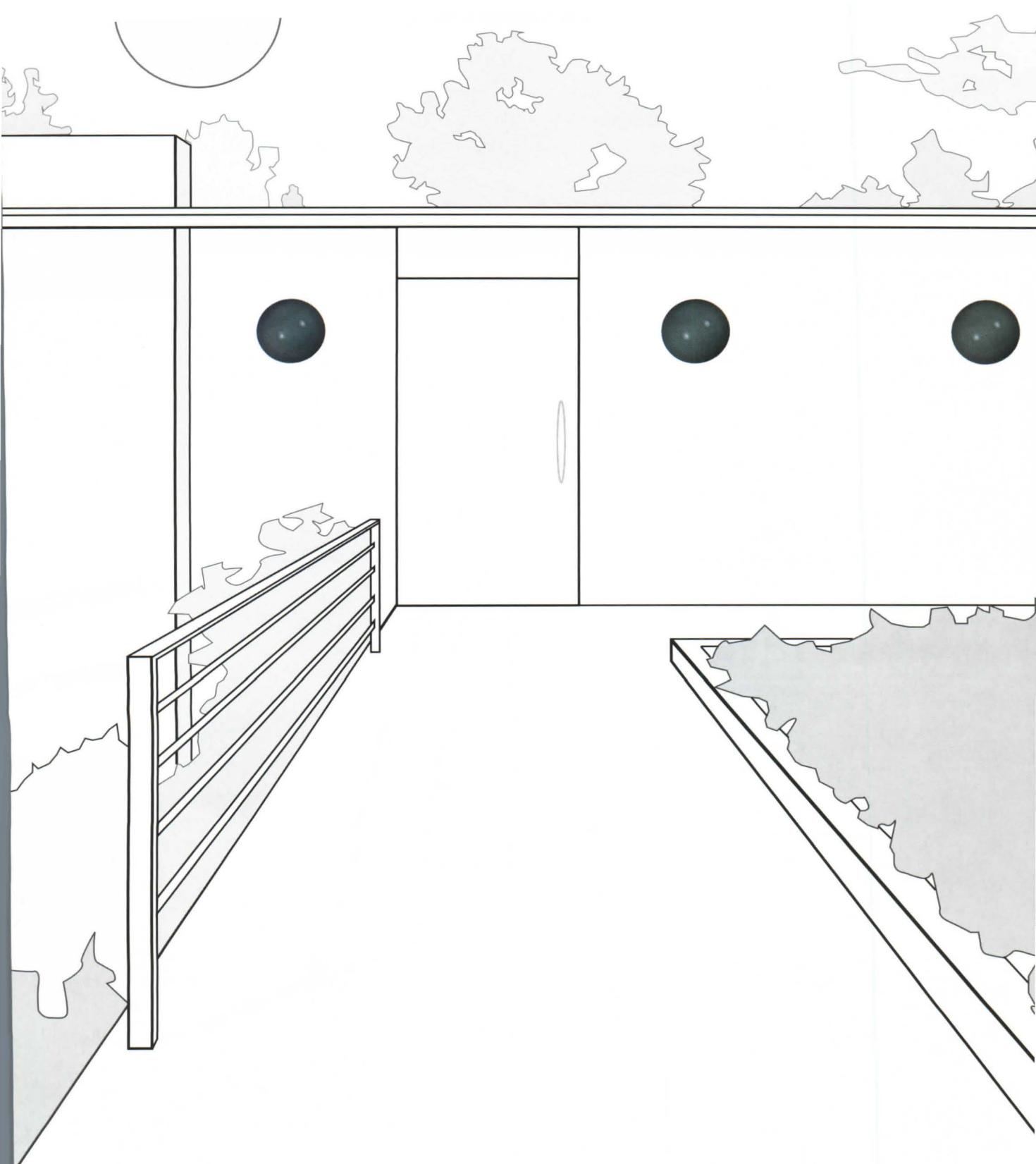
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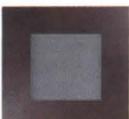
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Defending the healthcare specialty

I read with interest Wayne Ruga's letter [February 2005, page 13]. First, let me clarify that Mr. Ruga, a founder of The Center for Health Design, has not been associated with the organization since 1999. Second, regarding whether healthcare architecture should be treated as a separate discipline, we at the center believe it should. It requires a unique set of skills and knowledge, and many clients are now asking for evidence-based design in RFPs. Training and qualifying healthcare architects does not exclude others or suppress creativity; instead it advances the practice and helps improve patient safety and outcomes as well as staff satisfaction.

Rosalyn Cama, Board Chair

The Center for Health Design, Concord, California

Europe vs. Buffalo?

Your February issue features two articles compelling in their juxtaposition: On page 11, C.C. Sullivan extols the architectural legacy of Buffalo but ignores one of the world's first ventilated double-façade buildings, Cannon Design's Hooker Building (1980); it features all the strategies and controls that typified early European green design years later. On page 17, Peter Buchanan pegs a purported technology gap as a losing competition between the United States and Europe, strangely ignoring huge leaps in the field in Asia. Perhaps a better under-

standing of technology—and less Europhilia—would be the first positive step in creating a better global environment.

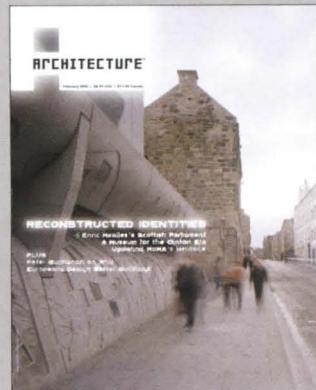
John S. Durbrow

Chicago

Thanks for the concise, well-defined perspective from Peter Buchanan. His insight suggests the next generation may provide the revolution needed for this profession to survive.

Richard D. Podulka

North Royalton, Ohio



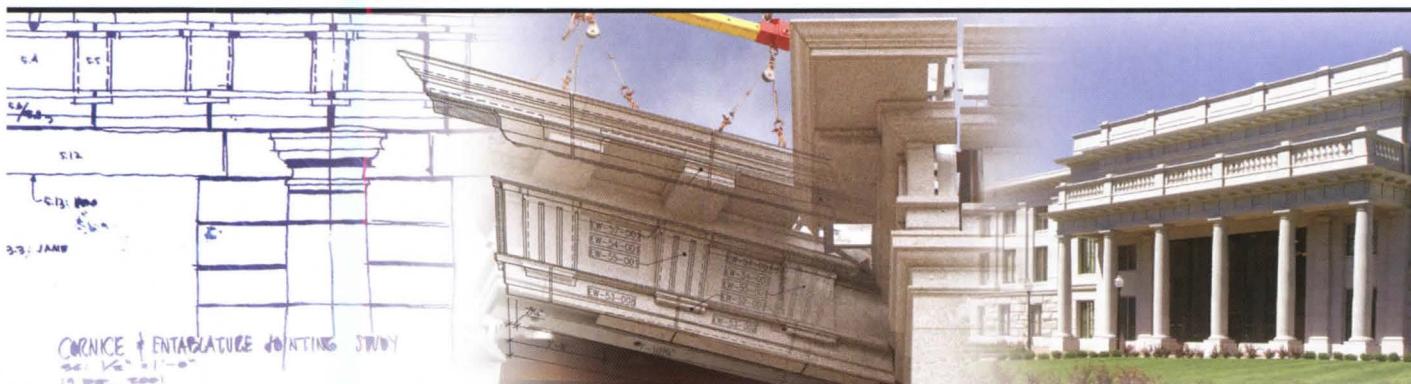
02 | 2005

Three-step program

Here's how to win a P/A Award [January 2005, page 21]: (1) Be Thom Mayne; (2) design housing prototypes—as a field of angular, wavy masses—for the elderly and their grandchildren; or (3) submit a published winner of a well-known competition.

Michael Miller

Los Angeles



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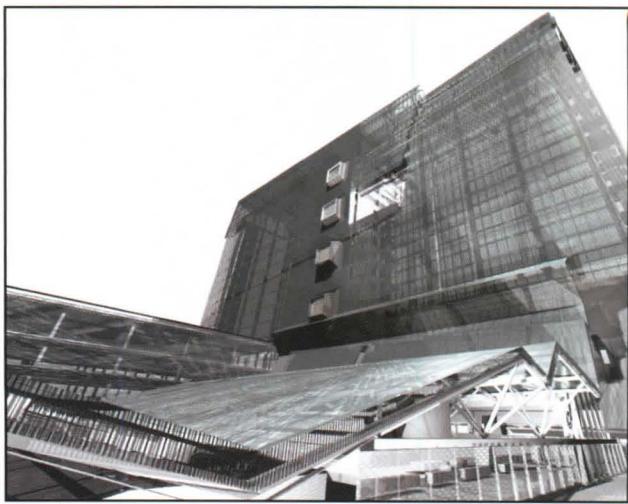
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THOM MAYNE TAPPED FOR PRITZKER

With 54 AIA Awards and 25 of Architecture's P/A Awards to his name (including 2004 honors for his work on L.A. Now: Volume 3), Morphosis principal Thom Mayne, the architect known for his uncanny ability to win acclaim, has been chosen as the 2005 laureate of the Pritzker Architecture Prize.

While Morphosis was established in 1972, the past five years have brought Mayne a series of high-profile commissions including a spate of large government projects such as the San Francisco Federal Building (right) and the Wayne L. Morse Courthouse in Eugene, Oregon (January 2004, pages 40 and 65). As cofounder of the progressive Southern California Institute of Architecture in Los Angeles and currently a professor at the University of California at Los Angeles, architectural education and risk-taking designs have characterized Mayne's career. He will receive the \$100,000 award on May 31 in the Jay Pritzker Pavilion in Chicago's new Millennium Park. **Bay Brown**



A DIMMER FUTURE

A recent study by Zing Communications on architects' and lighting designers' attitudes about light pollution—a term that describes glare, light emitted up into the sky, and light that trespasses into adjacent properties—found that the majority consider glare to be the gravest light-pollution concern. Fixture positioning and shielding were cited as the most effective solutions, and the 200-plus respondents voiced a desire to see standardized labeling of fixtures to show compliance of maximum wattage for different lighting zones.

Good news: Addressing concerns such as these, the International Dark-Sky Association (IDA) inaugurated its "Fixture Seal of Approval" program last fall, identifying fixtures that meet "dark-sky-friendly" standards. IDA's annual conference, dedicated to dark-sky issues, starts April 6 in Tucson, Arizona, followed by the IDA Europe symposium at the end of the month in Genk, Belgium. On that country's tenth annual "Night of Darkness" last month, more than half of the Flemish municipalities turned off their lights to raise awareness about light pollution. **Anna Holtzman**



RESHAPING THE AIRPORT

Retrofitting airports to meet new federal security rules since September 11, 2001, has been hassle enough, not least for passengers. But in Fort Myers, Florida, construction of a new \$386 million terminal opening mid-May was beginning when the hijackings occurred, and the entire security apparatus had to be reworked, fast, on a budget of \$52 million.

The designer, Guillermo Carreras of Miami's Spillis Candela DMJM, had originally designed the 930-foot-long Midfield Terminal at the Southwest Florida International Airport to have two security checkpoints serving three concourses. After September 11, the Transportation Security Administration ordered that each concourse have its own checkpoint to keep shutdowns isolated if there were a security breach. Space for explosives-detection machines for baggage added another 27,000 square feet to the lower levels of the terminal.

Carreras says, however, that the design changes didn't undermine his basic strategy to make the terminal easier than most on older travelers—no moving sidewalks, more seating, and, yes, numerous bathrooms. **Bradford McKee**





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TREADING WATER

More architects are making water a primary design driver. by Anna Holtzman | illustration by Jeremy Traum

"Water is an essential part of life, so an architect would have to be an idiot not to worry about it," states architect William McDonough, known for his environmentalist treatise *Cradle to Cradle*. "It would be like saying you're not going to worry about gravity!"

As most know, water covers most of the earth's surface, but only 1 percent of it is accessible fresh water from rivers, lakes, and the ground. (The rest is made up of 97 percent ocean water, which is too salty for drinking or irrigation, and 2 percent that is locked away in glaciers and ice caps.) According to a 2003 report by the U.S. General Accounting Office (GAO), water managers in 36 states expect shortages in the next 10 years, demonstrating that resources are stressed beyond just the arid southwestern region of the country. This is partly due to a ballooning population. From 2.5 billion in 1950 to 6.5 billion today, the world population will rise to approximately 9 billion by 2050, according to U.S. Census Bureau projections. And as indicated by the GAO report, the daily rate of water use in the United States—the largest portion of which is industrial—has doubled from 1950 to 1995, reaching roughly 400 million gallons per day.

ARCHITECTS AS STEWARDS

"As architects," says Bert Gregory of Seattle-based firm Mithun, "we need to work with our clients and our projects' communities to make sure that we're doing our part to be

good stewards of this limited resource." According to designers who regularly address water issues, such as Gregory and Chris Reed of Boston's StoSS Landscape Urbanism, there are two key strategies to consider when mapping out a site's interaction with water: Reducing strain on municipal water sources by minimizing the amount that the site uses, and decreasing the volume of unfiltered water that must be drained off the site, such as storm water and sewage. Combined-sewer overflow (CSO), a problem most prevalent in the northeast but found throughout the United States, occurs after heavy rainfalls when systems that carry both sewage and storm-water drainage get flooded. As a result, raw sewage is discharged into, and contaminates, natural water sources such as rivers and oceans.

When addressing the issue of storm water, planners and architects can minimize the amount of ground covered by paving—and use porous concrete and similar materials where possible—so that rainwater may be absorbed back into the soil, replenishing groundwater supplies and limiting urban runoff. Strategies for reducing a site's consumption include simply limiting the amount of water used (through low-flow fixtures and more efficient washing machines, for example); capturing and recycling rainwater for use in toilets and irrigation; and treating and recycling black water (sewage) and gray water (from showers and other nontiolet applications) for nonpotable uses.

SETTING EXAMPLES

Both StoSS and Mithun are currently working on projects that demonstrate strategies for dealing with water issues. At Lloyd Crossing, a 35-block sustainable urban-design plan sponsored by the Portland Development Commission in Portland, Oregon, Mithun's goals are to integrate natural drainage systems into an urban context, capture and reuse rainwater, and treat black water for secondary uses and recirculation. A central feature of the scheme is a biological water-treatment plant known as a "living machine." This compact, indoor greenhouse facility, developed by Canadian biologist John Todd, uses plants to filter black water to a level fit for use in toilets and irrigation systems. Natural or man-made wetlands serve as ideal water filtration systems in suburban and rural sites. At Islandwood, a Mithun-designed environmental education center in Seattle, an artificial wetland treats black water for nonpotable reuse.

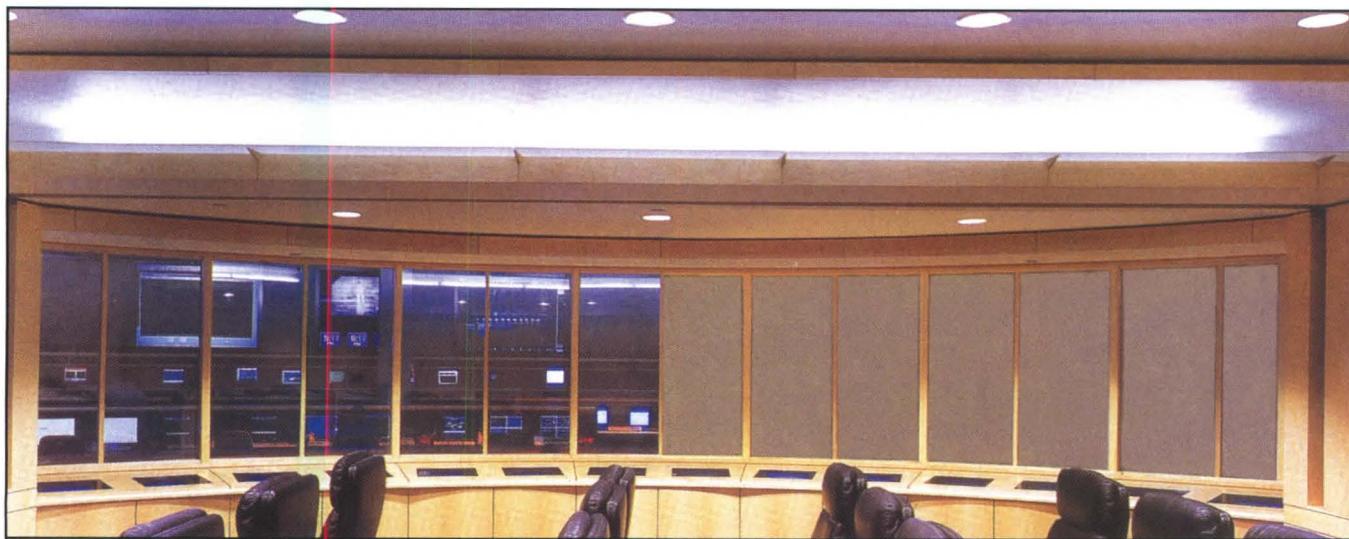
In Somerville, Massachusetts, StoSS is building an Eco Demonstration Project—essentially an experimental garden—with funds from the Boston Society of Architects' design research program, the Boston Foundation for Architecture, and the city of Somerville. The initiative addresses an existing landscape behind a high school and near the city hall where storm water runs off a parking lot and down a hill into combined storm-and-sanitary sewers. "The idea is to capture and detain this water with plantings and man-made landforms," explains Reed, "and use it for irrigation on the site." Employing such simple, biological strategies to divert storm water and prevent CSO, claims Reed, "could save the city billions over time, rather

than separating the combined-sewer system by means of a lot of hard piping." The project serves as a public installation for a neighboring residential community and as an ecology lab for the adjacent high school. This spring, high schoolers will help plant the site, which they will continue to monitor; the first round of construction took place last fall with the aid of architecture students from the Harvard Design School.

A MOISTER FUTURE

Most of the water-conserving techniques in use today involve simple technologies and common sense. "An interesting thing that's coming on line," reports Gregory, "is smaller, more localized wastewater-treatment systems. This makes it easier to transport the collected water to the places where it's going to be reused." According to Reed, the next step is looking more closely at urban environments. "You look at any suburban development and every 12 to 20 houses come with their own grassy detention basin. In many regions, there are already codes mandating that," he says. "The question now is, how do you make that fully integral to landscape and architecture projects in the city, where space is a little tighter?"

Reed believes that the key to resolving our water-related problems lies in raising awareness of the issue. "Landscape design has been a few years behind architecture discourse in academic circles, but in the last few years, architects are looking to landscape as a source for architectural strategy," he says. "The future is for landscape to be considered as an integral part of site design, not just a decorative, last-minute add-on." ■



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CHANGING THE FORMULA

Mixed-use developments with affordable housing components are becoming more popular—to the benefit of everyone involved. by Katie Gerfen

Crime. "The Projects." Inner city. These are descriptors that come to mind when thinking of low-income housing. But that need no longer be the case: One rising trend in affordable housing is the incorporation of new dwellings into larger mixed-use developments. These projects feature rental units or condominiums with municipal services and commercial space—including retail and education uses that the residents need in their day-to-day lives. Developers like them for their tax credits and other incentives; residents also tend to like them because they move into whole communities and neighborhoods, as opposed to islands of low-income homes. And proponents of affordable housing and the environment see them as safer and healthier for residents as well as for society at large.

And the need for low-income housing is growing: The poverty rate in America grew in 2004 to 12.5 percent, or 35.9 million people, up from 11.3 percent living below the poverty line in 2000. For housing advocates, the problem can be boiled down to: How do we house these people? And with the gap between the quantity of available homes and the number of families that need them—which amounted to nearly 2 million in 2002, according to Washington, D.C.'s National Low Income Housing Coalition (NLIHC)—the problem is reaching emergency status.

MIND THE GAP

The disparity between supply and demand is getting wider. When the 2006 budget for the U.S. Department of Housing and Urban Development (HUD) was announced earlier this year, significant cuts and reassessments of funding painted a bleak picture [February 2005, page 17] for the low-income housing sector. HUD's shrinking budget comes on top of the fact that at current funding levels, only a small percentage of the poorest families are receiving the assistance they need,



The Bernal Gateway affordable mixed-use development, designed by Pyatok Architects, creates a sense of community by providing courtyards surrounded by "cottage" style homes (below left) to give children a place to play away from busy streets. Day care and educational facilities in storefront spaces line the sidewalks of this San Francisco neighborhood.



according to Harvard University's Joint Center for Housing Studies. The Center's *State of the Nation's Housing: 2004* report describes how efforts to cut federal assistance programs and funding for Hope VI (which has since been eliminated entirely from the 2006 budget) may cause many low-income families to lose what assistance they already have. This is especially troubling in light of the fact that rents are steadily increasing ahead of median incomes in major metropolitan areas.

"When you look at cost burden and infrastructure, there are between 30 million and 40 million households that have some sort of [financial] challenge," says Frank Beard, senior vice president



of policy and information at the Fannie Mae Foundation. "[That number] seems to be growing, and it seems to be creeping into the moderate- and middle-income households."

Architects who serve the affordable-housing sector are also seeing a decline in new projects. "We have recognized

that we as a firm are going to have to diversify," says Oakland, California-based architect Michael Pyatok, who specializes in government-funded housing projects.

BETTER FOR RESIDENTS . . .

Mixed-use developments are widely viewed as a possible way to fix many of the problems associated with affordable housing. These projects do more than meet the needs of low-income tenants, creating an environment that can both foster community and improve access to social and retail services for residents. "It does make a lot of sense to put low-income housing close to schools, jobs, and transportation," says Linda Couch, deputy director of NLIHC. "When we talk about mixed-use," argues Pyatok, "we really need to talk about mixed-use neighborhoods." His Bernal Gateway project in San Francisco's Bernal Heights district includes a child-care center and adult-education facilities located in storefronts along the sidewalk. This proximity of services allows immigrant parents to study English and learn new job skills while their children are looked after, all without leaving their housing complex.

Another benefit is that mixed-use zoning helps families to increase their incomes by running businesses from their homes. Some affordable-housing architects believe that flexibility of space is essential, regardless of zoning. "The important thing," notes Pyatok, "is to give them the tools to create a live-work space. What they do with it is their decision."

. . . AND DEVELOPERS

Developers have also found ways to benefit from mixed-use developments with affordable components. Several tax credits can be applied to building sites, thereby reducing rents and allowing more to be spent on construction.

The New Market Tax Credit (NMTC), for example, can be applied to housing developments that are at least 20 percent commercial space. Charles Werhane, president of the Columbia, Maryland-based Enterprise Social Investment Corporation (ESIC) Realty Partners, one of the organizations involved in developing the tax credit nearly 20 years ago,

says that the NMTC helps to "bolster downtown residential populations and still provide the services to support their needs." Dependent in part on the median income of the specific location, the credit can be sold to an investor in return for equity or low-interest loans. These savings can be reapplied to the project to offset rental rates, allowing middle- to low-income renters to afford units. The NMTC can also be used in conjunction with Historic Preservation Tax Credits to help with

the costs of converting older properties into residential or mixed-use developments. It cannot, however, be used with the Low-Income Housing Credit, which has been instrumental in creating new projects for many years.

. . . AND ENVIRONMENTALISTS?

With a rise in sustainable building across the board, environmentally savvy practices

are also being introduced into low-income developments. Many housing advocates believe that green, ecologically sound building creates better living environments that improve the long-term performance of affordable developments. ESIC, for example, recently established the Green Communities Initiative, a funding program designed to create "healthier and better located housing," says Frank Narron, a senior vice president with ESIC. Each development costs between 5 percent and 15 percent more to build, depending on the market, but Narron believes the price is worth it. "If it weren't for an initiative like this, our constituents would be the last to benefit" from the green building movement.

The mixed-use village with affordable homes is an idea that seems to have found its footing, with benefits for everyone involved in the process: residents, developers, and funding organizations alike. By placing services within reach, say proponents, these developments foster the sense of community that too many projects have lacked. In essence, this rapidly rising trend in urban centers is not simply the creation of individual developments, but rather a neighborhood movement that gives more people an opportunity to live in healthy, stable environments. And with the quantity of people under the poverty level increasing every year, so does the need for these developments. ■

AFFORDABLE HOUSING SOURCES

U.S. Department of Housing and Urban Development

www.hud.gov

The nation's official housing authority offers information on federal housing policy and funding at the state level.

National Low Income Housing Coalition

www.nlihc.org

Devoted to raising awareness of affordable housing issues, the NLIHC's annual Housing Conference and Lobby Day will be held May 2–3 in Washington, D.C.

Joint Center for Housing Studies, Harvard University

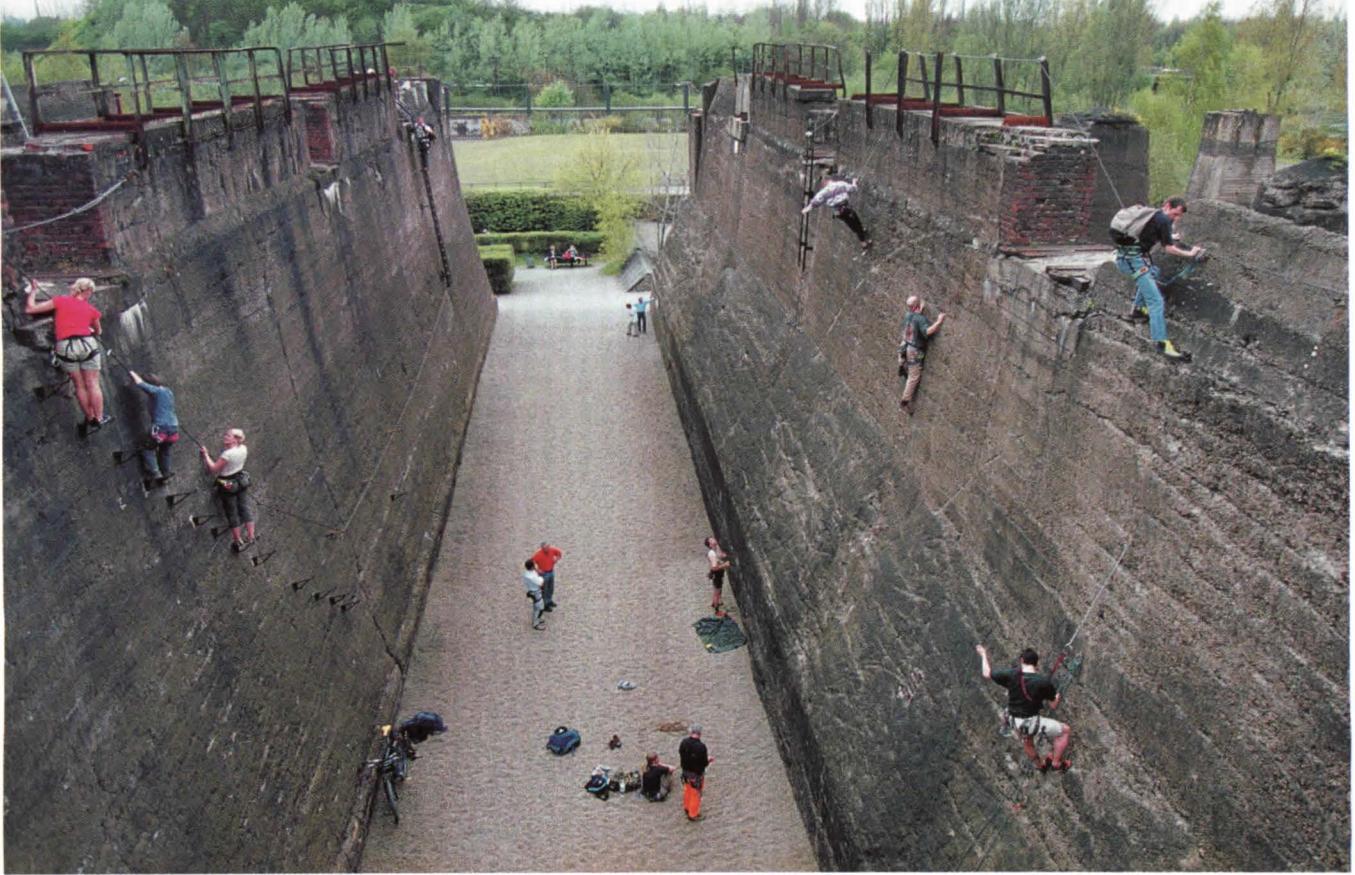
www.jchs.harvard.edu

This center for research and information on housing issues an annual report titled *State of the Nation's Housing*.

Affordable Housing: Designing an American Asset

www.nbm.org

The National Building Museum and the Fannie Mae Foundation have co-curated a traveling exhibition on low-income home design. It is in Philadelphia through May 27.



THE GRASS CAN ALWAYS BE GREENER

Large-scale land reclamation and reuse projects are springing up worldwide—a new exhibition offers a vivid tour. by Abby Bussel

When Yoshio Taniguchi was designing the temporary exhibitions gallery for the top floor of his revamped Museum of Modern Art (MoMA) in New York City, he was likely thinking about big art by boldfaced names in blockbuster-sized shows. By setting the ceilings 18 feet above the gallery floor, he also managed to make room for the display of some of the largest new works around: public spaces. *Groundswell: Constructing the Contemporary Landscape* documents 23 such projects recently completed or underway in the United States, Europe, Asia, and the Middle East. Many occupy sites that were previously off limits, such as industrial plants, military airstrips, and landfills; others arise from disasters both natural and manmade. Cultural and recreational programs for the great outdoors are fast transforming large swaths of degraded or abandoned land, and, in the process, they are serving as high-profile laboratories for ameliorative, sustainable design.

While the MoMA show is not the first to acknowledge the public-space zeitgeist, it does reinforce the magnitude of the movement—and the emphases on design and environmental sensitivity that characterize these projects. On view through May 16, *Groundswell* is organized into three thematic sections:

"Designing the Urban Stage," which looks at town squares and plazas; "Simulations of Nature and New Topographies," which seeks to negotiate between the artificial and the natural; and the "Bad and the Beautiful," a group of projects that reinvent polluted sites. Uninspired theme titles aside, the engaging installation of large-scale models, giant video projections, and wall-mounted renderings suggests something of the physical breadth and depth of the work displayed.

In Shanghai, China, for example, Tom Leader Studio with Michael Duncan of Skidmore, Owings & Merrill lines a sunken plaza with a 650-foot-long "carpet" of recycled building materials, while EDAW rebuilt the Manchester, England, city center following the 1996 IRA bombing there. Other projects create ersatz "natural" environments out of artificial conditions, such as Gustafson Guthrie Nichol's Lurie Garden in Chicago's Millennium Park, with its beds of native perennials atop the concrete roof of a parking garage. In Duisburg, Germany, Latz + Partner remakes the obsolete infrastructure of former steelworks into a public park.

One of the most ambitious projects in the exhibition is *Fresh Kills lifescape* on Staten Island, a competition-winning landfill

An ore bunker becomes climbing walls in the reinvention of a former steelworks in Germany by Latz + Partner.



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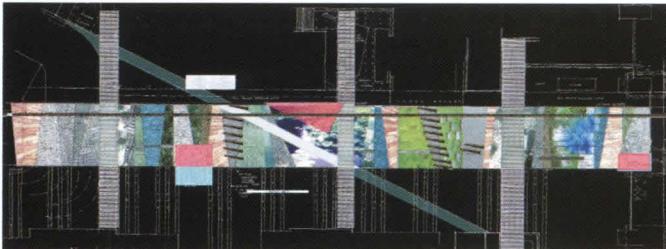
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Projects on view in *Groundswell* include: *Shanghai Carpet* by Tom Leader Studio and SOM (above); *Lurie Garden* in Chicago by Gustafson Guthrie Nichol (below) and *Fresh Kills lifescape* by Field Operations (bottom).



reclamation by Field Operations that converts 53 years worth New York City refuse (including debris from the World Trade Center towers) into an ecologically diverse public park. With construction to extend over 30 years, the project aims to sequester mountains of garbage—some up to 225 feet high—beneath protective membranes, while restoring existing habitats, inserting recreational amenities, and memorializing September 11 where two horizontal land forms the length of each tower.

Like the earthworks of the 1960s and 1970s, many of the landscapes in *Groundswell*, while conceived in the postindustrial era, resonate with social and political signs and symbols. As with the earlier body of work, there is no overriding aesthetic. What is held in common by these diverse efforts, as MoMA curator Peter Reed points out in his wall text, is “a surge of creativity” through landscape design long missing from the making of civic spaces. And that surge is rooted in an abiding desire—on the part of many designers, planners, and public officials—to better steward our resources, take back our waterfronts, and remind ourselves of the value of design in the public realm. ■

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MULTI-HOUSING NEWS

The multiplier reveals a lot about your firm. For many, this measure—more accurately labeled the *direct labor multiplier*—is just another financial indicator that someone at some time said to watch. Yet the multiplier indicates two critical things: The value a client perceives a firm provides, and the efficiency by which the firm provides it.

Calculating a multiplier is easy: Simply divide raw direct-labor cost into net revenue. (Net revenue is gross revenue less reimbursable expenses and direct nonlabor expenses.) Some firms instead calculate “net service revenue” and “net fees”; they are close enough but exclude markups on pass-through expenses, which average about 15 percent in firms that are able to pass those costs onto their clients.

Relative to **perceived value**, the multiplier tells us how much net revenue a firm receives for every direct-labor dollar it pays. The average multiplier in architecture historically has been around 3.00, meaning that firms receive three dollars in net revenue for every dollar paid in direct labor. Over the last decade or so, average multipliers for U.S. firms have varied between about 2.80—typically when the economy ebbs and client budgets are tighter—and 3.00 during times of stronger markets.

Similarly, relative to efficiency, the multiplier indicates how efficiently **labor** applies to projects. We can't tell from the multiplier how much of the **result** is value-related and how much is efficiency-related, but we do know that firms whose clients more aggressively seek them typically have higher multipliers than those practices that do the hunting; hence the value component surfaces. Also, firms with more effective project-delivery processes have higher multipliers than less effective competitors in the same markets: hence the efficiency component. At any given fee level, multipliers increase with improved process (once firms are past the learning curve). And at any level of efficiency, multipliers increase as clients find more value in what a firm provides—as long as the firm doesn't give away that value.

TWEAKING REVENUE AND DIRECT LABOR

When it comes to multipliers, higher is better, but why—and why should you care? Consider the equation: net revenue ÷ direct labor = multiplier. To increase the result, increase net revenue or decrease direct labor. For more dramatic change, do both. Of course, such changes are not without their ramifications.

Starting with the divisor, sure, decreasing direct labor will boost the outcome, but doing so suggests some combination of increasing efficiency, reducing salaries (to which current employees might object), and replacing existing staff with less expensive—and perhaps less experienced or less talented—new staff. Improving efficiency only raises the multiplier if net revenue remains constant, which points to the generally desirable value-based contracts that focus less on the cost to deliver the work (July 2004, page 32).

As soon as we're talking about **contracts**, we're shifting to the dividend of the equation, net revenue. Value-based

A MULTIPLICITY OF MULTIPLIERS

What kinds of architectural work offer firms the best multipliers? **Interior design**, notably for corporate clients, carries multipliers higher than industry averages, often in the range of 3.30 to 3.50. And firms that undertake complex project types, like laboratories and health-care facilities, for **complex clients**—such as universities and institutions with multiple decision makers who occasionally are at odds with each other—might be expected to have higher multipliers than those undertaking simpler projects, but that's not the case. The time and energy the architect expends to deal with such difficult clients more than offsets the higher multiplier that might result if the client were out of the picture and the only challenge were the project itself. Firms immersed in public **K-12 education** work, a segment in which fees are notoriously squeezed by tight budgets and schedule pressures, at times sustain higher multipliers than might be expected. Most successful are those firms that establish continuing relationships with their school districts and work with templates for the various project types—elementary, middle, and high schools—they undertake. **H.H.**

contracts can take traditional forms, such as lump sum and percent of construction, or less common “value-added” forms, such as a component of fee tied to the speed of achieving targeted occupancy in a commercial office building. In this context, keep in mind that time-based contracts, particularly hourly contracts with an upset limit, penalize the architect for increasing efficiency. The penalty is even greater when considered in the context of the increased experience that contributes to higher efficiency: With more experience, the architect is doing a better job and avoiding the pitfalls and risks that a less experienced practitioner might be unaware of, yet time-based contracts (except at very high hourly rates) reward the architect less.

NATIONAL BENCHMARKS

The range of values of multipliers is worth a look. At the lower end, civil engineering firms often experience multipliers below 2.50, reflecting the market view of the value of the service and the ready availability of providers, which drives down fees. (Such firms stay afloat financially by keeping overhead much lower than industry averages.) At the other end, there are firm-wide multipliers as high as 5.75. Firms enjoying such lofty levels don't always take on full project scope, with conceptual and schematic design being the mainstay of their practices.



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Firms whose reputations precede them, which often includes offices that take on work in distant locations, frequently find themselves dealing with value-oriented clients rather than cost-oriented clients. The result is higher fees and higher multipliers, although long-distance situations can increase overhead, with the result that profit, while usually higher than average, doesn't necessarily parallel the multiplier.

This calls to mind another simple formula: revenue - expense = **profit**. (Using net revenue in this equation helps avoid the potentially misleading consequences of gross revenue, which doesn't tell us how much money the firm has to do its work.) To improve profit—and this goes to elementary school arithmetic—firms can increase revenue, decrease expenses, or do both. The multiplier relates revenue and the direct-labor expense, eliminating direct nonlabor expenses to focus on net revenue; that leaves only overhead (indirect labor plus indirect nonlabor expenses) to address.

For most firms, the biggest impact on profitability comes from increasing revenue relative to the direct cost of doing the work: that is, from increasing the multiplier. A second component is increasing **delivery efficiency**. And a third is managing the overhead (while not losing sight of its partial function as an investment in the firm's future). A few tips—which are often easier said than done—can be offered:

- Concentrate on elevating the importance of the value of what you provide to your clients. To do so, understand the client's environment well enough to tie the value of the services to measures that are meaningful in the client's eyes. And base the value argument on performance and results, not hope or hype.
- Solicit feedback about the perceived value of your firm's work (product and service), and be nondefensive in reviewing it.
- Be willing to walk away from assignments where the client's perception of value differs considerably from yours.
- To increase efficiency, begin projects with clarity about what you are trying to accomplish—the client's goals, the firm's goals—and the roles of the individuals who will undertake the work.

Most important, recognize that the bar of acceptable quality continually rises; to sustain respectable multipliers, work quality must also elevate.

Hugh Hochberg, a partner in the Seattle-based consulting firm The Coxe Group, has worked with more than 500 firms over three decades.

MORE GREENBACKS FOR GREEN SPECS?

Does building green mean more green for the firm? For spec writers, the answer is maturing from a "maybe" to "probably not." "Initially there was a learning curve, and we charged additional fees for the extra research," says Mark Kalin, a specifications consultant in Newton, Massachusetts. "Today, there is no additional fee," he notes, for projects seeking U.S. Green Building Council (USGBC) LEED certification. Plus, green products are now standard fare: "Look at efforts by MasterSpec and BSD SpecLink to incorporate LEED into their sections," points out Jonathan M. Miller of Davis Langdon Schumann Smith in Vergennes, Vermont.

While there's an "added burden" on the first go-round, "Over time most firms develop a database that allows them to spread the pain over several projects," says Ross G. Spiegel, a spec writer for Fletcher-Thompson in Shelton, Connecticut, and the Construction Specification Institute's liaison to the USGBC. "But in three to five years, it will be totally integrated, a standard practice but an additional service, like rendering."

The AIA must be thinking the same way too, observes Spiegel: Among the 12 new contract forms added to its software last month is a new scope-of-services document for LEED certification. **C.C. Sullivan**



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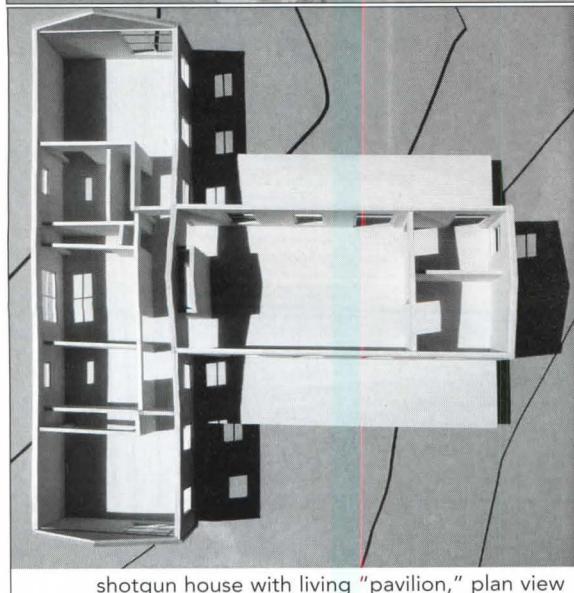
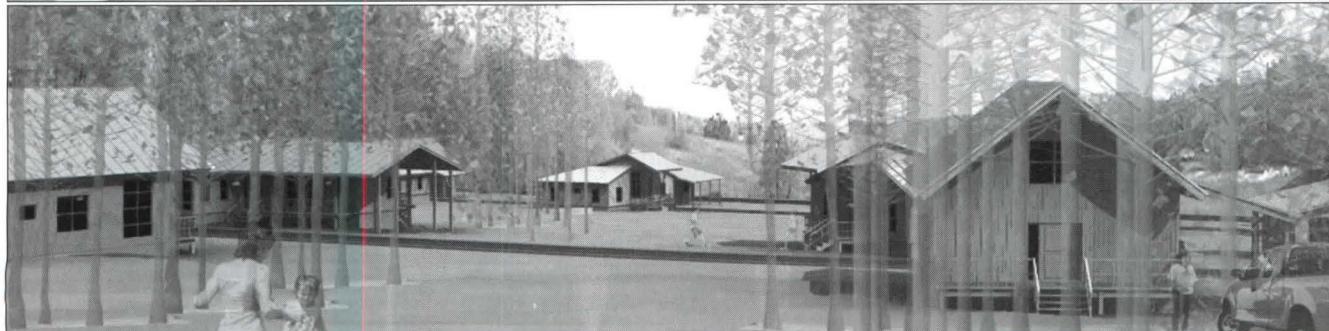
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→ MARILYS R. NEPOMECHIE ARCHITECT WITH MARTA CANAVÉS | "QUILTING HOME" AFFORDABLE HOUSING | ROWAN COUNTY, KENTUCKY

A rare partnership between state agency and public university led to an unusually long community-planning process for "Quilting Home," 28 affordable single-family units on a remote 14-acre tract in Appalachian Kentucky. The solution draws heavily on vernacular building types, an approach that—like quilting, argues the architect—is the "personal inflection of a form derived in equal parts from its use, and from the traditions and patterns of its making." The final site plan, more crazy-quilt than Cartesian, loosely arranges the houses into four neighborhoods according to a "planting strategy" that ensures maximum privacy and autonomy to residents (bottom right)—Appalachia's self-reliant, individualistic citizens tend to prefer isolation. Four dwelling types are synthesized from rural precedents, all with tall public rooms: a T-plan Shotgun (bottom left); a compact single-pen Barn (middle); a family-sized Dogtrot with a generous roof; and a pyramidal Shed (top) with an asymmetrical scissor truss that suggests a hooded barn. The Shotgun and Shed types are dimensioned for possible off-site manufacture, but the stick-built versions, which start construction this summer, each cost \$150,000 to build. **C.C. Sullivan**



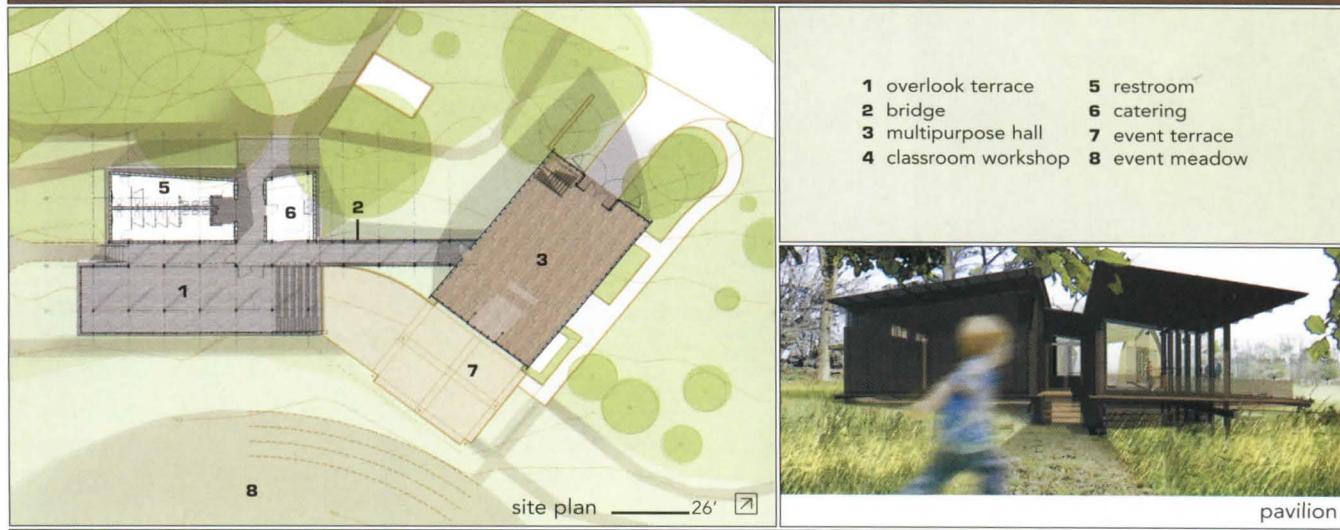
shotgun house with living "pavilion," plan view



site view

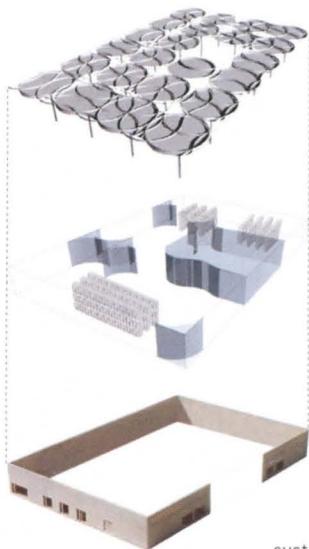
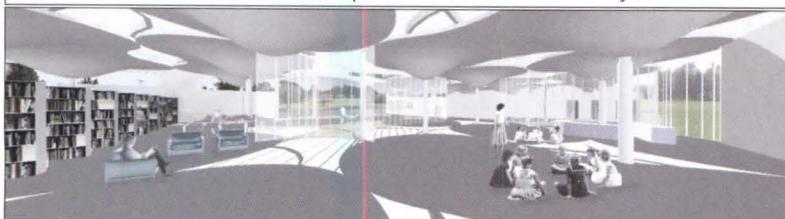
DE LEON & PRIMMER ARCHITECTURE WORKSHOP | YEW DELL GARDENS LEARNING & RESOURCE CENTER |
CRESTWOOD, KENTUCKY

Yew Dell Gardens is the 33-acre home, botanical gardens, and arboretum of the late commercial nurseryman Theodore Klein that recently opened to the public. The property of rolling hills and woods in a rural community east of Louisville contains Klein's Cotswolds-style residence, many outbuildings, and more than 1,000 rare specimens of trees and shrubs. At the edge of a beech-tree allée overlooking a sloping meadow, the site for a new 6,700-square-foot learning-and-resource center holds a circa-1945 mail-order barn, a corncrib, and a small pet cemetery. Scheduled to break ground this spring, the project includes the rehabilitation of the barn, a new pavilion set on wood piers to "avoid existing root zones and minimally impact water runoff and site regrading," according to the architects, and a bridge connecting the two buildings. Echoing the region's pitch-coated tobacco sheds, barns, and fence rails, the project's materials include dark-stained tongue-and-groove siding and decking, tin and polycarbonate roofing, and welded-wire panels. The location and orientation of the pavilion is derived from the informal footpaths and circulation patterns found throughout the gardens. **Abby Bussel**



Located in rural Marfa on the high plains of West Texas, this public library sits on a 27,000-square-foot lot facing a park in a single-story residential neighborhood. Marfa's population of 2,500 and the 6,500 residents of Presidio County include cattle traders, factory workers, border patrol personnel, and an arts community established by Donald Judd in the 1970s.

In addition to the 13,000-square-foot library's collection of 120,000 volumes, it houses reading and writing programs, drama and language classes, and a gallery. The roof—made up of structural concrete "lily pads" supported by poured-in-place-concrete mushroom columns—is dotted with planted gardens and skylights and collects and distributes water and solar energy. Inside, book stacks and undulating glass walls with embedded photovoltaic cells organize the space. A shaded courtyard and an adobe perimeter wall, whose proportions reflect those of the surrounding neighborhood, help to reinforce the local vernacular. Completion is slated for next year. **Anna Holtzman**



systems diagram



ZOKA ZOLA | "TOGETHERNESS" MIXED-USE PROJECT | CHICAGO

With this sustainable mixed-use project, Chicago's Zoka Zola aims to "remove imposed intimacy from the concept of community." The goal? A "togetherness without expectations" and with only "abstract or undefined contact," if any at all. The site—an industrial zone on Grand Avenue about two miles northwest of the Loop—is a nice blank slate for such social engineering. Zola offers verandas, balconies, and open-air corridors for social interaction, all rendered in spare, rectilinear volumes with ribbon windows. (Her inspiration is more ornate: the Art Nouveau housing of Belgian protomodernist Victor Horta.) Horizontal pre-cast-concrete panels tinted with red aggregate interlock at corners and cantilevers ("like Lincoln logs," says Zola), fastened by steel pins. Construction begins next month on the 12,000-square-foot project, which contains four residences of 1,500 to 1,700 square feet, two storefronts, and the owner-developer's 2,800-square-foot home with a large roof garden. **C.C. Sullivan**



read on

As we all know, thanks to repeated reminders since childhood, reading in the dark is bad for our eyes. But is it bad to read in a well-lighted dark place? That is the question posed by Dutch architect Wiel Arets in his new library for the University of Utrecht. "In any library," he notes in his project statement, "the storage of books and other light-sensitive items requires closed spaces, while the study space for students and researchers requires openness." These opposing agendas are reconciled in Arets's design, which is sheathed (inside and out) in black. Boldly colored book spines, moving graphics on computer screens, a bright-red reception desk, and students themselves illuminate the library, as much as the artificial lighting and heavily glazed façade do.



Dark Clouds of Knowledge

Far from passé, libraries are the new black. Wiel Arets's book sanctuary in Utrecht proves it. by Aaron Betsky | photographs by Jan Bitter

It would seem that we don't really need libraries anymore. Recent trends have even promised the disappearance of the book altogether as large Internet search services promise to digitize all of the printed word and make it available on the web. Yet, there has been a spate of new libraries opening up all over the world. In many cases they are public spaces that are as much about activities—classes, lectures, and even sipping coffee or buying a book—as they are about reading. Libraries are becoming the last bulwarks of a culture of acculturation: They are places where you learn, and in learning, become part of a larger world.

If the shining example of this trend is the tortured diamond of the Seattle Public Library (July 2004, page 40) by Office for Metropolitan Architecture (OMA), then its dark counterpart is the new University of Utrecht Library, designed by Dutch architect Wiel Arets. The Seattle building is light-filled and open, with its books disciplined by a continuous spiral of movement rising up out of a base of public spaces, while the Utrecht building is a dark and enigmatic box whose books hover over public voids "like clouds," as the architect puts it. Arets's library all but swallows up 4.2 million books without a trace, leaving a contemplative maze of open and closed volumes as reading rooms.

The building is, ironically perhaps, the focal point of a 15-year-old master plan by OMA for the largest university in the Netherlands. Under the direction of campus architect Arjan Sikkema, the 1960s Uithof Campus has been revitalized with careful additions of buildings that invite students in and house them: OMA's Educatorium (1997) is a collection of classrooms; Neutelings Riedijk's earth sciences building (1997) is shot through with atria and dining rooms; and the tiny Basketbar (2003), designed by NL Architects, turns a small student café into a skate park, basketball court, and communal meeting spot in this world of big boxes. Right in the center, Arets has now inserted a volume of almost 400,000 square feet. It is a dark magnet with no clear entry, no exuberance, and no sign of what it is. The library aims to anchor the rejuvenated campus, not set it loose.

Both the building itself and the 450-car parking garage Arets designed next to it—with room for expansion of book-storage areas on its roof—are covered in glass and concrete panels that have been etched (in the case of the glass) or molded (with the addition of rubber strips, in the case of the concrete) with a large-scale image of reeds produced by the architectural photographer Kim Zwarts, who records all of Arets's work. The effect is a subtle collage of planes, closely matched in color and texture, that look streaked. It is as if the architect wanted the building to look dirty and aged. "We just thought it should look natural in its semirural place," claims the architect.

NAVIGATING KNOWLEDGE

Visitors enter the building either through a small door on the library's short side or from a second-floor bridge to an adjacent academic building. A broad staircase leads up from either entry to a central atrium, and here the building reveals itself. A bright red service-and-reception desk provides orientation, but what really catches your eye

The glass curtain walls and concrete panels of the library are etched and molded, respectively, with a photographic image of reeds.



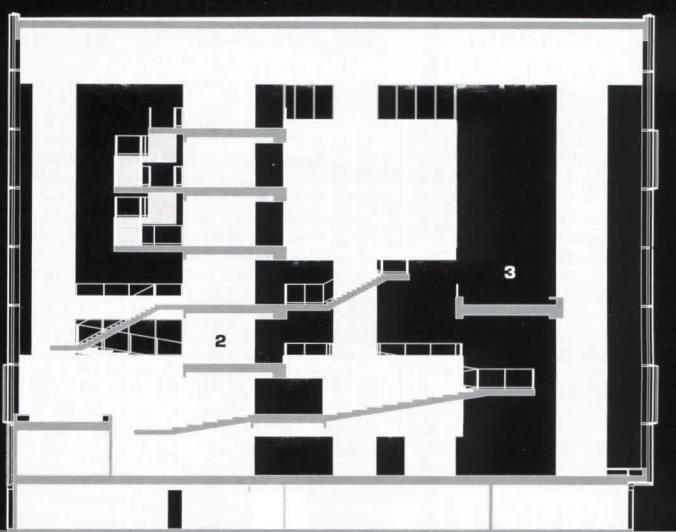
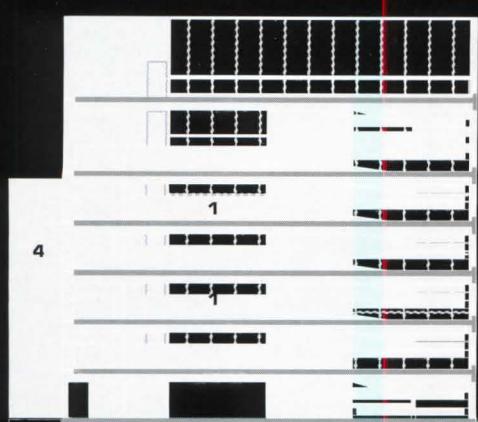






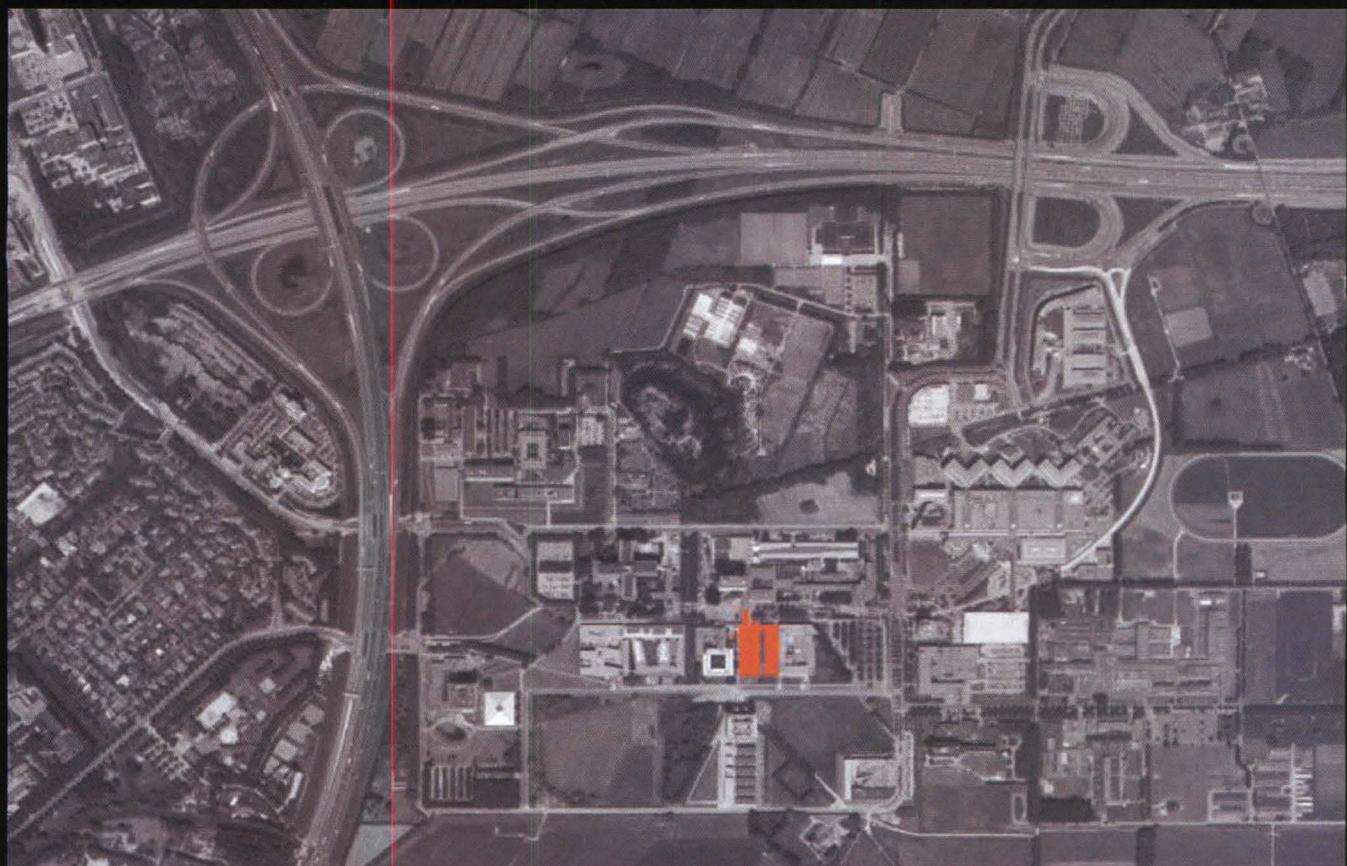




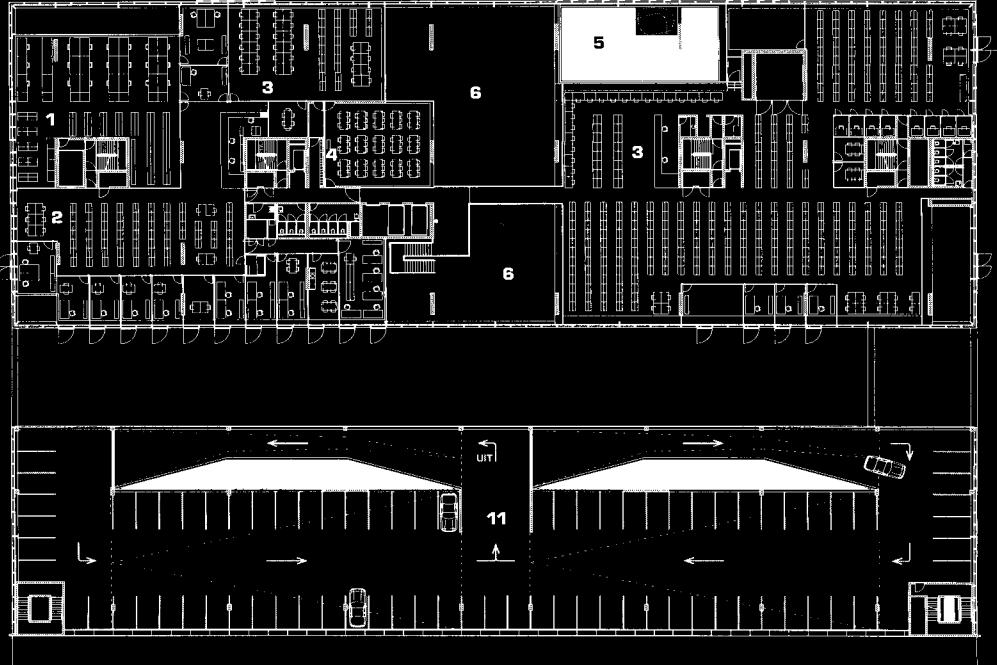


east-west section ————— 9'

- 1 parking garage
- 2 main staircase/entrance hall
- 3 reading room
- 4 adjacent building



site plan ————— 400' ↑

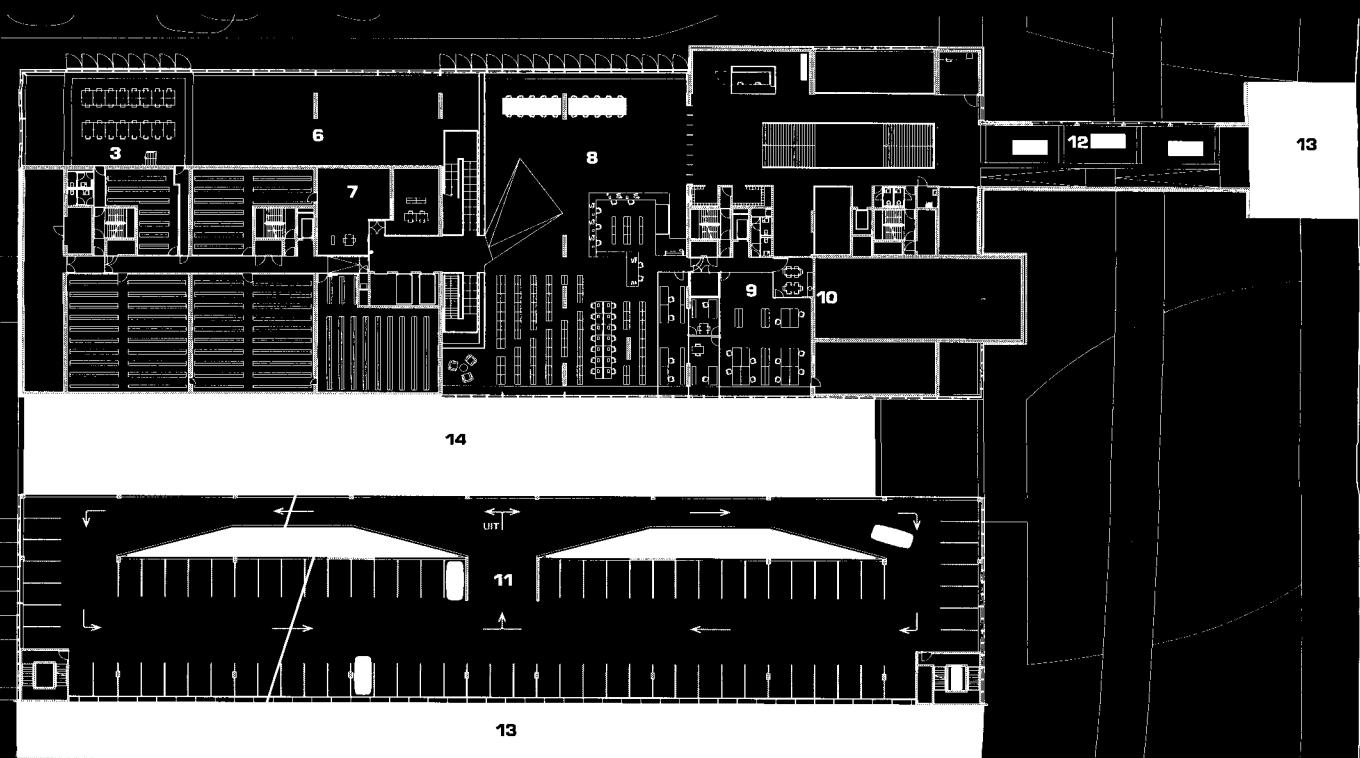


sixth-floor plan

- 1 map room
- 2 open storage
- 3 reading room
- 4 classroom
- 5 roof garden

- 6 open to below
- 7 microform room
- 8 entrance hall
- 9 study room
- 10 auditorium

- 11 parking garage
- 12 pedestrian bridge to adjacent building
- 13 adjacent building
- 14 garden



second-floor plan ————— 18' →

are the large, dark masses of stacks floating above and all about. This central space does not clarify and organize, it introduces and intrigues, inviting you to wander up and around. There is no central circulation system to guide you through the building, only a series of smaller stairs and elevators spread throughout a structure that, with 60-foot spans supported by concrete columns, is remarkably open.

Somehow the library manages to be a clear system despite this confusion. Once you have looked up what you want, you can go to the specialized section or the librarians will fetch the items for you within 20 minutes—the quick access being one of the reasons the university wanted a centralized facility in the first place. The books flow through a series of pneumatic tubes that are interconnected in the basement and accessed at the service desk. Then it is up to the visitor to find the most congenial space to read. "Of course, a library is a place of collective memory," explains Sikkema, "but it is also a social engine, where you meet people, maybe to discuss something, maybe just to fall in love. This building gives you that freedom. But above all else, it puts the activity of being a student, whatever that means, in a context. We wanted a building that would make it clear that this was not just a high school, not just a village center. This is something new, something grand, something that will even make you wonder."

That sense of wonder is dampened by Arets's choice of color. Almost every vertical surface in the building is black, from the outside skin to the stained-concrete forms inside. In combination with what Sikkema calls the "glass in lead" effect of the photo-toetched windows, it fosters a sense of darkness and even, at times, oppressiveness. "I wanted a place of contemplation, a place of rest and clarity in our confused world," explains Arets. "Together with the lighter colored floors and desk surfaces, the black color creates the perfect atmosphere for study."

If this is meant to be a place of gathering and wonder, though, it might have benefited from a bit more joy and openness, but both Arets and Sikkema maintain they have created a perfect antidote to the confusion of student life in the campus around them. Unfortunately, the building is still slightly underutilized, but perhaps that will change as students discover the beauty of the black monolith and all its nooks and crannies. Someday, true love may blossom in those crags, whether it is love of learning, or of another human being, sheltered here under the dark clouds of knowledge. ■

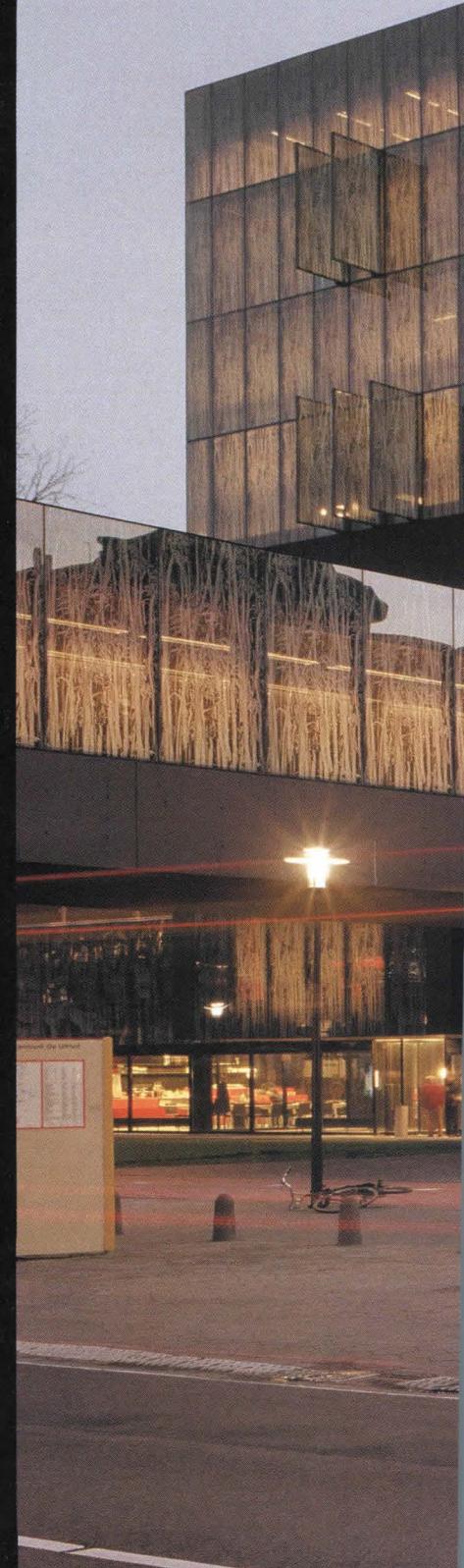
University of Utrecht Library, Utrecht, The Netherlands

client: University of Utrecht **architect and interior design:** Wiel Arets Architect & Associates, Maastricht, The Netherlands—Wiel Arets, Harold Aspers, Dominic Papa, René Thijssen, Frederik Vaes, Henrik Vuust (project team); Pauline Bremmer, Jacques van Eyck, Harold Hermans, Guido Neijnens, Michael Pedersen, Vincent Piroux, Jan Vanweert, Michiel Vrehen, Richard Welten (collaborators); Pedro Anão, Nick Ceulmans, Mai Henriksen, Carsten Hilgendorf, Kees Lemmens, Rob Willemse (model makers) **landscape architect:** West 8 **structural engineers:** ABT Adviseurs in Bouwtechniek, Wilimas Bouwadviseurs **consultants:** Huygen Installatieadviseurs (building services); Cauberg-Huygen Raadgevende Ingenieurs, Adviesbureau Peutz & Associates (building physics); Adapt 3D; Kim Zwarts (façade pattern photograph) **contractors:** Heijmans-IBC Bouw; GTI Utiliteit Midden; Permasteelisa Central Europe **area:** 390,000 square feet **cost:** \$94 million

Specifications

precast concrete: Ergon steel mesh; Inform **Belgian bluestone:** Inform **glass partitions:** Nelissen **acoustic ceiling panels:** Attent **lighting:** Etap (interior); Lichtfocus (parking area); Inform (exit) **carpet:** Balta Group **furniture:** Vitra, Quinze & Milan **bookshelves:** Scheeres **book-delivery system:** Ergotrans **elevators:** Mohringer

This somber box, which becomes luminous at night, may be accessed either at ground level or via a pedestrian bridge that connects to an adjacent academic building (facing page). Inside, the weighty darkness of its black walls is mitigated by ample natural light (preceding pages.)





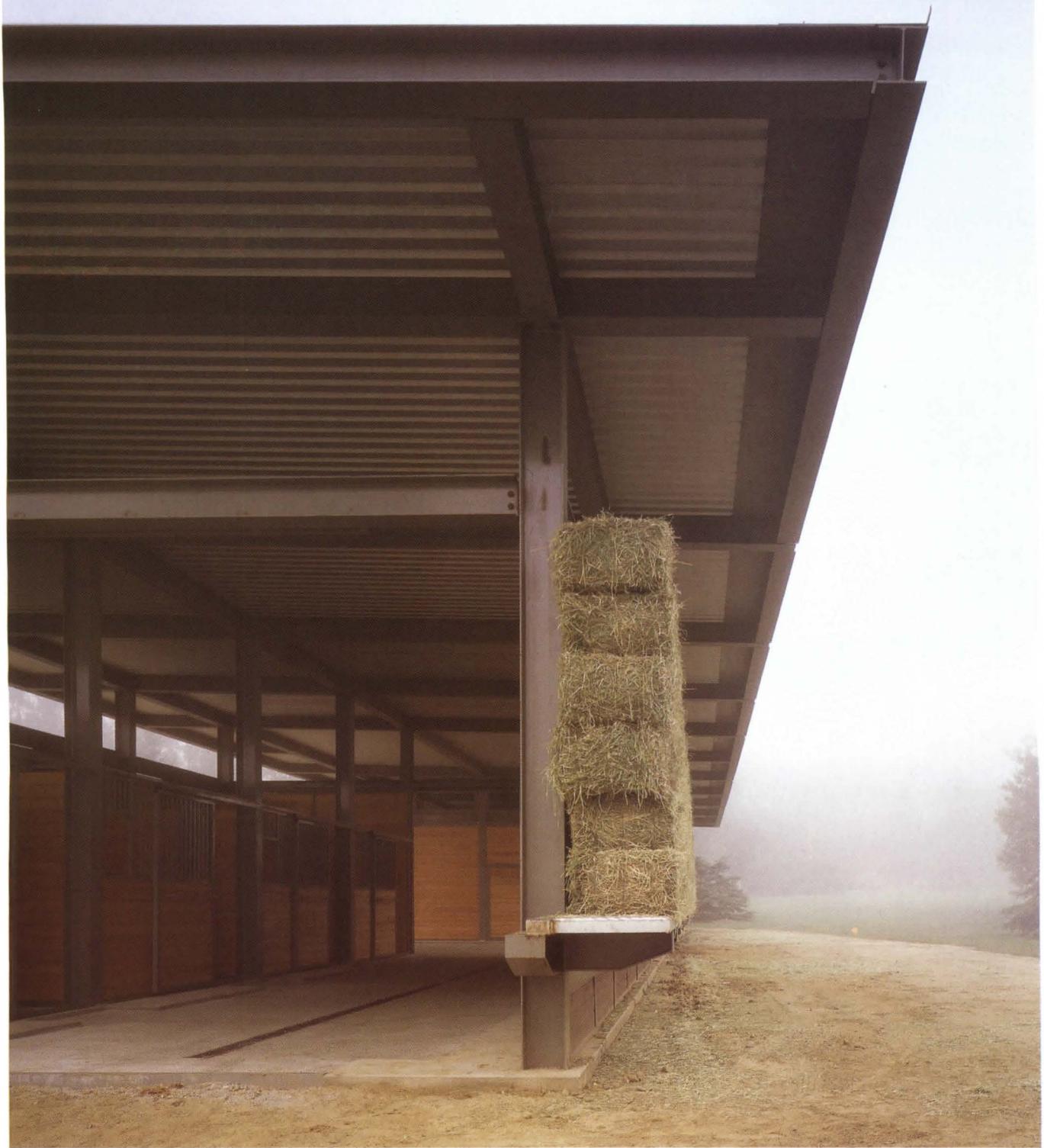
MR. ED'S SHED

For a barn on the California coastline, hay is both fodder and façade at the hands of SPF:a.

BY ABBY BUSSEL | PHOTOGRAPHS BY JOHN EDWARD LINDEN



The open-air horse barn is a constantly changing presence on this 40-acre property in a small farming community. As hay bales are removed from or added to a perimeter storage shelf, the façade's appearance is altered.

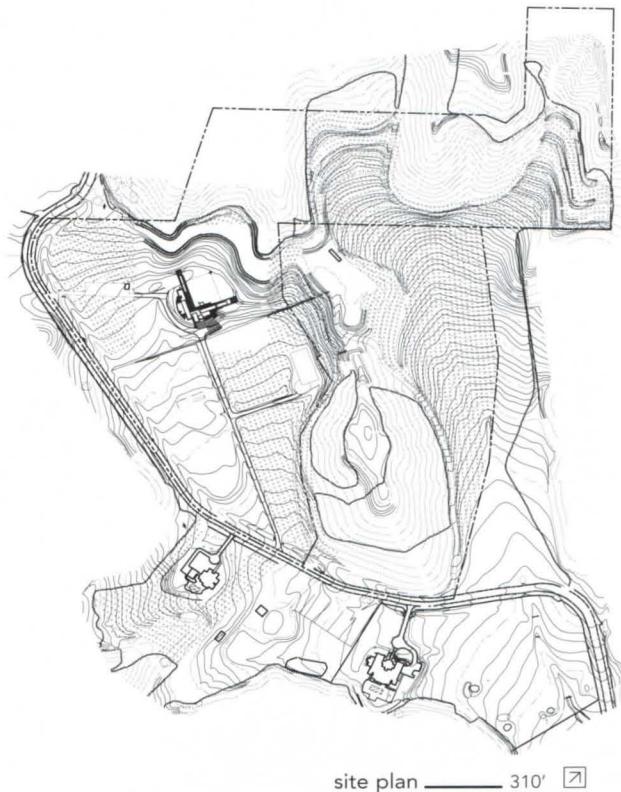


The barn holds four stalls and an enclosed room for farm equipment, feed, and tack. Hay bales are stored on a galvanized-steel grate supported by a painted-steel outrigger fastened to structural columns.

In 1999, the jury for Architecture's P/A Awards gave a citation to a horse barn clad in bales of hay (April, page 104). Juror Thomas Fisher called it "the horse's version of the gingerbread house; you eat it as you go. It solves the problem in a new way, yet it's just a horse stable. How many architects are rethinking the stable?" Turns out that at least one architect, Zoltan Pali, had been thinking about the typology for about a decade.

Back in the late 1980s, a drywall contractor named Steve Sharpe commissioned Pali, principal of Los Angeles-based SPF:a, to design a house on a 40-acre lemon grove in Somis, California, a small coastal farming community about 45 miles west of L.A. "It was during this time that Steve asked me to design a barn" on the same site. "I went through a series of ideas—[including a] Quonset hut—to do something a little more interesting." Time passed, and the house's design evolved, as did the proposal for the barn. Fast-forward to 1999: "Three days before the P/A Awards deadline, I came up with the [hay-bale cladding] idea," says Pali. Pleased with the design and hoping to push the project forward, he submitted the scheme to the awards program without his client's knowledge. The project earned a citation and, last year, the barn was raised. (The house, an L-shaped ranch wrapped in titanium shingles and stucco, is under construction.)

The architect got his exposed hay-bale barn, but some changes were made to the original design, despite his



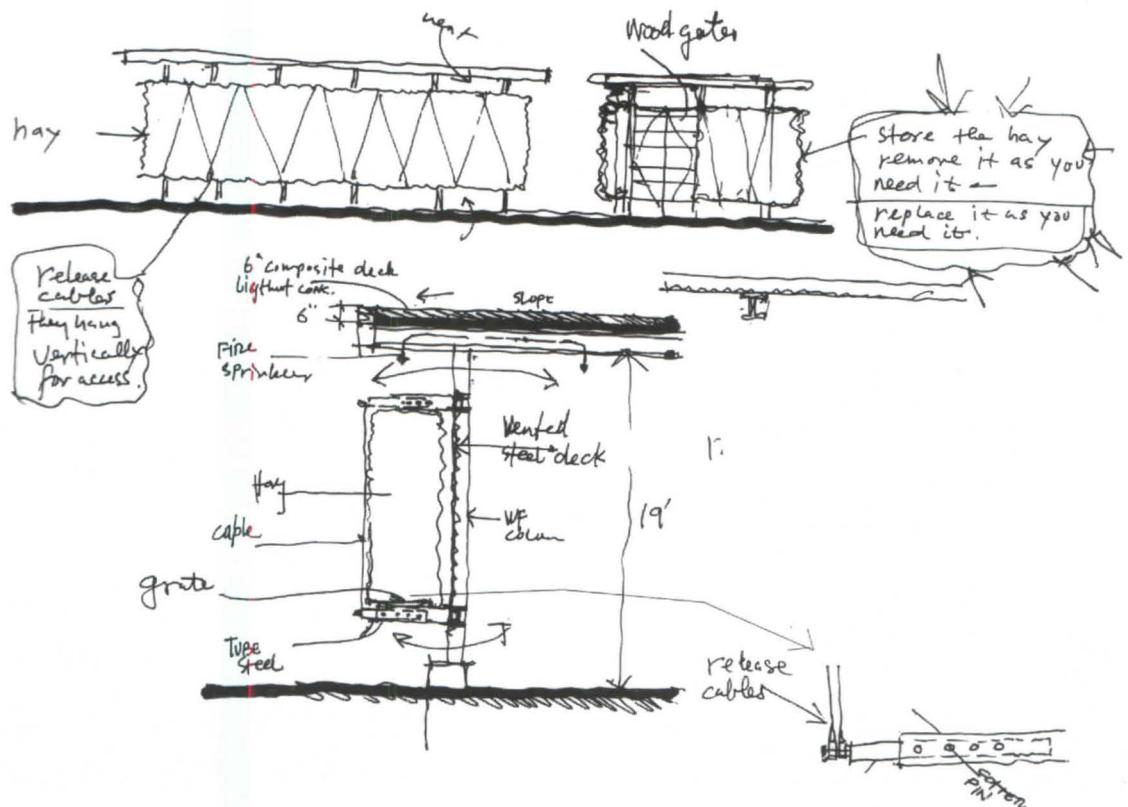
site plan 310'



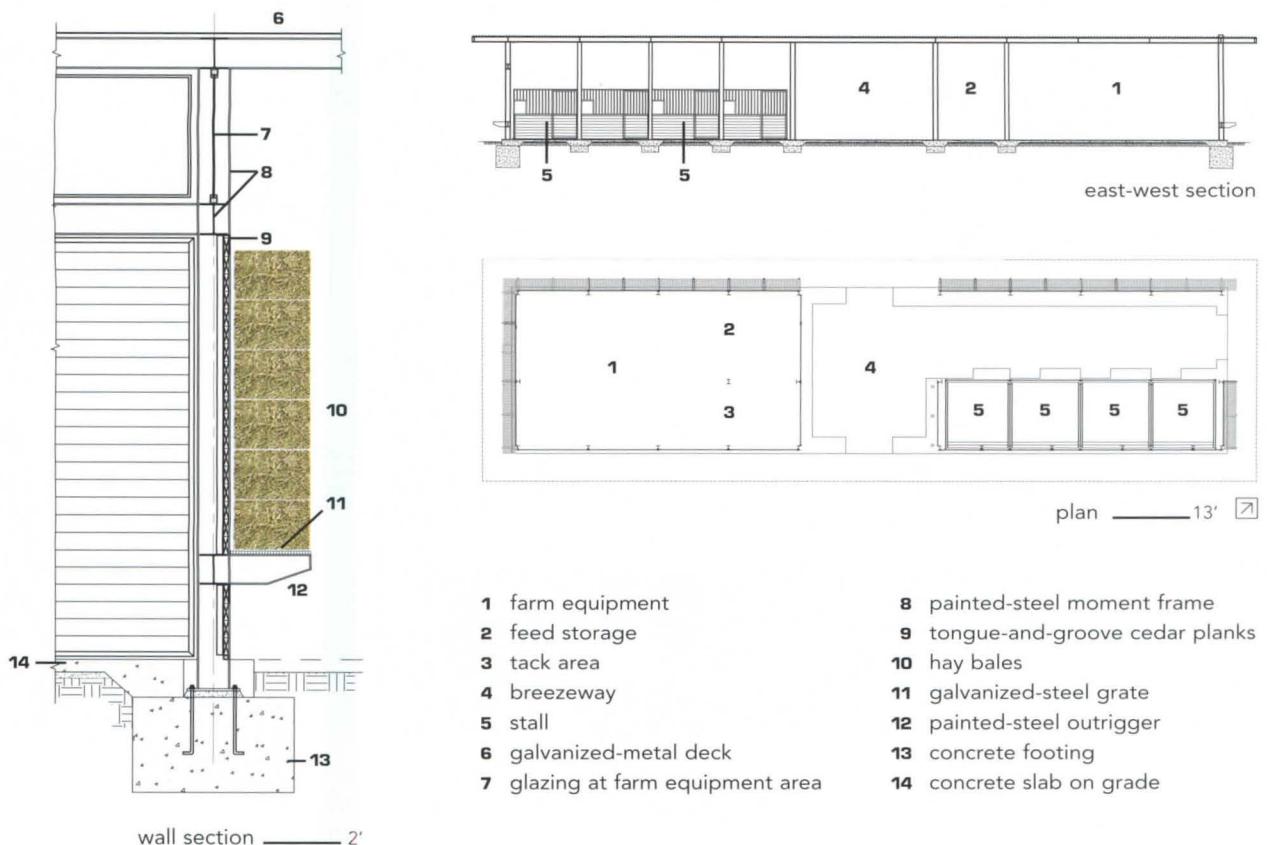
The metal roof deck extends well beyond the barn's edges to protect interior spaces and the stacked bales of hay from the rain.



A breezeway separates the horse stalls from storage areas. The architect originally designed moveable cables to hold the bales in place, but this proved unnecessary, as the friction created by the hay is enough to do the job.



conceptual sketches



- 1 farm equipment
- 2 feed storage
- 3 tack area
- 4 breezeway
- 5 stall
- 6 galvanized-metal deck
- 7 glazing at farm equipment area

- 8 painted-steel moment frame
- 9 tongue-and-groove cedar planks
- 10 hay bales
- 11 galvanized-steel grate
- 12 painted-steel outrigger
- 13 concrete footing
- 14 concrete slab on grade

wall section — 2'

protestations. The winning scheme called for walls of vented galvanized-steel deck that didn't meet the ground: The chosen material and raised perimeter allowing air to pass through the barn and its hay façade didn't make it into the final design. The contractor Castlebrook Barns, a barn builder located in Fontana, California, fought against the vented steel, arguing that the horses could bump into it and get hurt. The contractor was, according to the architect, "hell-bent on using cedar planking to line the barn walls." Another change involved the moveable cables that were to secure the stacked bales to a shelf cantilevered from the barn's steel columns; friction, concedes Pali, holds the bales in place—no cables needed. The exposed structural frame, overhanging metal roof deck, and 12-foot grid were realized as conceived.

Despite minor alterations to the original concept, Pali's barn retains its most potent element: The dual-purpose façade—both storage and skin—produces a building in con-

stant flux. "It has rigor. It has intelligence. And a good sense of humor," commented 1999 P/A Awards juror Mehrdad Yazdani, adding that, "It takes you out of the barn typology. . . [and] combines a very industrial structure with a very agrarian program." Well, hee haw. ■

Somis Hay Barn, Lucky Dog Ranch, Somis, California

client: Steve Sharpe **architect:** SPF:a, Los Angeles—Zoltan Pali (principal); Judit Fekete, Dan Seng, Greg Smith (project team) **structural engineer:** John H. Haigh & Associates

general contractor: Castlebrook Barns **area:** 3,000 square feet **cost:** \$280,000

Specifications

structural system: steel frame **wood:** tongue-and-groove cedar planks **Zincalume-coated steel deck roofing:** IMSA

glass: PPG **door and stable hinges:** Stanley **high-bay**

lighting: Lumark



A 12-foot grid defines the structural system. The storage room (through door at right in photo) has a glazed clerestory, while the rest of the barn is open at the roof to ventilate the interior.



KIDS ON THE BLOCK

A SAN FRANCISCO PRESCHOOL BY MARK HORTON ARCHITECTURE MAKES THE MOST OF A PREFABRICATED STRUCTURAL SYSTEM.

The Montessori Children's Center, a private preschool serving about 60 children, stands on a slice of land between two-story residential buildings in Park Merced, a 1951 suburban development in the western part of San Francisco. Not originally intended for a school, the site was carved out of a patchwork of existing residential lots in order to move the facility from its location in a former athletic building slated for demolition.

Although the school faces a large landscaped traffic circle that is the focus of the Park Merced tract, it does not parade the importance of its location. In fact, the school administration opposed the placement of elements such as a curved wall inscribed with the name of the school that

BY SALLY B. WOODBRIDGE | PHOTOGRAPHS BY MATTHEW MILLMAN

would have been set in front of the building, doubling as a bench. This antipathy to advertising the building's function robs its contemporaneity of some of the impact one assumes a progressive educational approach like the Montessori's would want.

Still, the school's canted street façade, and the blue box containing a reception area that projects from it, attract attention. Set back from the front of the building at the glazed northeast corner, the main entrance is countered by a gated entrance for parents and children to the southeast.

The roof's wide overhang continues along the south side, where it provides some protection from rain and sun. Acting as a strong lid for the long rectangular box, the roof also



The prefabricated steel shed is oriented east-west to maximize passive solar heating and natural illumination through the heavily glazed south side of the building.

defines the building's form by descending to the ground at the west end. The gentle slope downward from east to west was designed to permit the collection of rainwater at the low end for landscape irrigation.

The 4,000-square-foot structure incorporates a prefabricated steel frame and roof deck commonly used for commercial buildings. The system's major benefit was the time saved in the tight construction schedule: The pre-engineered roof and wall members were delivered to the site and assembled in approximately two weeks.

A nonbearing, light-gauge steel stud system frames two generously proportioned classrooms and service spaces on the interior. The windows were built up from lengths of

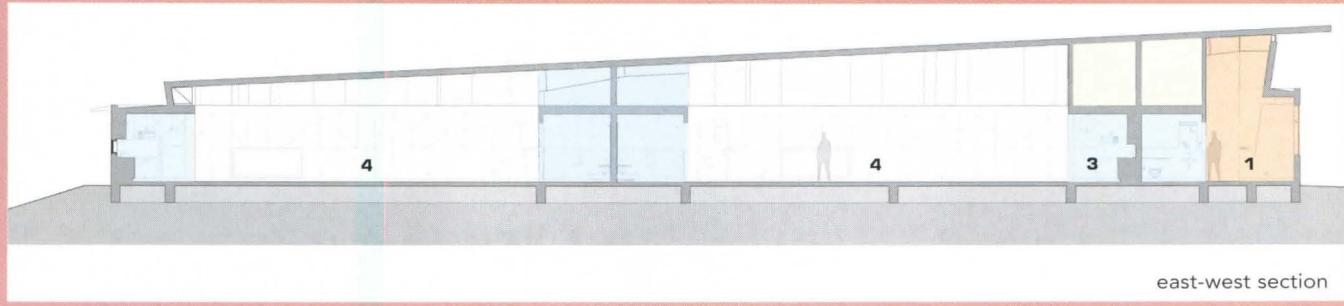
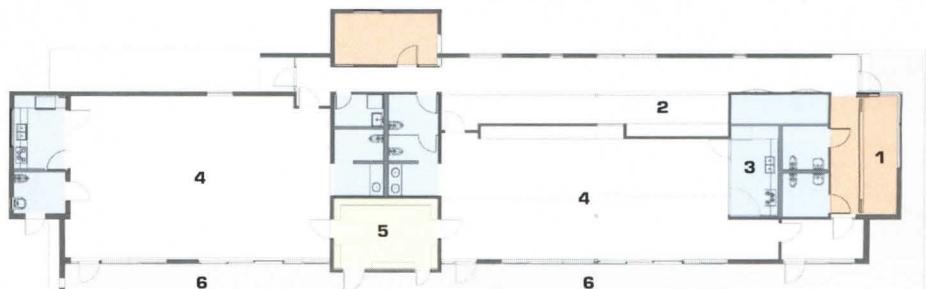
extruded aluminum, delivered to the site and then cut to match the desired lengths for window mullions and door frames. This process permitted adjustments to measurements as needed and facilitated the painterly composition of the south wall. When glazed, the built-up windows were set in the corrugated metal screen walls.

Despite its anonymity, this is a gift box packed with light and airy spaces, all linked to the out-of-doors, that seem just right for the young children who populate them.

Sally B. Woodbridge, an architectural writer for 40 years, is author of *Architecture San Francisco* (Ten Speed Press, 2005)



- 1 reception
- 2 lobby
- 3 kitchen
- 4 classroom
- 5 cubbyholes
- 6 playground





A menagerie of animals shares a room with cubbyholes where the preschoolers store their belongings (facing page). In support of the Montessori teaching philosophy, which emphasizes connecting students to the outdoors, both classrooms open directly onto a playground (above).

Montessori Children's Center, San Francisco

client: Olympic View **architect:** Mark Horton Architecture, San Francisco—Mark Horton (principal in charge); Chris Roach (project architect); Paul Haydu (project designer) **engineers:** Endres Ware Architect | Engineers (structural); MHC Engineers (M/E/P); Brian Kangas Foulk Engineers (civil); Treadwell & Rollo (geotechnical); Charles M. Salter Associates (acoustic) **landscape architect:** Conger Moss Guillard **lighting designer:** DODT Electrical **general contractor:** Northern Sun Associates **Realty area:** 4,000 square feet **cost:** \$1.5 million

Specifications and Suppliers

premanufactured structural system: VP Buildings **exterior siding and roofing:** AEP Span **exterior synthetic stucco:** Parex **windows and sliding doors:** Vistawall **locksets:** Dorma, FSB **exit devices:** Reese **ceiling systems:** USG **cabinetwork and custom woodwork:** Formica **paints and stains:** Benjamin Moore **vinyl flooring:** Armstrong **carpet:** Milliken **cement stain:** QC **kitchen appliances:** General Electric **lighting:** Prudential, SPI, Zumtobel (interior ambient lighting); BK (uplights); Juno (exterior); Portfolio, Panasonic (specialty) **plumbing fixtures:** Kohler, Elkay **bathroom fixtures:** Bobrick

STAIR-CASE STUDIES

The engineer-architect partners of Endres Ware take an interdisciplinary approach to stair design.

by Sally B. Woodbridge

Paul Endres and John Ware formed a practice in 1995 in Berkeley, California, dedicated to the integration of architecture and engineering. Both men received master's degrees in structural engineering and began their careers in the 1980s. They returned to school in the 1990s to study architecture at the University of California at Berkeley where they completed master's degrees. The partners saw training in both fields as a way to help them translate the complex forms of their designs into the grammar of structure.

"Although in the United States both a legal distinction and a historical precedent for a separation between architecture and engineering exist along with a distinct scope of services that we must respect, Paul and I see architecture and engineering as simply the process of designing buildings," Ware observes. "To design appropriately, whether at the scale of a building or an important detail, [one needs] **a sense of proportion, materials, and forces**. Cooperation is just as inevitable as specialization in a world of increasing complexity."

To synchronize the design of form and structure, the firm focuses on the creation of details that convey the integrity of the whole. The design process moves back and forth between the details and the overall structure, refining both until complete integration is achieved. While they have not tested their approach in large-scale structures, Endres Ware's work on elegant staircase structures suggests its promise.

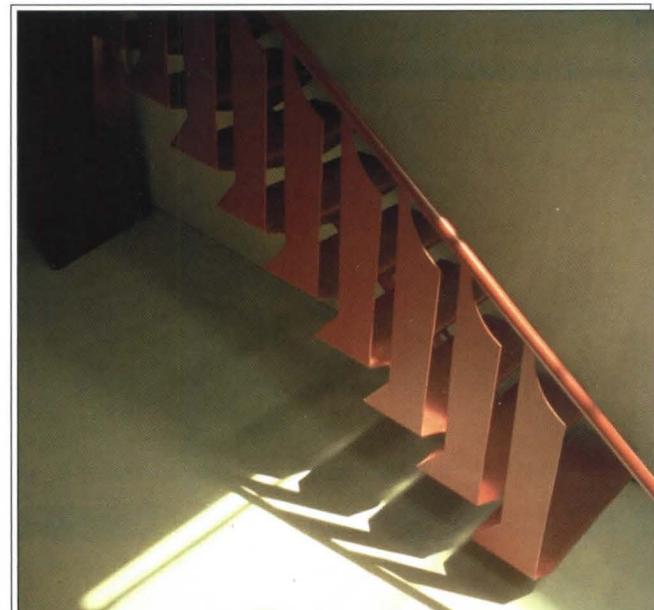
INTEGRATING DISCIPLINES

At Christie Avenue Commons, a concrete-framed warehouse in Emeryville, California, converted into live-work condominiums by architect Don Mill in 1994, for example, Endres Ware designed a freestanding staircase constructed of laser-cut and folded metal sheets, 1/4-inch thick, coated with paint primer. To balance the **deflections of the spiral form**, the treads are not centered on the tubular stringer but are set in a one- to two-thirds ratio that gives them a cantilever along the outside edge. Six such stairways are spaced along a ground-floor corridor where they could double as an exhibition of minimalist sculptures.

Working with Kava Massih Architects and metal fabricator Dennis Leudeman, the firm created a more elaborate staircase in an enclosed, two-story tower for Evolve Software (2000), also in Emeryville. In this case, the stair treads cantilever off a **floating tubular stringer** that rises 30 feet. The stairs are supported by three paired columns from which two arms extend; each arm is attached to the triangular landings by exposed swivel



Endres Ware optimizes the effects of gravity on their stairs, spiraling unsupported, as in the condominium (above); cantilevered, as at Christie Avenue Commons (below); and free-standing, as at the Evolve Software offices (facing page).



connections. These connections were seen as the details that would convey the integrity of the whole design.

For a San Francisco residential building designed by Paulett Taggart Architecture and fabricated by Tony Orantes in 2003, Endres Ware created a spiral flight of stairs that travels unsupported between two floors. Two steel arms project from the exterior wall to **clamp the triangular stringer**. The treads are attached to the stringer by U-shaped sections of laser-cut steel intersected by tubelike balusters. Seen from below, the stairway resembles a chambered nautilus.

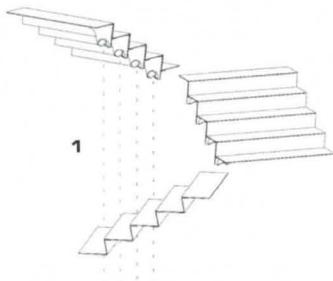
GRAVITATIONAL PULL

Paul Endres believes that, "Engineering is essentially predicting and analyzing gravity's behavior. The typical assumption is that those forces will travel to the ground in the most direct way possible, and typical engineering tries to predict that behavior in an architecturally predetermined form, efficiently and economically."

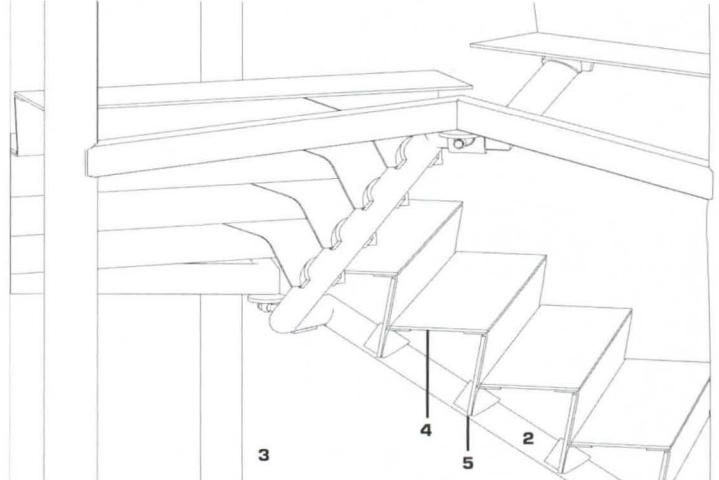
"We want to redefine that line to the ground, **to sculpt these natural forces** into a new structure," concludes the architect-engineer. ■

For Evolve Software, Endres Ware developed a two-story stair tower with treads that cantilever from a 30-foot floating stringer. Triangular steel landings are supported by six free-standing columns, and connections are highly articulated.

- 1 cantilevered Z-section stair treads
- 2 eccentric floating tubular stringer
- 3 freestanding column supports for triangular steel landings
- 4 steel tread
- 5 steel saddle connection



2

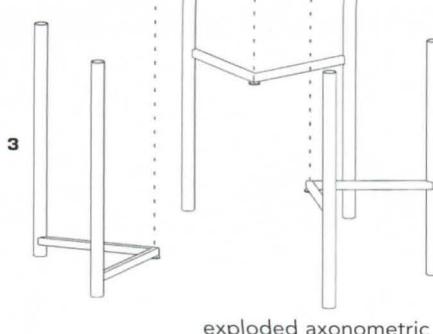


3

4

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axonometric



exploded axonometric



BORN TO BURN

Fire departments find new challenges for a vital training tool, the burn building.

by C.C. Sullivan

The **burn building**—a facility designed for computer-controlled fire training with real flames—popped up all over the country in the 1980s, using novel materials and designs that made them safer and more effective than ever. (Before that, most fire squads used “live fires” of wood and oil in improvised structures and old cars, as well as modular compartments designed for merely observing fire behavior.) More recently, architects have created innovative concepts and details to make them more durable and useful for firefighter preparation.

Recent examples include a three-story concrete structure for the Fire Training Academy on Randalls Island, New York, which features modular componentry for changing layouts and entry points as well as an unusually robust steel liner to protect the walls and ceilings of **fireplace rooms**, the spaces containing gas-fueled fire beds. Next to it stands a 72,000-square-foot “fieldhouse” that doesn’t burn but does promote good search-and-rescue techniques: Under 120-foot steel trusses, its clerestory-lighted atrium contains a Disneyesque streetscape of varied façade types replete with simulated **code violations** and assorted window styles. This setting gives firefighters a realistic feel for the unexpected conditions in actual emergencies.

This compelling archetype, designed along with the burn building by New York City’s Swanke Hayden Connell Architects, reflects the changing needs for these facilities. To meet busy schedules, fire departments conduct multiple drills at once, and they insist that realistic training makes a life-or-death difference. To practice working in elevator shafts, garden apartments, and industrial settings, many burn structures have **balconies, confined spaces, and caged ladders**. A survey of fire chiefs by Antioch, Illinois-based Fire Facilities, reveals another priority: Simulated hallways and multiple burn rooms within a single structure for better search-and-rescue training.

New designs also have improved material integrity to protect against extreme physical abuse and freeze-thaw cycling. While the Randalls Island burn building is made of cast reinforced concrete, such facilities can sport steel structures as well. Critical to performance are **liner materials** that shield load-bearing members from direct flame, high-pressure hose spray, and thermal shock. Typical liners for fire-compartment walls include **refractory concrete castings** and steel plates coupled with insulating panels. Other design considerations: Roof and floor live loads should be at least 100 pounds per square foot, and wall and roof surfaces should be flat, with beveled edges for safe **rappelling and laddering**. After all, as fire training becomes more realistic, so too should it become safer. ■



burn building sources

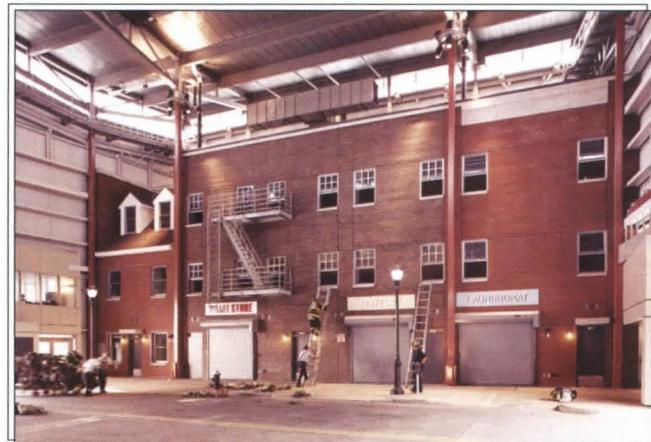
FIREBLAST 451, RIVERSIDE, CALIFORNIA
(FIREBLAST451.COM)

FIRE FACILITIES, ANTIOCH, ILLINOIS
(FIREFACILITIES.COM)

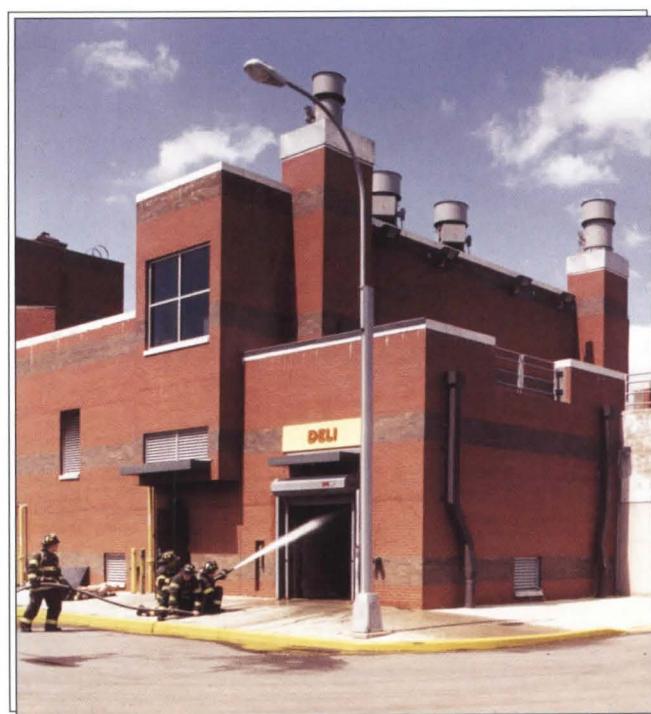
HIGH TEMPERATURE LININGS, FAIRFAX,
VIRGINIA (FIRETRAIN.COM)

WERNER-HERBISON-PADGETT,
OVERLAND PARK, KANSAS
(TRAININGTOWERS.COM)

For more info, circle 150 on page 89.



A state-of-the-art fire training facility in Randalls Island, New York, includes fireplace rooms (top), a novel “fieldhouse” with a Disneyesque streetscape (above), as well as a three-story burn building (below).



BRACE FOR BIM

The arrival of building-information modeling seems inevitable. Are U.S. architects ready for a revolution?

by C.C. Sullivan

Coming soon to your firm, whether you like it or not: A novel technology for designing, constructing, and operating buildings known as building-information modeling, or BIM. And it will render your business unrecognizable.

This isn't Chicken Little talking. Those in the know compare the transition to BIM to the inevitable and somewhat painful adoption of 2-D CAD in the 1980s—unfavorably.

Why is BIM inevitable? Mainly because "the primary driver is the client," says Dominic Gallello, CEO of Graphisoft (graphisoft.com), offering some examples. "The GSA, the largest client in the United States, is about to mandate BIM deliverables," he points out, alluding to the U.S. General Service Administration's recent request for information on BIM. So are such huge corporate builders as Intel and General Electric, and major institutions like the Coast Guard and the Smithsonian. Even general contractors and design-build firms are forcing the issue for architecture firms, say others. To get commissions, it seems, designers will eventually have to adopt BIM tools.

And why might it be painful? While technology vendors and architects alike describe plentiful benefits for architecture firms, they also concede that BIM will shake them up by **resequencing the design process**; raising new personnel and copyright issues; redefining professional liabilities; altering project communications; and even changing how designers are compensated.

"There are no precedents at all for this. We're going to have to develop business standards that go way beyond what's in the AIA's standard forms," concludes Robert Anderson, a vice president with Nemetschek (nemetschek.com). Clearly, this change will take some doing.



IS FRONT-LOADING A GOOD THING?

Of course, just as some architects still toil with pencil and bumwad, a lucky few will be spared the wrath of BIM. But most design firms will need to employ the tools, at least on some projects.

For the unindoctrinated, the idea behind BIM isn't exactly new. As early as 1989, consultants like Dianne Davis of AEC Infosystems, Baltimore, talked of a **"front-loaded process"** using 3-D models with embedded information to speed up building projects while reducing risk. Today's BIM programs—Graphisoft's ArchiCAD, Nemetschek's VectorWorks Architect, Autodesk's Revit, and Bentley's MicroStation and Bentley Architecture—more or less do that. The approach is touted for its many "downstream" benefits, such as accurate estimating and scheduling, efficient handoffs from the designer to fabricator to contractor, improved on-site coordination, and the rich, versatile databases describing facility components and assemblies.

A revolutionary concept, yes, but one that raises basic questions: For example, is front-loading construction projects a good thing? And do the **downstream benefits** accrue to all parties?

On the first issue, design architects have mixed feelings. On the plus side, BIM "really forces designer to think about constructability when they normally wouldn't," says Larry Rocha, chief information officer with Wimberly Allison Tong & Goo, Newport Beach, California. "But that raises **liability issues**, especial-

Design architects think of BIM as a tool for CDs, not concept development. Many prefer to use more freeform programs in early phases, like SketchUp, which HKS used to design RadioShack's new digs.

ly for firms that do only early-phase design work." Not only that, but the programs "focus more on the quantitative aspects rather than the qualitative aspects of design," says Ken Jensen, a senior designer with Weber+Thompson in Seattle. "BIM seems more targeted at the late schematic, design-development, and construction-document phases."

Clients, on the other hand, are less conflicted. "BIM solves problems before they surface in the field," contends Ricardo Aparicio, a capital-project manager for General Electric in Birmingham, Alabama. "And the more integrated systems allow owners to make decisions earlier that are more cost-effective."

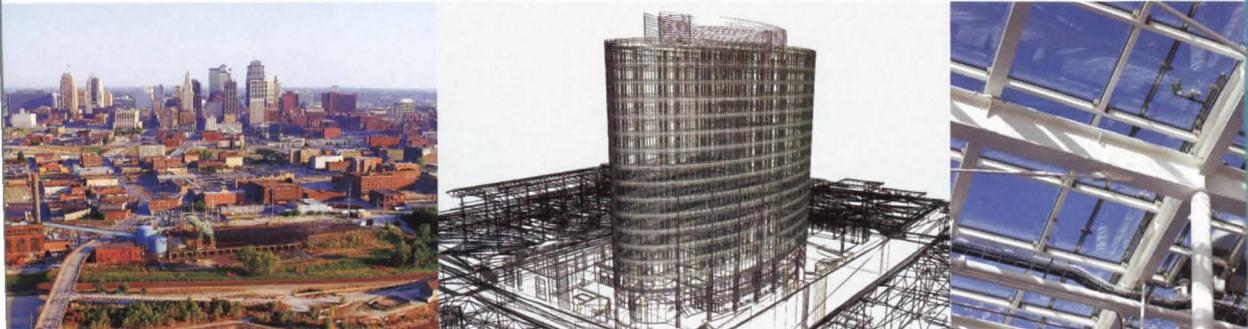
DOWNSTREAM OR MAINSTREAM?

On the question of sharing downstream benefits, even BIM's proponents admit that architects will get less of the capital—and more of the shaft, so to speak.

"Some clients who can control the relationship may see the BIM model—with its libraries and symbols—as free, highly manipulable information for their in-house teams to use," says Anderson, who thinks architects should own the model, an "instrument of service" no different from drawings or specs. Still, he



Build outside the box.



Idea:

Create an iconic global headquarters for H&R Block that also serves as a centerpiece in the revitalization of downtown Kansas City.

Realized:

By adopting an Autodesk building information modeling solution, 360 Architecture will break the traditional square mold of KC's skyline by creating an inspirational modern ellipse. They are able to design with the best possible information, document the construction more efficiently and reduce coordination problems to make sure that every dollar spent goes into the beautification of the area. From skyscrapers in the Midwest to surf shops in Melbourne, Autodesk's products and solutions can help architects and engineers realize their ideas to compete and win.

To learn more, visit autodesk.com/building

believes, "It's fraught with liability issues and **intellectual-property** concerns that may force states to pass new legislation."

Another issue is how the front-loaded design process forces architects to make decisions typically reserved for consultants or contractors, thus increasing their scope of services—and man-hours. "One of the biggest tensions in the process is that architects and engineers think they do all the work and don't get compensated for it," says Phillip G. Bernstein, an Autodesk (autodesk.com) vice president.

Most observers hope that **fee structures** change with BIM. "Architects might have to do a little more work, for example, in order to make it easier for the mechanical engineer to lay out ducts," says Huw W. Roberts of Bentley Systems (bentley.com). "But the architect should be paid for the extra work."

"Architects tend to be undercompensated already, given the general complexity of the issues they manage and the risk they take," contends Anderson.

The widely held assumption that BIM dramatically enhances productivity may take the edge off of these concerns. More vexing are questions about how the technology adds new expectations of the architect. "Anything in the design can be scheduled in BIM, so who's responsible for **extracting quantities**? The architect, contractor, or software maker?" asks Rocha. "And who will lead on constructability issues?"

THE RECALCITRANT DESIGNER

Such questions are hard to answer, but BIM's biggest proponents aren't really worried. Owners see it as a door to new business methods, says Roberts, and contractors see ways to "streamline their processes and increase their marketability," adds Gallello. And a small slice of design firms, motivated by marketability, new efficiencies, or even breakthrough designs, are also tinkering with BIM.

But most architects won't heed Chicken Little's cries. Should they be forgiven for their recalcitrance?

"Firms generally do not like being early adopters," says Ian Howell, CEO of Newforma, a software developer in Manchester, New Hampshire. "They have been burned too many times trying software that promised a lot and didn't deliver or was too difficult to deploy. And the cost of changing tools is enormous." ■

3-D Modeling (Without the BIM)

- ☒ product: **Shade 7 Professional**
- ☒ manufacturer: **Curious Labs**
- ☒ web: curiouslabs.com



- ☒ product: **form-Z 5.0**
- ☒ manufacturer: **auto·des·sys**
- ☒ web: formz.com



CAD-compatible Shade serves up advanced modeling, lighting, and rendering tools for architectural applications. Intuitive Bezier curves and surface modelers—as well as features like "RoomPlanner," with its drag-and-drop building components—help speed concept development. Rendering quality benefits from such features as global illumination and solid texture shader.

- ☒ product: **SketchUp**
- ☒ manufacturer: **@Last Software**
- ☒ web: sketchup.com

The simple toolset and intuitive nature of SketchUp—with its patented 3-D edge-modeling system—make it a tool of choice for designers who like working on paper but need a speedier medium. Dallas-based HKS employed the software to streamline decision-making during the design reviews and approval processes for RadioShack's new headquarters (image on page 77).

- ☒ product: **IX SPeeD**
- ☒ makers: **ImpactXoft, Lattice3D**
- ☒ web: impactxoft.com

New software suite converts and publishes 3-D data from all major CAD formats into XVL, compressing the models by more than 98 percent. Developed for industrial SPD (simultaneous product development) applications, the program also can be used to turn architectural data into document files, PowerPoint and Flash presentations, and interactive Web output.

Release 5 of this freeform design program is the first native Mac OS X version. Abundant new features include: four new primitives of ruled parametric surfaces, including the hyperbolic paraboloid; a plug-in that derives framewise structures by converting object edges and vertices into round beams and spheres; and "doctors" that detect and repair irregularities on objects or projects.

- ☒ service: **aerial videos and stills**
- ☒ provider: **SkyPan International**
- ☒ web: skypanint.com



Using remotely piloted vehicles, this aerial photographer creates videos and still images ideal for composite renderings and for showing prospective clients and tenants future views from unbuilt projects. Trump Tower Tampa (above), now on the boards at the firm SmithBarnes Santiesteban Architecture, has deployed the service for presales promotion.

FOR MORE INFORMATION ON CAD SOFTWARE AND HARDWARE, CIRCLE 150 ON PAGE 89.

■ product: Reach
 ■ manufacturer: Allsteel
 ■ web: allsteeloffice.com

This new system of case goods and storage increases the capacity of the standard 8-foot-by-8-foot workstation. Stacking units of shelves and drawers integrate into cubicle walls—increasing open floor space—and open shelves, drawered units, and lockable cabinets combine with a series of different work-surface materials to allow customization of the workspace. Standard paint colors, Pantone colors, veneers, and Allsteel's Landscape Finishes can be specified.



■ product: Pet Lounge
 ■ manufacturer: Turnstone
 ■ web: turnstonefurniture.com

This new line of contract seating is Turnstone's answer to environmentally conscious contemporary design. The surface is constructed of a "blanket" made from polyethylene terephthalate, or PET—the same material as plastic bottles, 13 of which are recycled into use on each chair, compressed, and heated to form a rigid, feltlike material. Supported by a platinum-finished tubular-steel frame that is molded for easy stacking, the chair is available with or without arms in dark gray flannel and a lighter heather gray.



■ product: Elbow chair
 ■ manufacturer: Carl Hansen & Son
 ■ web: carlhansen.com

Designed by Hans Wegner in 1956, this midcentury modern classic is in production for the first time. Stackable, the wooden chair is suitable for residential applications, but also durable enough for contract use. The body is available in three varieties of wood—ash, beech, and oak—and can be paired with an array of seat options, including five shades of leather and more than 30 fabric colors.



■ product: Liberty
 ■ manufacturer: Humanscale
 ■ web: humanscale.com

This new task-and-conference chair, by industrial designer Niels Diffrient, rethinks the application of mesh in office seating. Instead of a single piece of fabric that requires an exterior lumbar support, Liberty employs three panels of low-stretch material arranged as a contoured ergonomic surface. A counterbalance reclining system adjusts automatically for individual users without the need for manual controls. The product uses 50 percent recycled material.



FOR INFORMATION ON FURNITURE AND CASE GOODS, CIRCLE 149 ON PAGE 89.

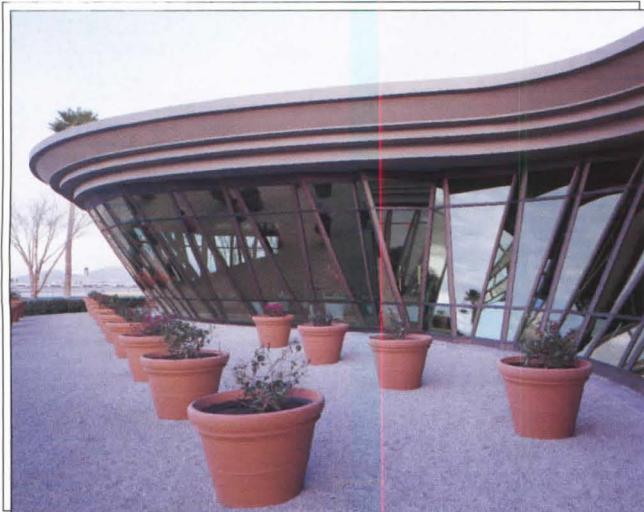
- product: Designer Series
- manufacturer: Pella
- web: pella.com

The Designer Series features window treatments installed between the two glass panes. The interior panels open to allow the treatments—which come in 10 blind colors, 15 cellular shade colors, and unfinished wood grills—to create a smaller-pane effect, and to be removed or exchanged. This option is available in double-hung, casement, and awning windows, as well as in sliding and hinged patio doors and transoms.



- product: Oceans of Color
- manufacturer: PPG Industries
- web: ppgglass.com

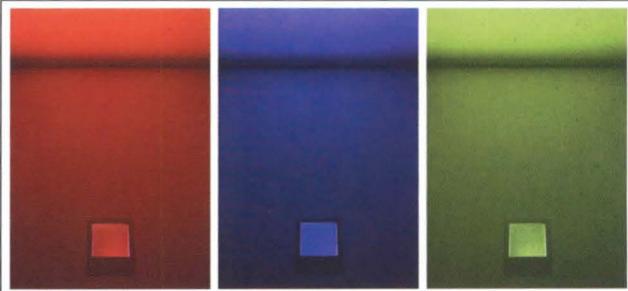
Spectrally selective architectural glass in four ocean-inspired hues—Atlantica, Solexia, Caribia, and Azuria—provide color options while enabling buildings to rely less on artificial lighting, heating, and cooling. Each of the four colors offers high visual-light transmittance, especially for tinted glass—the highest being Solexia, with 69 percent for a 1-inch insulating unit.



FOR INFORMATION ON WINDOWS, CIRCLE 147 ON PAGE 89.

- product: Atrium Multichrome
- manufacturer: Erco
- web: erco.com

These uplights provide indirect lighting with three separately switchable lamps in red, green, and blue. A horizontal diffuser acts as safety glass and the dark light reflectors eliminate glare. The recessed fixture is available in two housing sizes for tungsten-halogen lamps, metal-halide lamps, or compact fluorescents.



- product: Birzi, Goggle
- manufacturer: Luceplan
- web: luceplan.com

A functional light source with a sense of humor, the Birzi table lamp (below), designed by Carlo Forcolini, is made of malleable pressed silicone. The incandescent fixture comes in white, orange, and green, and can be reshaped according to the user's mood. Designed by Ross Lovegrove, Goggle is an elliptical lamp in opaline polycarbonate that can be fixed to the wall singly or in rows. It is also available in a mirrored version.



- product: Ether
- manufacturer: Visa Lighting
- web: visalighting.com

Ether has a low-profile linear design with die-cast triangular end caps, an extruded aluminum housing, and oven-cured lacquer finishes. Options include specialty finishes, fluorescent dimming, and trim bar or lighted reveal.



FOR INFORMATION ON LIGHTING, CIRCLE 148 ON PAGE 89.

EXHIBITION

Perspectives 145: Bodys Isek Kingelez | Contemporary Arts Museum Houston | Through May 1

Self-taught Congolese artist Bodys Isek Kingelez creates models of imaginary buildings and cities from cardboard, decorative papers and foils, and found objects. His whimsical designs for massive civic buildings, such as a complex titled *Mundial Isek Sport* (right), can be read as a response to the struggles of the Democratic Republic of Congo to build a postcolonial society and a city—Kinshasa, the capital, where the artist lives and works.



Part of the Contemporary Arts Museum's "Perspectives" series, which is dedicated to lesser-known contemporary artists, the show includes a selection of Kingelez's work from the early to mid-nineties, including five freestanding structures, each a few feet square, and a city spanning a low pedestal of about 20 feet by 10 feet. Entitled *Ville Fantome*, the urban plan is a fantasy of international cooperation, comprising various cultural buildings, skyscrapers, and transit centers labeled with the names of cities and countries from around the world. Given recent Western trends toward privatization and the difficulties global institutions face staying afloat in an increasingly free-market world, Kingelez's work presents a radical statement of support for civic life. Given his limited experience, the artist's particular urban vision becomes even more interesting: Kingelez had never visited any city other than Kinshasa until he began to receive recognition for his work. **Julia Mandell**

EXHIBITION

Mexico City Dialogues | Center for Architecture | New York City | Through May 7

In *Mexico City Dialogues*, architect and curator José Castillo explores not only his city's newest talents, but also the vastly contradictory urban conditions that inspire their creative solutions. Data analyses, mappings, and texts illuminate the peculiar juxtapositions of Mexico City: It is a metropolis of extreme wealth and severe poverty, in which three-quarters of all housing is built without architects or formal planning. A wall text excerpted from statements by Cuauhtemoc Medina, a Mexico City-based art critic, states, "Places like Mexico City seem to indicate that the architect and the urban planner will end up having a retroactive function: Instead of planning in a utopian manner, they will forever intervene post-de-facto, incrementally reforming what's spontaneously been created by society itself."



Among the 14 recent projects displayed, several exemplify Medina's statement, including the San Pablo Ozotepetec Market (right), an outdoor marketplace inhabited by a variety of food and dry-goods vendors. The "before" photos reveal a chaotic scene in which each vendor has constructed his own shelter, a patchwork of brightly colored tarps and disparate materials. Architect Mauricio Rocha Iturbide standardizes the indigenous forms with a muted, consistent color palette and more durable materials. The effect, ironically, dulls the liveliness of the haphazard originals. But take away the romanticizing lens of the outsider, and these architects have achieved a more livable built environment, while preserving the core forms of spontaneously emerging structures. **Anna Holtzman**

BOOK

Competing Globally in Architecture Competitions | edited by G. Stanley Collyer | Wiley-Academy

Encapsulating editor G. Stanley Collyer's almost fetishistic obsession with design competitions, this second effort in the "Architecture in Practice" book series combines no-nonsense advice with architecture-world legend. A pragmatic first chapter by Collyer—who also directs The Competition Project and its *Competitions* magazine—and a country-by-country appendix offer good advice for emerging architects with high international aspirations. (The gist: Compete, but do so judiciously.) Anyone



else will enjoy reading about the politics and personalities behind major design contests from around the globe, not to mention viewing an amply illustrated range of project solutions—such as Enrique Norten's winning design for Brooklyn's Visual & Performing Arts Library (left)—including those by well-known runners-up. Organized by six building types—government, performing arts, education, public library, museum, and housing—the book illuminates such issues as making civic places secure and fulfilling latent expectations that museums become "urban generators" for "world-class cities." Overall, this is a concise and worthy read filled with inspirational stories of architects who overcame the odds. **C.C. Sullivan**

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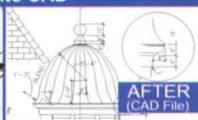
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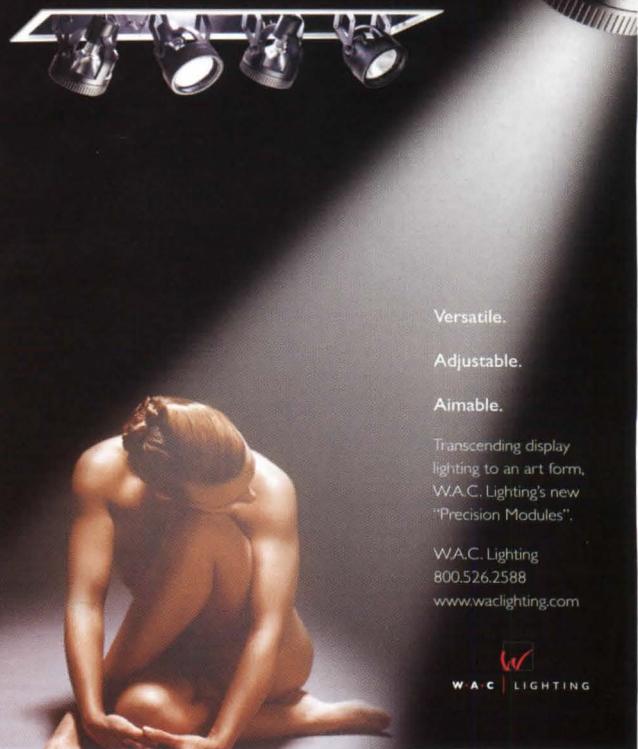
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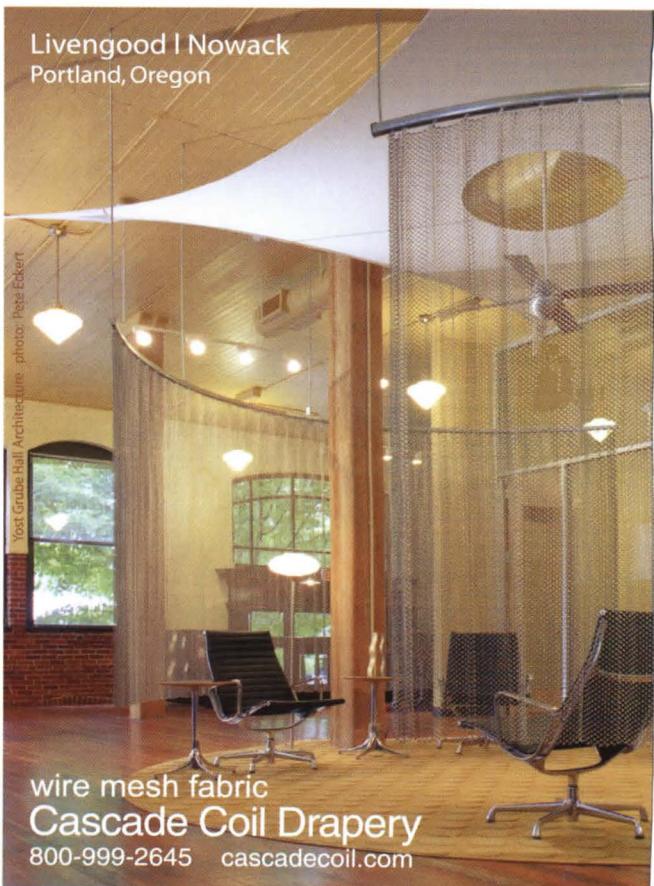
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MUSEUM TO VISITOR: PLEASE BE SEATED. ON THE FLOOR.

BY STEVE TOKAR

As art lovers and New York expatriates, my wife and I eagerly anticipated our recent visit to the renovated Museum of Modern Art (February 2005, page 40). Our enthusiasm lasted about as long as our feet did. Where could we sit to look at the art? Every fourth gallery or so, there was a bench, but no room for us; tired visitors clung to every square inch of seating like sea lions hauled out on the only rocks in the ocean. Exhausted-looking student types, choosing comfort over propriety, plopped down in the middle of the floor. The design wing offered a world-class selection of comfortable chairs—for viewing, not sitting. We left the museum on sore feet, unrefreshed.

We were also puzzled. Why did the new MoMA, with all the interior design opportunities in the world, create so few places for visitors to sit, relax, and view the work? Who makes these decisions in art museums—and why? To get some idea, I asked leading institutions in New York, Boston, and California.

Traditionally, art museums leave the design of galleries to curators, whose primary job is to serve the work, not the visitor. Seating becomes an afterthought. "Benches tend to end up where there's dead space, because you've got room for them," observes Jennifer Bose, director of exhibitions and design at the Museum of Fine Arts (MFA) in Boston. An official of one highly respected West Coast museum contends that the choice often comes down to either "cases with objects, or a seat. Well, you're going to put in the cases with objects. We're paying a lot of money to have those objects here." There are also safety issues: In cluttered galleries, benches are trip hazards that



might interfere with ADA-mandated wheelchair space. Thus, on a busy weekend with many visitors, explained the official with no apparent irony, "You don't want seating in there. If there's nobody in the gallery, you absolutely do want seating."

DISCOMFORT BY DESIGN

At museums of modern and contemporary art in particular, galleries are devoid of seating for reasons of design. Elana Hornstein, manager of visitor programs at the San José Museum of Art, explains that in a show of minimalist or other austere work, "the curator will feel like a bench is actually a visual distraction."

At MoMA itself, according to visitorservices director Diana Simpson, curators have the final word on gallery seat-

Seating shouldn't be an afterthought. People of all ages, types, and abilities will better appreciate great art if they are given the chance to sit down.

ing—and, of course, benches cannot be placed where they interfere with visitor flow or safety. But why does a museum that has just spent hundreds of millions on renovations even have "flow or safety" issues? One reason might be that MoMA still operates on an antiquated model of museum as temple, with the curator as priest. Comfort is secondary. Did the church consult with the peasants on seating arrangements at Chartres? The result is a false dichotomy: the belief that museums must choose between the art and the visitor. In the end, neither is served.

ACCESSIBLE ART

Good gallery design works for both art and audience—and must, if museums hope to survive by attracting repeat visitors. Boston's venerable MFA, for example, has made seating part of a larger initiative to become a more accessible, visitor-friendly institution. "Obviously we're an art museum, and that's our mission," says Bose. "But where we're designing or renovating a gallery from scratch, the seating is part of the thought process from the beginning."

In San Francisco, the de Young Museum is scheduled to reopen this fall in an entirely new building designed by Herzog & de Meuron. From the start, the museum was determined that seating would be integral to the design, and the architects obliged. There are long window seats in major galleries, built-in seating throughout the lobby area, and a grand interior staircase where visitors may sit. "And we asked our curators to incorporate benches into the overall layout for each gallery as they design the exhibition," says the museum's project director, Deborah Frieden. The overall effect exudes comfort, warmth, and elegance.

Unlike many museums, MoMA will never have to worry about a potential shortage of visitors. But it is a model for other institutions. In choosing to renovate itself as a cold, forbidding cultural monument, the Modern has missed a precious opportunity to demonstrate to the world that people of all ages, types, and abilities might better appreciate great art if they are given the chance to sit down.

Based in San Francisco, Steve Tokar is a museum exhibition developer and universal design consultant.

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