How much you wanna bet they'll have lots of parties?

Our windows. Your design. Combining these elements not only creates a haven. It creates a lure. Call 1-800-477-68
ARCHITECTURAL RECORD loves the single-family house. For almost 50 years, since we published architect Ulrich Franzen's own home near Rye, New York, in 1956, this magazine has promoted Record uses as laboratories for design. No other issue of the magazine is more popular with readers than this, serving up a platterful of innovative solutions for modestly scaled freestanding building. Demonstration projects, these successes provide case studies, incorporating social ideals, formal concerns, and historic or material evolution into three-dimensional time capsules.

The temptation today might be to expand the franchise, commissioning a new generation of case-study houses, widening the explorations begun by John Entenza for Arts & Architecture magazine. As Thomas Phinns observes on page 112, who wouldn't wish to build another Eames house? Yet, as excellent as that groundbreaking program proved to be, the case-study houses addressed a specific milieu: California in the years following 1945, where Modernist steel-framed structures were created for a growing middle class in a paradisiacal, benign climate.

What, we wondered, is the case in 2003? To answer that question, ARCHITECTURAL RECORD convened a panel of housing experts last month, sitting a select group of architects and a demographer to lunch, where we discussed contemporary issues in houses and housing. You will be able to read about the results of that luncheon in a subsequent article. The single-family house, the group declared, seemed to be well served, continuing to attract fulfillment work on custom homes for the educated or affluent and provoking excitement to new processes, including prefabrication.

While ARCHITECTURAL RECORD will continue to report on changes in single-family residential design, the experts asked us to consider housing in the aggregate. What happens when we put houses together, allowing how the pieces fit together and how the individual modules relate? The question of multifamily housing has never been more important. Achieving greater residential density, a problem vexing most architects, constitutes design's Holy Grail—decelerating the centrifugal force of sprawl and reducing our need for petroleum products.

Programmatically, the case for multifamily offers a variety of issues. Its vast potential clientele encompasses a range of house types and inhabitants, from ready-to-wear to blue chip. Solutions range beyond shape and array: economic, social, even legislative questions span across the demographic spectrum. Projects need not remain frozen in time, but can evolve, allowing the housing to expand or shrink with changing social demands.

At the same time, by soliciting and showing the best new examples of multifamily housing, we are describing a new urban framework. Think of a low-rise/high-density multiplication problem in which duplexes double to quads, to blocks, to neighborhoods in an iterative approach. The ideal stretches from the English New Town to today.

Throughout the coming months, ARCHITECTURAL RECORD will proceed to highlight examples of the best solutions for proximate living, scouring the newest additions of Amsterdam's Borneo Sporenberg and downtown San Diego. At the same time, we will formulate a new case study, to result in demonstration housing for the coming year: multiple, evolving, reflecting the new dynamics of society.

The new case raises questions. In the era of the megahouse and the S.U.V., can we find satisfaction in compression? Does the American ideal demand a fulsome plot of earth? Will we discover the next chapter to New Urbanism? What is the meaning of family? While we treasure our editorial legacy, and will expand on it, we ask if it is possible to expand the creative American ideal beyond the Record House. Join us on the case.
Create a sense of luxury
with Ginger® accessories
and lights.

Smart detailing. Unsurpassed quality. Serious engineering. Forged in solid brass. Finished by hand. Collections ranging from traditional to art deco to modern.

Ginger
fine bathroom accessories, lighting and decorative hardware

T. 888.469.6511  F. 803.547.6356  E. info@gingerco.com  www.gingerco.com

CIRCLE 12 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
Letters

New-town contemporary

I just returned from America's architectural Mecca, Fort Worth. In complete agreement with the views of David Dillon and his article Tadao Ando's new Modern Museum of Fort Worth [March, page 98], it is a gem, hard for me not words to, to describe this art, meditative, handsone, and properly appropriate setting for an museum. The new-id-driven plan has to be compared with many of the new museums that statements about the architects or museums for art. And perfect that it is "partnered" to Kahn's Kimbell museum. Either, they stand as possibly the best buildings created in the United States in the past 100 years.

Viewing these buildings finds me of the highest aspirations I had as a young architect but thus achieved.

A visit to these buildings would be a must, a pilgrimage, practicing architects and students. Incidentally, the Fort Worth museum has published a small book by Michael Auping, titled Interviews with Tadao Ando, which is a thoughtful, insightful, and inspiring window into the man and thoughts about architecture and museum.

Rob Goldfeder

Dego

town copycat?

Ando blew it. RECORD couldn't have been more right than to say the outside is never as important as the inside for Ando. This thing reminds me of the Kennedy Center by Edward Durell Stone, right to the the water feature.

Joseph La Rocca

Plotte

late for Urban Design?

The building Lower Manhattan* (February, page 46). James Russell noted that critics, led by New York Times critic Herbert Muschamp, have pitted the "progressive" architectural projects against "neo trad" urban concerns and states that the so-called progressives see "architecture as urban design." To date, there has been much discussion about the skyline and little about urban design. It seems as if most critics are uninterested or incapable of discussing what good urban space is and analyzing the proposals in relation to it. Robert Campbell's critique in that issue (page 75) stated, "What are the virtues of traditional urbanism that we should hang on to?" It is about time that these concerns come out.

In the February 6 New York Times article "Balancing Reason and Emotion In Twin Towers Vold," Herbert Muschamp declared that until the Enlightenment, in the 18th century, there had been no secular urban space, only religious space. However, the Greek Agora and the Roman Forum were a balance of both, and from the Middle Ages on there were civic spaces and market spaces as well as religious spaces. The Campo In Siena, Plaza Signoria in Florence, Campidoglio In Rome, and the Louvre, Place des Vosges, and Place Vendôme in Paris, as well as so many canonical urban spaces, were not religious.

Until the late 20th century, urban space accommodated and symbolized events. To copy the style of the past is certainly reactionary, but to utilize the principles gleaned from the great precedent of urban space could be, as it so often has been, successfully progressive. "Instead," as Robert Campbell says, "both in program and in design, the architects and the LMDC are rehashing the late 20th century."

At a recent conference on Urban Design, organized by Columbia and Harvard Universities with the Van Alen Institute, in which I participated, there was a general sense that we have lost the art of urban design—that is, the making of urban space. A challenging question was raised to name any successful urban space that has been made since Rockefeller Center.

It is interesting that only the Peterson-Littenberg project presented a plan in their proposal. One of the critical means of visually rendering and comprehending urban design has been with the plan, or the urban map. The urban plan, like the architectural plan, often tells us a lot about the quality of the design, how a project relates to its context, what relation it has to the form of the city, and even suggests its role in the social patterns of the city.

It was interesting to see the hypergeometry of most of the projects in a site where the grid of Broadway and that generated from the Hudson River provide so much potential as context as well as geometry. Provided here are simple figure-ground diagrams of several of the projects. I believe these are very revealing for Robert Campbell's question, "What would be a good downtown neighborhood for our own time, now in the 21st century?"

These plans were not revealed and not discussed. Rather, the images that first came out and are still being used show a fixation with tall, image-making buildings. To stand at the fine urban street intersection of 5th Avenue and 34th Street in New York City and not necessarily notice that on one corner is a tall building, the Empire State Building, is an important lesson. It's not about style, but rather an example of how to make tall buildings and simultaneously make urban space and place—a problem that is yet to be discussed. I trust that it is not too late.

—Michael Schwarting

Director, Graduate Program In Urban and Regional Design

New York Institute of Technology

Dramamine dreams

I was one of the AJA members fortunate enough to tour Lord Foster's new GLA building [February, page 110] last August. Whilst Brian Curtain and Foster and Partners are justifiably proud of the advancements in design, particularly their pioneering use of 3D technology, there are several flaws with the building that your reporter should have mentioned.

The public courtyard is very hard and completely lacking any landscaping or human scale. Unfortunately, the courtyard has been taken over by the teenage skateboarders who congregate downstairs at the National Film Institute.

Arup's air-conditioning/ventilation engineering may be ingenious and energy-efficient, but it apparently doesn't work. On the upper floors, virtually every worker had a small portable fan on their desk.

Finally, I personally found the combination of ramps floors and ceilings, angled walls and differently angled columns very disconcerting.

After an hour in the building, I felt a sort of seasickness, with a need to get some sort of reference back to the square and true. Strangely, I felt the same sort of relief upon exiting the building onto the embankment as I have when leaving a sailboat or an airplane.

Ken Livingstone and Foster and Partners deserve credit for bringing a very progressive new building to London. However, in my opinion, it must be judged a noble failure.

—Tom Giannini, AIA

London

Out with der old

In his commentary on the Saxon

04.03 Architectural Record 25
Gagecast™ is a cast metal wall surfacing material suitable for a variety of interior architectural applications where patterns that feature high luster, relief, durability, and cost-effective installation are a requirement.

Twenty-four designs are standard, however custom collaboration is encouraged.

Gagecast™ is one component of Gage Vertical Surfacing. Contact the factory for product literature and selected samples.

Letters

State Library in Dresden by Ortner and Ortner [Building Types Study, February, page 152], David Cohn states that this building stands for a “suggestive image of a new Germany in the making.” It can only be hoped his proposition will not come true, and my belief is it won’t. While functionally sound, this library shows an institutional, oblique, even unfriendly face to the public and to its visitors. If this monolithic architecture were to be representative, it would suggest a retrogressive Old Germany, indeed. Fortunately, there is a wide variety of current work in Germany that points to the contrary. The open and inviting Landesbank by Behnisch and Partners in Hannover [February, page 124] is a much better example of things to come, as is the Max Planck Institute [January, page 110], located in Dresden not far from the Ortner’s library. Behnisch designed a widely appreciated library for Eichstätt University some time ago, which has become a trademark for a friendly, youthful approach to that building type—and still stands for a progressive image of German architecture, as well.

—Oswald W. Grube
Herrsching, Germany

The eyes have it

In your December editorial [“Another Pair of Eyes,” page 17] you wrote about The New York Times’ coverage of architecture being left solely in the hands of Herbert Muschamp. Muschamp’s major failing is that he does not seem the least concerned about how buildings fit into their environment. It was very interesting, therefore, to turn the page and see an article about the proposed RISD building in Providence, by Rafael Moneo [News, page 23], who must be one of Muschamp’s favorites. The article quotes Moneo as touting the building as being “so contextual,” which is clearly absurd from the photograph. The proposal has been rightly derided by David Brussat, The Providence Journal’s urban design critic, as antithetical to the characteristic of College Hill. Visible in both photos, however, is the Providence County Courthouse, a tour de force of contextual architecture, breaking up its huge mass into residential-size pieces marching up the hill. Not content with being a blight in the daytime, the proposed building promises to upstage the lighted steeples of College Hill at night, too. There might be a right place for the design, but this isn’t it.

—Larry Cole
Silver Spring, Md.

Corrections

In the March issue, on page 190, the top image (for the Brazil Rendering System) of the Viking Research Center in Mississippi should have been credited to hypertecture and Richard Meier & Partners. Also in March, in the Building Types Study beginning on page 140, the school featured is PS. 156, I.S. 392. For the March profile on page 252, the portrait should have been credited to Brad Baskin. In February News, on page 52, the photo of the Kate and Laurance Eustis Chapel should have been credited to Neil Alexander. Al on that page, the Federal Building United States Courthouse in Centr Islip, New York, was designed by Richard Meier & Partners and the Spector Group. Also in February News [page 54], the proposal by Wickham and Zawadzki, of In Situ Design, for the Pentagon Memorial should have stated that the victim names are engraved collectively on the surface, and the table made of cast bronze. In our spec in March Healthcare Supplement, two photos of the Bronson Methodist Hospital on page 11 should have been credited to Peter Mauss/ES Fendi.

Send letters to editor in chief Robert Ivy at rivy@mcgraw-hill.com. Letters may be edited for style, format, or length.
Libeskind design chosen for WTC site, but process and time-frame questions remain

**John E. Czarnecki, Assoc. AIA, with Kevin Lerner**

ne of the most widely publicized architect selections ever, the design Daniel Libeskind was chosen February 27 for the World Trade Center (WTC) site. The Manhattan Development Corporation (LMDC) and the Port Authority of New York and New Jersey selected the scheme by Libeskind, with Gary Zupan, but the rebuilding process and Libeskind's ongoing role remain unclear.

His face and his schemes appeared on the front pages of newspapers worldwide, but will the entire ship built according to Libeskind’s plan? Will the office buildings, transportation hub, or museum be signed by other architects based on Libeskind’s master plan? And at the time frame for any building?

The LMDC gave Libeskind a 30,000 contract extension in March, which increases the amount of money the architect has earned to $548,817. The contract extension allows Libeskind to do further modifications to the open area intended for a memorial. But what role he play with the design of the transportation component, for example. The New York Times reported on March 12 that Michael Balila, a spokesman for the Port Authority, said, “We haven’t made the final decisions yet. We would expect Mr. Libeskind would be involved in all the different aspects of rebuilding. As of mid-March, it was also unclear if Larry Silverstein, the developer who holds the lease on the WTC office space, will continue as the leaseholder as the rebuilding proceeds or if he will bow to pressure and abandon his interests once the insurance claim is settled in court. If Silverstein does intend to rebuild, will he have an option to select another architect(s) or an obligation to work with Libeskind?

The City of New York appeared to be jockeying to gain a greater role in WTC redevelopment decision-making. Daniel Doctoroff, deputy mayor for economic development and rebuilding, sent a proposal to Governor George Pataki that called for a new commission, with the governor as chair, to lead the rebuilding. With the new commission proposal as of press time.

Plans call for a competition to be announced soon for the design of a memorial for the site. The LMDC announced in March that the memorial will honor all victims as a single group rather than honor separate groups, such as firefighters, police, or tenants, individually.

**Modified proposal**

Libeskind made a few distinct modifications to his plan in February. The most striking change was that the memorial area was raised from 70 feet below ground level to 30 feet below grade with a green lawn underfoot rather than rock. The slurry wall is still visible on the western edge of the site. Libeskind says the memorial was raised to allow the slurry walls to be stabilized with lateral structure. While that may be true, it appeared that the memorial was also raised to allow for the possibility of a bus terminal or PATH train access underneath. A navelike space, as Libeskind called it—about 300 feet long and 30 feet wide—at the northwest corner of the memo-

---

Highlights Pentagon memorial winner p. 37
Toyo Ito in Barcelona p. 38
Diller + Scofidio at Lincoln Center p. 46
Two Chicago exhibitions p. 48
REBUILDING LOWER MANHATTAN

(continued from previous page)

Firm Fox & Hargreaves will succeed George Kirkwood as chair of the Department of Landscape Architecture at the Harvard Design School effective July 1.

Robert Fox, Jr., has left New York firm Fox & Fowle Architects to start his own practice. The parting was “with mutual goodwill,” according to the firm, which will keep its name. Daniel Kaplan, AIA, will join cofounder Bruce Fowle, FAIA, as senior principal.

San Francisco architect Stanley Saitowitz is designing the conversion of a factory into a new home for the University of Waterloo School of Architecture building in Cambridge, Ontario. The facility will open in May 2004.

I.M. Pei, FAIA, will receive the Henry C. Turner Prize for Innovation in Construction Technology at the National Building Museum in Washington, D.C., on April 15. The prize is sponsored by the museum and Turner Construction Company.

French architect Jean Nouvel has designed a new branch of the Guggenheim Museum in Rio de Janeiro. Construction may begin this summer, with an opening in 2006.

Denver firm Fentress Bradburn Architects won a GSA Design Excellence competition to design a $50 million federal courthouse in Cape Girardeau, Missouri.

Shelley Poticha is resigning as executive director of the Congress for the New Urbanism effective July 1.

British architect Peter Smithson died March 3 at age 79. Smithson, a partner in practice with his wife, Alison, who died in 1993, was an influential British Modernist who designed the Economist Building in London.

British architect Peter Smithson died March 3 at age 79. Smithson, a partner in practice with his wife, Alison, who died in 1993, was an influential British Modernist who designed the Economist Building in London.

The tallest tower, a performing arts center, entrance to the transit station, and a memorial museum.

Think revisions

Although it was not selected, the design by the Think team, led by Rafael Viñoly, FAIA, Frederic Schwartz, AIA, Shigeru Ban, and landscape architect Ken Smith, was modified (pictured, left) in February. Think changed its latticework towers from 1,665-foot-tall structures of steel to 1,440-foot-tall towers, each with a smaller circumference and made of lighter-weight stainless steel. Schwartz told RECORD that the new version of the towers was designed to cost $300 million less than the previous one. Within the latticework towers, the museum component was moved down from about the 70th floor to the 35th floor. On the ground level in the latest version, much of the ground immediately around Think’s lattice work towers that was initially proposed as a reflecting pool became a park.

Weiss/Manfredi on board

New York firm Weiss/Manfredi Architects, retained in November 2002 as an in-house urban design consultant to the LMDC, received assignment in March to develop plans for residential, commercial, and waterfront precincts near the WCS

For continuous updates on the planning of Lower Manhattan, visit our special section at www.architecturalrecord.com
Set in a field of trees, the memorial has 184 benches cantilevered over pools of water lit from below.

Flight 77. The cast-aluminum benches will cantilever from gravel paving, and narrow pools of water, lit from below, will be under each unit.

Beckman and Kaseman created opportunities for individual and collective memorialization. A victim's name will be inscribed in each bench. The direction that each bench faces will indicate whether the victim was a passenger of the flight or a person in the Pentagon. The benches are also arranged according to the ages of the victims, and the memorial overall is positioned to follow flight 77's path.

Kaseman adds that the units' tactility, plus the crunching of gravel and placement of maple trees, activates multiples senses so that "this atmosphere really emphasizes life in general and has some kind of sublime beauty behind it."

The Department of Defense estimates that the memorial's construction cost will range between $4.9 and $7.4 million, which will be primarily raised in private contributions. Completion is scheduled for no later than September 11, 2004. David Sokol

**sign by young New York architects selected for Pentagon's 9/11 memorial**

Sign by New York architects Julie Beckman Keith Kaseman—their first major commission—and their first competition entry—has been selected as the memorial to victims of the September 11 terrorist attack on the Pentagon. Beckman and Kaseman were chosen by the U.S. Department of Defense from six competition finalists (February, February 2003, page 52) among 1,126 petition submissions.

Beckman and Kaseman's design for the memorial, called Light Benches, includes a 

**ckman and Kaseman “overwhelmingly honored” to be chosen**

“We wanted a sense of responsibility, Julie Beckman, 30, and Keith Kaseman, 31 (pictured), said they were “overwhelmingly honored” to win the competition. Beckman and Kaseman met as graduate architecture students at Columbia University. Since graduating in 2001, they've completed a few projects as Kaseman Beckman Amsterdam while working for other firms.

**Hitectural Record: What inspired you to enter this competition?**

**K KASEMAN:** First and foremost, it was an emotional response. After the events of September 11. Once we decided to enter, we felt a natural obligation to do something. All we wanted to do was contribute to the conversation.

**AR: What is the core idea for the benches?**

**JULIE BECKMAN:** This is a tribute to 184 unique individuals. We wanted to provide families, friends, and colleagues with a unique and special place to go to and feel good about themselves and the people they're remembering.

**KK: We wanted a sense of place that is highly crafted and articulated—more than just a bench or a pool—with a layer of trees as well.**

**AR: You both took a leave of absence from other jobs to develop this design. What are your plans for the immediate future?**

**KK: The memorial is definitely our top priority.**

**JB: There are so many people depending on us to realize the memorial as it has been designed.**

*Interview by David Sokol*
Toyo Ito unveils twists and curves for Barcelona project

Tokyo-based architect Toyo Ito has been chosen to oversee the expansion of Barcelona’s Gran Via Trade Fair Campus, located on the southwestern limits of the city and the neighboring municipality of L’Hospitalet.

Ito will design representative buildings, including a meeting center, a vaulted entry hall, a serpentine circulation spine (below left), and a pair of landmark 28-story towers containing offices and a hotel. These buildings accompany 2.6 million square feet of exhibition space in six pavilions on the campus. Ito’s project was chosen earlier this year in a competition with Dominique Perrault, Foster and Partners, Weil Arets of Holland, Madrid architects Abalos and Herreros, and Argentine architect Clorinda Testa.

The design plays off the contrast between organic and orthogonal forms and uses moving water as both a theme and a major cooling element. “I wanted the expression of the entire complex to be about oscillation and fluidity,” Ito says. The rippling, twisting shaft of the hotel tower, for example, is repeated in the central core of the glass-walled office tower, which will be visible at night, transforming it into a ghostly twin. The large rectangular hall of the meeting center contains the organically shaped volumes of two auditoriums. It opens to a sunken, water-covered plaza and a promenade of fountains along the south facade. The multilevel circulation spine includes restaurants and other services. It winds through the exhibit pavilions like a river, with flowing water across its roofs that is visible through skylights.

Together with existing facilities at Montjuïc about 1.5 miles to the east, the Trade Fair will be the second largest in Europe after Milan’s. The new buildings are scheduled to open in 2007 at a cost of $500 million. Project financing is led by Catalonia’s regional government. Other developments under construction or planned nearby include a 10-building office complex designed by Jean Nouvel, a hotel tower by Richard Rogers, a judicial complex by David Chipperfield, and an office park by Arata Isozaki and Foreign Office Architects’ Alejandro Zaera. David Cohn
Discover the Colors of Strength.

Pozzi® metal-clad wood windows are available in a limitless array of enduring color finishes. In fact, they're so strong they're guaranteed for 20 years (even in coastal areas). To learn more visit www.pozzi.com/cladding.

CIRCLE 20 ON READER SERVICE CARD
OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
Ando designs centerpiece for Clark Art Institute

A new building designed by Tadao Ando will form the centerpiece of a major renovation of the Clark Art Institute, in Williamstown, Massachusetts.

The building will add 95,000 square feet of space to the institute without increasing the amount of above-ground floor space on the campus. More than three quarters of the new Ando building will be below ground, and an existing service building and parking lot will be demolished to make room for the new structure.

The Ando building will be a two-story glass-and-red-granite structure with a terrace overlooking a new reflecting pool. Below-grade courtyards will allow light into the underground portions of the new building. The addition will house 11,500 square feet of gallery space, as well as a restaurant, café, and bookstore. It will also include office, classroom, and research facilities for the institute’s graduate art history program.

The red granite incorporated into the structure will match the cladding of an existing 1973 library and office building on Clark's campus.

Ando has also designed a new entrance pavilion for the institute’s original 1955 building, a white marble Neoclassical structure. The 2,700-square-foot foyer will be clad in transparent glass and will restore a grand entrance to the building. The original entrance was closed when an addition was built in 1973.

Reed Hilderbrand Associates has designed a new landscape plan for the campus, focusing on the new reflecting pool at the center of the building cluster. Existing walking trails around the rear of the site will be preserved, and traffic will be rerouted through tree-lined drives to unobtrusive parking lots surrounded by trees.

The Clark Institute opened in 1955 and holds a collection of more than 8,000 objects, with concentrations in Old Master, Impressionist and 19th-century American art. In addition to being a public art museum, the institute conducts research in art history and criticism and offers master’s degree in conjunction with nearby Williams College.

The institute is currently fund-raising for the project. A time frame for construction has not been established. An exhibition of Ando’s work is currently on view at the institute through April 27. An exhibition of Ando’s design for the institute’s Art in Nature: The Clark Art Institute Today and Tomorrow, is on view now through summer. The show includes models and drawings of the new designs, including a campus model. Kevin Lerner
Form doesn’t always follow function. Sometimes they walk side by side holding hands.

Balancing form and function is one of the biggest challenges for architects and designers. Which is most important? Traditionally, form follows after you’ve worked out the basic functionality. At VERSA-LOK® Retaining Wall Systems, however, we believe form and function are equals. That’s why our walls are not just functionally sound, but aesthetically stunning. Find out more at 1-800-770-4525 or visit versa-lok.com.
Record News

Swedes to make modern statement with embassy on Potomac

Sweden is planning to build the first embassy ever to grace the historic Potomac River in Washington, D.C.

If the “House of Sweden” gains approval from the U.S. Commission of Fine Arts (CFA) on April 17, construction should begin next year. The U.S. Department of State and a local city advisory group have already given their informal approval for the combination embassy and condominiums at the edge of Georgetown near the Kennedy Center.

Sweden’s trademark blond wood and winter-white stone will clad many interior surfaces of the angular concrete-and-glass embassy, according to the Swedish firm Wingårdh Architects, which designed the building.

Wingårdh won the commission, which is part of a commercial American venture, in a juried competition in January. The firm also designed the Swedish embassy in Berlin in 1999.

In addition to displaying Sweden’s hallmark simple elegance, a chief goal for the new embassy “was to make it as accessible as possible,” said codesigner Tomas Hansen. Layers of transparent and opaque glass will make the building appear open.

Because the embassy borders the river and the National Park Service’s Rock Creek Park, retaining public waterfront access while trying to prevent flooding will be a challenge. Steel floodgates will help protect the 70,000-square-foot building. Most of Washington’s Potomac shoreline has been reserved as riverfront park. No building has been erected directly on the riverfront since the 1980s.

The embassy itself will occupy the basement through the second floor of the four-story building. Parking will be in the subbasement, a conference center and 100-seat auditorium will be in the basement. The transparent first floor will feature public exhibition space, and the second floor is dedicated to embassy offices. The rooftop garden will be shared with residents of the condominiums on the top two floors.

American developer Lane-Armada Harbourside will sell the condos. Although Sweden is designing the building, it will actually be renting the space from the developer.

Sweden is now leasing embassy space in an office building five blocks from the White House. Most countries have built their embassies along one of Washington’s two main embassy rows.

Barbara J. Saffir

The Swedish Embassy (above and section, below) will be cantilevered and clad in glass and concrete.
FOR A ROOM TO MAKE A STATEMENT, IT NEEDS A VOICE.

should soar was a long, drawn-out development.” The design’s verticals will form a counterpoint to the memorial to the victims of the September attack on the Pentagon (see page 3 which the promontory immediately overlooks.

Other elements of the Air Force Memorial include a bronze Honor Guard by sculptor Zenos Frudakis as well as a roofless “contemplation chamber” of translucent glass panels.

This is not Freed’s first design for a memorial for the Air Force, which has been the only military branch without a memorial in the Washington, D.C., area. Established in 1992, the Air Force Memorial Foundation had commissioned Freed to design a memorial for a site along Arlington Ridge, between the Marine Corps’ Iwo Jima Memorial and the Netherlands Carillon about a mile and a half from the current site. That 1999 design featured a five-pointed star suspended above the ground, the corners of which were extruded to form pilotis for the structure. In 1999 the Marine Corps filed suit to block the neighboring Air Force memorial because of its close proximity. The lawsuit was dropped, and the Air Force selected its current site in late 2001. To create the site, the easternmost wing of the N Avenue Annex will be demolished by 2004. The Air Force Memorial Foundation has raised $33 million of the $38 million estimated construction cost. Completion is scheduled for 2006. D.S.

Freed’s design for Air Force Memorial near Pentagon is approved

Shortly after its unveiling in mid-March, the National Capital Planning Commission approved the design by James Ingo Freed, FAIA, for a new Air Force Memorial in Arlington, Virginia. Freed, of Pei Cobb Freed & Partners, was chosen from an invited competition that included Morphosis, Urban Instruments, Moore Ruble Yudell, and student and faculty submissions from the Washington-Alexandria Center.

The centerpiece of the Air Force Memorial comprises three attenuated, arcing stainless-steel spires; the tallest of the spires stands 270 feet high. Freed explains that the spires’ asymmetrical configuration creates a “constant dynamic relationship that’s always changing,” and evokes the image of flight. Observers have noted that the triumvirate resembles the peel-away maneuver performed by the Air Force Thunderbird Demonstration Team.

The memorial will be constructed on a three-acre promontory from which “the idea of soaring came quickly, but the idea of how it

The Air Force Memorial (shown in context near the Pentagon, top) will have three stainless steel spires (left) and a “contemplation chamber” of translucent glass panels.
Custom cabinetry isn’t the only way to meet the demands of your most detailed designs. With six beautiful woods, 32 fine finishes and thousands of storage and style options, KraftMaid’s built-to-order cabinetry not only fits your vision, but also fits your budget. So you get the design flexibility and superior construction associated with custom cabinetry, without the higher prices. And with the help of our extensive dealer network and some of the shortest lead times in the industry, you’ll keep on schedule and under budget, just as you planned.

To see how KraftMaid can fit nicely into your plans, call 1-800-919-1986 or visit www.kraftmaid.com.

Made just for you.

KraftMaid
Cabinetry
Record News

Safe rooms: Steel cubicles as safe havens for terrorist attack

With the continued threat of domestic terrorism, Jeff Quante believes he has a solution to keeping your homeland secure.

Amid the French tablecloths and hot tubs at last month's Washington, D.C., Home and Garden Show, Quante was hawking one of Zyttech's steel cubicles as safe havens for terrorist attacks.

"They range from $80,000 to more than $80,000. They range from phone-booth size—34 inches by 34 inches by 82 inches high and weighing 2,600 pounds—to 8 feet by 10 feet by 8 feet. Custom sizes can also be ordered."

Wealthy individuals and security companies have been the chief customers of the (self-described) "fear-driven firm that Quante, a security designer for two decades, cofounded eight months ago. But now he is aiming to hook "middle income Americans" into buying the freestanding refuges for their homes."

He seized on the safe-room idea when a Virginia security firm asked him to build one and he could locate a manufacturer.

Only eight rooms have been produced so far at Dunn Industries, a storage tank manufacturer in North East, Maryland. Quante hopes to sell 300 this year.

Sometime in the near future, Quante and partner, glass specialist Nelson Bolton, plan to subject the safe rooms to bomb testing. Quante said a Maryland testing lab already has certified that the structures will withstand bullets and battering rams. "These rooms will last forever," says Quante, who expects to equip his own semirural home with one of the rooms. B.J.S.

Diller + Scofidio to redesign Lincoln Center public spaces

New York City's Lincoln Center for the Performing Arts has selected a team led by Diller + Scofidio to design the 6.3 acres of outdoor public space at its west side complex. The Diller + Scofidio team includes Fox & Fowle Architects; Cooper, Robertson & Partners, as planners; lighting design L'Observatoire; landscape architect Olin Partnership; and graphic designer 2x4.

Diller + Scofidio, which currently has a major exhibition at the Whitney Museum of American Art through May 25 (see story, page 103), won the five-month competition against firms including Foster and Partners and Richard Meier. The redesign of the outdoor areas, budgeted at $150 million, is part of Lincoln Center's $1.2 billion construction project. Images of Diller + Scofidio's Lincoln Center design were not made public at press time.

A major component of the public space design will be a transformation of 65th Street from Broadway to Amsterdam Avenue into Lincoln Center's "Main Street." The new 65th Street will be a more pedestrian-friendly thoroughfare, with new entrances to the Juilliard School, Lincoln Center Theater, Alice Tully Hall, and the Walter Reade Theater. Construction on 65th Street will likely begin in 2004. J.E.C.
When you first hold a piece of this beautifully grained hardwood you won't believe that it came from an 18-year-old tree grown on a plantation. And the stump is already growing more.

It's plantation-grown Lyptus®. Even though it grows many times faster than other hardwoods, Lyptus® is harder than oak. These plantations are interspersed with reintroduced indigenous trees to preserve the native ecosystem, and managed for sustainability. Plantations also assure consistent quality and supply—and the price is pleasantly predictable.

To find out more or to schedule a presentation, call 877-235-6873.
Two Chicago architecture exhibitions look to future

Two recently organized architecture exhibitions in Chicago highlight the widely divergent view of the future by architects in that city and the Midwest.

Organized at Chicago's Gallery 400 by a group of curators at the University of Illinois, Speculative Chicago: A Compendium of Architectural Innovation included 52 entries by architects and designers from the Chicago region. The exhibition, which was on view in March, was developed with the premise that innovation is alive and well in Chicago's architectural community.

McLain Cutter's Bucktown House, a consciously contorted riff on a traditional gabled worker's house, was designed for Chicago's trendy artist neighborhood. On the rural front, Douglas Pancoast's "cowbot" was a spherical object programmed to roam a farm as "prairie light, seeder, and herder." Architect and engineer Joseph Burns showed actual nuts and bolts in elegant computer renderings of complex steel connections for the renovated Soldier Field. A catalog of the show, including additional projects originally submitted for exhibition, will be published in August by Gallery 400.

Invisible City: Planning for Chicago's Future looks considerably more pragmatic in comparison. Building on several expansive planning initiatives currently under development for the Chicago region, the Chicago Architecture Foundation (CAF) asked three teams of local architects to propose projects based on the new Central Area Plan, the revised Chicago Zoning Ordinance, and the Chicago Metropolis 2020 plan. The exhibition is at the CAF's gallery through April 27.

Each team stresses transportation as part of a larger development in a specific location. The husband-and-wife team of Linda Searl and Joseph Valerio create a futuristic solar tower above a proposed intermodal transit center in suburban Berkle, Illinois. Ralph Johnson and Todd Snapp of Perkins & Will suggest that the city's previously endorsed decked of a sunken expressway west of downtown can become a series of amorphous park bridges bounded by aerodynamically sculptural towers that funnel winds through the open area. Partners David Brininstool and Brad Lynch redevelop a CTA elevated station as an elegantly arched structure that ties directly to adjacent buildings. The three schemes portray exciting alternatives to the larger "official" proposals.

Edward Keegan
Paint the town *Tangerine*

Rich, bold, blazing colors that protect and preserve your design for years to come.

From advanced fluropolymers to high-performance urethanes, Tnemec metallics, opaques and clearcoats dazzle with distinction.

Tnemec Premier Finishes.

Brilliant coatings technology for brilliant designs.

For a free package on Premier Finishes, return the reply card, call 866-216-TOPS or visit simply-tops.com.
Eisenman’s Arizona Cardinals’ stadium to include movable field

The stadium's exterior steel skin will be curved in a form similar to a barrel cactus. The roof will have two retractable panels that can be closed and the facility can potentially be fully air-conditioned. Vertical slots and a fabric roof will allow light to penetrate when the retractable panels are open.

HOK Sport is working with Eisenman Architects on the stadium, which will have 63,000 permanent seats and an ability to expand to 73,000 seats for major events, such as the Tostitos Fiesta Bowl and Super Bowl. Eighty-eight luxury suites will be included on two levels. The 165-acre site will include parking for 16,000 cars.

This is the latest design by Eisenman, who has been developing designs for a Cardinals’ stadium since the late 1990s. The plans and design have changed due to local politics.

Construction is scheduled to begin this summer on the stadium, which will be built adjacent to the hockey arena and mixed-use entertainment development opening in December.

J.E.C.

Canadians propose national architectural policy

The Royal Architectural Institute of Canada (RAIC) hopes to create a Canadian national architectural policy—if it can agree on what it should say.

“We are trying to lobby the federal government to help create and implement a policy document that would guide how the federal government invests in infrastructure to make sure of its value in a variety of ways—through sustainability and improving the quality of life,” Jon Hobbs, executive director of the RAIC, said.

But how a policy would provide that guidance remains open to debate.

Ottawa architect and RAIC president Ron Keenberg has ambitious plans to organize a series of public forums around Canada to raise the public’s consciousness about architecture before embarking on a grand replanning of Canada’s cities. “Everybody has different views,” he said. “Mine is that we intend to ask the government for U.S. $166 million, and that will fund international open competitions for master plans for 10 to 15 Canadian cities. There would be nothing that these master plans would not touch. By 2070, there could be radical and wonderful changes.”

Jack Diamond, principal of the Toronto firm Diamond & Schmitt, has more modest expectations than Keenberg for a national architectural policy. “My view is that we need performance standards and we need to raise consciousness about the importance of design and urban design in order to indicate to people how significant a role they play in the world and in the quality of their lives.”

Finland, Sweden, the Netherlands, and Scotland currently have architectural policies that focus on the quality of architecture and design as a key element of social health.

Andrew Blum
There are windows and there are mirrors. We don't get them confused.

IRAN® anti-reflective glass is so clear, it's like it's not even there. Mirrors are great for seeing yourself. They're not so great for seeing what's on sale. Or what's inside a zoo, museum, restaurant – anyplace where visibility counts. That's when you need Amiran anti-reflective glass. For years it's been virtually eliminating glare to as little as 1%. There are other advantages, too. Amiran saves money. It lets more light pass through than regular glass, so lighting fixture and energy costs are lower. And only Amiran has a year track record for reliability. Amiran anti-reflective glass is available in tempered, laminated and insulated glass panels for virtually anywhere in the U.S. Because if you want a window, we think you should get a window. Let us put some Amiran in your doors so you can see the dramatic difference for yourself. Call 914-378-3839 or write Schott Corporation at 3 Odell Plaza, Albany, NY 10701 for samples. For more details, visit www.us.schott.com/tgd.

© Schott Corporation. © Amiran is a registered trademark of Schott Glas, Mainz, Germany.
News Briefs

Pelli-designed performing arts center under construction  In February, the Orange County Performing Arts Center, in Costa Mesa, California, celebrated groundbreaking for its first major expansion since 1986. Designed by Cesar Pelli, FAIA, the addition (pictured at right) will include the 2,000-seat Renée and Henry Segerstrom Concert Hall for the Pacific Symphony, as well as the 500-seat Samueli Theater. The limestone facade of the new building features an undulating glass wall that Pelli has likened to a stage curtain. The $200 million building will open in fall 2006.

The Institute of Peace will have winglike roof forms.

Curt Dale, FAIA, dies  Denver architect Curt Dale, FAIA, a partner in Anderson Mason Dale, died in late February in an avalanche while skiing. He was 57. Dale was skiing at the Pine Creek Trailhead, in California, with his son Chris and a friend, Bob Redwine, a structural engineer with Redwine-Rezian. Both Chris Dale and Redwine survived.

Dale joined his practice in 1978 and became a partner in 1980. Partner John Anderson, FAIA, was the American Institute of Architects (AIA) national president in 2001. Andy Nielsen, AIA, a principal with Anderson Mason Dale, told RECORD, "Curt was a role model and an exceptional architect in the biggest sense of the word. He put his heart and soul in all aspects of the profession, and he will certainly be missed." J.E.C.

Safdie design for peace building approved  Moshe Safdie and Associates' design for the United States Institute of Peace headquarters in Washington, D.C., has been approved by the U.S. Commission of Fine Arts. Safdie was awarded the commission in August 2001 from a shortlist that included Cesar Pelli, Michael Graves, Polshek Partnership, and Weiss/Manfredi.

Located on one of the last available construction sites adjacent to the National Mall, the new 125,000-square-foot headquarters will house administrative offices, a library and archives, a conference center, and a museum, arrayed around two atria, which face the Potomac River and the Lincoln Memorial, respectively. The atria are covered by segmented spherical and toroidal roof forms constructed of white translucent glass on a steel frame.

The Institute of Peace is currently raising funds for the $65 million project; the federal government donated the site. Construction completion is tentatively scheduled for 2005. Leo A. Daly is the associate architect.

Landscape architect Robert M. Hanna dies  Philadelphia landscape architect Robert M. Hanna, who established the firm Hanna/Olin in 1976 with Laurie Olin, died on March 8 at age 67 due to complications following surgery. With Olin, Hanna designed the landscape for the Johnson & Johnson headquarters in 1977 and developed the master plan for Battery Park City in New York City, with Cooper Eckstut Architects. Hanna established a separate firm in 1995, Hanna Landscape Architects, and completed the master plan for the University of Washington in Tacoma. Hanna taught for more than three decades at the University of Pennsylvania. J.E.C.

Meet your mentor online  The American Institute of Architects (AIA) is sponsoring an online program to connect mentors with your architects based on personal profiles including interests, experience, and expertise. The program has an initiation and annual fee. For more information, visit www.colaboro.ws/AIA. News briefs by David Sokol unless otherwise noted.
Upcoming Exhibitions

OUT: Six Months in Rome
New York City
19-May 2, 2003
80 works by American Academy in Rome artists will be on view in New York City. Among the works will be Tupperware designs by Stuart McLean, FAAR'85; Stow/Davis designs by Robert DeFuccio, FAAR'76; V8 splash by Paul Shaw, FAAR'02, and lamps designed by Kevin Walz, FAAR'94. The exhibition title was inspired by the acronym FMR, to Fellows of the American Academy in Rome. At the ADC Gallery. Call 212/643-1440 or visit www.aarome.org.

/Design Series 1
San Francisco
19-24 August, 2003
An exhibition of groundbreaking design solutions by South African-born architect Lindy Roy will be the first of an ongoing series devoted to showcasing the work of contemporary designers in architecture, graphic design, and industrial design. At the San Francisco Museum of Modern Art. Call 415/357-4000 or visit www.sfmoma.org.

Architecture and Design Permanent Collection
San Francisco
19, 2003-ongoing
An exhibition will inaugurate a newly installed, rich presentation of the museum's architectural and design collection. Featuring some 100 works of architecture, graphic design, and industrial design from a permanent collection of more than 4,000 objects, the survey will include well-known classics and works by up-and-coming designers and will highlight special strengths of the collection, including experimental architecture and digital design. At the San Francisco Museum of Modern Art. Call 415/357-4000 or visit www.sfmoma.org.

Planning the Rose
Boston
23-June 1, 2003
Part of the planning process for Shakespeare & Company's Rose Playhouse U.S.A. and celebrating Shakespeare's birthday, this exhibition will feature innovative designs for the world's first historically accurate replication of London's 1587 Rose Playhouse. Curated by architect George Marsh and the Boston architectural firm Payette Associates, the show, through photographs, illustrations, architectural drawings, and text, traces the history of the playhouse and the present-day plans to rebuild the theater using traditional building methods and materials. At the Boston Architectural Center, Call 617/262-5000 or visit www.the-bac.edu.

Both/And: Building Modern in the Context of Historic Architecture
Seattle
May 2003
The exhibition focuses on built and unbuilt projects that juxtapose modern architecture with.

The Power of Exotics

Mysterious and enchanting. Exotic hardwood flooring that captivates your soul. Solid or engineered in prices to meet any budget.

1-800-525-BR111 [271]
www.BR111.com

BR-111 EXOTIC HARDWOOD FLOORING

CIRCLE 48 ON READER SERVICE CARD
OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
**Dates & Events**

historic buildings—architecture that is built in a decidedly modern manner but retains, refers to, and sheds light on the adjacent historic buildings. Exhibition projects will be drawn from the Seattle area, along with select projects from other cities in the U.S., Europe, and Canada, including projects from Foster and Partners; Coop Himmelb(l)au; Dan Hanganu with Provencher Roy and Associates; Schwartz/Silver Architects; Kohn Pederson Fox Architects; and Saucier + Perrotte Architects. At the AIA Seattle Gallery. Call 206/448-4938 or visit www.aiaseattle.org.

**Alessi 2003 Coffee and Tea Piazza:**
**City of Towers**
**New York City**
**May 2003**

This exhibition will feature the North American premiere of Alessi’s new selections for the Coffee and Tea Piazza, designed by a stellar roster of contemporary architects. Promising to define contemporary and digitally driven architecture at the beginning of the 21st century, this new edition will feature coffee and tea sets by William Alsop, Wiel Arets, Juan Navarro Baldeveg, Shigeru Ban, Gary Chang, David Chipperfield, Dentor/Corker/ Marshall, Deszo Ekler, Massimiliano Fuksas, Zaha Hadid, Tom Kovac, Greg Lynn, Morphosis, MVRDV, Jean Nouvel, Dominique Perrault, Kazuyo Sejima, and UN Studio. At the Max Protetch Gallery. Call 212/633-6999 or visit www.maxprotetch.com.

**Other Architects**
**Barcelona**
**May 2003–May 2004**

A part of the Year of Design 2003, this exhibition links the constructions built by animals with the architecture created by human beings. At the Zoology Museum, Natural Science Museum. Visit www.designyear2003.org.

**50/50: Fifty Years of Boffi and Vespa**
**Santa Monica, Calif.**
**May 1-May 8, 2003**

Boffi and Vespa, two pioneers of high-tech, avant-garde Italian design, have organized a joint exhibition at the Boffi kitchen showroom that traces the evolution of their respective products—kitchens by Boffi and scooters by Vespa—from the post–World War II years through the present. Using lifesize models of its most recent kitchen designs as a backdrop, Boffi will display images of the Italian kitchen’s evolution through the postwar decades. There will be a display of actual scooters, including several vintage Vespas and newer models. At the Boffi Los Angeles showroom, in Santa Monica. For information, call 310/458-9300.

**Harlem Lost and Found**
**New York City**
**May 3, 2003–January 4, 2004**

This exhibition traces the history of Harlem from pre-Revolutionary times to World War I. Works with consulting curator Michael Henry Adams, author of the book Harlem Lost and Found: Architectural and Social History, 1765–1914, the museum has drawn from its rich collection to add a unique dimension to the story of the neighborhood’s architectural richness. At the Museum of the City of New York. Call 212/534-1672 or visit www.mcny.org.

**Garofalo Architects:**
**Between the Museum and the City**
**Chicago**
**May–October 2003**

An architecturally distinctive, pavilionlike structure designed by architect Doug Garofalo will be the first in a series of MCA commissions for emerging and mid-career architects. At the Museum of Contemporary Art. Call 312/280-2660 or visit www.mcachicago.org.

---

**Windows and Doors that Realize Your Design**

At Case Window and Door, we are committed to building the highest quality windows and doors available anywhere. Based on proven European technology, we have refined, developed and optimized the Case System, which includes wood and metal-clad windows, doors, and window walls that meet almost any architectural challenge. The result is the durability, performance and beauty that we—and the architects we partner with—demand.

If your drive is for quality without compromise, excellence without equal, Case understands, and we can build the unique windows and doors that realize your design.

**CASE**
**Window and Door**

301 Green Street
Schenectady, NY 12305
800.227.3957
www.casewindow.com

---

CIRCLE 41 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
"Giant Sequoia"
Kings Canyon National Forest
Photographer: Khaled AlKotob

DREAM
BIG

The lighting industry is about to change in a BIG way... Find out what dreams are really made of in our booth, #1929, at Lightfair 2003.

CIRCLE 42 ON READER SERVICE CARD
OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML

B-K LIGHTING
Quality to Last a Lifetime™
I

**Dates & Events**

**Ongoing Exhibitions**

**Do It Yourself: Home Improvement in 20th-Century America**  
*Washington, D.C.*  
October 19, 2002–August 10, 2003  
This show is an examination of modern American housing and its products, with cultural implications regarding gender roles and leisure time in the domestic sphere. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org for more information.

**David Adler, Architect: The Elements of Style**  
*Chicago*  
December 6, 2002–May 18, 2003  
This will be the first major retrospective of the architect David Adler’s work, featuring approximately 100 pieces, including plans, drawings, photos, models, and decorative arts. At the Art Institute of Chicago. For information, call 312/443-3600 or visit www.artic.edu.

**Big & Green: Toward Sustainable**

**Polygal Polycarbonate**

**For Glazing Design Flexibility**

- **Maximum Design Creativity**  
  - Widest variety of colors and sizes in the industry  
  - Light weight for wider spans, lighter support structures

- **Easy To Install**  
  - No special training, tools or handling equipment required  
  - Cold forms into arches at the job site

- **Unrivaled Factory Backing**  
  - Outstanding tech support and design help  
  - Strongest warranties in the industry*

* Warranty details available on-line or on request

Complete Polygal product descriptions and specifications on-line at www.polygal.com

**800-537-0095**  
Since 1983, North America’s Leading Supplier of Polycarbonate Products

**Architecture in the 21st Century**  
*Washington, D.C.*  
January 17–June 22, 2003  
Through in-depth profiles of approximately 5 contemporary green projects worldwide, along with a broad examination of global ecological and economic forces, this exhibition demonstrates the transformative powers of sustainable design. At the National Building Museum. For more information, call 202/272-2448 or visit www.nbm.org.

**The Art of Structural Design: A Swiss Legacy**  
*Princeton, N.J.*  
March 8–June 15, 2003  
From New York’s George Washington Bridge, Boston’s new Bunker Hill Bridge, some of the country’s most acclaimed structures are the products of Swiss design. This exhibition celebrates the contributions of a group of highly influential Swiss engineers widely recognized as the most innovative structural designers of the 20th century. At the Princeton University Art Museum. Call 609/258-3788 or visit www.princetonartmuseum.org for information.

**Fantastic**  
*North Adams, Mass.*  
March 8, 2003–Spring 2004  
In Fantastic, MASS MoCA showcases contemporary artists—Miguel Calderon, Gregory Crewdson, Alicia Framis, Nils Norman, and the artist collective Temporary Services—all of whom embrace a world of hallucinatory, visionary, utopian, and otherwise “fantastic” ideas. At the Massachusetts Museum of Contemporary Art. Call 413/662-2111 or visit www.massmoca.org.

**Picture This: Windows on the American Home**  
*Washington, D.C.*  
March 29–August 11, 2003  
Picture This presents windows through multiperspectives and offers an entertaining two-century history of a building element that opens a view into the changing nature of American domestic life. Actual windows, advertisements, film and television clips, models, drawings, and photographs help to explore how windows establish architectural character and shape our understanding of the world inside and outside our dwellings. At the National Building Museum. Call 202/272-2448 or visit www.nbm.org.

**Roy McMakin: A Door Meant as Adornment**  
*Los Angeles*  
March 23–June 29, 2003
Designing the highest level of security can be easier when it comes from one source.

Network of consultants and distribution partners offers the most extensive security and safety solutions in the industry. With 22 consulting and spec writing offices throughout the U.S. and Canada, we can provide the services you need—from access and egress control to time and attendance, as well as asset tracking and personnel scheduling. IR Security & Safety, known for more than 75 years for its leading brands, is now providing biometric, electronic and mechanical security solutions, as well as software network integration. Learn more, visit irsecurityandsafety.com or call 1-877-840-3621 to contact one of our 22 Security & Safety Consultant™ offices.
Dates & Events

McMakin became a strong presence in the design scene in 1987, when he founded the Domestic Furniture Company in Los Angeles. The exhibition is a mid-career survey of the Seattle-based artist, tracing the development of his career in art and design and his unique manipulations of the traditional definitions of furniture and sculpture. At The Museum of Contemporary Art. Call 213/621-2766 or visit www.MOCA-LA.org.

New York City
Through April 23, 2003
The Swiss Section exhibits cutting-edge Swiss design for cities, public spaces, and infrastructures by both emerging designers and the renowned practices of Gigon/Guyer, Conzett, Bronzini, Gartmann, and Herzog & de Meuron. At the Van Alen Institute. For more information, visit www.vanalan.org.

The Swiss Section Architecture Exhibition

Ron Arad: Taking Liberties
Barcelona

Through May 12, 2003
The work of Ron Arad is well known and respected for its fusion of sculptural freedom and industrial flexibility, showing that a personal and imaginative work can also exist as an attractive and marketable product. Arad was the winner of the Barcelona International Design Prize 2002, and now, in this solo exhibition, shows some of the key works of his career. At Centre d’Art Santa Monica in conjunction with the Year of Design 2003 exhibition series. Visit www.designyear2003.org.

Living in Motion: Design and Architecture for Flexible Living
Barcelona
Through May 25, 2003
In this exhibition, architects and designers attempt to adapt homes and artifacts to the new demands of contemporary living. As part of the Year of Design 2003 at the Museum of Decorative Arts. For further information, visit www.designyear2003.org.

Futures2come
Copenhagen
Through June 9, 2003
An exhibition curated by Christian Bruun that started at the Max Protetch Gallery in New York City in December 1999 and has continued on to Europe. At the Dansk Architecture Center. Call 32/57 19 30 or visit www.gammeldok.dk.

Luxury Textiles East and West
Los Angeles
Through August 15, 2004
Commemorating the 50th anniversary of LACMA’s Department of Costume and Textile, this exhibition highlights extraordinary examples of the textile arts of America, Asia, and Europe from the department’s extensive holdings. At the Los Angeles County Museum of Art. Call 323/857-6000 or visit www.lacma.org for more information.

Pere Noguera: Lands
Barcelona
Through August 31, 2003
A poetic reflection on the design of elements of earth used in architecture, in the home, for domestic utensils, for furniture, decoration, the garden, and everything that surrounds us. At the Ceramics Museum, as part of the Year of Design 2003. Visit www.designyear2003.org for further information.

Of Our Time: 2002 GSA Design Awards Show
Washington, D.C.
Moisture and water intrusion problems can haunt you for years after a building is complete. That's why it's good business to use weatherization products such as DuPont Tyvek® CommercialWrap® to help keep your buildings drier and more comfortable.

Tyvek® CommercialWrap® is a secondary weather membrane that helps to hold out bulk water and wind-driven rain. Better yet, Tyvek® breathes, to help moisture escape. Wall systems dry faster so the potential for mold, mildew and water damage may be minimized. And Tyvek® itself will not support the growth of mold and mildew.

Tyvek® CommercialWrap® is engineered to stand up to the rigors and demands of commercial construction. It can even take up to nine months of UV exposure.

When planning your next project, a secondary weather barrier should be a primary consideration. Specify Tyvek® CommercialWrap® and breathe easier.

Get the inside story. Call 1-800-44-TYVEK® or visit www.Tyvek.com. Find out how you can earn AIA/CES learning units in Health, Safety and Human Welfare by taking a lunch & learn course sponsored by DuPont.

1-800-44-TYVEK® WWW.TYVEK.COM BUILD IT ONCE, BUILD IT RIGHT.
Wood doors that use the renowned Ellison Balanced Door hardware and frames are now available. For information on wood selection and door design contact our factory.
What Makes Them So Durable Makes Them So Beautiful

This is the real thing — old world craftsmanship. It's the way we build all our doors. The fabrication techniques that made Ellison Balanced Doors famous can be found on our hinged doors, pivoted doors and sliding doors.

We create a unitized superstructure by welding a continuous frame right through the door face. There's no expedient tack welding at Ellison. Seams between stiles and rails are welded. Then, in a meticulous and painstaking process, the entire door is ground until every seam and weld is, well, seamless. That's why we know our doors can last a century when we've only been making them for seventy years.
Southern Pine is not only the strongest structural species, it is also the most treatable. Widely available in a number of treatment options, Southern Pine is exceptionally durable, naturally beautiful, plus it comes from a renewable resource. A building material for all ages.

The Southern Pine Council offers complete design information, project plans, and even a product locator. Visit: www.southernpine.com
Does the Building Industry
Really Need to Start Over?
You Decide.
www.bentley.com/bimwhitepaper
Dates & Events

Competitions and Awards

AIA New York State 2003 Design Awards Program
New York
Registration Deadline: April 11, 2003
Architects currently registered in New York State are invited to participate in the program and submit their work for review by this year’s distinguished AIA New York State 2003 Design Awards jury. The seven categories for the Design Awards are residential, institutional, commercial/industrial, mixed use, urban planning design, historic preservation/adaptive reuse, and universal design. Call 518/449-3334 or visit www.aianyc.org.

Designing the High Line
New York City
Registration Deadline: April 25, 2003
Late Registration Deadline: May 16, 2003
Designing the High Line is the first-ever international ideas competition seeking visionary design proposals for the reuse of the High Line elevated rail structure on the west side of Manhattan. Sponsored by Friends of the High Line, the open ideas competition will culminate in a large-scale exhibition in Grand Central Terminal’s Vanderbilt Hall in July 2003. For information call 212/631-9188 or visit www.thehighline.org.

12th Ermanno Piano Scholarship
Paris
Submission Deadline: June 30, 2003
The Ermanno Piano Scholarship has been created for newly graduated architects to give them the opportunity to improve their education through a six-month internship with the Renzo Piano Building Workshop. For further information, call 01/44 61.49 00 or visit www.rpbw.com.

International Achievement Awards
Deadline for entries: July 1, 2003
Sponsored by the Industrial Fabrics Association International (IFAI), this competition offers architects an opportunity to gain recognition for projects that have creatively used fabric. Project entries include photos of outstanding specialty fabric projects and descriptions of their unique and important characteristics. To request a brochure and entry form, contact Christine Malmgren at 800/225-4324 or 651/222-2508, e-mail cmalmgren@ifai.com, or visit www.ifai.com.

E-mail event information two months prior to the event or competition to ingrid_whitehead@mcgraw-hill.com.

Design professionals tell us they prefer to specify Elevette® residential elevators because of their reliability and custom features.
Choose from five car styles, three drive systems and many accessory items to create a truly custom elevator. In-shaft or free-standing

Call 800-343-9007 Dept. 66

INCLINATOR COMPANY OF AMERICA
www.inclinator.com
www.FirstSourceExchange.com
www.sweets.com
2200 Paxton Street, Harrisburg, PA 17105-1557
isales@inclinator.com
© 2002 Inclinator Company of America
Cairo, once the Paris of the Nile, tries to regain design stature

Correspondent’s File

By Paul Bennett

largest urban area in Africa, Egypt, has evolved over the 20 years into a sprawling metropolis. Its 17 million inhabitants cram-packed into the labyrinthine city, a maze of narrow streets and tenements dating back to the 19th century, and the Paris-inspired city, planned and built in 19th century with its radial streets, have been confined to a labyrinthine network of narrow streets to the horizon. The housing is so bad that squatters have taken root in cemeteries that often extend to the Islamic center, the called Cities of the Dead.

Contemporary design in Cairo is in a similar state of disarray. The most visible projects are the luxury buildings lining the Nile designed and built by international developers their in-house architectural firms, usually rather bland. Local architects, with some exceptions, have been confined to classrooms of Cairo University. There is a general agreement among critics that today, 14 years after the country’s most influential architect, Hassan Fathy, died, that profession in Egypt is in crisis. Lack of building restrictions, outdated laws for licensure, and inadequate education reached a breaking point in 1992 when a number of poorly built structures collapsed during a major earthquake. The situation may have slightly improved—there have been no notable collapses in the past few years—but no one is claiming that Cairo has yet regained the status of “Paris of the Nile.”

Setting a standard

The wholesale relocation of the American University (AUC) may shake things up in Cairo. This small liberal arts college is relocating from its downtown Tahrir Square main campus, where it has been since 1919. Groundbreaking was held in February for the AUC’s 260-acre, $250 million campus that will be built from scratch in New Cairo, one of several new settlements being built along a ring road that surrounds Cairo in order to alleviate the population pressures in the city. New Cairo is being planned as a middle-to-high-income city for an expected population of 2.5 million people.

AUC representatives say that the school intends to raise standards and demonstrate proper building methods as a result of a Western-style planning and design process. That process began in 1999 with an international competition for a master plan for a campus with up to 7,000 full-time students. Distinguished jurors included Charles Correa, Ricardo Legorreta, and Ismail Serageldin, the director of the new Alexandria Biblioteca. A small firm called Boston Design Collaborative took top prize with a compact, topographically sensitive proposal for clustering campus buildings around a green spine. The AUC hired Sasaki Associates of Watertown, Massachusetts, and Abdelhalim Community Design Collaborative (CDC) of Cairo, to flesh the plan out, portion it into bids, and eventually manage a design team that includes Legorreta + Legorreta (in charge of student housing and the campus center), Ellerbe Beckett (athletic facility), and Hardy Holzman Pfeiffer (library). Sasaki and Abdelhalim CDC divided the rest of the campus buildings between them, with the former taking most of the academic buildings, and the latter in charge of the theater, administration building, and bookstore. Carol R. Johnson Associates has been hired to design the landscape. The new campus is expected to be ready for fall 2006 classes.

“The developing world too often looks to the West for its building forms,” commented Victor Legorreta, Ricardo’s son and a partner in the practice. “But the AUC wanted to do something different. They wanted ‘modern Egyptian architecture.’ What does that look like if it doesn’t look Bauhaus, Brutalist, or USAID? That’s the challenge.”

The AUC architects, without...

By Paul Bennett

[Co-editor based in Rome, Paul Bennett former editor at Landscape Architecture magazine.]

The American University in Cairo (model, above right) will be built on what is now desert (above). The campus will include an administrative building by Abdelhalim CDC (below) and a campus center by Legorreta (below right).

"Paris of the Nile"
exception, talked about avoiding pastiche. During 12 months of work­shops in Cairo, they undertook an in-depth study of Egyptian archi­tecture. The seemingly haphazard and hypergeometrical pattern of spatial relationships in the medieval Islamic city, rather than any specific form, inspired much of the campus design, in which buildings and inte­rior spaces are shifted and canted in innovative ways.

Urbanism abandoned?
Egyptian architects and planners have openly expressed concern that the AUC is abandoning Cairo for the suburbs. Although the university hopes that New Cairo will someday be a metropolitan center of its own standing, planners have noted that this city in utero lacks any urban design guidelines or zoning restric­tions. “New cities are a failure in Egypt,” a planner, Khalid El-Adli, flatly stated. “Planning occurs here in a vacuum.”

In order to break loose of international Modernism, which dominated Cairo architecture in the midcentury, local architects have embraced historical revivalism, according to As­hraf Salama, a pro­fessor of architecture at Al Azhar University. Anything antique, from pharaonic geometries to Islamic details, are employed to “foster a sense of belonging” and create an idea of Egyptian-ness.

In tandem with AUC’s decision to move to New Cairo, the Egyptian Museum is planning to build a new facility in Giza, 12 miles outside of the city. Although it will continue to use its 100-year-old Neoclassical building in the center of town for storage, the museum’s primary collection (and the several thousand daily visitors that come to see it) will be moved out of the city. With the help of the International Union of Architects, the museum has embarked on a two-stage anonymous design competition for the $350 million project. At press time, the first stage had been completed and 20 firms were requested to submit fur­ther drawings. The jury will select a winner in late April.

One institution that’s attempting to buck the anti-urbanist trend is the Aga Kahn Trust for Culture (AKTC), a branch of the sprawling Aga Kahn network of agencies. AKTC is in the construction stage of an 80-acre urban park on the eastern edge of the medieval city. The park actually reclaim­ed a hillock of garbage that residents have been throwing over the city’s wall for the past 1,000 years. Part of the design includes an excavation of this wall, which hasn’t been seen for centuries.

After working with several architects, including both Sasaki Associates and Abdelhalim CDC, the AKTC selected local landscape architect Maher Stino to complete the design. Stino has been challenged to work with an unforgiving topography: The site features three municipal water tanks sunk below grade, and a fine powder soil. Several structures will be included in the park, including a restaurant by architect Rami Al-Dahhan.

In addition to building the park, the Aga Kahn is involved in restor­ing several monuments in the neighbor­hood, including a minaret and an aristocratic house, and providing low-interest loans to homeowners for architectural improvements.

Investing in Cairo
Although words like “crisis” and “problematic” are constantly used by Cairo architects when describing the state of local architecture, there is a small but growing body of exceptional projects being built that indicate an undercurrent of vibrant creativity. Abdelhalim CDC has garnered local praise for interpreting tradi­tional Islamic architectural ideas into a modern milieu. Its recent Palace of Fine Art is an impressive conversion of an old exhibition hall, in which interior spaces alternately open and close around a central open atrium to create an interplay of light.

Another notable project is the Om Kalthoum Museum located near the ancient Nilometer river gauge. Designed by Egyptian archi­tect Akram El-Magdoub in collabora­tion with Italian architects Maurizio di Paolo and Enzo Serafini, the museum is a richly textured building that showcases one of the first uses of multimedia programs­ing in the city. In the garden, situated between the museum and the river, stands a 23-foot steel tower with a radiating fan of wires acting like a prow to connect two of Cairo’s most potent symbols, the mesmerizing singer Om Kalthoum and the Nile.

Ahmad Hamed, an architect who teaches at the American University in Cairo, has executed several small but impressive proj­ects, including the 1999 conversion of a chicken coop into a guest­house and prayer room for a Sy­rian businessman on the outskirts of Cairo. The project has a high level of detail, including stained-glass windows and an ornate wooden screen, both abstracted from tradi­tional Islamic design.

Building without drawing
Hamed, who was educated in South­ern California, blames weak laws—and the fact that the regulation­governing practice are 50 years old—for the limited amount of great architecture in Cairo. But he also tries to frame this moment as an opportunity. He says that ironically, being constrained to do small projects with even smaller budgets is liberating because he is forced to get closer to the design, and, in a way, to be a more honest architect.

“I’ve built things without draw­ing,” he says proudly, “using car­drawings. The jury will select a winner in late April.

One institution that’s attempting to buck the anti-urbanist trend is the Aga Kahn Trust for Culture (AKTC), a branch of the sprawling Aga Kahn network of agencies. AKTC is in the construction stage of an 80-acre urban park on the eastern edge of the medieval city. The park actually reclaim­ed a hillock of garbage that residents have been throwing over the city’s wall for the past 1,000 years. Part of the design includes an excavation of this wall, which hasn’t been seen for centuries.

After working with several architects, including both Sasaki Associates and Abdelhalim CDC, the AKTC selected local landscape architect Maher Stino to complete the design. Stino has been challenged to work with an unforgiving topography: The site features three municipal water tanks sunk below grade, and a fine powder soil. Several structures will be included in the park, including a restaurant by architect Rami Al-Dahhan.

In addition to building the park, the Aga Kahn is involved in restor­ing several monuments in the neighbor­hood, including a minaret and an aristocratic house, and providing low-interest loans to homeowners for architectural improvements.

Investing in Cairo
Although words like “crisis” and “problematic” are constantly used by Cairo architects when describing the state of local architecture, there is a small but growing body of exceptional projects being built that indicate an undercurrent of vibrant creativity. Abdelhalim CDC has garnered local praise for interpreting tradi­tional Islamic architectural ideas into a modern milieu. Its recent Palace of Fine Art is an impressive conversion of an old exhibition hall, in which interior spaces alternately open and close around a central open atrium to create an interplay of light.

Another notable project is the Om Kalthoum Museum located near the ancient Nilometer river gauge. Designed by Egyptian archi­tect Akram El-Magdoub in collabora­tion with Italian architects Maurizio di Paolo and Enzo Serafini, the museum is a richly textured building that showcases one of the first uses of multimedia programs­ing in the city. In the garden, situated between the museum and the river, stands a 23-foot steel tower with a radiating fan of wires acting like a prow to connect two of Cairo’s most potent symbols, the mesmerizing singer Om Kalthoum and the Nile.

Ahmad Hamed, an architect who teaches at the American University in Cairo, has executed several small but impressive proj­ects, including the 1999 conversion of a chicken coop into a guest­house and prayer room for a Sy­rian businessman on the outskirts of Cairo. The project has a high level of detail, including stained-glass windows and an ornate wooden screen, both abstracted from tradi­tional Islamic design.

Building without drawing
Hamed, who was educated in South­ern California, blames weak laws—and the fact that the regulation­governing practice are 50 years old—for the limited amount of great architecture in Cairo. But he also tries to frame this moment as an opportunity. He says that ironically, being constrained to do small projects with even smaller budgets is liberating because he is forced to get closer to the design, and, in a way, to be a more honest architect.

“I’ve built things without draw­ing,” he says proudly, “using car­
What is it about the Midwest? It seems as if there's a sort of migration going on among the vanguard of the design professions toward the middle of the country. This month, archrecord2 marks a fourth architect from Michigan to be featured in the Design section in its two years of existence. One might even call it a trend. Plus, in Live, you can find an innovative first-year design program being taught at the University of Cincinnati. Maybe there's something to this.

To Erik Hemingway, a peripatetic architect who for the past few years has been based in the Detroit area, architecture is a movable feast. In his view, architects should not come to projects with fixed ideas, but should react to conditions, using their knowledge to develop solutions.

"I'm not really interested in a formula for projects," Hemingway says. "Each particular project creates an opportunity, given its time, its context, its client. It inspires a kind of event-based architecture, rather than one based on the thought that 'that was a really nice detail on the last project, let's do that again.'"

Hemingway earned his undergraduate degree at California Polytechnic State University in San Luis Obispo before an expatriate stint in London working for Zaha Hadid. He then returned to U.S. and worked with Arquitectonica, both in Miami and San Francisco. Then, after earning a graduate degree at Columbia University, in New York City, he returned to San Francisco, where he founded Hemingway+Associates and stopped moving around.

It was in San Francisco that Hemingway developed his firm's design style, dividing time among competitions, installations, and actual built work. "The competitions support the ideas for the projects," he says, "and then those small projects and the small jobs that they bring in support the budget for the competitions."

Still working in San Francisco in 1999, Hemingway felt that the city's economic bubble would burst. He began to think about leaving. Around that time, partner Allison Warren was accepted for graduate study at the Cranbrook Academy of Art, near Detroit.

"Practically the same day," Hemingway says, "Lawrence Technical University called me up about a teaching job." He hadn't heard of the school. He asked them how far they were from Cranbrook," he says, "and they said 15 miles. So it seemed like the next phase for us."
Despite never having lived in the Midwest, Hemingway found Detroit appealing, so he accepted a position with Lawrence.

"My thesis at Columbia was on how Los Angeles was a 20th-century construction of industry and the automobile," he says. "And in a strange way, Detroit and Los Angeles have a lot of similarities. The weather is different and the industry is different, but they have the same sort of relationship to the decentralized urbanism that I'm very interested in."

He and Warren share a house north of Detroit, which serves as their home, their studio, and an ongoing project for the firm, which was renamed Hemingway+A/studio after the move. This blurring of different aspects of Hemingway's life extends outside the house as well.

"There's not a large distinction between my studio at school and my studio at home," he says. "I have a lot of students work with me."

The working arrangements lead to a fairly informal atmosphere around the studio: "I'm sort of intense in my relaxed mode," Hemingway says. "I give everybody the time to finish what they're working on, since I know I'm on the slower side myself. But then when the deadlines approach, I ratchet up the pressure a little bit to get the project out on time. It's an ebb and flow."

His relaxed attitude may hint at his flexibility, but when he states his firm's mission, that flexibility becomes a precept: "The position of the practice is to pursue critical architectural ideas," Hemingway says, "and somehow manifest them in whatever form they need to be manifested, whether it's on paper or an exhibition, or taken to some kind of finality." Kevin Lerner

Go to architecturalrecord.com/archrecord2 to see more projects from Hemingway+A/studio.
Goethe famously described architecture as "frozen music." A less canonized poet, Elvis Costello, said that writing about music is like "dancing about architecture." But aside from esoteric bons mots, the arts of architecture and music appear to have little in common.

So leave it to a university to finally figure out the relationship.

About 120 first-year University of Cincinnati architecture and interior design students worked in groups to design, build, and play musical instruments constructed from discarded appliances and a few parts picked up at local hardware stores. The students then had to perform original compositions on their instruments. The concert, on January 22, played to a packed house.

Marc Swackhamer, an assistant professor of architecture, helped to organize the project, along with the rest of the first-year studio professors.

"The idea here is that students should stretch themselves beyond what they're accustomed to or comfortable with," Swackhamer said.

Susan Strike, a first-year architecture student, built a slide guitar, using a discarded refrigerator shelf as a base. The strings of the guitar, however, were purchased.

"We could spend money on our project, as long as most of it was built from trash," Strike said. The appliance parts

Hambro floor systems provide excellent and highly cost-effective features. These include fast and simple installation along with soundproofing solutions that make Hambro elevated slabs as much as 100% quieter than conventional concrete slabs and 200% quieter than conventional wood floors. Add fireproofing solutions which have earned Hambro UL and ULC ratings of up to 3 hours and you have built-in solutions to your project's safety requirements.

Engineered solutions
Engineered service

Our proven systems, engineering expertise and manufacturing facilities translate into value-engineered solutions that allow you to reduce your project's construction timeframe while saving on the cost of materials and labor. For more information, please call your nearest Hambro office or dial 1 800 546-9008 and ask for Manuel Torres, Sales.

http://www.hambrosystems.com

CIRCLE 62 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
used for these instruments came from an earlier first-year studio project, the disassembly of appliances. The students used the parts as models for drawing practice, but their reuse as instruments also taught a lesson in resourcefulness.

“Our whole first-year program is about creativity and using resources,” Strike said.

The students built the instruments on their own, but they were grouped together into bands for the performance.

“We didn’t know who we would be playing with when we designed our instruments,” Strike said, “so we couldn’t pick a group of instruments that would go together. We had to make it work.”

The range of instruments made for an eclectic mix onstage: PVC-pipe saxophones, harps made from ovens, zithers, whistles, and an array of percussion instruments.

The instruments didn’t always sound like their builders planned them to. Justin Smith, a student, said that his copper-pipe wind instrument “makes a sound more like a choo-choo train than music.”

Despite the unexpected, the concert went off well, and the students have moved on to building something more overtly architectural: staircases. But the lessons learned from the pairing of the seemingly unrelated disciplines of architecture and music will stick with them, or at least their professor hopes so.

“We can learn a lot about design issues from everyday life, everyday objects,” Swackhamer said. “We can learn the principles of design from cuisine, art, a movie, a magazine, a building, and yes, from old appliances.”

Kevin Lerner

For more stories about architecture students, and for information on how to submit your story, go to: architecturalrecord.com/archrecord2
Will Libeskind’s plan for the World Trade Center site become a massive design swap?

Commentary

By Joseph Giovannini

 若要Libeskind, beaming, may have secured front page headlines when his “bath bathtub” scheme won the competition for the World Trade Center. But the real winner is developer Silverstein and his architects, more, Owings & Merrill (SOM). Libeskind actually secured only 4,000 square feet of the project’s cultural facilities, while Silverstein’s architects—if the developer prevails on his insurance claims—get the 10 million square feet of office space available to the square footage of trade towers. SOM would handle 96 percent of the project in a cultural facility, while Silverstein’s architects, if he prevails, separate cultural buildings into a memorial precinct. From the beginning, Think reasoned that funds for cultural facilities were better protected if isolated in a memorial precinct rather than dissipated through the whole site. The architects Rafael Viñoly, Frederic Schwartz, and Shigeru Ban decided to forgo the design of the office buildings and proposed scaffolds with several cultural buildings suspended high in their framework.

At the heart of his project, Libeskind left the deep bathtub, which he bounded on two edges with low-rise cultural buildings that were framed in turn with high-rise office towers. Though basically conventional, the freestanding office buildings were designed with facades that shared the ethos of the rest of the project. Libeskind based his design on a secondary geometry representing the paths of arrival of rescuers, which he overlaid on a newly recreated street grid. Writ into the facade, the fractal geometries mystified the towers and eluded easy understanding. The apparent irrationality acknowledged yet transformed the history of the troubled site.

When, in his initial presentation, Libeskind noted his crystalline office towers could be designed by other architects, the developer and officials obviously listened. Prior to Libeskind’s selection, Silverstein laid claim publicly to the towers, saying they were his alone to rebuild, with architects of his choosing. Whatever his actual motives may be, the terms of his insurance claim force him to display intent to build. SOM, one of the seven contenders in the recent competition, withdrew, citing conflict of interest. Silverstein’s court architects, SOM was about to lose the competition but get the bigger commission.

This winter, the architectural politics surrounding 9/11 emerged as a huge chess game, and officials and developers essentially check-mated a public playing blind. The
Libeskind design could be stripped down to the bathtub and 400,000 square feet of attendant cultural facilities, and Libeskind would still appear to be the winner.

In his bid to get the job, Libeskind not only conceded towers that were not really his to give away, but also compromised the bathtub at the core of his poetic idea. In one of his more cloying analogies, he said that the 70-foot-high slurry walls had withstood the attacks, like America's democracy. Ironically, they apparently couldn't withstand the putatively democratic process of rebuilding the site. The Port Authority, which hasn't acted as a visionary institution since the Twin Towers were built, has forced acres of bus parking into the bathtub, a myopic strategem that will take visitors off New York's ample public transportation systems while clogging the city's vehicular arteries. The parking decks cost the tub its proportions, aura, and sense of authenticity. Visitors will no longer descend into the depths of the disturbed site as though into another emotional and environmental state, but will head up to his 1,776-foot-tall tower. But beyond the conspicuous green growing on elevated decks buttressing the weakened slurry walls. The slurry walls do in fact need to be reinforced, but they could be buttressed in a way that retains the raw materiality that gave the Libeskind proposal its character. The pit now looks sanitized.

A project that now fails at the ground also fails in the sky. Libeskind maintains that the master plan can survive a change of architects if the volumetric massing remains roughly intact, spiraling up to his 1,776-foot-tall tower. But the gardens originally conceived within the tower as a symbol of renewal are now gone, replaced by a restaurant and communications tower competition but a search for a land-use plan that would serve as the basis for reconstructing the site. However, the sex appeal of Libeskind's scheme helped sell a plan that, ironically, is hardly different from two of the schemes presented in July by the hapless Beyer Blinder Belle. That firm lost the battle because the architects simply planted dummy models as space holders rather than show-stoppers like Libeskind's fractalized crystals. The architecture that sold the project has now been removed.

Beyond the conspicuous deception lies an expanse of missed opportunities. Burying West Street could have yielded land for thousands of self-paying apartments, but the idea was summarily taken off the table, removing a residential population that could have both breathed life into downtown and jump-started demand for New York's neglected harbor and waterfront. Nowhere did the Port Authority encourage designers to reconnect the city to a body of water that ranks as a potential national park and recreation area. Faced by the glut of office space, officials did not try hard enough to convert office to residential use. The token amount of residential space in Libeskind's scheme was removed.

New York still runs on its great old public works—its bridges, tunnels, subways, and parks. But, strangely, nothing of a monumental scale has been built in the city since the Twin Towers. The city and state have lost their will and ability to create the infrastructure of a public realm: Clearly this competition has made obvious that the model of a public/private partnership hits a glass ceiling when it comes to vision. New York now faces the prospect of a downtown skyline around Ground Zero that is indistinguishable from Houston's or Dallas's—cold, conventional, and corporate, even if dressed in the latest curtain walls.

So much for transparency in the process and integrity in the vision. But no amount of rhetoric and PR will be able to spin the commercial juggernaut about to engulf the site if the developer prevails. The Libeskind scheme, sadly, is now a decoy. The televised renderings that depict a rebuilt Ground Zero from the pit mask 10 million square feet of high-rise buildings of unknown design. The new non-Libeskind vision from the other side, however, has never been presented to the public.

Ironically, Libeskind's proposal has shrunk so much that there is enough room after the bathtub and his cultural buildings for a new competition to design the site. Alternatively, the original contenders could now be reconsidered, such as the Beyer Blinder Belle project by United Architect or a variant of the same idea of interconnected buildings, by the Richard Meier team. Libeskind is now basically designing a cultural park, leaving the rest of the site up for grabs.

There are only two hopes. The first is that Libeskind will rally reclaim what he had to concede to get the job. He owes it to himself and the public because his talent has been used as a vehicle to dupe the public. The second hope is that Silverstein is unhappy with his insistence on the city administration survived its architectural trials in the aftermath of 9/11. But this is a sacred design trust that cannot be broken: The buildings that emerge should act as a cast reenact the nobler dimensions of which the principles of our nation. Pulling a fast one just won't do.
be it could be in New York City at Whitney Museum of American Art? Wherever. Somebody should mount an exhibition on Taliesin. I've stolen this idea from Neil Levine, the noted architectural historian and Frank Lloyd Wright scholar and Frank Lloyd Wright scholar. Such an exhibition would present Taliesin as a finished work of art, because it never was such thing. That would be the point: to understand Taliesin by extension, all architecture.

Taliesin East is not so much a built object as an architectural event, the noted architectural history of East. It's like these great old sites that had many layers, like Troy. And the documentation is there. He'd like to see the house presented in an exhibition in six parts: 1911, 1914, 1924, 1937, 1949, and 1959. He thinks we'd learn a lot not only about Wright, but about the nature of creativity.

There's another reason for an exhibition on Taliesin. The place is falling apart. It needs our love and our money.

As Wright often said, he built Taliesin not on the hill but of it. That's part of the problem. The house functions as an unintended retaining wall. The soil is only about 6 feet deep, resting on rock. As water tries to percolate down the slope, it builds up behind the foundation walls, creating hydrostatic pressure. Twice in recent years the result has been a mud slide. Chunks of the hill's earth have slipped laterally, in a shear failure against the rock beneath. So far, there's little damage to the house, just "long-term creep," in the words of Tony Putman of the Taliesin Associated Architects, who still use the house. But repairs are urgent.

John Eifler is a Chicago architect who is consulting on plans to solve these problems. "First, we have to stabilize the hill on which the building sits," Eifler says, "and then we have to stabilize the way the building sits on the hill. Both of those are pretty tall orders. They require a lot of underpinning and concrete, and it all has to be done in a way that is gentle and not noticeable."

The sliding hill is only one of Taliesin's problems. Wright built his house like a stage set. Outdoor stone terraces rested on wood joists, which predictably rotted. Glass met stone without engaging it, so you can sometimes put your finger between. The heating system no longer works, and in winter there are icicles indoors.

Designing for an audience
Beyond the natural decay, there have been unexpected disasters, such as the storms the locals call
Critique

“microbursts.” An icon of Taliesin was the great oak that occupied the main courtyard. A microburst sent it crashing into the roof of the old drafting studio several years ago. That damage has now been repaired, but at the cost of money that might have been spent on other repairs.

“I guess Wright decided that...”

WE SHARE THE VALUES OF A PACK OF VANDALS, PRIZING COLLECTIBLE OBJECTS MORE THAN CREATIONS LIKE TALIESIN.

the next generation would take care of things,” says Eifler. “Taliesin was theater design. The point was to impress clients on a very tight budget.” The late Wesley Peters, Wright’s leading disciple in the Taliesin Fellowship, once told me that the master would sometimes rout his young student apprentices out of bed in the early morning and set them to pouring concrete on the bare earth, in order to build his latest brainstorm. (You can argue that Taliesin—like Jefferson’s Monticello—was in part erected on the backs of a slave culture, the difference being that the apprentices paid for the privilege.)

Vermont Bob Burley is another architect who has worked on Taliesin. “There are very few places where construction is first rate,” he says. “I think Wright would say that being able to carry out the idea physically and have people see it and enjoy it is more important than making a timeless monument. Maybe a little bit like Palladio: Let’s get it up with plaster if we have to, to at least get the form. And of course he didn’t have the money.” Ten years ago, Burley led a team to analyze the building. He guessed then that it would take $20 to $30 million to fix it. He figures the number should be at least doubled today.

Too big to hang
But $60 million for Taliesin is chump change. A single Van Gogh can cost as much. We preserve with devotion our heritage of paintings and sculptures. Yet we let our masterpieces of architecture deteriorate. Taliesin East, taken as a whole, is a far greater work of art than any American painting. But in our culture we tend to share the values of a pack of vandals. We see collectible objects as more valuable than holistic creations like Taliesin. That’s because Taliesin is too big to be acquired and hung on the wall of a museum or a living room as proof of wealth and taste.

It’s not that nobody is doing anything; Taliesin is owned by the Frank Lloyd Wright Foundation, and the foundation is embarked on a capital campaign. Its president, J. Goulka, grew up across the street from the Oak Park home and studio near Chicago. He’s a businessman with an art history degree from Yale. At Yale, Goulka attended a Vincent Scully lecture where, he says, “the lights went off and he started talking and my world changed.” Goulka and his board, with advice from the National Park Service and others, will make the decisions about Taliesin. A federal grant of $1,140,000 will help solve the subsurface drainage problem. But that’s a small beginning. If you figure the whole estate, barns and school, windmill, farm, and all—a $60 million economy—you should, because everything is part of the holistic vision of life that Wright created—you’re talking about 100,000 square feet of building plus a lot of historic landscape. Not to mention the contents: works of art of every kind, carriages and sleds and skis, even Wright’s old movie projectors, all of which he tells the story of the communal life...
Steelcraft GrainTech® The best steel door, available with Von Duprin’s INPACT™ exit device. The Steelcraft GrainTech door series gives you the rich look of real wood grain with the strength of steel for a door that withstands extreme wear and tear. Our exclusive embossed grain and staining process simulates the beauty of wood with six factory colors. The GrainTech door can be ordered with Von Duprin’s INPACT exit device in a pre-installed door system. Von Duprin’s INPACT exit device is the latest innovation in design, giving you low profile, great looks and durability. Two great brands that can be ordered separately as well.

To learn more about Steelcraft GrainTech doors and Von Duprin INPACT exit devices, visit insecureityandsafety.com or call 1-877-840-3621 to contact one of our 22 Security & Safety Consultant™ offices. (Learn more about the Vandlgard program—hardware for high-abuse environments.)
Wright strove to create.

Two issues dominate the question of preservation. Issue One: How do you keep the sense of Taliesin as an improvisation? Taliesin was an act of creation as joyous and careless as a dance. It was an open-ended experiment, a place in a state of continual transformation and invention. Restore it too carefully, and you lose that sense. But just how does an architect walk that tightrope?

Issue Two: To what date do you restore a building that never stopped changing? Nobody quite agrees. Our reference date for the restoration is 1959, says Goulka. "It will be a restoration in the precise sense, to the Secretary of the Interior standards." John Eifler is less sure. "I think we're using 1959 as a guide, there's no question about that, but we are considering everything on an individual basis. We might elect to keep something that Olgivanna [Wright's third wife] did [after Wright's death], because you can't ignore her influence on these buildings."

He points to the Oak Park house and studio as an example of a restoration that was perhaps too zealous. "They had a very rigid date for their restoration. In the process, they removed an entry vestibule that Wright did a little later on. So that you had real stuff getting removed for kind of ersatz stuff."

A third position is that of Neil Levine. He'd like to restore the house to about 1925, when he thinks it peaked. "Certainly before 1938," he says, the year he believes Wright's passion shifted to Taliesin West in Arizona. Levine thinks that after 1938, Wright "sort of trashed Taliesin East or, let's put it this way, he no longer considered it to be the prime place of experimentation."

These are questions that deserve a national debate. They shouldn't be resolved by a few inside players. A public exhibition could put them on the table.

**AFTER 1938, WRIGHT NO LONGER CONSIDERED TALIESIN EAST TO BE HIS PRIME PLACE OF EXPERIMENTATION.**

A hometown favorite

A contrast to Taliesin is the fate of another indispensable Wright house, the Darwin Martin House, in Buffalo. Preservationists have acquired and demolished an apartment building that long occupied the site of the Martin's former carriage house. The carriage house is being rebuilt, together with the famous pergola that linked it to the main house. Is this preservation, or is it re-enactment? I don't know, but I'm glad it's happening.

Buffalo is my hometown and also Bob Burley's (he once worked on the top floor of Sullivan's Guar Building, with the circular window. Our city has seen tough times economically in recent years. One result is that Buffalo is prouder than ever of the treasures it still has, whether those are sports teams or Wright houses, of which Buffalo possesses four. Buffaloonians, who once tore down the Larkin Building, now see Wright as an emblem of past greatness and future potential. Taliesin lacks that kind of patriotic setting. It's up to the nation as a whole to become, for Taliesin, the constituency that Buffalo is for the Martin.

I won't try to describe Taliesin. Suffice it to say that there is no greater work of American art. A museum show would bring its greatness into the consciousness of a large public and help preserve it for the future. If we don't do those things, we might as well forget our pretensions to culture or civilization. ■

---

**NO MATTER HOW HOT YOUR DESIGN, WE CAN COOL IT.**

Now you can install a high performance cooling and heating system no matter what sort of design you choose for your custom home. The Unico System's flexible mini-ducts fit easily into the most complex designs where conventional systems can't — including curved walls and vaulted ceilings — providing even temperatures throughout each room. Outlets are small and subtle to match any décor.

With the Unico System, you'll enjoy the superior performance of quiet, draft-free cooling and heating all year long.

For complete information on the high performance Unico System, call 1-800-527-0896 or visit us on the web at www.unicosystem.com.

CIRCLE 70 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
Home on the shelf: A roundup of titles on residential design

Books


Joy, who spent 12 years as a landscape and carpenter before going to architecture school, says, "As a carpenter I was always more interested in the ways to make the music of a house as simple yet emotionally full as the desert itself?" Joy’s work seems formed by a wisdom derived from the entire heritage of desert architecture, and his attitudes toward the music of a house’s gaze is transfixed on the desert range to the northeast—Catalina, and by short descriptive sketches, diagrams, and working drawings, the result of mind-eye-hand connections, they provide evidence of an architect’s ideas and values. Applying this lens, Beck and Cooper’s new book about Murcutt provides a fresh look at the 2002 Pritzker Prize winner’s work, most of it houses. Here, numerous drawings combine with excellent photographs and revealing commentary to uncover insights not usually revealed in more historically oriented monographs on Murcutt. The book is organized into three sections: theory, practice, and technique. In the first section, Murcutt, Beck, and Cooper clarify the vernacular, and available materials give Minimalism a poetics of inhabitation. Murcutt’s work falls into this category but goes further. The Glenn Murcutt we get to know here is a rationalist who frames his work as a rationalist, his hallmark linear plans back through Le Corbusier and Wright to the vernacular, and look at Murcutt’s working process through drawings for the unbuilt Broken Hills Museum. Murcutt talks about being inspired by the poetics of utilitarian architecture, reflects on his frustration with the loss of a fundamental connection between building and site in architectural education, and—in a discussion of detail and product choices—demonstrates his enthusiasm for the making of buildings. In the practice section, chronological presentations of 23 projects, completed over 30 years, are accompanied by commentary by both authors and Murcutt and give an overview of the architect’s work to date. This feast of drawings and photographs leaves us wanting more, a desire partly satisfied in the section on technique by a wordless collection of design-development and working drawings for the 23 projects. The legendary Murcutt sectional drawings are particularly engaging. With characteristic economy of means, the entire drawing is densely noted on one sheet, demonstrating the way systems of foundation, floor, wall, and roof all relate to one another. Unfortunately, publishing decisions compromised the legibility of many drawings. Beck and Cooper are advocates for Minimalism’s ability to empty out symbolism in favor of unadorned tectonic clarity. However, they also continue Colin St. John Wilson’s exploration of the “other tradition of Modernism,” in which the particulars of climate, landscape, and available materials give Minimalism a poetics of inhabitation. Murcutt’s work falls into this category but goes further. The Glenn Murcutt we get to know here is a moral rationalist who frames his design decisions in terms of his client, the site, and life-cycle material, labor, and environmental costs. His drawings show an endless will-
Inniness to explore and a rigor and precision of detailing that pushes his work beyond the poetic and into the sublime. The drawings in this book reveal, quite simply, a man who loves building—and who inspires us to do the same. Lisa Findley


Open House stands out from the recent flood of books about contemporary houses because of Adi Shamir Zion's provocative writing, which is enhanced by Dung Ngo's crisp, intelligent design. The first half of the book uses essays, supported by quotes, photographs, and plans, to trace the idea of openness in house design from the free plan to the endless house and beyond. In the more conventional second part, Ngo and Shamir Zion present 12 contemporary house projects by UN Studio, Glenn Murcutt, LOT/EK, and others through photographs, drawings, and a brief text.

In her lively essays, Shamir Zion argues that openness comes from one of three basic qualities or intentions: liberation, universality, and continuity. She traces the evolution of each from its early Modernist roots to today. Braided into the discussion are explorations of openness in art, film, dance, and literature, together with breakthroughs involving openness in psychology and physics, new building technology, and changes in urban, economic, cultural, and family structure. The essays range widely, tracking influences, disagreements, responses to criticism, and experiments that succeeded as well as others that failed. As a result, they are idiosyncratic and speculative in the best sense. They remind us of the less-well-known open house designs of Oscar Niemeyer, of Brazil, and José Antonio Coderch, of Spain. They cause us to wonder what visionaries like Buckminster Fuller and Frederick Kiesler would have done with access to today's digital and material technology, or why Schindler, Neutra, and Eichler did not have a more significant impact on suburban housing in California. And they purposely leave us without a conclusion, making clear that the exploration of unbound space is still very much a subject for architects to debate and push forward.

The design of the first half of the book moves beyond illustration to collaborate with the text. Sidebars, quotes pull the reader out of the flod of the text—suggesting that readers will be more open. Pale page photographs are carefully selected to support ideas of openness, so that taken together the projects provide a kind of catalog of design strategies for unbinding space. It is no accident that this beautiful book opens the reader thinking about the nature of openness in architecture. Lisa Findley

Looking for a picture tour, developers, cost managers, and bureaucrats. As a result, there is great variety among the authors' houses. The collection ranges from a 640-square-foot live-work studio in Los Angeles by Dry Design to a 2,500-square-foot house in Seattle by Olson Sundberg Kundig Allen Architects. Along the way, it includes work by Rick Joy, Stan Allen, Mack Scogin and Merrill Elam, Obie Bowman, Turner Brooks, and Bohlin Cywinski Jackson. All of the houses are American, except for one by Gabriel Poole in Australia and one by Jacques Moussafir in France. Clifford A. Pearson


The 20 North American houses shown in House were chosen to illuminate changing ideas that are shaping the American dream. The authors say they had difficulty finding houses that fit the bill. The book's first section showcases designs that push materials and building techniques to new expressions. The residences in the second section take their cues from their sites and impact them as little as possible—ideas aligned not with high Modernism but with environmentalism and social responsibility. The book's final segment is erroneously called "Revolutions." Indeed, the authors say they "are not so much suggesting that the architecture in this chapter is revolutionary, as much as we are saying that it creatively responds to the rapidly changing demands, functions, and conceptions of the contemporary house." Ho and Barreneche showcase three multigenerational dwellings, among them Steven Holl's Y-House, a tree house by Marlon Blackwell, and a house by Kennedy & Violich containing a home office, gallery, and lap pool.

None of the solutions shown in House are revolutionary or mind-popping, a point reinforced by the authors' conclusion that the "most significant revolution in domestic space in the late 20th century" is the residential loft. AOD
Perrin & Rowe produces the finest collection of faucets and accessories for the bath, shower and kitchen. Some of the most prestigious hotels, resorts and private residences in England, America and around the world feature Perrin & Rowe.

Perrin & Rowe is brought to you exclusively by ROHL, providing readily available inventory, technical support and customer service through its network of displaying decorative plumbing and hardware showrooms.

ROHL partners with Perrin & Rowe to produce faucets, shower valves and bathroom accessories that comply with American installation and code standards.

Call, or visit www.rohlihome.com to request a complete catalog and locate your nearest showroom.
Diller + Scofidio challenge assumptions in first major American exhibition

Exhibitions

By John E. Czarnecki, Assoc. AIA


Challenging assumptions underlying design of physical space, place, objects, and their meaning, New York architects Elizabeth Diller Ricardo Scofidio, in their first American museum show, lure spectators into a commentary on contemporary society. With an exhibition comprising a divergent collection of work that is both witty and engaging, Diller and Scofidio demonstrate that the creation of utility and order is superficial without an understanding of the world around us.

Scanning: The Aberrant Architectures of Diller + Scofidio, the Whitney Museum of American Art is more about art and design than about the design of buildings. A husband-and-wife team, who have collaborated for more than decades on art and architecture, is fast emerging from the New York avant-garde and academia into national attention and major commissions, including the landscape plan for the planned Lincoln Center renovation in New York (see page 46).

Other conceptual artists have borrowed material and concepts familiar to Diller + Scofidio’s: the experience of objects and environments, display, ritual, inside versus outside, transparency versus opacity, and public versus private—but it is important to see architects take on these themes on a large scale. Diller + Scofidio challenge the assumed territorial nature of physical space, encouraging other architects and designers to question, and ultimately to make richer places. The show includes video installations, designs for buildings and interiors, temporary museum installations, theater design, public art, toy robots, and a drill.

As visitors arrive on the Whitney’s fourth floor, they may hear the drill piercing the exhibition’s walls. Suspended from a track running 320 linear feet along the walls, the computer-controlled tool, with a half-inch drill bit, slowly moves along the track until it reaches a random point, where it punctures a hole both in the wall surface and in the silence of the space. Called Mural, this portion of the exhibition calls attention to the white walls—usually neutral supports for art that are not noticed as objects in themselves. By the end of the exhibition, a number of holes will have perforated the walls and interrupted their continuity.

Another wall intervention, Uncovered, is more subtle, but striking upon closer inspection: The architects have inserted an original gypsum-board wall from the Museum of Modern Art (now closed for an extensive renovation and expansion) into the exhibition wall at the Whitney. The differences in texture and shade of white paint, with markings where art used to hang, force the viewer to contemplate the wall segment’s place, function, and history.

Another installation, Bad

The exhibition of the work of Ricardo Scofidio and Elizabeth Diller (above) includes the installation Tourisms: suitCase Studies (top); Master/Slave (second from top), with toy robots on a track; and the aberrant creases of Bad Press: Dissident Housework Series (left).
Exhibitions

Press: Dissident Housework Series, showing shirts that are pressed and folded into imperfect and irregular forms, questions the aesthetics of efficiency, refinement, and cleanliness that we take for granted.

Diller + Scofidio's wry sense of humor mixed with social commentary is apparent in both Master/Slave and Tourisms: suitCase Studies. Master/Slave features toy robots—from the collections of Rolf Fehlbaum and Filo Stricker—along a conveyor belt in a large steel and glass vitrine. The robots move, one by one, along the belt into an X-ray scanner and past surveillance cameras mimicking the way people pass through airports. Tourisms: suitcase Studies, with 50 suitcases that each have a postcard and text from one of 50 tourist attractions in the U.S., examines the issue of authenticity in place-making.

Models and drawings of the firm's architectural projects seem in aggregate more like an aside to the other installations. A large-screen video of the Blur Building shows the museumgoer what a walk through the steam-filled structure is like. However, the drawings and models of buildings on the boards, like the Institute of Contemporary Art, in Boston, and Eyebeam Atelier, in New York, although beautifully designed projects, do not have the same impact or offer the ironic commentary of other portions of the show.

With Intercone Hotel, an ad campaign for an invented hotel chain, Diller + Scofidio present a critique of the role of architecture in contemporary life. While the information and hotel decor vary for six cities, the room itself and the skyline views change very little—a formula of sameness intended to confer comfort.
work and no play is no fun. But visitors to the Nigaki Chemical Company on the island of Kyushu, Japan, haven’t had to worry about that since the business completed its guesthouse. Instead, one can look forward to being wined and dined while gazing out at picturesque Saeki Bay. To accommodate the steady stream of colleagues making the 6-hour trek down from Tokyo and Osaka, the company owner wanted an entertainment space adjacent to his factory. In hiring Oita City architect Takao Shiotsuka, he also got a whole new way to experience the sea.

Considering that he’s been looking at Saeki Bay all his life, this was no mean feat. But Shiotsuka pulled it off with a simple, rectangular concrete box designed to fit in with the company’s industrial buildings. Enclosed by huge glass panels at either end, the 734-square-foot structure backs onto a hilly forest. In front, the water practi-
cally laps at its feet. Tinted black, the glass panels do not reveal the interior, but on the long elevations, a large triangular cutout of the building's base begins to reveal the main space's topography.

From the building's entry at the rear, stairs lead directly up to the main room's upper level. Here, the entire waxed-pine floor begins a stepped descent that pauses midway at a landing big enough to accommodate a dining area for six, and culminates in an open food-preparation area with plenty of room for guests to mill about. Each spot has a different vantage point to the sea. As the floor drops, the visible sky-to-water ratio changes, and the water draws closer until, says Shiotsuka, "it feels as if you're riding and shaking on a ship."

Like a camera lens, the window's 13-by-16-foot sheet of heat-absorbing glass focuses attention on the water but filters out more than unwanted rays. "If the exposure to the ocean is too direct, the smell and wind can be too strong," says Shiotsuka. Editing out these sensory elements intensifies the water's visual impact: All day long the waves' changing shadows and colors wash up on the building's glossy interior walls. After watching the water, it is possible to plunge in—albeit into the sanitized setting of the Japanese bath downstairs, where glass doors fuse the spa area with a private terrace facing the wooded hillside.

This building is not a guesthouse in the truest sense of the term. "It is not possible to sleep here unless you bring your own sleeping bag," chuckles Shiotsuka. Even so, it's still quite the haven for sybaritic pursuits.
THE BEST CONTRACT DOCUMENTS JUST GOT EASIER TO USE.

The leading contract documents are now easier to use than ever before, thanks to AIA Contract Documents 3.0 PLUS. It's a free upgrade for current electronic format 3.0 users, featuring:

- 11 new or revised documents
- Faster-printing "DRAFT" watermark for clean, readable copying and faxing
- Multi-seat licenses
- Improved navigational aids and formatting

AIA Contract Documents were created from a consensus of contractors, attorneys, architects and engineers. They've been finely tuned through 11 years of legal precedent. And now they're easier to use than ever before.

- To order AIA Contract Documents software, or to obtain your free upgrade, visit www.aia.org or call 1-800-365-2724.

THE AMERICAN INSTITUTE OF ARCHITECTS
www.aia.org

Copyright ©2002, The American Institute of Architects. All rights reserved.
When you specify The System™ from J&J Commercial you get the most complete combination of lifetime warranties in the carpet industry.

But the question remains, what is “lifetime?” The answer is up to you. J&J’s lifetime warranties are good for however long you keep our carpet on the floor: 3, 16, or 30 years—it’s all up to you.

Isn’t it refreshing to know a manufacturer who lets you decide the length of its product warranties?

A 45-year tradition of making carpet—Think Smart, think Beautiful, think J&J Commercial.

800.241.4585 - www.jjcommercial.com/THESYSTEM.asp
The Promise of the Prototype

by Thomas Mellins

Despite the enduring power of the single-family, freestanding American house, neatly equipped with gables and shutters and redolent with reassuring associations of peaceful family life, the desire to push the envelopes of style and technology also has a rich history. Throughout much of the 20th century, museums, magazines, and expositions sponsored the design and construction of stylistically inventive case-study houses. Intended as teaching tools for introducing Americans to Modernism, they were also meant to create reproducible prototypes. The hope was to make real (and affordable) a more daring dream of domesticity.

Thomas Mellins is a RECORD contributing editor and Web curator for the National Building Museum's Building America site.
The goal of bringing innovative, affordable houses to the mass market has never been fully achieved in the U.S. Indeed, demonstration houses have varied widely in their ability to influence mainstream taste or building patterns. Nevertheless, the houses collectively constitute a veritable textbook of Modern architecture's evolution in America. Underlying all of them has been a common conviction that abandoning the familiar can have real rewards. This is pretty heady stuff at a time when so many seem bent on disguising contemporary technologies—and lifestyles—in faux Georgian or Mediterranean McMansions.

Though some of the last century's experimental houses may strike us as impractical, or even downright wacky, it is hard to deny how contemporary and cutting edge some of these historic houses look today.

A mass-circulation magazine, Ladies' Home Journal, took the pioneering step in 1900 of sponsoring a series of designs for moderately priced suburban houses. Frank Lloyd Wright designed three of them. The stylistically progressive houses implied freedom from colonial inferiority and ingeniously constructed houses clearly suggested that popular historical styles derived from European precedent would soon be rejected for an architecture shaped by the American landscape and national character. Here, Wright seemed to suggest, were truly American houses, finally free from a lingering sense of colonial inferiority.

The “future American country house” received new impetus from Architectural Record when the magazine published a prototype design by Swiss-born Modernist architect William Lescaze in 1928. The International Style scheme, complete with concrete walls, exposed heating pipes (no fireplaces), and rooftop meteorological equipment, eschewed familiar settings for hearthside family life. It vividly embodied the idea of the house as “a machine for living.”

House construction came to a near standstill during the Great Depression, but experimentation flourished. The Aluminaire House, designed by Alfred Frey and A. Lawrence Kocher (then Record’s managing editor) and touted as the world’s first all aluminum and steel house, was constructed as part of the Architectural League of New York’s annual exhibition in 1931. Lambasted by some critics as looking commercial, the boxy composition seemed to push the limit of a recognizable domesticity too far to be influential.

But the concept of metal houses grabbed the imagination of other architects. When the Century of Progress Exposition in Chicago displayed 13 model houses sponsored by private companies and business associations in 1933, the standout was a three-story, 12-sided, glass-and-steel house designed by George Fred Keck. His “House of Tomorrow” featured a passive solar heating system, central air-conditioning (and inoperable windows), as well as a ground-level hangar for the owner’s biplane. In a two-year period, more than 1,250,000 people visited the building. Keck went on to establish a successful architectural firm with his brother William, although its output incorporated some of the advanced technological features of the House of Tomorrow, it lacked the...
IF YOUR CLIENTS LOVE TO COOK, THEY'LL LOVE KITCHENAID® APPLIANCES.

KitchenAid® innovative appliances look, work and perform in harmony to meet the needs of today's passionate cooks. KitchenAid® appliances deliver exactly what your discriminating clients are looking for: legendary performance trusted by professional chefs; attractive, thoughtful designs with built-to-last craftsmanship; plus, complementary small appliances, cutlery and more.

For appliances that appeal to passionate home enthusiasts, design with KitchenAid® appliances. Only from Whirlpool Corporation. The Inside Advantage.™

Call Whirlpool Corporation at 800-253-3977.

"WE’RE PASSIONATE ABOUT COOKING AND ENTERTAINING. THAT’S WHY OUR APPLIANCES HAD TO BE KITCHENAID® BRAND."

KITCHENAID® HOME APPLIANCES

© 2003 Whirlpool Corporation. All rights reserved. ® Registered trademark / ™ Trademark of Whirlpool, U.S.A.
demonstration house's frankly futuristic look.

Between 1928 and 1946, the visionary architect Buckminster Fuller experimented with a variety of industrially produced shelters, all called Dymaxion houses. He designed the structures to be low cost, lightweight, easily transportable, and mass-producible. In 1941, the Museum of Modern Art (MoMA) in New York City erected one of Fuller’s Dymaxion Deployment Units in its sculpture garden. Five years later, another Dymaxion structure, known as the Wichita House, attracted strong consumer demand, but the project ran aground after Fuller suspected his business associates of shady dealings.

By the time John Entenza, the visionary editor of Arts & Architecture, initiated the magazine’s Case Study Houses program in 1945, a young generation of practitioners, deeply committed to architecture as a manifestation of reformist public policy, was eager to show that innovative design could be enjoyed by Everyman. The widely publicized program made stars of Pierre Koenig, FAIA, Craig Ellwood, Charles and Ray Eames, and the photographer Julius Shulman. It also helped to make sliding glass doors and flat roofs widely accepted. Indeed, as Koenig, who still practices in California, recently pointed out, the program catalyzed changes in local building codes, as well as in banking practices. Gone were stipulations that houses be outfitted with shutters and pitched roofs.

Perhaps most important, the program convincingly advocated a casual new lifestyle appropriate to California, based on “indoor-outdoor” living. Paradoxically, it encouraged a return to nature, coupled with an optimistic stance toward future increasingly defined by technology. And the houses—though more “cool” than cozy, looked as if they would be enjoyable places to live in, with terraces and barbecue grills. A new lifestyle was at hand.

Current interest in the Arts & Architecture program still runs high, as reflected in the recent publication of Case Study Houses (Taschen, 2002), a sumptuously produced book by Elizabeth A.T. Smith. Some argue that the program constituted more of a final flowering than a new beginning, resulting in “collectibles” for the cognoscenti rather than affordable habitation for the middle class. Yet it exerted a strong effect on such California merchant-builders as Joseph Eichler, who during the 1950s and ’60s built more than 12,000 affordable, Modernist-inspired homes.

In 1949, only four years after Entenza launched the Case Study House program on the West Coast, the Museum of Modern Art in New York hired Marcel Breuer to design a model house in its sculpture garden. The most eye-catching feature of the one-story, cypress-clad house was its butterfly roof. Inside, clearly defined rooms had given way to more fluid spaces. Large expanses of glass enhanced the sense of openness and blurred distinctions between inside and out. Around 75,000 people flocked to see the house during its summer-long run, inspiring the Woman’s Home Companion cosponsor, with MoMA, a second house in the same location the following summer. Designed by Californian Gregory Al...
The Shakertown® Craftsman™ 1-Course Cedar Panel is the newest development from the company that brought you the original cedar shingle panel. Manufactured using only the finest Western Red Cedar vertical-grain heartwood, the new Shakertown Craftsman Panel features concealed nailing and overlocking end-joints for a seamless appearance. Call today, or visit www.shakertown.com for your free brochure.

Shakertown and Craftsman are trademarks of Shakertown 1992, Inc.
the flat-roofed house was more severe and less expensive than the Breuer house. But it was still less affordable than the stylistically conservative houses being built at the same time by William Levitt on former Long Island potato fields.

In 1953, the Guggenheim Museum mounted a retrospective exhibition of Frank Lloyd Wright's work. The exhibition was housed in a temporary pavilion designed by the architect on the site of the future museum, which began construction three years later. The pitched-roof pavilion abutted a Usonian House that Wright built as a feature of the exhibition. The two-story, two-bedroom house demonstrated concepts he had been developing since the 1930s. Ironically, this example of Wright's vision, so rooted in a Jeffersonian model of agrarian democracy, sparked all the more by virtue of its swanky, densely urban New York setting.

For the past three decades, interest in bringing innovative house design to the mass market has waned. Traditional houses have proliferated, but often as watered-down versions of earlier styles and lacking the ambition of the best Postmodern models. Even when competently designed, these houses break no new aesthetic ground. Developers and housing experts often suggest that cutting-edge design is unlikely to enter the mass market anytime soon. Economic factors conspire against developers taking significant risks with untested products.

Nevertheless, experimentation continues, albeit without the public attention it once drew. In 1998, Michael Bell, an architect then teaching at Rice University's School of Architecture, organized an exhibition, 16 Houses: Owning House In the City. Bell commissioned architects to design houses for Houston's Fifth Ward, within the confines of a federally funded voucher program focused on helping low-income families enter the housing market. Among the participating architects were Lindy Roy, Seth Howe, Stanley Saitowitz, and Carlos Jimenez, along with Bell. The entries were stylistically diverse, but included such boldly Modernist schemes as Bell's Glass House @2°, built of glass, steel, and concrete. Under the Fifth Ward Community Redevelopment Corporation, a design by Morris Gutierrez Architects has been built and another, by Jimenez, is in the works.

Despite the great potential of efforts in Ward Five, viewed exclusively as blueprints for extensive development, demonstration houses may be limited in their influence. Still, if new methods of building, such as computer-assisted milling and other prefabrication methods, make experimental house designs more realizable, as some architects predict, then demonstration houses could help introduce home buyers to a wide range of soon-to-be-available options.

And even if the new technologies do not exert a profound effect on the marketplace, a prototype house that is successfully connected with the rich tradition of such efforts in 20th-century America might help refocus attention on the idea that exploring the unknown is worthwhile, and indeed, the necessity for a culture that does not wish to stagnate. After all, in and of itself, might be a very good thing.
Record Houses 2003

Dynamism and collage emerged as leading motifs in 20th-century art—and continue to play vital and evolving roles in architecture today. As this year’s selection of Record Houses tests, architects are actively exploring issues of movement—be it kinetic building parts, in forms and compositions that imply motion or potential energy, or in structures that prompt journeys through and around them. And while collage appears in architecture influenced by Postmodernism and Deconstructivism and, one could argue, in the work of Frank Gehry, this motif currently finds expression most often through the visible layering of materials and spaces. Sometimes the layering itself—with its potential for internal spaces and translucent boundaries—stimulates movement.

Such is the case with Sean Godsell’s Peninsula House, in Australia: a glazed rectangular volume wrapped in a veil of thin wood battens. To enter the building, you must travel an elongated, semi-outdoor route, passing between the two skins. Like a wicker picnic hamper, this beach house can be unpacked, revealing its contents, when its outer hinged panels open. This layering is partly about privacy and partly about camouflage and attunement to the landscape.

Kinetic and visually light in other ways, Shigeru Ban’s Picture Window House, in Japan, also defers to its setting. Its moving parts are large glazed panels that slide aside, literally opening up two parallel elevations—turning the house into a huge picture window to the sea. The openings extend the interior onto decks, ushering the inhabitants (with lightweight furniture) farther outside.

At Thomas Phifer’s Taghkanic House, in New York State, a sheer, movable layer forms a sail-like brise-soleil over glass. And at Valerio Dewalt Train’s Doblin Residence, in Chicago, a facade of seemingly impenetrable corrugated steel becomes transformed, offering sculptural variations on a theme, as its mechanical bifold doors peel back to disclose a hidden garden.

To discover the size and character of the Doblin and Taghkanic houses, you must move through and around them. The same holds true for the other projects in this collection—including Jim Jennings’s Visiting Artists House, Alvaro Siza’s Quinta Santo Ovidio, Jarmund/Vissgnaes’s Red House, and Mack Scogin Merrill Elam’s Mountain Guesthouse—remarkably dissimilar as they are in form, materials, and site. In our pages, we invite you to follow the trajectory of Jennings’s enigmatic concrete walls as they carve into a California hillside, to penetrate Jarmund/Visgnaes’s deceptively modest entry in the outskirts of Oslo, and to ascend the ramp into Scogin and Elam’s Georgia treetop aerie. Please feel free to move about—to peer between layers and behind the moving parts. Sarah Amelar
Glass panels slide aside, opening up the sides of the main living area. A rail-less deck is continuous with the interior floor plane, extending toward the sea.
Shigeru Ban revisits the idea of a framed view, with walls that literally slide away, opening his Picture Window House to the sea.

Most houses have windows. But Picture Window House, Shigeru Ban's latest residential design, is a window. A remarkably simple but powerful scheme, the 2,950-square-foot structure consists of two glass membranes oriented by metal wall panels at either end. The uninterrupted views of shaded greenery to the north and Pacific Ocean to the south are spectacular, the complete opening of the ground floor’s main room is sublime. When the room’s sliding doors are pushed back, 66-foot-wide openings are unveiled on the house’s long elevations, transforming the interior into a conduit for light and sound, all flowing freely from forest to beachfront.

The main room—combining kitchen, living, and dining—opens directly onto a porch overlooking the water. A seamless extension of the interior floor, the porch is a rail-less platform, inspired by traditional engawa verandas (typical in Japanese houses and other wooden buildings), which straddle the line between inside and out. Bookends, a double-height entry foyer with a bathroom and a two-story pottery studio with a study flank the main space. (The owner, a widower with grown children, who visit frequently, is an amateur musician.) Doubling as structural supports, the two end pieces carry the house’s vertical load to the ground. They tie into the second floor’s-and-concrete floor slab and trusslike web of columns, beams, and diagonal braces—designed like a bridge to span the lower level’s unobstructed openings.

Upstairs, a corridor that doubles as a bathroom gives access to a living area and four bedrooms. Even in Japan, where the need for lute privacy is not as great as in the West, this pairing is unusual. “I two places that are only used occasionally and combined them into ‘ explains Ban. Designed to beat the morning rush, this space is outfitted with five sinks, two toilets, and a tub. Whereas only tempered glass curtains separate the functions here, a more conventional lavatory downstairs offers substantial enclosure and privacy, except where its window opens the room to views of the sea.

At the outset of the project, the client provided a laundry list of programmatic pieces, including the number of bedrooms and other functional requirements, but left the rest up to Ban. What really got the architect’s creative juices flowing was the land itself. “It is easier to know what to take advantage of when clients buy new land, instead of rebuilding on land they already own,” observes Ban. Purchased expressly for this project, the property has an unimpeded ocean view—a rarity on the Izu Peninsula. Just 60 miles from Tokyo and known for its relatively gentle climate, Izu is dotted with first and second homes. But Picture Window House, its owner’s full-time residence, sits atop a steep hill covered with natural foliage—placing it well beyond direct sight lines of even the closest neighbors.

Because of the site’s relative isolation, privacy from outsiders was not an issue. Yet the building’s permeability required various measures to keep it comfortable year-round. Screens to keep out insects were a must, though this filter compromises pure and total openness to light and air. Supplementing passive measures, heated floors and an electric heat pump provide climate control when outdoor temperatures soar or plummet. “Heat pumps are the most economical system in Japan,” says Ban. “We don’t like to heat or cool an entire house, only rooms where there are people—and even those not 24 hours a day.”

The glass skin required a symphony of blinds, curtains, and a roof overhang to reduce summer heat gain while still letting in warming winter rays. Though interior-mounted devices sufficed on the north side, exterior Venetian blinds were necessary to modulate the sunlight entering the second-floor bedrooms. Elegant as well as practical, the adjustable aluminum slats mesh with the wall’s overall composition and emphasize the facade’s strong horizontal lines.

But the house’s skin derives most of its uniqueness from a system of sliding doors: a horizontal strip of eight 8-foot-square transparent...
The structure allows for a 66-foot clear span on the lower level. Upstairs, a string of bathrooms, doubling as a corridor, runs along the periphery. A long mirror over the sinks reads almost as a window to the leafy views.
Like a bridge, the upper level's trusslike web of columns, beams, and diagonal braces and its steel-and-concrete floor slab all tie into the building's load-bearing ends. Exterior aluminum blinds may be deployed (above) or retracted (left). Inside, on the second floor, only glass partitions separate bathroom functions (opposite, bottom).
Most of the furnishings, including paper-tube chairs (right), are Ban's designs.

Ban's first experiment with sliding doors emerged as a second event in his 1995 Paper House, an initial foray into his now established realm of paper-tube construction. Here, a thin layer of transparent panels, which can be stowed away, enclose the house, fusing interior and exterior and spotlighting the undulating paper-tube wall rising around the center of the building. In his Wall-less House and Square Grids House, both completed two years later, sliding doors take the main stage. Both houses consist of a platform, or “universal” floor, removable panels that can divide or open the interior. While the inside Wall-less House can be split into two parts, 9 Square Grids House, used with channels, offers a broader range of possible divisions. And sliding doors are not the only means to Ban’s desired ends. He wrapped the house with Curtain Walls in two-story-high fabric sheets that can roll up completely. And he is now finishing a house enclosed in metal doors that roll up, merging inside and out.

Ban’s practice of incorporating unusual elements in unexpected places has both shock value and whimsy. Many of his devices and their effect on living spaces may seem extreme. But architectural thrill-seekers is not what motivates him. It is the desire to realize his ideas in their pristine form. As in Ban’s other work, Picture Window House tells both the clarity of his thought and the purity of its expression.

Resources

Tachikawa Blind Kogyo

WWW For more information on the people and products involved in this project, go to Projects at www.architecturalrecord.com.
At the house’s north end (this page and opposite), the glazed facade opens up, creating a link between the main living space with a veran
Sean Godsell transforms a seemingly simple box, wrapping his PENINSULA HOUSE in a veil of slender wood batten's.
The wood screen metamorphoses, changing visually with light and vantage point (this spread), sometimes appearing as a single opaque mass (this page, bottom right) and other times as a sheer veil (bottom left and opposite). A slot separates the carport from the main house (top left). Hydraulically operated panels open the outer skin (top right).
Interior moves further modulate the seemingly simple volume. Within the double-height living area, the architect cantilevers a cocoon-like upper-level bedroom, creating a retreat free of attachment to exterior walls or roof. The insertion of a kitchen and dining area below the cantilever produces a relatively compressed space, in bold contrast to the expansiveness and intense illumination of the living area beside a solid block of kitchen cabinets and appliances and a laundry room that sequesters a study, located to the south, into the hollow of the living area.

By opening or closing panels within the continuous jarrah sheath, the owners, a couple, can unpack the house upon arrival and pack it when they depart—an apt metaphor for a beach house, as well as protection against winter storms and harsh summer sun. Top hinged, these panels controlled hydraulically. Throughout the house, Godsell subtly and massively transforms the roles of his wood and glass skins. Outside the living room, for example, the jarrah sheath extends beyond the glass box, sheathing a veranda to the north. Meanwhile, the omission of roof glazing between carport and bathroom creates an internal, open-air court, a rock garden bathed in filtered light. Here, a counterweighted glass wall can open the bathroom into this tranquil space. And between the kitchen entrance corridor, and exterior, wood panels can lift, making seamless transitions and providing a canopy over a barbecue deck or outdoor room.

Animating the interior and exterior with filtered light, the ten screens tend to metamorphose with changing light and vantage point. From an oblique angle, they may appear as a single-textured, opaque plane; but, when viewed more directly, they become veil-like. The slender recycled wood members, hand-threaded onto steel rods and separate spacers, will warp and weather with exposure to sun and rain.

The increasingly irregular surface of this conceptually pure form is a paradigm of Godsell’s practice to date. As a Modernist scholar and experienced builder with a deep concern for regional and global issues, he does not fall back on the vernacular, but creates work with both local and international resonance. He often threatens that this will be his “last house,” but the Peninsula is not just another house. It is a significant investigation within the larger body of his research.

Sources
Glazing: Pilkington
Hardware: Lockwood
Paints and stains: Delux

WWW For more information on the people and products involved in this project, go to Projects at www.architecturalrecord.com
The walkway, or corridor, from the carport to the main living space follows the contours of the land—and remains open, from above, to the elements.
Thomas Phifer creates a dematerialized pavilion on a plinth for his Taghkanic House in the serenity of New York's Hudson Valley.
From the main road, there is no hint that a house rises beyond the vista of trees, fields, and hills. As one approaches by the long, winding drive, the pavilion's astringently delineated glass-and-steel-frame structure appears so evanescent that it looks like the abstracted lineaments of a Modern villa hovering like a ghost over the terrain. From this perspective, the weekend house seems to have only one room—albeit a sizable, 30-by-60-foot one with a 15-foot-high ceiling. But there's much more to it. Gradually, a lower level comes into view, where glass-walled rooms jut out of the ramparts of the hill on which the pavilion sits.

This underground substructure, about four times the size of the pavilion, contains six bedrooms, a study, media room, kitchen and breakfast room, not to mention a wine cellar and a refrigerated cheese room. The owner, a very private person, wanted a place where he and his family could spend weekends and entertain friends amid the rolling hills and woods of the Hudson Valley, without ever having to lay eyes on another house. He also did not want his house to obtrude on the landscape. Not even the glass, wood, and steel guesthouse, a delicately diminutive complement to the main building, is easily visible.

In taking on the commission, Thomas Phifer, a New York architect, envisioned a dematerialized pavilion on a plinth. The rectilinear, tautly planar structure seems to perch lightly on the landscape in the manner of the early Modernist villas of Le Corbusier and Mies van der Rohe, or the late Modernist houses of Richard Meier. At the same time, Phifer's embedding of the lower level of the house in a grassy knoll recalls Renaissance country villas atop strongly demarcated hillside terraces.

Phifer's exploration of these particular themes makes a strong case for architecture reflecting biography. The architect, who started his own office in 1997, was a design partner in the firm of Richard Meier and Partners from 1986 to 1996. And in 1996, when Phifer went off to Rome as a fellow of the American Academy, the young Modernist was soon fascinated by the Renaissance approach to placing villas in the landscape.

Working here with landscape designer Dan Kiley, Phifer carved out a bank of bedrooms along the western side of the slope, with the kitchen, indoor pool, and service areas gouged out of the opposite side. Kiley knowingly reinforced the architectonic qualities of the house through the manicured lawn, rectilinear pavers, and clipped Linden trees.

**Project:** Taghkanic House, Hudson Valley, New York

**Architect:** Thomas Phifer and Partners—Thomas Phifer, AIA, principal; Greg Reaves, project architect

**Interior designer:** Muriel Brandolini

**Engineers:** Gilsanz, Murray, Stefick (structural); Altierrí Sebor Weiber (m/e/p)

**Landscape architect:** Dan Kiley
The breakfast room on the lower level of the house faces east (this page). Bedrooms on the west side open onto steel-edged, lawn-covered terraces (opposite, top), while the south side looks out to a grassy slope (opposite, bottom).
The white painted-stainless-steel framing supports aluminum-coil-mesh exterior shades, which allow the glass in the windows to be open. The wall is set within custom wood frames. The lawn on the plinth looks like an outdoor carpet. To keep it green, a corrugated liner beneath the lawn contains cups to catch store rainwater for delayed irrigation.
1. Dining area
2. Living area
3. Kitchen/breakfast room
4. Master bedroom
5. Exercise
6. Media room
7. Playroom
8. Study
9. Mechanical
10. Garage
11. Swimming pool
12. Reflecting pool

[Diagram of the building with room numbers and labels]
on the podium, as well as the bosque of Sargent crab apple trees beside the geometrically defined terrace off the lower level's breakfast room.

The most startling thing about the spacious subterranean domain is that one doesn't have a sense of being below ground. Each leg of the H-shaped plan is edged with floor-to-ceiling glass window walls, opening up the interior to views and light. Long slots of skylights penetrate the grassy roof, bringing additional illumination indoors. The slots also demarcate the location of the east and west retaining walls of the concrete structure, "where architecture meets earth," says Phifer.

Connecting one side of the house to another (the two legs of the H) is an underground transverse hall 75 feet long, a masterly volumetric exercise of planar surfaces, where the poured-in-place-concrete structure has been plastered and, in some places, sheathed in sand-colored anigre wood. Although this hall lacks skylights, it receives ample illumination from the window walls at either end and is pierced at midpoint by a stair with glass treads and risers leading to the light-filled pavilion above.

In the pavilion, the view dramatically expands in all directions. "You can detect the change of seasons just by the atmosphere of the light coming into the house," Phifer points out. To reduce glare, he designed a series of aluminum-mesh screens that are manually operated on the pavilion's east, south, and west faces, and fixed on the north elevation. As further protection from the sun, Phifer mounted an upper register of screens directly above the first level along the south. When the shades are closed, the pavilion reads as a serenely articulated box, with a concatenation recalling the linear rhythms of an Italian palazzo. When the screens are rotated, establish a peculiar dynamism—like square sails on a landlocked ship. "Light is cut 70 percent when the shades are shut," Phifer claims. "And the windows and skylights in the ceiling of the pavilion are operable; the room gets a lot of natural ventilation during hot days."

In order not to obstruct the views, the interior designer, M. Brandolini, arranged low-slung geometric seating around the living room fireplace. Browns, reds, and oranges dominate in both living and dining areas, with a few pieces, such as sculptural rocking chairs designed by Arad, added for pizzazz. "The space was beautiful, but felt cold," Brandolini. "I wanted to make it warm and livable—not austere."

With its earth tones inside and carefully tilled landscape outside, the house represents a thoughtful effort to integrate the themes of nature and culture, while keeping the two distinct. At the same time, the house authoritatively melds two architectural vocabularies, where Classical principles of proportion, scale, and rhythm carefully control modern materials such as concrete, lightweight steel, and glass.

Sources

Garden roof system: American Hydrotech
Shades: Cascade Coil Drapery

WWW For more information the people and products involved in this project, go to Projects at www.architecturalrecord.com
Visitors enter the living/dining pavilion via a small entrance located in the northeast corner (opposite, and right). One of two narrow stairs leads to the level below. From the living room (above) one sees the tower of the lower-level master bedroom (near right). On the opposite side of the lower level, a bar-ceilinged breakfast room adjoins the kitchen and overlooks the reflecting pool and terrace (far right).
The house slices through a hill (this page and opposite, top). To approach the entry doors, the structure presents guests with access to paired concrete stairs (opposite, bottom) leading down to a central courtyard.
Jennings carves into a California hillside, setting his VISITING ARTISTS HOUSE in a landscape rich with sculpture.

Steve Oliver calls it a ranch, but it's art he's raising—not cattle. A building contractor who sits on the board of trustees of the San Francisco Museum of Modern Art, Oliver has animated the grounds of his Sonoma County weekend estate with sculptures by Richard Serra, Robert Stackhouse, Bruce Nauman, Ellen Driscoll, and others. Instead of merely collecting pieces, he commissions them specifically for the ranch, and they tend to be big and architectonic. The Serra, for example, consists of six pairs of forged steel "dice" that tumble downhillside and through a meadow, while the Nauman is a ½-mile-long concrete stair that climbs another hill. So it would be easy to view the guesthouse designed by Jim Jennings for the property as another sculpture, a piece of art where people can stay for short periods.

At first glance, the house confirms that notion. Like the Serra and Nauman, it engages the land in a visually intriguing way: Two poured-in-place concrete walls slice through a gentle hill and carve out strictly circumscribed spaces for indoor and outdoor living. Instead of running parallel, the walls creep slowly together, creating a slightly forced perspective that directs one's view to Stackhouse's 99-foot-long surfboardlike sculpture. How could an architect do anything here but make a statement that says ART? Jennings, though, created a residence, not a live-in sculpture. Designed for visiting artists to occupy while they work on commissions for the ranch, the 1,700-square-foot house provides two small suites, each with its own living room, kitchenette, bath, bedroom, and private terrace. A shared courtyard between the two units separates and connects them.

The simple plan generates a rich set of spatial experiences, beginning with a modest yet mysterious entry sequence that takes visitors down a pair of narrow outdoor stairs to a gap in one of the concrete walls. From here, you enter the central courtyard and see, for the first time, that the inside surfaces of the 14-inch-thick concrete retaining walls are incised with great curving lines extending from one end of the house to the other. The
SECTION A-A

1. Courtyard
2. Living
3. Kitchenette
4. Bedroom
5. Mechanical

FLOOR PLAN
a living pavilion (opposite) is a simple structure of glass rain walls, steel beams, and poured-in-place concrete walls. Accommodate David H. Monwich's artwork, the paintings used a fine aggregate in the concrete and added a rough surface without reinforcing bars. The entry stairs (near left) lead to a central courtyard (opposite). Visitors can also use pavilions for private terraces (near and far right).
The bedroom (below), kitchenette (bottom), and living room (right) stand free of the concrete walls. Mechanical shades on the glass end walls and aluminum screens (not shown) that can fold out from the service core, provide privacy when desired.

cuts—3,000 in all—are the work of David Rabinowitch, a New York City artist who used the 207- and 209-foot-long walls as his canvas.

Between the concrete walls, a pair of remarkably light glass-and-steel pavilions seem to float in their own world yet remain connected to the rest of the ranch by views of a pond to the west and the Stackhouse sculpture to the east. Narrow skylights, just inside the retaining walls, wash Rabinowitch’s looping, geometric art in daylight and separate the house’s key elements—concrete walls, wood-slat ceilings, and maple floors—from each other. Aluminum-clad enclosures for the kitchenette and bath define a 6-foot-wide swath down the center of each pavilion—reinforcing the impression of elements slipping past, but not quite touching, one another.

“The house has a pristine clarity to it,” says Oliver, who enjoys the back and forth of the creative process and has worked with Jennings on a number of projects, including a house in San Francisco [ RECORD, April 1998, page 102]. The architect designed the guesthouse more than a decade ago, before Oliver thought of bringing a sculptor into the project. Then the plans sat on the back burner for several years. When the job got going again, Oliver realized that the clarity he so admired in Jennings’s design could support the energetic slicing and carving of Rabinowitch’s work. So architect and artist met and found areas of common interest.

“The house is all about positioning—in the land and toward the views of the ranch,” explains Jennings. “David responded to that immediately and to the perception of space and perspective that it engenders,” he adds. Indeed, Rabinowitch’s expansive lines, which run indoors and challenge the visitor’s sense of scale and place but always connect the house to the natural setting. Rabinowitch, whose work often involves cuts in paper, appreciated the challenge of carving in concrete and felt drawn to Jennings’s muscular plan. “It was never my intent to ornament his space but to contribute to “a totality,” says the artist. While Jennings’s design remained essentially intact throughout its 10-year gestation, the architect made a few changes in response to the art—adding the skylights 4 inches of depth to the concrete walls for the carvings.

The house requires a certain discipline from guests—it isn’t a sort of place where you can just leave your clothes lying about—but it’s a residential version of a Donald Judd box either. Its outdoor rooms are seductive areas to enjoy a meal. And at night, when illumination from fiber optic lights at the base of the retaining walls spills into the landscape, one can imagine yourself staying here awhile. To be so lucky, though, you’d have to get Steve Oliver to commission a sculpture from you.

Sources
Steel-and-glass doors: Hope’s
Wood ceilings: Rulon
Ceramic mosaic tile: Dal-Tile
Pendant light: Steng Licht
Refrigerator: Sub-Zero
Stove: Gaggenau

Motorized shades: Mechoshades

WWW For more information about the people and products involved in this project, go to Projects at www.architecturalrecord.com.
Rabinowitch’s mathematically driven artwork took four stone carvers eight months to cut. The walls were then honed and sealed.
Jarmund/Vigsnæs transcends the world of suburbia, perching its RED HOUSE on a wooded slope

By Peter MacKeith

Monolithic in form and color, the Red House rises dramatically above a steeply sloped forest hollow in Norway’s Lysaker River Valley. Yet, as wild as this topography may appear, the house is barely 6 kilometers west of the city center of Oslo (metropolitan population nearly one million), just within the periphery of the city’s Røa suburb. The setting is actually a post–World War II development of closely spaced single-family houses with pitched roofs and colorfully stained wood siding.

Like many residential designs by Oslo-based architects Jarmund/Vigsnæs, the 1,830-square-foot Red House emerged productively from the difficulties of its site: a narrow quarter-acre parcel that extends over the edge where residential allotments meet the river’s sloping east bank. Though existing homes stand nearby, pine and fir trees shield the structure’s northern and western exposures, dominating its views—and giving the illusion of a place secluded in the forest.

One of the nearest houses, a gabled, cream-colored suburban dwelling, was the childhood home of the Red House’s owner, who inherited part of his parents’ rear garden with the sale and subdivision of the property. The decision to build on a parcel so potentially infused with memory was utterly pragmatic, but the owner sought out an architect who could address both neighborhood and landscape.

“The relationship [between architecture and nature] is a main theme of our practice,” explains partner Einar Jarmund. The firm has been fortunate to have rather extraordinary sites for most of its commissions [see RECORD, July 2002, page 178]. And they try, he says, “to explore each setting for each different house through the plastic sculpting of volumes.”

Although such “plastic sculpting” is not fully apparent on the narrow approach from the street to the Red House’s diminutive front porch and door, it is immediately clear that the building’s thin rectangular volume stands perpendicular to the river below it, accentuating the fall of the slope. This siting—along with a massing that initially reveals only one

Peter MacKeith, associate dean of the School of Architecture at Washington University in St. Louis, writes frequently on Nordic architecture.

Project: The Red House, Røa, Norway
Architect: Jarmund/Vigsnæs—Einar Jarmund, Hakon Vigsnæs, partners in charge; Roar Lund-Johnsen, project architect
Engineer: Walter Jacobsen
General contractor: Gunnar Johansson
Skillfully sited on a wooded slope, the house gives the illusion of being secluded in the forest. The vivid red stain complements the changing seasons.
of the structure's two stories—helps make the house a good neighbor, minimizing its street presence among existing homes. These conditions also intensify the unfolding drama of inhabiting such terrain.

Indoors and out, sculptural qualities emerge through the juxtaposition and nesting of L-shaped elements in plan, section, elevation—in a range of scales, materials, and textures. The result is a continuous sequence of surprises. Against a tight interplay of interior forms, the external workings of the house—a strong, single-vibrantly colored volume—conveys its designers’ confident energy.

Planned with simplicity and economy for a family of five, the House is essentially organized “upside down”—with the parents' bedroom and the kitchen, dining, and living areas on the entry floor, and the three bedrooms, plus a family room, on the lower level. “We conceived the house,” says Håkon Vigsnes, “as a covered balcony, or terrace, filled with light—connected to the ground and to the views out through the trees.”

While orientation and natural illumination are primary considerations in any good architecture, they characterize this project the variety and precision of its fenestration, reinforcing relations between inside and out. Beyond the entry vestibule, views open to south and west through butt-joined glass panels and wall-size sliding glass doors—comprising a veritable light box—leading out to a covered race. Downstairs, north-facing strip windows at desktop height border the children's bedroom study areas, while windows facing north and west wrap the family room's exposed outer corner.

In the main living area, seven laminated wood beams extending along the light box and onto the terrace, set the rhythm. Although the construction quality is high, interior finishes and details remain minimal: simple built-in cabinetry, white paint, and ash floor. The calm restraint and ample daylight impart a much-appreciated sense of quietude (in counterpoint to the three young boys downstairs), openness, and intimacy.

Of course, any discussion of the Red House leads inevitably to its vivid color. Make no mistake: This house is red, its stained vibrantly so. Anything beyond white or a material's natural hues is rare Jarmund/Vigsnes’s residential work. But here, the architects cite the temperaments of the clients as inspiration. Of course, this claim may herring of the same hue: Red is actually part of the owner's name and of the location (in the Røa, or red, suburb), but to say more would b
At its entry (left), the house is understated, despite its bold color, revealing only one of its two stories. But sculptural qualities soon become apparent as "wall" folds into "roof" (above and opposite, bottom), as horizontal boarding merges into vertical, and as concrete gives rise to glass. The precision and variation of the fenestration, and the integration of decks, reinforces the connection between the interior and the landscape.
Laminated wood bents set a rhythm for the main living space (left). L-shaped forms, interlocking and nesting in plan and section and in a variety of materials, textures, and scales, shape the interior (left and below).

1. Master bedroom
2. Kitchen
3. Living
4. Dining
5. Terrace
6. Bedroom
7. Playroom
8. Laundry
9. Storage
10. Fireplace
owner's desired anonymity. If the choice of so vivid a color surprised clients initially, they now understand it as highly appropriate to the ext—suited literally and figuratively to its venue and its occupants.

Since the 14-person firm of Jarmund Vigsnaes formed in 1995, work has increased in scale and complexity. Even while working currently on major buildings for the Norwegian ministry of defense—a headquarters within Oslo's Akershus fortress—and a research institute in northern Norway, the practice continues to explore issues of aesthetic. Emergent Nordic architects, Jarmund and Vigsnaes, both are quick to acknowledge intellectual and spiritual allegiance to Sverre Fehn and Per Olaf Fjeld, but they are also committed to developing their own language of form—striving, they emphasize, for specificity to each local situation.

The Red House confidently condenses such particularity into a living home that appears both intimate and monumental, standing in contrast to the changing seasons on its quarter acre of spectacular woodland slope. At verandas and deep-set windowsills (this page), parts of the exterior turn inward, juxtaposing flashes of red with calm interior finishes—ash floors and white paint—bathed in daylight.

Prior cladding: Maxbo Norwegian fir
Sliding: Norsk Stål (corrugated steel)
Glazings: Icopal
Floors: H-Vinduet (painted wood)

Masonry tile: AS Steinhuset (St. Hubert limestone)

For more information on the people and products involved in this project, go to Projects at architecturalrecord.com.
In the lush collage of Portugal's northern landscape, Alvaro Siza deftly unites the Baroque and the contemporary at QUINTA SANTO OVIDIO

By David Cohn

Architecture, if it is not a pleasure, is the worst thing that exists," Alvaro Siza once confessed, battle weary after his struggle to complete the Serralves Museum in his native Porto in 1999. To put aside the cares of such large-scale projects, he took refuge for many years in the restoration of a friend's dilapidated country house, the Quinta (or Estate) of Santo Ovidio, in the Douro region of northern Portugal, some 40 miles east of Porto. During weekend site visits, the architect relished working one-on-one with local stone masons, carpenters, and other craftsmen, and what he describes simply as "the pleasure of making something well."

Set in verdant countryside amid a patchwork of small plots raced into the hills, the Quinta is the 7.5-acre core of a large farm that was probably built in the early 1800s, although precise dates are elusive. Siza, now nearing 70, rarely has time for such small projects, but was drawn into this one in 1989 by an old friend, a clothing designer, dreamed of mounting fashion shows in its gardens. The architect took the reconstruction of the severe, granite-walled main house, the conversion of the former caretaker's cottage into a guesthouse, and...
ration of the grounds. But the work dragged on as the client struggled to finance it, and she was finally forced to sell the Quinta in 1996.

Still in love with the project, she persuaded the architect and new partners, a local manufacturer and his wife, to finish it together. Despite initial skepticism, both sides warmed to the task. The couple added a pool and, for their daughter’s wedding, a chapel—structures allowing Siza to play his formal virtuosity with the place’s seductive genius.

Siza’s work on the house and grounds far exceeds a simple rationalization, though his hand is seldom obvious. The estate had been cloned for 20 years and the main house open to the elements. A ground floor built as a stable was a warren of corridors and living quarters. To give the interiors a generous scale, Siza stripped down to the masonry bearing walls. On the upper level, partly embedded in a hill, he created an enfilade of rooms opening successively across a configuration: from the entry foyer beside the exterior stair to the main kitchen at the opposite end. On the ground floor, he carved out bedrooms and a family room. Now an interior stair connects the levels for the first time.

The architect recreated windows and details using deteriorating nals as models. The rustic simplicity of wide-plank pine floors and rough and simple moldings is echoed in sparse furnishings, some
1. Lane
2. Armorial gate
3. Main house
4. Pool house
5. Baroque fountain
6. Pleasure garden
7. Belvedere
8. Chapel
9. Tennis court
10. Vineyard
11. Orchard
12. Guesthouse
13. Laundry
deftly inserted modern buildings eclectic structures picturesque setting (opening spread, top). Pool house is adjacent to an existing building, now the guesthouse (opening spread, m). Exploiting the contrasting functions of house and chapel (opening spread, m), the architect has created a dialogue of old and new. His swimming pool house is clad in zinc, and his veritable chapel in granite (far right). Apertures in the external walls symbolize canonical features of church (far right).
The architect restored granite channels (above) through which water flows across the land. Stream-fed laundry basins (right) stand outside the kitchen. In the kitchen (top), Siza restored an original room-size fireplace and granite floors—and added a U-shaped service island topped with flowerlike blue glass uplights on slender stalks.

designed by Siza, including the kitchen table and chairs and the library’s delicate silver chest. In the kitchen, with its original room fireplace and granite floors, the architect built a U-shaped service island.

Siza’s work on the grounds, in part with landscape architect Gomes da Silva, concentrated on restoring rather than restructuring original elements, maintaining their exotic mix of the grand and mundane—from stream-fed laundry basins beside the kitchen to entry court’s monumental Baroque fountain. This project also restored entry allée of lime trees leading to a ceremonial gate and the fountain, added an underground garage, tucked behind the fountain’s sculptural backpiece. For the formal gardens in back of the house, such elements as granite channels, carrying gurgling water across the lawns, were restored.

The architect sited his new pool house and chapel on a rolling lawn north of the main house, a relatively casual setting above the entry court and the rear garden’s formal terraces. He felt free to use a contemporary vocabulary for these pavilions, though with a certain discretion. The building, adjacent to, but independent of, the guesthouse, is clad in zinc. The chapel, rising beyond it to the west, includes many traditional references.

Siza exploited the two buildings' contrasting functions to create aologue of formal opposites. For the indoor pool, dedicated to the body, the floor level is submerged in the ground, while the chapel, dedicated to the spirit, rises above the lawns on a platform.

The Quinta’s original chapel, a typical feature of such estates, was demolished by an irate 19th-century owner to keep out local devotees of Saint Ovidio, a popular Portuguese holy figure reputed to cure the sick (That owner was excommunicated for his pains.) The new chapel stands near the site of the old. Its entry faces away from the house, toward the west, allowing the architect to create an elaborate approach passing up the sacristy’s cantilevered (virtually levitated) volume. In each of the chapel’s four walls, Siza cut an aperture, playfully symbolizing a canopied feature of the traditional church: The tympanum appears as a pointed arch over the entry; the apse is represented by a semicircle at the altar; the sacristy’s metaphorically open door is suggested by a paver in the threshold of its cantilevered floor; and a cross is shrouded in the node of its cantilevered floor.

In the pool house, the descent to the water brings bathers eye-level with the ground outside, through low strip windows. While multiple pools of daylight give the chapel unexpected warmth, the atmosphere here is otherworldly. Sun-dappled walls of sky-blue and sand-yellow ceramic tiles, inspired by a trip to Mexico and bearing Siza’s sensuous sketch of human figures, are tempered by the white marble of the pool and its surroundings.

As in the Serralves Museum [RECORD, November 1999, 102], these sculptural pavilions attest to the formal sonorities that in the encounter between the architect’s work and his native land. The gestural, accidental qualities of his forms seem most at home in the jumbled, quiltlike collage of Portugal’s terraced fields with crumbling stone walls and houses, gushing streams, and gentle hillside slopes.

Though Siza has worked across Europe, his inspiration clearly emanates, here, where the act of building remains intimately connected with the character of the land.

Project: Quinta Santo Ovidio, Douro Litoral, Portugal
Architect: Álvaro Siza Vieira—Álvaro Siza Vieira, principal; José Luís Carvalho Gomes, principal in charge; Ashton Richards, Rafaelle Leone, Francesca Montalto, Misunori Nakamura, project team

Engineer: Matos Campos (mechanical)
Landscape architects: Júlio Gomes da Silva, Álvaro Siza Vieira

For more information about the people and products involved in this project, go to Projects at www.architecturalrecord.com
The pool area (this page) has a sublimely cool quality. Its blue and yellow ceramic tiles were inspired by a trip Siza took to Mexico. He plays these colors against the white marble of the pool deck, steps, and basin (above and near left). Over the tiles, he made abstractly sensuous sketches of the human figure (above and far left).
The front garden leads from a bifold door to the glazed main living space (top). The street front appears impenetrable at first (bottom), but a 3-foot-wide door (opposite) can open between the two bifold doors.
In Chicago, Valerio Dewalt Train turns a mechanical door into a gateway to a hidden garden and the **DOBLIN RESIDENCE**

John E. Czarnecki, Assoc. AIA

Appearances can be deceiving. At the Doblin residence, in Chicago, a seemingly impenetrable and industrial stainless-steel facade transforms itself, becoming a kinetic element that peels back to reveal a realm of garden, house, and garage—combining home machine within a simple modern solution.

Carefully choreographed as this sequence may appear, far from the original intent of the building’s architect, Joe rio, FAIA, of Valerio Dewalt Train Associates, and his client, Bruce Doblin. At first, Doblin, a young, single physician, said to buy an urban building with potential for an open loft, but developers were snapping up those properties in the late 1980s. “So I had to get a dog,” he says, describing the one-story building he bought on Chicago’s North Side, not far from a frame house he then occupied. Erected in 1918 as a warehouse and garage, the “dog” most recently housed a T-shirt silk-screening operation.

Doblin hired Valerio for an interior renovation, but structural analysis soon revealed an unstable front facade. Threatening to collapse, elevation required demolition. Also, the engineers found that interior d-frame partitions were supporting the bowstring roof trusses. These overies led Doblin and Valerio to the sobering decision to remove the front wall and roof structure, gut the interior, and keep only the rear, side, and two interior brick walls. That move changed the entire design process.

Although the 48-by-100-foot lot was tightly bound by an alley on the north and a house to the south, the varied nature of the urban landscape—with single-family homes, apartment buildings, and small brick-and-steel manufacturing buildings across from an El embankment—gave Valerio freedom in designing a new facade. The industrial purpose of the existing structure, which consumed its entire parcel, actually aided him. Had the building originally been residential, Chicago city code would have stipulated a footprint set back 15 to 20 feet from the sidewalk and at least 5 feet from its other lot lines—and would have prohibited a garage facing directly on the street. But the earlier designation granted Valerio flexibility in using the whole site.

Starting with the remaining brick walls, the architect designed a home that is hard-edged and masculine, yet offers a serene refuge from the city. As a gradually unfolding narrative, the project initially presents a facade formed by 16-foot-high sheets of galvanized corrugated steel, incised by two 10-foot-high bifold scissor garage doors flanking a 3-foot-wide door. One bifold opens onto a two-car garage, the other onto a front garden, and the smaller, hand-operated door in the middle allows for pedestrian access without lifting the mechanical bifolds. With all three doors closed, the wall appears solid and industrial, but as soon as the bifold Project: Doblin Residence, Chicago
Architect: Valerio Dewalt Train Associates—Joseph M. Valerio, FAIA, principal in charge; James Wild, Assoc. AIA, Amy Ciolek, project architects
Structural engineer: Robert Darvas Associates
doors begin to retract, the elevation becomes sculptural. With the garden bifold open, tranquil views of vegetation soften the hard streetscape.

A bluestone path, complementing the galvanized steel’s silvery gray, leads through the garden to the house’s front door. As the trees and shrubbery grow, they will mask views from the street to the building’s floor-to-ceiling glass facade and from the interior to the garden’s bifold.

Inside the house, the 32-by-48-foot living/dining/sleeping space offers a domestic tabula rasa. Here, Valerio created a horizontal plane—a new, radiant-heated concrete floor, surrounded by a channel of bluestone river pebbles along the walls—on which to position such objects as sculptures or furniture. Doblin has already tried different arrangements in the few months since he’s moved in, relying on a concrete fireplace and mobile birch cabinets, designed by Valerio, to help define separate areas.

The architect structured the building on a rational 16-by-16-foot grid with an overhead frame of wide-flange steel sections tying into the masonry walls and supported on wide-flange columns with stabilizing cross bracing along the glazed front and back walls.

The cool color and smooth texture of the concrete floor and exposed steel contrast with the warm, rough preexisting walls of Chicago common brick. Two of these interior brick walls define the garage enclosure. The rest of the interior is open, with a kitchen in one 16-by-16-foot bay, directly behind the garage, and two bathrooms in a rear bay. Three skylights hover above the main room. With glazing facing the front garden, the kitchen receives ample southern daylight. A finely detailed island in the kitchen includes birch cabinets, a sink, a counter, and a breakfast booth. Birch cabinets also hang from the kitchen’s northern brick wall.

Valerio admits that the interior’s surprising warmth, flexibility, and openness—made possible because it’s so hidden from the street—evolved as much from happenstance as from design intent. It’s a crisp, modern, mysterious insertion in the neighborhood, and seems like a perfect fit for Dr. Doblin. This winter, he had most of his old furniture—his previous life, really—stashed in the garage, just waiting to be hauled away.

Sources

Steel wall cladding: Epic Decking
Aluminum curtain wall: Kawneer
Steel hangar doors: Schwiess
Bi-Fold Doors; He-H Steel

WWW For more information on the people and products involved in this project, go to Projects at www.architecturalrecord.com.
For the main living space, Valerio designed tall, movable birch units (this page, top) to store items and define areas within the larger room. His concrete fireplace (opposite, top) stands near the rear glass wall. He also fitted the kitchen with his custom birch cabinets (opposite, middle).
The cantilevered bedroom appears as a glass cube afloat in the forest. Sheltered, but outdoors, a ramp leads up to the main living area. The long, narrow deck, edged in Cor-ten steel, is penetrated by bamboo sprouting through a floor grate.
Jack Scogin Merrill Elam creates a woodland aerie, perching the MOUNTAIN GUESTHOUSE amid a grove of slender poplars in north Georgia.
Giving the fleeting illusion of one long, high span traversing the forest, the narrow deck of the Mountain Guesthouse extends into the north Georgia woodland with the attenuated grace of a rope bridge across a jungle chasm. Though the deck actually rests on thin steel columns over gently sloping ground, these posts almost disappear into the landscape as they echo the rhythm and proportions of the slender poplars around them. With a thicket of bamboo sprouting (by design) through its deck, a cantilevered bedroom virtually floating among the trees, and an entrance requiring a slightly daring ascent (via ramp), this 1,000-square-foot cottage has earned its nickname, "the tree house."

But its materials—glass, Cor-ten steel, slate, and concrete—are hardly typical of a tree house. And neither its architects, Mack Scogin and Merrill Elam, nor the clients initially envisioned such a long, lofty structure—not even a guesthouse. Instead, the design evolved organically as the owners' lives changed.

It all began with the main house, just 80 feet away, which Scogin Elam and Bray [RECORD, April 1997, page 90] built on a woodland drive that winds through a 24-acre site in the Appalachian foothills. The Atlanta-based owners—a journalist and his wife, an avid landscaper—wanted a weekend retreat that could become their permanent home. Along a creek, the architects created an inside-outside house with a next-door guest suite (the original one on the site), playing planar forms against the surrounding hills. Soon the clients' children married, recalls Scogin, "started birthing babies—and, before you knew it, the grandbabies had taken over the guesthouse and Elam returned to convert the garage into a playroom.

But the client, who'd done much of the landscaping herself, desired after a shed for her tractors and seedlings—and then, well, the idea of a swimming pool emerged. To keep out animals, Elam proposed raising it on a high deck—reminiscent of the architects' own pool in their Atlanta home [RECORD, April 1998, page 130]. So, the design moved from a garage/potting shed into a lap pool on an elevated deck with cabana. But, in the end, it seemed impractical to maintain a pool in a weekend home, and the project was trimmed back to a garage. "Suddenly," recalls, "we all missed that long, high, horizontal element in the landscape.

Besides, the owners really did need more room (and privacy) for visiting grandchildren. With the program finally settled, the architects created a one-room aerie that is remarkable in its sculptural qualities and response to setting. From the serpentine drive, this guest hideaway comes into view before the main house. Its diagram is fairly simple: a rectangular volume (bedroom and bath) partially cantilevered atop a larger rectangular form, with a long, upper-level deck off one side and a ramp descending the opposite direction. But Scogin and Elam transformed the diagram through an exquisitely subtle balance of solids and voids, volumes and planes, and opaque or matte surfaces and transparent or reflective ones.

As a result, parts of the building practically vanish or appear smaller than their true dimensions, while other elements—the long
The steel columns supporting the deck blend with the forest, mimicking the rhythm of poplar trees—just as do the vertical slits in the Cor-ten parapet.
The entry ramp (above and above right) passes between vertical planes of concrete, translucent glass, and Cor-ten steel. Slate paving continues from the deck into the bathroom (right) and throughout the interior. The bedroom overlooks the main house (below).

and ramp—expand the house’s perceived size. In less skillful hands, the front of the cast-concrete garage, for example, might have appeared heavy and bulky, but instead, its top half virtually dematerializes. Here, a band of mullion-free glazing, reflecting nearby foliage, reads as an opening—setting the Cor-ten parapet above it visually afloat. On the elevation, two cantilevered forms appear equally unfettered by gravity—cubelike bedroom, with floor-to-ceiling glazing, and the planar roof over.

Ambiguity—between permanent and ephemeral, natural-built, heavy and light, indoors and out—plays an essential role in this structure. While its materials may be hard and man-made, they meld with the site, as the steel’s rusty patina mimics moss and lichen on the poplar slats in the parapet, along with the columns, echo the rhythms of the forest.

Merging indoors and out, the entry ramp, leading to living spaces above the garage and basic kitchen, rises between a well-grounded Cor-ten and a shoji-like screen of translucent glass. As the route passes rowly between building skins, it accentuates the play of light and shadow. The arrival point is a 1,000-square-foot deck—an outdoor living room set views—that doubles the house’s occupiable space. Slate paving continues inside from the deck, covering the entire floor. In the bedroom interior seems to open completely, with floor-to-ceiling glazing—but glass is fixed, while operable panels in the room’s solid walls offer air.

For all its apparent ambiguity and paradox, the design is neither jarring nor contradictory. Strong verticals and horizontals play harmoniously against the hills and the ramp’s dynamic diagonal. And though the well-grounded house may seem suspended in the treetops, it merely takes that position visually—hovering in an exceptionally fine balance.

Project: Mountain Guesthouse, Dillard, Georgia
Architect: Mack Scogin Merrill Elam Architects—Mack Scogin, AIA, Merrill Elam, AIA, principals; David Yocum

For more information on the people and products involved in this project, go to Projects at architecturalrecord.com.
Building Regulations May Finally Shed Their Impenetrable Language

NATIONWIDE EFFORT IS UNDER WAY TO MAKE BUILDING CODES MORE RATIONAL AND USABLE

Barbara Knecht

Building codes are the history of how we react to situations," explains Carl Galioto, partner in charge of Skidmore, Owings & Merrill (SOM)'s technical group and a member of the New York Mayor's Commission on Adoption of a National Model Code. "Changes have occurred because of tragedies as the Triangle Shirtwaist Factory fire [New York City, 1911] and the collapse of the walkway at the Kansas City hotel [1981]. September 11 has been another catalyst—examine our assumptions, to look at redundancy and interrelationship of systems."

The reactive approach to building failure is an act of defense, though valuable, way to understand and improving performance. Failures become opportunities to make assumptions, to perform studies, and to invite democratic debate on best practices. The collapse of the World Trade Center towers is a spectacular example of how possible it is to write codes that anticipate the infinite combination of factors that contribute to building failure. Life's loss of life. New York structural engineer Guy C. Johnson—a volunteer on the Structural Engineering Association of New York's post-9/11 damage-assessment panel—observes, "No one had written a code for how to handle the situation that faced us, that is, how to safely demolish the structurally chaotic piles of debris there. We were constantly debating and arguing and persuading in a classic example of deliberative Athenian democracy. And it worked, because no one was hurt as part of that effort."

Barbara Knecht is an architect and principal of a New York City-based consulting firm. She writes about architectural technology, design, and housing policy.

CONTINUING EDUCATION
Use the following learning objectives to focus your study while reading this month's ARCHITECTURAL RECORD/ALA Continuing Education article. To receive credit, turn to page 188 and follow the instructions.

LEARNING OBJECTIVES
After reading this article, you should be able to:
1. Describe the recent changes in building codes.
2. Identify benefits of the national code.
3. Explain the difference between prescriptive- and performance-based codes.

For this story and more continuing education, as well as links to videos, white papers, and products, go to architecturalrecord.com.

Tangled web
Although the first national code was published at the beginning of the 20th century, codes have remained stubbornly local and regional until the past few years. Now the building industry and the code makers themselves are surrendering to the drive for uniform structure across the country, and performance codes are nearly as common as prescriptive codes. The most significant change in the past decade is the creation of a single body of codes the initiators hope will be used nationwide and internationally.

In the U.S., modern building and fire codes have been developed in the private sector, most familiarly by three regional not-for-profit organizations: Building Officials and Code Administrators International (BOCA), International Conference of Building Officials (ICBO), and the Southern Building Code Congress International (SBCCI). They produced, respectively, three model building codes in the 20th century: the BOCA National Codes commonly used in the eastern and Great Lakes regions; the Uniform Building Code (UBC) adopted by the western and midwestern states; and the Standard Building Code, which has been the prevalent code in the southern states.

These so-called model codes form a collection of standards and regulations that become law only when adopted by governmental juris-
dictions. Each of them includes, by reference, standards developed by other industry organizations, such as the National Fire Protection Association (NFPA) or the various associations of mechanical, electrical, and plumbing trades. And each of them, when adopted by a governmental jurisdiction, may be subjected to modification for specific conditions in a particular location.

Although the model codes are widely adopted within their regions, there has been no shortage of jurisdictions—notorious among them Chicago and New York—that have created their own (often Byzantine) codes. Adjacent municipalities may have different processes and standards for the same building. This quirk exists in the extreme in New York City, where the state builds buildings within the city limits according to its own code adjacent to buildings built to city code. Other sorts of jurisdictional overlap and conflict abound.

"In Pennsylvania," explained Christine Ussler, an architect in Bethlehem, "we have a state code administered by the Department of Labor and Industry, which is responsible for plan checking, inspection, and final review. This code is primarily concerned with safety, not with construction methods. Local jurisdictions, including fire departments, then adopt local codes. The result is that any project larger than two residential units in a jurisdiction with local authority must be reviewed independently (not coordinated through one agency) by three entities.

Pressure for national uniformity grew during the 1970s, as more architects, builders, and manufacturers produced work across the country. "The ultimate goal of a national code is to make it easier on the end users, but the underlying logic is that if an existing standard is safe in New York, then it is safe in California," says Paul E. Myers, assistant director of the Cincinnati Department of Buildings and Inspections and president of the Board of the International Code Council (ICC). "In 1994," he continues, "the three regional organizations came together and created the International Code Council, under which they agreed to cooperate in the development of a single set of coordinated model construction codes.

By 2000, the family of integrated codes (I-codes), including International Building, Fire, Residential, Private Sewage Disposal, Mechanical, Fuel Gas, Property Maintenance, Energy Conservation, Zoning, and Electrical codes, were complete and ready for adoption. In the following three years. On February 1, 2003, the three separate organizations ceased to exist in favor of the consolidated single entity, the International Code Council. The pace of adoptions has been quite high, according to the ICC, and, indeed, only five states remain where no jurisdiction at all has adopted some part of the ICC codes. This unity, however, hasn't stifled competition. The NFPA chose not to join the ICC coalition [REC August 2002] and has, in the intervening years, developed its own building code (NFPA 5000) to add to its family of codes, which is also available for adoption.

New York State has adopted the International Building Code (IBC), and New York City has a task force that is studying the feasibility of adopting IBC 2003 or the NFPA 5000. Recommendations of the task force are expected this month (April 4). Patricia Lancaster, the commissioner of the N.Y.C. Department of Buildings, is optimistic about the value of shifting to one of the national codes. "They are written in clear understandable language so that even the general public can understand..."
Designing Codes for Developing Countries

Stephen Forneris, an architect in New York and Ecuador, opens his articles and presentations with a depressing statistic. “For the past 10 years, the developing world has shouldered the unpleasant burden of suffering 70 percent of all natural disasters and 91 percent of all disaster-related fatalities, with earthquakes in Latin America alone responsible for 53.4 percent of these fatalities.”

The lack of building codes and enforcement of what codes there are blamed for the high number of fatalities caused by collapsing buildings when earthquakes occur in developing countries. Latin America is highly vulnerable to earthquakes, and a lack of up-to-date building codes is pervasive. Stephen Forneris took these facts to Senator Christopher Dodd who, along with Senators Joseph Lieberman and Jeff Sessions, introduced and passed “The Code and Safety for the Americas (CASA) Act” in 2002. This modest pilot program, funded with $3 million over two years, will provide for translation (or funds to translate) the International Code Council building codes into Spanish, and provide training to architects and contractors in El Salvador and Ecuador in appropriate use of the code.

The argument for encouraging safer building is a potent one: We can’t prevent natural disasters, but, at least in the case of earthquakes, we have the tools to build structures that can dramatically reduce the number of deaths they cause. The World Bank and the United States Geological Survey estimated that $280 billion in disaster relief aid could have been saved by a $40 billion investment in disaster prevention.

The ICC model codes serve as a base for each governmental entity to adopt to its own particular set of circumstances. David Eisenberg’s statistics are powerful support for integrating sustainable building practices into building codes, and they take on even more urgency in places that are starting with a clean slate. “Of the 6.3 billion people living on earth today, less than one third are living in the kinds of buildings described by our model building codes. Another third are living in earthen structures, and the final third are living in houses made of other nonindustrial or scavenged materials. And a few million are living in no structures at all.” Sustainable building is an imperative as society attempts to solve global housing problems. Balancing the need to increase building safety without building to inappropriate standards that place burdensome costs on the environment and individuals will require skillful crafting of new codes appropriate to the places, conditions, and cultures where they are being used.

Forneris agrees with the need for that balance. “We see the need to edit and focus on what is really important to life safety in the codes. Just by codifying and enforcing regulations for door swings, we will improve safety at no cost. General egress and occupancy classifications will cut down on deaths. Our task is to cipher through the manuals and work with the governments to distill and implement what is economical, safe, and appropriate.” Barbara Knecht
Strachan House (1996), in Toronto, Canada, is home to formerly homeless adults. Private rooms open onto a three-story "public street." Shared living rooms and kitchens are divided by partial-height walls or railings. Each floor is divided into two fire compartments by a full-height wall with a door that closes automatically in case of a fire. The second- and third-floor living rooms are expressed on the facade (right) with colored cement board.

them," she says. "They are organized in a logical structure but are flexible in the specifics, so that a jurisdiction, such as New York, can make them as strong as our code currently is. Buildings will be safer because users will be able to understand what the code is trying to accomplish."

Carl Galioto of SOM, who is on the task force, adds, "Compared to the current New York City code, for example, the IBC model code is written so the references are kept up-to-date. This takes the burden off the local jurisdiction to develop and update standards." Changes can be made at the local level, but those that have national relevance can be made at the national level, further reducing the cost and burden to localities. Commissioner Lancaster observes, "No other jurisdiction has dealt with issues of safety and density the way New York has, and we foresee some of those lessons being adopted by the national codes."

**Breaking the codes**

The model codes reflect another positive trend in code writing: the shift from prescriptive-based codes to performance-based codes. Historically, our codes have been prescriptive and formulaic. For example, the width of an exit stairway is calculated based on the number of people it is expected to carry during an evacuation. There are specific distances to exits and other similarly prescribed fire and life safety requirements, which, in theory, all work together to provide a safe environment.

Formulaic buildings, such as chain stores, benefit from, or perhaps are the result of, prescriptive codes. Prescriptive codes form the basis of the model codes, but the model-code organizations have also published separate performance-based codes, such as the 2001 Performance Code for Buildings and Facilities (mentioned above) and the NFPA Life Safety Code. The performance codes include specific objectives and quantifiable measures, such as a maximum time for exiting, but don't specify the means. This is a relatively new development, but it has roots in prescriptive codes.

With sufficient expertise and time, and a modicum of cooperation on the part of building and fire officials, it has typically been possible to build buildings or use materials that are not specifically permitted. Most prescriptive codes include a general statement that they do intend to limit the use of any materials or methods not specific to the code if an alternative can be shown to be suitable on the basis of past performance, tests, or evaluations. This is certainly a common route when renovating historic structures. "BOCA has had a cumbersome point system for establishing equivalent safety in historic structures, where meeting the codes literally means destroying their historic character," explains Ussler, whose Pennsylvania practice includes substantial adaptive reuse. "We have had pretty good success with it for years of experience, but ultimately, it is the decision of the inspector."

In New York City, Arup was the original mechanical, electrical, plumbing, fire, and civil-engineering consultant under John G. Wai
REGARDLESS OF HOW MANY EXITS YOUR BUILDING HAS SEEN, YOU ONLY NEED ONE ENTRANCE.

Businesses change. Businesses change with them. But the welcoming appeal of a Kawneer entrance endures. Engineered with details such as welded Dual Moment corner construction and dependable operating hardware, these are entrances with the durability to stand sentinel for years and the craftsmanship to offer a firm, confident greeting every time. It's a level of quality that allows Kawneer to include a limited lifetime warranty.

The Kawneer entrance. It never wears out its welcome.
Stairways rise fully exposed in the three-story height "street," creating a sense of openness. The ground floor (left) is completely open to the central volume, while on the upper floors (above), the stairs lead onto walkways, which have windows and openings to the space that will be closed off automatically in case of fire. By code, Strachan House is classified as a hospital, which allowed configurations not normally allowed in housing.

Associates, architects for the original adaptive reuse of the historic 1870 Tweed Courthouse, which is adjacent to City Hall in Lower Manhattan. It was impossible to meet contemporary building and fire codes and maintain historic elements, including the ornate ceilings, the grand rotunda, the exposed structural elements, and the wood doors with etched glass, of the original building. "It was an existing landmark building with a change of occupancy," explains Leo Argiris, principal at Arup and a structural engineer. "We couldn't install sprinklers in some areas, enclose the stairs, or take other measures prescribed in the codes. So the approach we took was to better understand the anticipated hazards and determine what measures we could take, and then to model the actual performance of the fire, the building, and the occupants in fire-engineering studies."

Arup pioneered the implementation of this process in Columbia University's recently constructed Alfred Lerner Hall (1999)—for architects Gruzen Samton and Bernard Tschumi Associates [RECORD, November 1999, page 94]—distinguished by a glazed atrium circulation hub in which a glass wall is supported by steel ramps, which are, in turn, hung from long-span trusses. Within this open space, the structural steel is exposed and the glass wall is fixed with a system that does not require mullions. Preserving the transparency and the clean lines of these elements was key to the architectural character of the space, but the high first cost of fireproofing the steel with nonflammable, intumescent paint and the subsequent burden and cost of maintenance prompted Arup to suggest another approach. Using fire-engineering studies in which they modeled the space and simulated likely fires, they were able to predict the behavior of fire and demonstrate that the steel would meet the intent of the code without the intumescent fireproofing.

Creative responses
The purpose of building codes is to protect public health, safety, and general welfare, but what exactly is the scope of that responsibility? "We grapple with the safety of individuals and the safety of the public," Commissioner Lancaster, "but we also try not to enact rules or changes that are overly prohibitive to the quality of life." Or that are prohibitively expensive, the building industry would add, a notion a commissioner would unconditionally agree with. "It is already extremely expensive to build in cities like New York. If we make it too expensive people won't come here to build," says Lancaster.

The findings and recommendations of the World Trade Center Building Code Task Force, released this February, appear to target weaknesses in egress and other building systems, while not placing an undue financial burden on developers. "If we don't achieve the right balance our code changes, the city won't continue to grow."

David Eisenberg, director of the Development Center Appropriate Technology, in Tucson, has another approach to consider the protection of life and general welfare under building regulations. He
been working to shift what is in the "hearts and minds of those writing and using the codes to consider their responsibility for the unintended environmental consequences of our building practices," says Eisenberg. "We made a societal decision that we need to protect people from risks attributed to the built environment, but in the process, we are inadvertently destroying the natural systems on which we all depend for our survival. With the current codes, it is much easier to build resource-intensive, wasteful, toxic buildings than to build in more sustainable ways."

Eisenberg is not suggesting that we eliminate codes or their safety standards; he is an advocate, along with many others, for sustainable building and for codes that encourage better, safer, and more environmentally responsible ways of building. "Our codes are written to keep bad things from happening; we're promoting the idea that they should also make sure the right things happen."

While Eisenberg is tackling the issue of safety on the macro level, Levitt Goodman Architects, based in Ontario, Canada, have a perspective on its definition from the micro level of a single building in Toronto. Strachan House, a housing development for chronically homeless adults, was created out of a 19th-century brick and timber warehouse. For its 70 residents, many of whom had been living secluded and isolated lives on the street, it was imperative that the building design provide individual privacy, but also that it encourage socializing. For these residents, reducing the opportunity for isolation increases their personal safety and their prospects for maintaining independence. Typical housing configurations with self-contained apartments, fire-rated corridors, and closed exit stairs were not going to support the level of visual and social communication the sponsor, Homes First, considered necessary.

With the cooperation of the mayor's office and the Toronto Building Department, their code consultant Peter Colquhoun, of Arenco Inc., worked out a way to achieve the desired openness designating the building a hospital. It was possible to use this designation because the building is staffed 24 hours a day, with an array of fire detection and sprinkler systems, as well. Doors to individual units are allowed remain open to the wide public passageways that serve as exit corridors, also contain shared living rooms and kitchens, and to the three-story atriums that anchor the ends of the building. Each floor has two fire compartments, which allows horizontal evacuation in case of fire. Even with cooperation of the regulatory agencies, it took three years to get approval for such an unusual configuration. And even with an exemplary record for safety, the team did not find it possible to replicate the model that has met with outright hostility from some jurisdictions.

Although neither Levitt nor Colquhoun anticipate imminent change in the Ontario code, the Canadian National Building Code (NBCC) is working toward an objective-based code. "Such a code," explains Colquhoun, "identifies objectives, like the protection of property, structural sufficiency, and life safety. It then says that the objective is to get everyone out of a building safely. It doesn't set an amount of time in which to do that, as in a performance code, nor does it tell you the width of doors, corridors, as in a prescriptive code. You are charged with getting everyone out safely, by whatever means, before the structure becomes untenable. This gives more freedom to the designers, but officials, then, need to be more knowledgeable."

---

**AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION**

**INSTRUCTIONS**

- Read the article "Building Regulations May Finally Shed Their Impenetrable Language" using the learning objectives provided.
- Complete the questions below, then fill in your answers (page 230).
- Fill out and submit the AIA/CES education reporting form (page 230) or download the form at www.architecturalrecord.com to receive one AIA learning unit.

**QUESTIONS**

1. Which is not one of the organizations that until recently developed building codes?
   a. BOCA
   b. ICBO
   c. ASPCA
   d. SBCCI

2. The model codes were a collection of standards and regulations that became law when?
   a. when they were written
   b. when they were published
   c. when they were passed by a vote
   d. when they were adopted by a governmental jurisdiction

3. Which was not a major drawback of the three model-code systems?
   a. the code may be subjected to modification for specific conditions
   b. jurisdictional overlap caused conflict in code review
   c. every local jurisdiction had a slightly different interpretation of the code
   d. architects had to design buildings to meet different codes

4. When did the three separate code-creating organizations cease to exist?
   a. 2000
   b. 2001
   c. 2002
   d. 2003

5. Benefits of the new national code are all except which?
   a. it is written in clear and understandable language
   b. it includes all of the building, zoning, electrical, and fire standards
   c. it is organized in a logical structure
   d. it is flexible in specific issues

6. Benefits of the national code to local jurisdictions include all except which?
   a. changes can be made at a local level
   b. local jurisdictions do not have the burden to update the standards
   c. code enforcement is handled at the national level
   d. code development is handled at the national level

7. The new national code is allowing for which shift in code writing?
   a. more performance-based codes
   b. more prescriptive-based codes
   c. more formulaic codes
   d. more limited codes

8. Prescriptive-based codes are best described as which?
   a. not limiting the use of materials
   b. not limiting the use of methods
   c. requiring the use of quantifiable measures
   d. requiring the use of specific means

9. Performance-based codes are best described as which?
   a. limiting the use of materials
   b. limiting the use of methods
   c. requiring the use of quantifiable measures
   d. requiring the use of specific means

10. The purpose of building codes is which?
    a. to protect public health, safety, and welfare
    b. to prohibit architects from using new materials
    c. to keep the cost of buildings increasing
    d. to destroy the natural systems of the environment

---
Digital Architect

Licensing: Software by the numbers

Alan Joch

They're good, well-managed companies that pay taxes and obey Occupational Safety & Health Administration requirements. But when it comes to software management, they have a blind spot.

Architects are not alone. Across all industries, about a quarter of the commercial software in the U.S. is being used illegally, representing approximately $2.6 billion in lost revenues for software companies, according to the BSA. In response, the group is becoming more aggressive—some say excessively so—in enforcing licensing agreements. Currently, 500 companies are negotiating with BSA lawyers to resolve compliance issues. Over the past 12 years, the organization has received more than $83 million in penalties.

Claims can include fines of up to $150,000 for each copyright infringement, in addition to charges of two to three times the standard price for any software a violator must purchase so that the number of licenses they own is equal to the number of people using the software. In extreme cases, software vendors may attempt to recover profits attributable to their software in court, a potentially deadly blow to an architectural office that routinely uses CAD applications. License violators may also face prosecution under federal copyright laws, which carry maximum fines of $250,000 and jail time.

Getting religion

Almost all of the BSA's enforcement cases begin with a lead submitted to its "hotline" by a disgruntled employee who reports an employer that is out of compliance. If BSA investigators find merit in the claim, they usually send the alleged violator a warning letter designed to instill fear. Some letters even advise the software user to close down its business until any licensing discrepancies are resolved, says Robert Zielinski, chair of the intellectual property and information technology practice at Wolf, Block, Schorr and Solis-Cohen, a Philadelphia law firm.

Zielinski says these letters are becoming more commonplace, with more of them going to smaller companies that may once have felt they could fly under the radar screens of big software vendors. "Before they receive a letter, these companies don't understand the importance of software licenses," Zielinski says. "But once the letter comes, they get religion very quickly."

Besides the emotional jolt, a letter can also be a budget buster, even for companies in compliance. One IT director for an architecture firm says his former employer spent almost $10,000 in staff time to document all its Microsoft software licenses after it received a compliance letter, even though they had the required number of licenses.

The BSA contends that accounting for licenses is straightforward. "You're just adding up the

Most software makers offer only individually licensed copies of their products (diagram, far left). But Autodesk and Bentley Systems offer network server licenses for their CAD software, in which license information resides in a single place (near left). Users are notified automatically in cases of noncompliance.
Digital Architect

number of software programs you're using and checking it against how many software licenses you own," Kruger says. But users believe that even conscientious companies can easily run afoul of overly complex agreements. One "gotcha" comes when companies recycle old computers. For example, a designer who receives a new workstation may pass down her old computer to somebody within the administrative staff, without deleting the CAD software that was on the machine. The software may never be used again, but because it still resides on the hard drive, it may turn up as a violation in a software audit.

Other people become confused by the myriad license types offered by software companies. Some allow registered users to legally install software on both a desktop and notebook computer, while other agreements limit usage to a single computer. Also, IT managers may find themselves constantly working to keep staff members from loading software brought in from the outside. "When you have millions of computers in a company, it's hard to make sure nothing sneaks in," says Peter Theis, IT director at Roger Ferris + Partners in Westport, Connecticut.

Of course, some noncompliance cases involve the outright disregard of agreements by companies trying to cut costs for expensive software, particularly CAD programs, which cost upwards of $2,000 to $3,000 per seat. Other scofflaws flaunt what they consider to be unfair and restrictive license agreements. For example, some agreements give software vendors the right to enter a business to perform an audit whenever it suspects a violation. "Some of this stuff is sickening," says one architect in the Northeast.

"When you use the term 'piracy', you're making an analogy that's way over the top," says Bradley Kuhn, executive director of the Free Software Foundation, a Boston-based group that advocates the development of freely distributed "open source" software, such as the popular Linux operating system. He believes current licensing policies and "tip lines" foster distrust among coworkers, and that a new business model built on freely distributed source code is the answer to copyright infringement problems.

Kuhn concedesthe handful of free CAD programs now under development are not yet ready for prime time, but he believes that situation could change if more professionals supported the free software movement. "If consumers took half the money they're paying for CAD licenses every year and gave it to some free software project, [open source versions] could be developed and people wouldn't have to pay for licenses anymore," Kuhn says.

Compliance strategies
Since market-ready, open-source CAD applications won't be available anytime soon, how can architects make sure their company avoids a threatening letter from the BSA enforcement division? The first step is for upper management to articulate a formal policy regarding licensing, says Ken Sanders, FAIA, chief technology officer for Gensler in San Francisco. "Architects have a reasonable expectation that clients will comply with the terms of the contracts they sign—so it's reasonable for us to comply with the software licenses we sign, even if we don't always think they're the best terms," he says.

In addition to communicating that philosophy to employees, Sanders says senior managers must be committed to such compliance in their own minds. "If you express

ambiguity, people take cues from that," he says. "You need to sit down and talk from the standpoint of how acting this way is part of being a good citizen. You may not agree with all the copyright laws and think it's not reasonable to restrict the use of software, but at the end of day, when comes down to an agreement you have signed with another party, you must honor it."

To ease the logistics of compliance, IT directors suggest purchasing network server licenses of software applications whenever possible. In this model, a predetermined number of "seats"—say 10 licenses of a CAD application for a department of 15 designers—reside on a single server. Any 10 people may use the application at a given time, but the system looks out for compliance, IT directors suggest purchasing network server licenses of software applications whenever possible. In this model, a predetermined number of "seats"—say 10 licenses of a CAD application for a department of 15 designers—reside on a single server. Any 10 people may use the application at a given time, but the system looks out

LICENSE VIOLATIONS CAN SNEAK UP ON WELL-MANAGED FIRMS. CREATING A POLICY FOR COMPLIANCE AVOIDS SURPRISES.

Third-party auditing programs are also available to help IT departments keep accurate records of licenses and software installations. These products include Express Software Manager from Express Metrix, KeyServer from Sassafras Software, Inventory from Altiris, and TS.Census from Tally Systems, a GASP from Attest Systems. Prices are based on the number of computer users in an organization. A $22-per-seat version of GASP costs $22 per seat. (The BSA Web site lets companies download a free trial version of GASP, which will run 100 computers for 60 days.)

Thes, of Roger Ferris + Partners, says architecture firms, especially larger ones, that don't make use of auditing software are "a nightmare" trying to comply with license agreements. "You could spend hundreds of hours" making sure each computer to a master list of licenses, he says.

Keeping this information in an electronic record helps a company not only stay in compliance, but also know where it stands if an auditor arrives. If that happens, Ziesel tells his clients to respond quickly and honestly, even if they're not in compliance. "We counsel clients never to swap out hard drives or reformat disks [to hide illegal software copies]. That only makes things worse and really makes it look guilty," instead, he says, companies should conduct internal audits to understand how they're out of compliance and what the need to do to resolve the problem. The subsequent fines may be steep, but this avoids walking the plank into a federal courthouse.
Moisture Management in Steel Stud Assemblies

Steel stud assemblies are gaining increased popularity in commercial construction as part of an economical and versatile wall system. Steel studs offer many advantages such as low cost and non-combustibility. They enable a small footprint and are lightweight. However, when specifying steel stud wall systems, climate must be considered in order to control moisture and energy flow.

Designers have accepted that commercial buildings must be responsive to varying seismic risks, wind loads and snow loads, yet typically overlook variances in temperature, rainfall, exterior and interior humidity and their interaction.1

The hygro-thermal regions shown in Figure 1 are determined by heating degree-days experienced throughout a normal calendar year.

**Severe Cold Climates** equal 8000 heating degree-days and higher.1

**Cold Climate** equals 4500 - 8000 heating degree-days.1

**Mixed Climate** equals 4500 heating degree-days and less.1

Severe Cold, Cold and Mixed climates experience between 20 and 60" of precipitation per year.1

**Hot Humid Climate** is the region of North America that averages a temperature of 45°F or higher throughout the year and experiences more than 40" of rain.1

**Hot Dry Climate** is the region of North America that averages a temperature of 45°F or higher throughout the year and experiences less than 20" of rain.1

The definition of a degree-day is as follows: *A degree day is the difference in temperature between the outdoor mean temperature over a 24-hour period and a given base temperature.* For the purposes of determining building envelope requirements, the classifications are defined as follows:2

(a) **Cooling degree-day base 50°F, CDD50:** for any one day, when the mean temperature is more than 50°F, there are as many degree-days as degree Fahrenheit temperature difference between the mean temperature for the day and 50°F. Annual cooling degree-days (CDDs) are the sum of the degree-days over a calendar year.2

(b) **Heating degree-day base 65°F, HDD65:** for any one day, when the mean temperature is less than 65°F, there are as many degree-days as degree Fahrenheit temperature difference between the mean temperature for the day and 65°F. Annual heating degree-days (HDDs) are the sum of the degree-days over a calendar year.2

Building envelopes and mechanical systems (HVAC) should be designed to work together based on each specific hygro-thermal climate.

How Moisture Accumulates in Steel Stud Assemblies

Moisture works its way into a wall system in a variety of ways. It can diffuse through the components of the wall system in the form of vapor. Vapor can also be carried into the wall cavity by air infiltration or air exfiltration. Water that leaks in through the roof or through wall flashings will also enter the wall system. Let's look at each of these issues in more detail.

**Vapor Diffusion** is the process by which water vapor migrates through a wall system and its components such as gypsum, building wrap, insulation and paint. Each component of the...
wall system has a perm rating. The International Building Code (IBC) says that a material with a perm rating of 1.0 or less is a vapor retarder.

In Severe Cold and Cold climates diffusion from the interior side of the wall is common. In winter conditions, the vapor drive is typically from inside to outside. Moisture in the form of vapor can diffuse into the wall cavity, especially if the perm rating(s) of the material(s) on the interior side of the steel studs are greater than 1.0.

In Hot Humid and Hot Dry climates diffusion from the exterior side of the wall is common. In summer conditions, the vapor drive is typically from outside to inside. Moisture will diffuse into the wall cavity, especially if the perm rating(s) of the material(s) on the exterior side of the steel studs are greater than 1.0.

In Mixed climate, walls get the benefit of both internal and external vapor drive based on the time of year and season.

Real life example: 400 occupants in a typical commercial building can emit up to 200 lb. of water vapor into the air per day. This water vapor can diffuse into the wall cavity and may contribute to a breeding ground for mold and decay.

Diffusion from the exterior side of brick veneer walls is also common in all climates. In spring, summer and fall, wind-driven rain can be absorbed by brick veneer. This moisture is then stored inside the masonry layer. After the storm, as the sun heats up the brick, the moisture turns to vapor in the brick cavity and is driven into the wall system.

Exfiltration refers to the physical movement of air from the interior towards the exterior as a result of an air pressure difference. The pressure difference can be caused by wind effects on the building envelope. While moisture diffusion occurs on a molecular level, moisture movement by exfiltration occurs when the indoor air physically moves through commonly occurring penetrations like unsealed openings, joints in the interior vapor/air barrier, electrical outlets, etc.

Infiltration refers to the physical movement of air from the exterior towards the interior as a result of an air pressure difference. While moisture diffusion occurs on a molecular level, moisture movement by infiltration occurs when the outdoor air physically moves through commonly occurring penetrations like unsealed sheathing joints, joints in the exterior vapor/air barrier, window openings and flashings. Most building codes require a maximum of air infiltration rate of 0.06 ft³/min • ft² for commercial buildings.

The potential for vapor movement by exfiltration and infiltration is many times higher than diffusion due to the slowness of the diffusion process.

The air pressure difference between the inside and the outside of a building can effect how much moisture gets driven into the wall cavity. If the air pressure is greater on the warm side of the wall, vapor will be driven into the wall cavity. It is best from a moisture perspective to keep the warm side of the wall at a slightly lower pressure than the cold side since cold air generally holds less moisture than warm air.

Condensation

When the actual temperature drops below the dewpoint temperature inside the wall cavity, condensation can occur if water vapor is present. The temperature of the interior side of the exterior wall sheathing and the steel studs are the most important surfaces to consider. The inside of the exterior sheathing and the steel studs are not insulated in today's commonly specified systems. This makes them more likely to be colder than other components in the wall system. Today's most commonly specified systems have 6" steel studs 16" on center with 1/2" interior gypsum board, R-19 fiberglass insulation, 5/8" exterior grade gypsum sheathing on the exterior with some kind of building wrap. This wall is referred to as the baseline wall system as we move through examples in this course. The R-19 fiberglass does a good job of keeping the interior of the building warm where there are no studs. However because the exterior sheathing board is on the outside of the glass fiber batt insulation, it is essentially at the same temperature as the exterior air. This theory applies to Cold climates. In Hot climates the reverse is true. It is the exterior side of the interior sheathing and the steel studs that are the most important surfaces. This is because the cool side of the wall is toward the interior of the building.

Let's look at an example of the baseline wall system and how it performs over an average year in a Cold climate—like Chicago. To evaluate how the wall systems in the course will perform over time, an Excel spreadsheet was set up using a typical temperature difference and thermal resistance calculation. We then compare the temperatures of each surface of the wall system against the dewpoint temperature. Note that the dewpoint temperature also changes as you go through the wall system, depending on the temperature and humidity level at each surface interface. If the outside temperature is 14 degrees F and the indoor temperature is 70 degrees F, the interior side of the exterior sheathing will be about 24 degrees C. With an interior relative humidity of 40% we can expect moisture to condense on the interior side of the exterior sheathing and the steel studs. This is because the surface temperatures of these components are below our dewpoint temperature range of 37 to 45°. We get these dewpoint figures from a standard dewpoint chart. If this happens day after day, a semi-wet environment can be created. This example is a point in time snapshot of what can happen, so let's take it to the next level. If we take ASHRAE data for the city of Chicago and look at how the baseline wall system will perform over the course of a typical year, we can show the possibility of moisture build-up from early November to late March (Figure 2). This will result in five months of moisture build-up potential. So what is the solution?

To manage moisture we can try to warm up the wall cavity and its components so that they all stay above the dewpoint temperature. If we get this to happen, the water vapor will never condense. Let's look at the baseline wall system example again. Except this time we install a 1" R-5.4 layer of rigid insulation over the exterior gypsum sheathing. The results show that we can shorten the time frame during the year when moisture has the likelihood to condense and accumulate by about 1 month (Figure 2). This solution isn't great because we still have four months out of the year where moisture build-up can occur. However, if we take the fiberglass of the wall cavity and increase the amount of rigid insulation (R 10.0) we apply to the exterior side of the wall, we almost eliminate the potential
Exterior Gypsum defects in labor are all ways moisture gets into a wall cavity. Prolonged moisture does get in, the wall cavity is empty conditioned space. Units of moisture build-up. um sheathing materials to warm up to nearly the temperature of the interior of the building. The wall cavity remains conditioned space, which leads to less moisture build-up and dryer capabilities. The second thing you can do is specify an air barrier membrane on the interior side of the exterior gypsum sheathing. An air barrier membrane prevents most of the exterior moisture from entering the wall cavity. If moisture does get in, the wall cavity is empty conditioned space, which leads to better drying capabilities.

d is not necessarily harmful. However, concerns have been raised regarding the health effects of certain strains of mold on susceptible people. Individuals with existing medical problems or suppressed immune systems may risk infection. In general, molds demand a fungal spores settling on the surface. Oxygen availability Optimal temperatures (40 – 100°F) Nutrient availability Moisture (liquid or relative humidity above 70%) The first four conditions are met in almost every building. The key conditioning factor is moisture, which may be managed by adhering to the air construction practices discussed in this AIA course.

Since mold can grow in wall cavities where the relative humidity level is 70% or higher, it is imperative in Hot Humid climates to keep the air outside the building conditioned to prevent most of the exterior moisture from entering the wall cavity. Conditioning the air in the wall cavity is one of the best ways to manage the humidity level in that space.

Because of the conductivity of steel, ASHRAE requires that architects use a factor in calculating the effective thermal performance of fiberglass insulation in steel stud walls. For example, in the baseline wall system with 6 ft. steel studs 16" on center, the R-19.0 fiberglass is factored by 40%. This results in an effective R-value of 7.6 (19.0 x .40 = 7.6). When using rigid insulation on the exterior side of the wall, ASHRAE gives full credit for the manufacturer’s published R-value because there are less thermal shorts when insulating by this method.

In most cities in the United States, the baseline wall system will meet the minimum ASHRAE code requirements because of the additional insulating value that you get from the other wall components. However, in Severe Cold climates, you need to pay more attention because the minimum requirement jumps substantially to 17.54. In these locations the only way to meet code is to use insulated sheathing on the interior or exterior side of the wall.

Fire Performance
The International Building Code requires UL-rated wall assemblies only when buildings are 30 ft. or closer to each other. Most commercial buildings are not with 30 ft. of each other. Therefore there is not a need for a fire-rated wall assembly in most cases. When there is a need for a rated wall assembly, please refer to the UL design manual for recommendations.

Sound Transmission
When changing the component make-up of a wall system, you must consider what effect the changes will have on the interior environment as it relates to sound. The baseline wall system with a 4" brick veneer will perform relatively well in keeping the outside sound out of the interior space. This system has a Sound Transmission Coefficient (STC) of 63.

By taking the fiberglass out of the cavity space and insulating with thick rigid foam on the outside of the cavity (Figure 4), the STC is lowered to approximately 60. The amount of insulation put on the exterior will affect the final result, but not dramatically, once you get over 1 1/2" thick material.

Recommandation
There are several ways to design steel stud walls and control moisture build-up. The recommendation in this course only looks at one way. This system can be used in all climates and only differs in the thickness of insulation needed. Refer to Figure 4 for a cross section detail of this recommended system.

Working from the inside out, the recommendation is to leave the wall cavity empty so that it becomes conditioned space. The exterior grade gypsum sheathing stays in the system to help wrap up the building quickly and give time for the interior work to start. An air barrier membrane is specified to attempt to eliminate moisture from entering the cavity from the exterior side, and a minimum R-7.5 rigid insulation is required on the
exterior side to meet the energy code requirements in most climates. The insulation will keep all of the wall components, except for the brick veneer, close to the inside temperature and humidity levels. This leads to better moisture control and drying capabilities. The R-value recommendations per climate are as follows:

- **Severe Cold Climate**: R-15.0
- **Cold Climate**: R-12.5
- **Mixed Climate**: R-7.5
- **Hot Humid Climate**: R-7.5
- **Hot Dry Climate**: R-7.5

Different variations can be made where it makes sense to do so based on climate. For example, in Hot Dry climates, it may not be necessary to use an air barrier membrane because in general, the level of relative humidity is so low. This would apply to the southwestern United States. In this case, a good building wrap would stop bulk water from entering the cavity. Any water vapor that does enter the wall system will enter into conditioned space and most likely dissipate before it has a chance to condense.

Let's take this recommendation and look at some modeling examples for cities in three different climates. For the Severe Cold climate we look at Minneapolis, Minnesota. For the Cold climate, Philadelphia, Pennsylvania is our choice, and for our Mixed climate example, St Louis, Missouri. In each model we are comparing the baseline system against our recommended system.

The modeling will use ASHRAE weather data to predict when the potential for moisture build-up is likely to occur during a typical year. Figures 5, 6 & 7 depict how each system is predicted to perform.

In Minneapolis the results are similar to our Chicago example. The baseline wall system has a potential for condensation from early November to early April, or a 5-month period. In Philadelphia and St Louis the potential for condensation is from early December to early March, or a 3-month period using the baseline wall system. The recommended system keeps the potential for condensation very low in all three climates. The key point to remember is that these predictions are based on average ASHRAE weather data. If we run into severe winter conditions like winter 2002-2003, the potential for moisture development only increases.

**Summary**

Controlling moisture in wall cavities is extremely important to the long term health and durability of the wall system. No matter what climate your building is in, water will find its way into the wall through diffusion, exfiltration, infiltration, or leaks. In Severe Cold, Cold and Mixed climates, this water can condense time after time, creating a semi-wet environment. In Hot Humid and Hot Dry climates condensation can also occur.

Mold can grow when a favorable combination of the 5 conditions exists:

- Fungal spores settling on the surface
- Oxygen availability
- Optimal temperatures (40 - 100°F)
- Nutrient availability
- Moisture (liquid or relative humidity above 70%)

Even if water in a liquid state does not exist, mold can advance. A relative humidity level of approximately 70% or higher can create an environment for mold to germinate, sporulate, and grow.

The key to controlling moisture build-up is to limit the amount of water that enters the wall cavity from the exterior side of the building and manage the environment in the cavity space to ensure proper drying of the wall system. By following the recommendations in this course, your wall systems will have a better chance of longevity and performance.

---

**Footnotes**

Moisture Management in Steel Stud Assemblies

Click for Additional Required Reading

As part of the CES Learning Activity, you are required to read additional material online. To access the material on effective R-value, structural considerations, and alternative wall systems, visit archrecord.construction.com/resources/conteduc. To obtain a faxed copy of the supplemental material, please contact Joe Barrow at jbarrow@dow.com. The test below includes questions derived from the online material.

LEARNING OBJECTIVES
- learn how moisture accumulates in steel stud/frame wall cavities.
- learn about some of the design challenges associated with steel stud walls systems.
- participants will be able to evaluate and specify methods that reduce moisture build-up in steel stud walls assemblies based on specific geographical location.

INSTRUCTIONS
Refer to the learning objectives above. Complete the questions below. Go to the self report form on page 234. Follow the reporting instructions, answer the test questions and submit the form. Or use the Continuing Education self report form on Record’s website—archrecord.construction.com—to receive one AIA/CES Learning Unit including one hour of health safety welfare credit.

QUESTIONS
Q: 1. Diffusion from the interior side of the wall is common in which:
A: a. Severe Cold and Cold climates
b. Hot Humid climates
c. Hot Dry climates

Q: 2. 400 occupants in a typical commercial building can emit up to how many lb. of water vapor into the air per day?
A: a. 100
b. 150
c. 200

Q: 3. From a moisture perspective, it is best to keep the warm side of a wall at which pressure in comparison to the cold side?
A: a. Slightly lower pressure
b. Slightly higher pressure

Q: 4. Which generally holds less moisture?
A: a. Warm air
b. Cold air

Q: 5. Exfiltration refers to:
A: a. Physical movement of air from the interior towards the exterior
b. Water vapor migrating through a wall system
c. Physical movement of air from the exterior towards the interior

Q: 6. The inside of the exterior sheathing and the steel studs are not insulated in today’s commonly specified systems.
A: a. True
b. False

Q: 7. The exterior side of the interior sheathing is the most important surface in which climate?
A: a. Hot Humid
b. Cold
c. Severe Cold
d. Mixed

Q: 8. The key to designing an effective wall system is to:
A: a. Keep all moisture out of the building
b. Maintain a consistent temperature within the wall year round
c. Allow it to dry out when it gets wet

Q: 9. Fiberglass thermal insulation does which:
A: a. Decreases the flow of energy through the wall and can decrease the rate of drying
b. Increases the flow of energy through the wall, increasing the rate of drying

Q: 10. Most conditions for mold growth exist in almost every building. Which condition is the easiest to control with sound construction practices?
A: a. Fungal spores settling on the surface
b. Oxygen availability
c. Nutrient availability
d. Moisture (liquid or relative humidity above 70%)
Attend the Design and Construction Industry's PREMIER EVENT!

AIA 2003 National Convention and Expo
San Diego Convention Center
May 8-10, 2003

THE AMERICAN INSTITUTE OF ARCHITECTS

Design Matters! poetry + proof

Earn valuable learning units—Fulfill AIA membership and mandatory state licensure continuing education requirements, including HSW
Choose from more than 200 continuing education opportunities—Workshops, seminars, and tours
Discover cutting-edge products and services from more than 600 companies
Visit San Diego—a beautiful waterfront city with a rich cultural history, art galleries, museums, and miles of sandy beaches

Visit www.aia.org—Register online and get up-to-date convention information
The Beauty of Natural Stone

Elegant, enchanting, enduring and more affordable than ever before

The use of natural stone has skyrocketed. Its popularity, especially for interiors, is at a record level, driven in part by technological advances in its fabrication.

“For our office, stone is a critical element in almost every design we do,” says Joshua Zinder, project manager at Princeton, N.J.-based architectural firm Michael Graves & Associates. “It’s one of the places we like to start a project.”

“The most exciting thing about the stone industry today is the increased acceptance of marble and granite by many users, for new and different as well as traditional applications,” says Vincent Migliore.

Migliore’s family interest in stone dates to 1843, and Migliore has worked all ends of the trade. Today he is a fee-based consultant and president of Empress Migliore SPA, Phillipsburg, N.J., and technical director for the Marble Institute of America. “The market has gone crazy,” he says. Stone is being used as never before.

“The cost of stone has come down substantially as a percentage of building costs,” Migliore says. “Its cost today is lower than it was 10 years ago.”

“Technological advances in all areas of stone production – quarrying, fabricating, and especially installing – have dramatically reduced the cost of using stone,” says Rich Booms, president of the Marble Institute of America and owner of Redford, Mich.-based Booms Stone Co.

“New, automated machinery allows us to cut stone thinner, at less cost, and more consistently,” Booms says. “The development of new anchorage systems makes installation easier, quicker, and more secure, and that, too, has driven prices downward. If we can install 30 pieces per day, instead of 15, the cost to the owner goes down by that amount.”

Contemporary cladding systems make it possible to use panels as little as 3/4-in. (2 cm) thick, with a notable reduction in the cost of stone.

Polished slabs of 2 cm-thick granite now sell for between $22 and $42 per sq. ft., depending on the color; rough 2 cm-thick slabs of marble, between $8 and $36 per sq. ft. Patterned edge material can cost from $12 (for a square edge) to $62 (for something as complex as a "reverse glacier" edge) per lineal foot.

Modular thin stone tile, a product of modern technology that is cut to a thickness of only 3/8-in. (1 cm), is suitable for many applications in which panels might previously have been specified, but is generally used on interior floors and walls.

Advertising supplement provided by Marble Institute of America
The Market
Despite a nationwide decline in commercial construction, the residential sector, fueled by a continuous dose of low interest rates, is enjoying a near-record run.

The number of U.S. households with an annual income of more than $100,000 has increased from three to seven percent over the five years.

The Washington, D.C.-based National Association of Home Builders (NAHB) reported in February that work on new homes and apartments reached a seasonally adjusted annual rate of 1.85 million units in January (based on U.S. Commerce Department figures), the fastest pace in 16 years, and the highest best single-family housing production in 24 years.

New single-family homes were constructed at a seasonally adjusted annual rate of 1.51 million units in January. "This was up 2.1 percent from December's strong number and the fastest production pace since November of 1978. It also is just shy of the fastest construction pace on record — 53 million single-family units started in December of 1977," said NAHB President Kent Conine, a home and apartment builder from Dallas, Texas.

From 1994 through 2001, U.S. homeowners spent an average of $20 billion per year on kitchen and bath remodels. Those factors have led to a robust market in natural stone. According to the U.S. Geological Survey, 1.22 million metric tons of domestic stone, valued at $263 million, were produced in the U.S. in 2001. In October 2002, the last month for which figures were available, imports of granite and marble to the U.S. reached $93 million. Italy, by virtue of the fact that it is the oldest and most respected processor of marble and granite, was the source of the greatest dollar volume of imports. Brazilian granite exports to the U.S. of more than 36,300 tons, however, nearly doubled Italian exports to the U.S.; China was third. Turkey, in October 2002, exported 28,286 tons of marble to the U.S., nearly twice the volume of Italy. Mexico was the third-leading exporter of marble to the U.S.

Stone selection once was limited to what was locally available. Today's stone marketplace, however, is virtually worldwide, and sources of stone are emerging outside traditional markets.

"Italy and Spain are still the hubs of the international stone market," says Booms. "The products from the Far East are not the most glamorous on the market, but they are very competitively priced."

Natural Stone
The universally used genetic classification of stone recognizes three kinds of stone: igneous, metamorphic, and sedimentary, and all are used in construction.

Igneous rocks are solidified from molten material. If the molten material solidifies deep in the crust, it will cool slowly and produce the crystalline, intrusive igneous rocks valuable as natural stone. Granite, gabbro, and basalt are examples of igneous rocks.

Sedimentary rock includes limestones, travertines, and sandstones formed by the accumulation of materials settling in basins and sea beds and becoming compacted over millions of years.
Limestone, used throughout the world as a building material, is found in colors ranging from dead white to black and many colors in between. Some limestones are hard and dense; others are soft and relatively porous. Order limestones may take a polish; softer ones will not. Travertines are a crystalline form of calcium carbonate, developed in layers deposited near cold and warm mineral springs. Characteristic holes were formed by the percolation of mineral water through the deposit for millions of years. Travertines, too, vary widely in density, size, and porosity. They are typically light beige and many can be polished to a high gloss. Sandstones are composed primarily of quartz and calcite, a wide variety of other minerals contributing to color and texture. Marble began as limestone, and the ors, textures, and veining are produced through metamorphic activity. Commercially, any stone (except quartzite) capable of taking a polish is called marble. Among the natural stones, two are highly popular as monumental building stones:

**Granites**: Are igneous rocks derived from molten masses or magmas, chief minerals of which are feldspars and quartz and smaller amounts of mica and hornblende. They are classified as fine-grained, medium-grained, coarse-grained.

Medium-grained granites contain feldspar crystals that average about 3/4-in. diameter. If relatively coarse-grained granite appears in a fine-grained rock mass, the rock is designated as a porphyritic granite.

The color of granite is governed largely by the color of the feldspar, usually the most abundant mineral. Near-white, dark gray, green, light gray, pink, and gray granites are common, but granites of other colors are becoming common. Form color distribution has traditionally been a desirable feature. However, many of today's granites exhibit veining movement and artistic background or variations.

The term "texture" as applied to granite means size, degree of uniformity, and arrangement of constituent minerals. The texture of granite signifies the size and arrangement of mineral grains. Uniform grain size is usually demanded in commercial granites. Uniform distribution of the minerals is as important as uniform grain size.

The translucency of marble is one of its most intriguing attributes. Not all marbles, however, possess this quality. Translucence is dependent upon the crystal structure of the stone, its color (white and lighter-colored marbles are generally more translucent), the thickness of the material, and its surface finish (smooth finishes emphasize marble's translucence). Translucent marbles can be used to diffuse light, may act as a translucent countertop surface, and have other applications when properly backlit.

**Marble**: Is a metamorphic rock resulting from the recrystallization of jasper, the product of heat and pressure, making marble a more dense stone. It is a metamorphic rock that has been subjected to heat and pressure, making it a dense stone. The color, veining, and appearance of marble are caused by the combination of these two forces. Most marbles are a mixture of minerals, including calcite, dolomite, and quartz. The marble is classified into four groups based on their appearance:

- **Group A** marbles are sound, with favorable working qualities. They contain no geologic flaws or voids that would require filling or patching and may be used for interior or exterior applications.
- **Group B** marbles may be expected to contain small holes or voids which may be filled with epoxy, shellac, or polyester resin through processes known as "waxing" or "sticking." Waxing refers to the practice of filling minor surface voids with melted shellac, cabinetmaker's wax, or certain polyester compounds. (It does not refer to the application of paste wax to the surface to make it shinier.) Sticking describes the butt-end repair of a broken piece of stone, now generally done with dowels, cement, or epoxy. Filling of imperfections within this group most likely will not be noticeable.
- **Group C** marbles commonly have blemishes, the result of impurities that have not changed into other minerals during formation. This is the largest and most colorful group of marbles. With this group, it is standard practice to repair the variations in structure through reinforcing, liners, sticking together, filling with resin or cement, and other procedures that render the stone suitable for architectural purposes.
- **Group D** marbles contain a larger number of natural faults than the previous category and require more finishing.

Marble may be finished in a number of ways. In general, as with granite, smooth finishes tend to emphasize color and veining; rough finishes tend to subdue those markings.

The translucency of marble is one of its most intriguing attributes. Not all marbles, however, possess this quality. Translucence is dependent upon the crystal structure of the stone, its color (white and lighter-colored marbles are generally more translucent), the thickness of the material, and its surface finish (smooth finishes emphasize marble's translucence). Translucent marbles can be used to diffuse light, may act as a translucent countertop surface, and have other applications when properly backlit.

**Stone Selection**

"Uniformity of material," when applied to natural stone, whether marble, granite, limestone, or slate, is a term of relative value that needs to be understood when making a selection. And designers must first be aware that because building stone is a natural material, quarry and cut from blocks, then finished, material even from the same quarry may vary greatly in color, texture, and porosity. Materials quarry over even a six-month period from the same site may differ. It is crucial, therefore, that before making a final

...
selection, designers be certain they have access to enough stone to finish a project.

For ease and economy, modular stone tiles offer a good option to stone panels for interior walls and floors. Thin stone tiles, varying in thickness from 1 cm to 1.5 cm, are available in modular sizes of 12 in. X 12 in. to a maximum of 24 in. X 24 in. The final look with such tiles, however, may fall short of expectations with regard to appearance, especially if the stone is variegated and veined, and tiles from different boxes should be mixed by the installer to ensure a pleasing result.

A most important concern when selecting stone for exterior applications is strength. This is especially true when selecting stone for exterior cladding over two stories. In selecting stone for exterior cladding, the engineering characteristics should be the determining factor in the final selection. Exterior stones must be able to withstand these stresses:

- weight load to be borne by anchorage systems;
- wind shear;
- humidity, which must be released to prevent problems with condensation and "efflorescence," the crystallization of naturally occurring salts through evaporation;
- freeze/thaw cycles, which can cause stone to crack and joints to fail;
- structural contraction that occurs during the curing stage of concrete;
- permanent structural distortion, which takes place progressively until the structure has settled;
- elastic distortion, which can be caused by movement produced by load changes on the structure;
- thermal expansion and contraction, which affects stone and other structural elements at different coefficient points and which can cause problems of stability.

Where structural capability is critical, test data for compressive strength, flexural strength, modulus of elasticity, and shear strength should be studied. Where weather is a factor, absorption, porosity, and permeability studies should be made, along with freeze/thaw compressive strength tests. For high-traffic floor areas, abrasive hardness testing should be performed before making a final selection.

Granites, historically, have been favored for exterior use. Their composition makes them both resistant and stable and their surfaces will hold a high polish indefinitely. As a rule, weaker stones require greater, and more costly, reinforcement and, therefore, are not as economical.

Nearly any stone may be used for interior applications, typically in a 3/4 thickness. However, in areas like fountains or showers, the effects of water be taken into account. The installation is more critical than the stone engineering qualities for water-based applications. The installation method the key to success. Stones must be able to resist frequent or continuous water flow, and in the case of showers, hot steam. Steam is a catalyst that can permanently change the color of some stones. Many stones with iron oxide react to steam and can "bleed," causing red streaks. Steam can permanently change the elements in the stone and make it do various things. The best re are obtained with a dense, resistant stone, like granite or compact marble, v a low absorption coefficient. The action of water on polished marble may c a surface dulling over time.

Stone Testing

"Most architects don't have much exposure to the technical side of the industry," says Booms. "A great reference tool is the 'Dimension Stone Design Manual,' published by the Marble Institute of America."

The 226-page manual includes an extensive introduction to stone testing, including data descriptions of test categories, procedures, a specifications of ASTM International (form the American Society for Testing and Mater It also offers detailed instruction for a broad range of installations, both horizontal and vertical, including curtain walls, countertop and lavatory partitions; a guide to care and maintenance; and sample contract documents. A copy may be ordered from the association www.marble-institute.com.

Historically, ASTM standards for stone been limited, but the organization is in the of expanding testing, particularly with regard travertine and serpentine. "Further testing," Migliore, "will further ensure the suitability stone for a broader range of installations. A more careful review of standards for various stone products will enable architects to use with increasing confidence. You can, in sho now specify stone and know that it will wo
ASTM conducts both wet and dry testing (compressive, flexural strength, and the modulus of rupture vary when wet), ASTM C 97 standards are based on tests of a stone's density, specific gravity, and water absorption. Compressive, flexural, and bending tests are conducted under other ASTM categories along with tests for abrasion resistance and slip resistance.

Testing evaluates the suitability of a specific stone for a particular application. Strength tests are needed to determine its resistance to crushing and bending. The density, or specific gravity, is needed to design a support system capable of carrying the weight of the stone. The amount of water the material will absorb will help determine the resistance of the stone to staining and freezing, and its slip resistance is important in flooring applications.

### LEARNING OBJECTIVES

- Gain a greater understanding of how to select natural stone.
- Learn some of the characteristics of various natural stone building materials.
- Have a sense of how to avoid some common problems when using natural stone.

### QUESTIONS

**Q: 1.** From 1994 through 2001, U.S. homeowners spent an average of how much per year on kitchen and bath remodels?

**A:**
- a. $10 billion
- b. $20 billion
- c. $30 billion
- d. $40 billion

**Q: 2.** At 36,300 tons in October, 2002, which country was the leading monthly exporter of granite to the U.S.?

**A:**
- a. Italy
- b. Spain
- c. Brazil
- d. Mexico

**Q: 3.** Which classification of natural stone includes granite, gabbros and basalts?

**A:**
- a. Igneous
- b. Metamorphic
- c. Sedimentary

**Q: 4.** Which classification of natural stone includes marble, slate, quartzites and schists?

**A:**
- a. Igneous
- b. Metamorphic
- c. Sedimentary

**Q: 5.** Which is a metamorphic rock resulting from the recrystallization of limestone caused by heat and pressure?

**A:**
- a. Marble
- b. Granite
- c. Sandstone
- d. Onyx

**Q: 6.** Green coloring in marble is caused by:

**A:**
- a. Iron oxides
- b. Bituminous materials
- c. Chlorite

**Q: 7.** Which classification of marble contains no geologic blemishes or voids that require filling or patching?

**A:**
- a. Group A
- b. Group B
- c. Group C
- d. Group D

**Q: 8.** Which classification of marble commonly has geologic blemishes but is the largest and most colorful group of marbles?

**A:**
- a. Group A
- b. Group B
- c. Group C
- d. Group D

**Q: 9.** Which stone has historically been favored for exterior use since its composition makes it both stable and able to hold a high polish?

**A:**
- a. Granite
- b. Marble
- c. Slate

**Q: 10.** Which stone finish is generally preferred for floors, stair treads, and thresholds?

**A:**
- a. Polished finish
- b. Honed finish
- c. Flamed (thermal) finish
Last Chance to Register!

VIP Complimentary Exhibit Hall Registration

- Exhibit Hall entrance 3 DAYS at both The CSI Show™ and The TFM Show™
- Entrance into Construct America™ General Sessions
  Featuring keynote addresses given by: Dr. David A. Wyss, Chief Economist, Standard & Poor's and William A. McDonough, FAIA, founding partner, William McDonough & Partners

Complimentary or 20% Off Complete Registration Package

Take advantage of this offer to participate in more than 3 days of quality technical education programs and exhibits. Don’t miss the debut of The CSI Show™ at Construct America™.

Last Name
First Name
MI

Company

Address

City State/Prov. Zip+4 Country

Please duplicate and pass the savings along!
Savings Pass (20% discount) cannot be combined with any other discounts and is not applicable to past registration purchases.

Credit Card #: Expiration Date:

Signature: Date:

Fax this completed registration form to: (703) 684-8436
For more information: www.thecsishow.com
Pick up badge at onsite registration.

CIRCLE 101 ON READER SERVICE CARD
OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
New Products

The application of state-of-the-art screening, glazing, molding, coloring, and other advanced techniques may help the tile, stone, and concrete products featured on these pages become the focus of many future projects. Whether inspired by comic books, cave drawings, classic decorative patterns, or just the natural landscape around us, there is no end to the possibilities of these versatile finishes. —Rita F. Catinella

Spanish tile trends include toned-down metallics and contemporary mosaics

Overings 2003, the major U.S. tile stone exhibition held last month in Orlando, the Pavilion of Spain showcased the latest technologies in the Spanish ceramic-tile industry designed for the U.S. market. Many of the collections offered textural effects created by state-of-the-art glazing and printing techniques. Favorite inspirations were natural materials, fabrics, faux painting effects, and exotic wood finishes. Metallics, which have toned down considerably, are now used for subtle effects in decorative-filled products—especially in silver and bronze. Deltaker’s Metal is a 10" x 10" metallic-glazed porcelain-tile series. It is offered in matte, with a textured or smooth surface and a geometric, high-relief pattern. Another trend evident at the show was for mosaics with glasslike finishes to feature contemporary, spicy colors. Vidrepur’s glass mosaics have soft, rounded edges and are produced from 100 percent recycled glass. The tiny mosaics are meshed in 12" x 12" sheets for easy installation. 305/446-4387. Tile of Spain Center, Trade Commission of Spain, Coral Gables, Fla. CIRCLE 200

New Spanish tiles include Vidrepur’s glass mosaics (left) and Deltaker’s Metal series (below).

Lightweight stone installs like brick

Boral Bricks has expanded its product offering beyond brick with the introduction of Liberty Classic Stone, a manufactured stone product that is lightweight (1.8 pounds per square foot, compared to approximately 45 pounds for quarried stone), installs like brick, and offers the look of natural stone with less expense. Unlike thin stone veneers, Boral’s new molded stone is sized to a 3" thickness, the same as traditional brick, allowing it to be laid by masons in the same manner. A patented molding method replicates the shape and texture of stone, making the material ideal for both exterior and interior applications in residential or commercial projects. Boral’s stone color is permanent, lasting even after years of weathering, and extends through the body of the stone. 800/5-BORAL-5. Boral Bricks, Atlanta. CIRCLE 201

Sealed-edge and fern-leaf impressions personalize kitchen’s concrete

Concrete Canvas crafts architectural concrete pieces for home and business applications. The custom possibilities extend to products such as countertops, vanities, sinks, furniture, mantles, hearths. The company explores the natural properties of concrete in a variety of ways: It can take on a cast-bronze appearance, have impressed finish, or be used in various applications such as a splash and window surround. In a recent kitchen project, Susan Boone Jones of Fowler Interiors in Greenville, South Carolina, the homeowners wanted a material to mimic the look of chiseled limestone, which would have been expensive. Concrete Canvas was able to form an edge to give the look of chiseled limestone, which fits into the home’s upscale rustic post-and-beam style.

Concrete countertop mimics limestone.

The thick edges give a massive feel to the counters, although the counter body remains small to reduce weight. The concrete features warm, earthy colors, including green, dark gray, and chocolate, which also accent the decor of the home. The backsplash, which extends up to the cabinets, is personalized with impressions of real leaves and ferns. 864/235-8007. Concrete Canvas, Greenville, S.C. CIRCLE 202

For more information, circle item numbers on Reader Service Card or go to www.architecturalrecord.comAdvertisers’ Products info.
New Products

Last year marked the 20th installment of Cersaie, the international exhibition of ceramic tiles and bathroom furnishings held annually in Bologna, Italy. The tiles below show the range of products on display at the million-square-foot fair. R.F.C.

Holy mosaics, Batman!
The Fumetto Mosaic Collections from SICIS offer an innovation for interiors with a contemporary art feeling. The mosaics bring the comic-book style of drawing to life with larger-than-life comic-strip panels that can be used individually or as part of a story to be read through the space. Featuring the Murano and Iridium collection of mosaics from SICIS, the sheets of tile are easy to apply on-site. New, complete comic-strip stories will be coming in the future from the company. 800/351-0038. Hastings Tile, Freeport, N.Y. CIRCLE 203

Reeds of tile
Cotto Veneto displayed an array of new offerings at its booth last year, in materials ranging from natural stone, glass, terra cotta to stainless steel. Rilie Canne (left) is a hand-painted bas relief in terra-cotta or enameled fired clay, inspired by the natural landscape of oases and bulrushes. The terra-cotta reeds of Stuoie (above) were also inspired by natural textures of vegetation. 518/344-7000. Hastings Tile, Schenectady, N.Y. CIRCLE 206

Joyful mosaics
The Joycolor Mosaic line, from Giaretta Italia, features a rainbow of paper-face-mounted, stone-shaped mosaics with a cracked glaze. Available in 280 mm x 280 mm (approximately 11" x 11") sheets, the tiles come in creatively titled colors, including Icy Sand, Frozen Jade, Jungle Alga, Himalayan Sky, Blue Atoll, and Neptunian Heaven. The mosaics can be used in both residential and commercial projects. 39/0424 808341. Giaretta Italia, Pove del Grappa, Italy. CIRCLE 207

Various tile styles
The Optical Series from Cerdomus Ceramiche was designed by Florentine architect and designer Simone Micheli. Suitable as a wall covering, the pop-arty tile comes in a range of bright colors in a single 25 cm x 40 cm (approximately 10" x 16") size. At the show, the company also introduced Pietra d'Assisi and Pietra di Angkor, porcelain tiles inspired by natural stone, and Mediterranea, a new line of tiles characterized by the colors of the sea, sun, and nature. 39/0546 652111. Cerdomus Ceramiche, Ravenna, Italy. CIRCLE 205

Ceramic cave drawings
The Swahili Collection represents a return to motifs from traditional decoration. The products feature archaic symbolism of the four elements (Terra, Acqua, Aria, and Fuoco), patterns that allude to fossilized animals, symbols of tribal civilizations, and even patterns that depict an ancient interpretation of the creation of the world. 39/089 342800. Fornace Della Cava, Cava De' Tirreni, Italy. CIRCLE 206
When faced with the challenge of selecting just the right flooring material for your next project, only terrazzo earns straight A’s across the board! Only terrazzo flooring can stand up to the daily calamities of high traffic areas and still deliver unlimited design capabilities.

Cost Effectiveness .......... A+
Design Flexibility .......... A+
Ease of Maintenance ...... A+
Durability ................. A+
Longevity ............... A+
New Products

Colorful accomplishment
The recently completed Cathedral of Our Lady of the Angels, in Los Angeles (ARCHITECTURAL RECORD, November 2002), is thought to be the largest colored-concrete building ever constructed (approximately 26,000 cubic yards of integrally colored concrete were used), Davis Colors supplied more than 100 tons of pigment used to tint the material for the project. Working closely with architect Rafael Moneo, Davis Colors developed a custom-colored pigment blend to create the "mission adobe" hue desired. Davis Colors celebrated the firm's 50th anniversary in 2002; today the firm claims to offer the widest spectrum of concrete shades available. 800/356-4848. Davis Colors, Los Angeles. CIRCLE 208

Metallic-inspired tile
Patine (right), Walker Zanger's new collection of handmade, tarnished copper tiles, feature warm, aged hues and embossed decorative patterns reminiscent of French or English country houses. Elixir is a new collection of contemporary ceramic tile with metallic glazes (below). Elixir's six shades come in both glossy and matte finishes and are available in 4" x 4" field tiles, as well as trim. Elixir is recommended for interior vertical surfaces, including light commercial applications. 877/611-0199. Walker Zanger, Sylmar, Calif. CIRCLE 209

For more information, circle item numbers on Reader Service Card or go to www.architecturalrecord.com Advertisers & Products
Throughout history, artists like Spain's Joan Miró have added new dimensions to their unique works with the creative use of ceramic tile. Like Miró, the tile manufacturers of Spain are regarded as masters of their craft. For centuries, they have combined a history of craftsmanship and quality with forward-thinking technologies.

Today, Spain leads the world in the production of ceramic tile. It continues to set industry standards, developing the techniques and products of the future, from handmade to high-tech.

Along with the prestige of the finest European products, tile from Spain offers competitive pricing, high quality, and elegant designs. When it comes to floor and wallcovering options, look for the mark of excellence known the world over...

For more information:
Tile of Spain Center, 2655 Le Jeune Road
Suite 1114, Coral Gables, FL 33134
Phone: 305.446.4387; Fax: 305.446.2602
E-mail: buzonooficial@miamilocomes.mnc.es
Website: www.tilespain.com.

Miró's tile mural, Mar du Soleil (1957), at the UNESCO Building in Paris, France.
New Products

**Made by nature, found again by man**

Authenticated Antique Belgian Java Limestone (right) joins the Ann Sacks antiquities program. The stone is a rare find because of the complexity and care required to reclaim large-scale stone from wealthy merchants' homes along the northeast coast of Java. Originally quarried in the mid-1800s in Belgium, the stone was used for many years as a ballast in old merchant sailing ships from Europe. Peppered with ancient fossils and burnished to a rich patina, the stone is offered in 20" and 24" squares. Also new from Ann Sacks are Dana's Sketchbook (left), a line of hand-painted ceramic tiles with a vibrant palette for highly artistic installations, and Pila Vetro glass tiles (center). 800/278-TILE. Ann Sacks, Portland, Ore. CIRCLE 210

---

**EXCITING SHELF SUPPORTS**

SH7—hamburger cut in half: 2 sizes, 7/8" 1/2" projection

SH13—perforated pattern in 2 sizes, 7 7/8" or 11 3/4"

SH — "Dirt's Foot" design, 3 1/2" projection

SH — massive bracket protruding 5 1/8"

Out-of-this-world lines of our SH-12 "Galaxy" radiate elegance and good design. Clear rubber bumpers raise shelf above support; maximum 11" shelf width. Available in Satin Nickel and Matte Chrome.

See all 15 of our contemporary shelf supports at [www.mockett.com](http://www.mockett.com).

Call for our "Latest and Greatest" free catalog at 800-523-1269.

"Fine Architectural Hardware for Your Fine Furniture."

---

**Discover the lasting beauty of genuine teak**

- Lumber
- Millwork
- Flooring
- Plywood
- Doors
- Teak & Ipe
- Decking

No one knows more about Teak than us. No one takes more care in bringing it to you.

www.eastteak.net

---

For more information, circle item numbers on Reader Service Card or go to www.architecturalrecord.com Advertisers & Products
**Product Briefs**

**Disruptive step**
KONE ECOMOD Complete

A systematic way to replace existing components of existing escalators with new technology to avoid significant disruption and construction costs that are associated with conventional escalator replacement.

**Swinging stool**
Zanzibar family of adjustable-height

Introduces a new member—the Zanzibar swinging stool. The stool’s ability to tilt in any direction allows the user to reach formerly out-of-reach objects while remaining comfortably seated, making it suitable for a commercial or residential setting. Available in nine colors, Zanzibar Swing features a neared polymer seat and a leg and base in chromed steel. 39/029 039 0013.

**Swingin g stool**
Zanzibar family of adjustable-height

Introduces a new member—the Zanzibar swinging stool. The stool’s ability to tilt in any direction allows the user to reach formerly out-of-reach objects while remaining comfortably seated, making it suitable for a commercial or residential setting. Available in nine colors, Zanzibar Swing features a neared polymer seat and a leg and base in chromed steel. 39/029 039 0013.

**Stout flooring**
When the Guinness Brewery in Dublin replaced its 27-foot-tall wooden vats with easier-to-maintain metal vats, some of the wooden vats were dismantled and stored while others were demolished. Mountain Lumber arranged to import more than 100,000 board feet of 100-year-old oak staves from the dismantled vats to mill into European Cooper’s Oak flooring. The warm-colored oak flooring ranges in hues from golden brown to dark brown and is enhanced by accents from iron bands that tightly wrapped around the massive vats for decades. 800/555-2671.

**Product of the Month**
Spectraloc grout

While Laticrete Spectralock Grout installs the same way as Portland cement grout, it performs like an epoxy grout. The grout can be used on smooth or textured ceramic tile or stone floors, walls, and counters in either wet or dry areas in commercial or residential projects. As its name implies, it is highly stain-resistant, and the manufacturer claims it won’t fade, crack, or powder out. The epoxy requires no special tools to install, mixes easily by hand, spreads like cement, and can be cleaned up with cold water and a sponge.

Ready for foot traffic in 12 hours, Spectralock is offered with a new color palette containing 40 colors, and five Dazzle combinations. The Dazzle line includes metallics, mother-of-pearl, and glow-in-the-dark (below) components that can be blended with Laticrete SpectraLock Grout to produce various effects. The glow-in-the-dark grout, for example, can help define wall and floor areas in complete darkness—and is particularly useful for those latenight trips to the bathroom or kitchen. 800/243-4788.

**Stout flooring**
When the Guinness Brewery in Dublin replaced its 27-foot-tall wooden vats with easier-to-maintain metal vats, some of the wooden vats were dismantled and stored while others were demolished. Mountain Lumber arranged to import more than 100,000 board feet of 100-year-old oak staves from the dismantled vats to mill into European Cooper’s Oak flooring. The warm-colored oak flooring ranges in hues from golden brown to dark brown and is enhanced by accents from iron bands that tightly wrapped around the massive vats for decades. 800/555-2671.

**Swinging stool**
Zanzibar family of adjustable-height

Introduces a new member—the Zanzibar swinging stool. The stool’s ability to tilt in any direction allows the user to reach formerly out-of-reach objects while remaining comfortably seated, making it suitable for a commercial or residential setting. Available in nine colors, Zanzibar Swing features a neared polymer seat and a leg and base in chromed steel. 39/029 039 0013.

**Swingin g stool**
Zanzibar family of adjustable-height

Introduces a new member—the Zanzibar swinging stool. The stool’s ability to tilt in any direction allows the user to reach formerly out-of-reach objects while remaining comfortably seated, making it suitable for a commercial or residential setting. Available in nine colors, Zanzibar Swing features a neared polymer seat and a leg and base in chromed steel. 39/029 039 0013.

**Stout flooring**
When the Guinness Brewery in Dublin replaced its 27-foot-tall wooden vats with easier-to-maintain metal vats, some of the wooden vats were dismantled and stored while others were demolished. Mountain Lumber arranged to import more than 100,000 board feet of 100-year-old oak staves from the dismantled vats to mill into European Cooper’s Oak flooring. The warm-colored oak flooring ranges in hues from golden brown to dark brown and is enhanced by accents from iron bands that tightly wrapped around the massive vats for decades. 800/555-2671.
Break New Ground with a Time-Tested Material
An investment in living well

Any design  Equally at home in traditional or modern home architecture, masonry exceeds the expectations of designers and builders alike. Unlimited shapes, sizes, colors, and textures bring every vision to life. Plus, homeowners appreciate how easy it is to maintain.

Any style  From starter home to mansion, durable and quiet brick and block homes provide comfort and safety. In multi-family buildings, masonry walls afford protection from noise and, more importantly, fire.

Any climate  Summer or winter, the thermal mass of masonry helps to regulate temperature swings and keeps families comfortable. New block configurations and insulation materials save even more money on utility bills.

Any extreme  Solid masonry walls resist the forces of nature: fierce winds, fire, and flood. From exterior walls to interior safe rooms, masonry protects lives and provides peace of mind.

Discover the value of masonry for today’s homes
CIRCLE 112 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML

www.cement.org/masonry
Product Briefs

Natural metallic finish

Solar-powered air circulation
Providing up to 1,200 square feet of circulation coverage, the Solar Star solar-powered attic ventilator exchanges air at a rate of up to 800 cubic feet per minute to prevent attic heat from building up in the summer and eventually causing a buildup of moisture. The compact design, which includes three roof-mounting options, allows the unit to be installed anywhere air circulation is needed, including attics, sheds, and garages. 800/966-SOLA. Solatube, Vista, Calif. CIRCLE 233

More information, circle item numbers on Reader Service Card or go to www.architecturalrecord.com Advertisers & Products info.
To see our full range of products, visit these exceptional showrooms.

Walk into any of these landmark buildings, and it's like walking into a DORMA showroom. On display you'll find DORMA's range of architectural solutions that accentuate the building's design. Whether it's automatic and revolving doors, partitioning systems, or a full line of door controls, exit devices and locks, DORMA has the solution. Call us or visit www.dorma-usa.com.
Corporation introduces GreenGuard Rain Drop housewrap featuring water channels that divert bulk water down the face of the wrap to the base of the exterior wall. Once the water has drained away and its source has abated, the drainage planes air dry. The housewrap may be used with most common exterior tiles and comes in 9’ x 100’ and 9’ x 150’ rolls. The drainage channels will not even when a hard-backed siding is fastened to the wall over the housewrap.

Semiprecious stones
The Concetta line from Caesarstone features semiprecious stones in quartz surfaces that can be used for countertops, vanities, table tops, and furniture designs. Intended for the luxury homeowner, Concetto is highly heat-, scratch-, and chip-resistant and is available in 1” thick, full-size slabs. The line uses flint, turquoise, carnelian, jasper, socialite, and quartz to create an alternative surface to marble or granite. Founded in Israel in 1987, Caesarstone is distributed in the U.S. by U.S. Quartz Products. 800/666-8201. U.S. Quartz Products, Sun Valley, Calif. CIRCLE 217

Stay within the lines
The Grid Panel System, available in both OSB and plywood, features a surface-printed system of cutting and nailing lines that assist in the efficient installation of roof sheathing, side walls, subflooring, and siding. Available in a variety of thicknesses and grades, The Grid is produced in agency-certified-rated sheathing, sanded, and industrial-grade panels. 318/448-0405. Martco Limited Partnership, Alexandria, La. CIRCLE 218

Is it any wonder it's called a feature window?

Windows and doors for residential and commercial projects.

Choose from custom or standard divided light patterns.

Available in standard and custom sizes.

Low maintenance exteriors in White, Sandtone, Terratone® or Forest Green.

Real wood interiors.

Backed by the 20/10 year Andersen limited warranty.*

See the exciting new line of Andersen® architectural windows and doors. To find the window dealer nearest you call 1-800-426-4261, ref. #4652. andersenwindows.com LONG LIVE THE HOME™

CIRCLE 215 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
Everest takes style to new heights.

All the charm of the Old World, all the performance of a Heat-N-Glo.

With its classic European lines and herringbone masonry, Everest conjures up visions of turn-of-the-century Vienna, Brussels or Copenhagen. But behind all that Old World charm you'll find all the features you've come to expect from the leader in gas fireplaces. Clearly, nobody builds a fire like Heat-N-Glo.

Designer Series by HEAT-N-GLO®
No one builds a better fire

1-888-427-3973 (www.heatnglo.com or www.fireplaces.com)

CIRCLE 116 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
PRODUCT BRIEFS

INTERNATIONAL BUILDER’S SHOW REVIEW

Door behind door per one ...  
ases that lead to hidden rooms are often associated with mystery novels and Hollywood sets. Here is the SPACE X DOORS system that replaces traditional doors with furniture-quality shelves that function as doors. Old bookcase system will also be available in front of a closet in a home office, or it can provide a more secure hiding place for guns, valuables, or even a vault or room behind the bookcase. It is also a hidden locking mechanism available, if necessary. The stem can hold books and items totaling 300 pounds of weight and can be opened without knocking objects off the shelf. Any door opening 4’ to 10’ can be accommodated. The bookcases come standard in oak, maple, cherry, and paint grade MDF, or they can be made to order in any other available color or material. 800/262-9464. SPACE X DOORS, Centennial, Colo. CIRCLE 219

Tough character  
Pella’s Impervia product line is manufactured from a five-layer Duracast fiberglass composite material that is claimed to be nine times stronger than vinyl and twice as strong as aluminum in tensile-strength tests. The windows and doors can withstand intense heat, moisture, and cold conditions. The line will be available in select southern and western markets in 2003, and in all other U.S. markets by late 2004. 888/84-PELLA, Pella, Iowa. CIRCLE 221

Double hung with options  
Weather Shield’s redesigned double-hung tilt window features a sleek sash profile that keeps fasteners, nail heads, and hardware to a minimum. It offers a choice of seven anodized aluminum finishes and 55 standard and designer exterior colors. The window sashes tilt in for easy cleaning or removal, and Quadra Mitered, air-tight corners in nailing fin, frame, sash, and glazing enhance the window’s efficiency. 800/477-6806. Weather Shield, Medford, Wis. CIRCLE 220

Get a feature you’ve always wanted in an affordable window.

The Andersen® 200 Series line features more worry-free solutions than ever. In fact, with the new gliding window, there’s now an affordable Andersen product for any project. Call 1-800-426-4261, ref. #4653. andersenwindows.com LONG LIVE THE HOME Andersen WINDOWS • DOORS CIRCLE 117 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML

3023B. © 2003 Andersen Corporation. All rights reserved.
The most famous architects have integrated TERRART® into their design repertoire. Today, this façade system whose visible parts exclusively consist of terracotta, is worldwide recognised. Individual, property specific production provides for the unique character and the distinctive appearance of each TERRART® façade.

Flexible linear lighting
Starfire offers a new brochure detailing the company’s Xenflex flexible linear lighting system. The eight-page color brochure shows how Xenflex Xenon lamp technology, a low-voltage, flexible-mounting-strip design, creates a lighting system that matches the specifications of halogen lighting systems without any of the handling or usage restrictions. 800/443-8823. Starfire Lighting, Wood-Ridge, N.J. CIRCLE 222

Government lighting
American Electric Lighting (AEL) has released the company’s first catalog since becoming an Acuity Brands company. The 192-page catalog includes new additions to AEL’s decorative Heritage Collection for municipal street lighting and the AVL vertical area lighter. 770/922-9000. Acuity Lighting Group, Conyers, Ga. CIRCLE 223

Oral privacy requirements
A new brochure produced by USG Interiors and Lencore Acoustics details how architects can meet the new Health Insurance Portability and Accountability Act of 1996 requirements to protect the privacy of health information conveyed orally. The brochure includes information about the

For more information, circle item numbers on Reader Service Card or www.architecturalrecord.com Advertisers & Products.
ARCHITECTURAL DESIGN SECRETS
OF THE ANCIENT MASTERS
REVEALED IN ONE
AWE-INSPIRING TOUR,

CEU TAX-FREE TRIPS
PARIS AND DELHI

LONG-LOST BUILDING TECHNOQUES RE<DISCOVERED
AND AVAILABLE ONLY THROUGH

CRAB APPLE TRAVEL

ARCHETYPICAL DESIGN WITH EARTHQUAKE
SAFE GEOMETRIC STONE PLACEMENT, NATURAL
ENERGY EFFICIENT BUILDINGS WITHOUT THE
USE OF ELECTRICITY OR SOLAR PANELS
FIVE DAYS IN PARIS
SIX DAYS IN DELHI AND JAIPUR
Lecture and hands-on application
Receive CEUs from accredited schools
All flights are exclusively northwest/KLM
Earn world perks frequent flyer miles

UPCOMING TOURS IN 2003 INCLUDE:

AUSTRALIA - EARTH-SAFE OUTBACK DREAM-TIME/
MEERKAT ORIGINAL STRUCTURES
MACHU PICCHU, PERU - MYTHOLOGICAL SYMBOLISM
IN STRUCTURES, GEOMETRIC STONE PLACEMENT,
ENERGY GRID AND ASTROLOGICAL PLACEMENT
TUSCANY / POMPEII - NATURAL PLUMBING AND WATER
WAYS WITH ENERGY-FREE AIR CONDUCTION; THE
EARTH'S FIRST BIDETS AND TOILETS
TOKYO / SINGAPORE - PERFECT MATHEMATICAL
PLACEMENT HARMONIZING, CALMING AND ENERGY
PRODUCING, ENERGY GRID PATTERNS
MAYAN RUINS, BELIZE - ASTROLOGICAL AND
GEOMETRIC STONE PLACEMENT, EARTHQUAKE SAFE
TOKYO / NAGANO - DESIGNING BUILDINGS LIKE CELLS
IN A BODY ALL INTERCONNECTED, HARMONIOUS AND
MOVING WITH EACH USE TO THE NEEDS OF THE OWNER
DELHI/HAADAKHAN - GEOMETRIC STONE MASONRY
PAIRED WITH GRAVITATIONAL GRIDS FOR HARMONY
WITH NATURE
CALCUTTA / DARJEELING - TRADITIONAL STRUCTURES
UTILIZING NON-ELECTRIC HEATING & COOLING THROUGH
UTILIZING BALANCING ECOLOGICAL FACTORS

FOR DETAILS CALL (612) 339-2710
EMAIL AT TOURS@CRABAPPLETRAVEL.NET

CRAB APPLE TRAVEL is a division of HUNG TEN LLC
New Business Consulting & Black Diamond Marketing

CIRCLE 120 ON READER SERVICE CARD
OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML

Product Literature

New door expressions
Marshfield Doosystems offers a free
brochure on the Expressions del Sol
factory-installed glazing collection for its
interior wood doors. The doors feature
glass openings factory glazed from a
wide assortment of available glass from
Firelite, Pilkington, Vanceva, and Visual
Impact Technologies. 800/869-3667, ext.
2200. Marshfield DoorSystems,
Marshfield, Wis. CIRCLE 226

Impact-protection catalog
Musson has released a new catalog
featuring the latest products in impact
wall protection. They include flat wall
guards in three heights for high-traffic
areas; ADA-compliant handrails in three
different profiles (sculpted, flat, and
cyindrical); and surface-mounted corner
guards in three styles. 800/321-2381.
Musson Rubber Company, Akron, Ohio.
CIRCLE 227

Protection collections
A new 28-page catalog introduces
Pawling Corporation's 2003 PRO.TEK
line of handrails, corner guards, and
wall and door-frame protection products.
In addition, Pawling publishes a full range of
other catalogs for its architectural prod-
ucts, including rigid vinyl wall cover-
ings, entrance matting and gratings, att-
floors, and parking and safety acces-
sories. 800/431-3456. Pawling
Corporation, Wassaic, N.Y. CIRCLE 228

Wood door options
Simpson Door Company introduces
new Doors of Lifetime catalog, a
comprehensive guide to the company's
collection of exterior and interior wood
doors. The 96-page catalog shows
Simpson's complete product line in
range of wood and glass options and
illustrates the company's custom cap-
bilities. 800/952-4057. Simpson Door
Company, McCleary, Wash. CIRCLE 229

Certified lumber report
A special report examining the grow-
ning demand for architectural wood do-
ors manufactured from certified lumber
now available from VT Industries. A
eight-page report, titled Going Green
provides an authoritative look at the
technology and procedures required
deliver architectural wood doors that
meet Forest Stewardship Council stan-
dards. 800/827-8783. VT Industries,
Holstein, Iowa. CIRCLE 230

For more information, circle item numbers on Reader Service Card.
www.architecturalrecord.com Advertisers & Prod11
The Reflective Dillon Series from E. Dillon and Company

Is this concrete masonry?

It is but it's unlike anything you've ever seen before now.

All new for 2003, the Reflective Dillon Series* features a new, higher level of polish for reflectivity that rivals or exceeds the finest polished marble or granite.

The reflectivity is combined with new manufacturing techniques that allow all exposed edges to be beveled - finally solving the classic problem of unsightly mortar joints. Instead, beautiful straight joint lines, like those pictured here, will grace your building.

Our new 12" tall Majestic sizes allow you to escape from the traditional 8" scale without adding weight or cost to your project.

*Patents Pending

P.O. Box 160, Swords Creek, VA 24649, (800) 234-8970
www.edillon.com

Tests prove Nova brik™ far exceeds all sidings in wind resistance (including conventional masonry).

Nova brik™ attaches directly to the stud system of the house/structure.

Nova brik™ increases the total strength of the average wood frame house/structure by 30%.

Nova brik™ requires no foundation - installs on all structures including structures set on pilings.

Nova brik™ provides a 2.5" thick concrete "armor" to withstand flying debris.

CALL 888-873-5007 FOR MORE INFORMATION.
AIA/ARCHITECTURAL RECORD
CONTINUING EDUCATION

Program title: Moisture Management in Steel Stud Assemblies, Architectural Record (04/03, page 195)
AIA/CES Credit: This article will earn you one AIA/CES LU hour of health safety welfare credit. (Valid for credit through April 2005)

Directions: Select one answer for each question in the exam and completely circle appropriate letter. A minimum score of 70% is required to earn credit.

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

Last Name First Name Middle Initial or Name

Firm Name Address City State Zip
Tel Fax E-mail

AIA ID Number Completion date (M/D/Y):

Check one: ☐ $10 Payment enclosed. (Make check payable to Architectural Record and mail to: Architectural Record/Continuing Education Certificate, PO Box 682, Hightstown, NJ 08520-0682.) For Customer Service, call: 877-876-8093.

Charge my: ☐ Visa ☐ Mastercard ☐ American Express Card#

Signature Exp. Date

Check below:
☐ To register for AIA/CES credits: Answer the test questions and send the completed form with questions answered to above address or fax to 212-904-3150.
☐ For Certificate of Completion: As required by certain states, answer test questions, fill out form above, and mail to above address, or fax to 212-904-3150.
Your test will be scored. Those who pass with a score of 70% or higher will receive a certificate of completion.

Material resources used: Article: This article addresses issues concerning health and safety.
I hereby certify that the above information is true and accurate to the best of my knowledge and that I have complied with the AIA Continuing Education Guidelines for the reported period.

Signature Date
When it comes to construction management, there’s really only one site to visit.

Concentrations include:

- Construction Executive Management
- Construction Project Management
- Infrastructure Development Management

New York University's School of Continuing and Professional Studies offers a Master's degree in Construction Management specifically designed to meet the increasingly sophisticated demands of today's multi-billion dollar construction industry. The degree draws on the real-world expertise of industry leaders and the time proven excellence of NYU to bring to the table the most pressing current issues and concerns, as well as emerging trends. Our advisory board, made up of New York's top practitioners, constantly scrutinizes our curriculum against current best practices and standards.

With its rigorous focus on investment and management, you'll acquire the fundamentals of project and business management, as well as technical expertise and financial knowledge critical to running a sophisticated construction organization. Most importantly, you'll also be exposed to an extensive network of professionals and events that will position you to take leadership position.

Master's degree from NYU – a tradition of innovation and excellence.

INFORMATION SESSIONS:

Tues., 6-8 p.m., Apr. 15 or Wed., 6-8 p.m., May 21
1601 Broadway, 7th Floor
Please call to RSVP.

For more information Phone: 1-888-998-7204, ext.368 Website: www.scps.nyu.edu/368
These microscopic, glassy spheres are fly ash — and at ISG Resources, we sell millions of tons of them every year.

Produced by burning coal at electric power plants, fly ash might be destined for disposal in a landfill. But when added to concrete, fly ash makes concrete easier to work with, stronger and more durable.

Fly ash also allows concrete producers to reduce the amount of cement that they use. That means less energy is consumed to manufacture cement and there are less greenhouse gas emissions from the process — almost a ton of CO$_2$ saved for every ton of cement that’s not produced. In addition to concrete, fly ash is used in mortars, stuccos and a variety of other building materials.

That’s an improvement worth specifying.

**ISG RESOURCES**

1.888.236.6236

www.flyash.com

Contact ISG for free technical literature and information on how fly ash use benefits the environment.
DOMINION PROJECT MANAGEMENT, INC
EDUCATION AND TRAINING
We are the Educators of the AEC Industry.

APRIL AND MAY COURSES:

DESIGN-BUILD
April 28th and 29th Washington, DC Area – $795

HOMELAND SECURITY
May 21st and 22nd Washington DC Area – $795

Project Management Boot Camp • Construction Law
Toxic Mold • Construction Management

Lee@Dominion-Project.com
Toll Free Number: (866) 342-8832
Fax: (703) 443-1002

**Group Discounts Available**

Our Project Managers instruct and our Instructors manage projects!

EXECUTIVE OFFICES
James H. McGraw, IV, Group Publisher
(212) 904-4048 Fax: (212) 904-3695
jay_mcgraw@mcgraw-hill.com
Laura Vicci, VP, Associate Publisher
(212) 904-2518 Fax: (212) 904-2971
lvicci@mcgraw-hill.com

ONLINE SALES
Paul Cannella, Manager
(312) 233-7499 Fax: (312) 233-7490
paul_cannella@mcgraw-hill.com

INSIDE SALES
James Kennedy, Director
(212) 904-6433 Fax: (212) 904-2074
james_kennedy@mcgraw-hill.com

NORTHEAST / MID-ATLANTIC
Ted Rzempoluch
(212) 904-3603 Fax: (212) 904-4256
rzempoluch@mcgraw-hill.com

SOUTHEAST / MID-ATLANTIC
Sue Shepherd
(404) 843-4770 Fax: (404) 252-4056
shepherd@mcgraw-hill.com

WEST (BRIT. COLUMBIA, ID, OR, S, CA, UT, WA)
Bill Madden
(503) 224-3799 Fax: (503) 224-3899
bill_madden@mcgraw-hill.com

INTERNATIONAL
Mark Casalotto (Canada, except Brit. Columbia)
(905) 668-2149 Fax: (905) 668-2998
mark_casalotto@mcgraw-hill.com
Martin Drueke (Germany)
(49) 202-27169-12 Fax: (49) 202-27169-20
drueke@intermediapartners.de
Ferruccio Silversa (Italy)
(39) 022-86716 Fax: (39) 022-895349
ferruccio@silversa.it
Katsuhiko Ishii (Japan)
(03) 5691-3335 Fax: (03) 5691-3336
amikatsu@dream.com
Young-Hee Chin (Korea)
(822) 481-3413/3 Fax: (822) 481-3414

CLASSIFIED ADVERTISING / MANUFACTURERS’ SPOTLIGHT

POSTCARD SERVICE
Tracy Hall
(212) 904-2010 Fax: (609) 426-7136
tracy_hall@mcgraw-hill.com

Editorial
(212) 904-2594 Fax: (212) 904-4256
www.architecturalrecord.com

Subscriber Service
(888) 867-6395 (USA only)
(609) 426-7046 Fax: (609) 426-7087
ps4cs@mcgraw-hill.com

Back Issues
(212) 904-4635
phyllis_mosby@mcgraw-hill.com

Reprints
(212) 712-4170 Fax (212) 712-6243
Architecturerprints@Businessweek.com

World Class Salons & Spas
Luxury Hotels & Resorts
Commercial Properties

www.salonequipmentintl.com
www.spaequipmentintl.com

Got Specs? (we do)

World Class Salons & Spas
Luxury Hotels & Resorts
Commercial Properties

www.salonequipmentintl.com
www.spaequipmentintl.com

Consulting • Design Needs • Worldwide Delivery
Call Toll Free: West Coast (877) 461-2972
East Coast (866) 706-3576

CIRCLE 136 ON READER SERVICE CARD
OR GO TO WWW.LEADNET.COM/PUBS/MHAR.HTML
For architect Daniel R. Oakley, toys aren't just child's play

Interviewed by Deborah Snoonian, P.E.

Daniel R. Oakley was, in his words, "wonderful and stressed out" in February as he embarked on a European tour for his company, Oliblock. Three years ago, Oakley made the first set of Oliblocks (photo, above right) in his kitchen. Now you can buy them in several countries, and they've attracted such a following that product maker Umbra signed him up to design puzzles.

Oakley studied architecture at the Rhode Island School of Design, then worked for Zaha Hadid for four years, introducing her to CAD and visualization technologies. He returned to his native California in 1994 to start his own firm.

Q: How did you dream up the idea for Oliblocks? I wanted to make something special for my best friend Tim Morgan's daughter, Emma. She's my godchild. I have friends who make sets and props for people like George Lucas in the film industry, and I'd seen how they make things like R2D2's feet out of plastic. I'd always wanted to try something like that myself.

Oliblocks actually began as prototype miniatures of a sand castle kit of modern shapes, things Emma could take to the beach. I made the miniatures in these abstract, organic shapes, and I designed them to interlock with themselves. I enjoyed experimenting with the miniatures so much that I just made more of them in different shapes. They evolved eventually into Oliblocks, with an interlocking connection at one end and a magnet at the other end.

Where does the name Oliblock come from? The O is taken from my last name and the I comes from Emma's younger sister, Liley. O-Emma just didn't sound right, even though I'd made the toys for her originally. One of my new products, the inflatable Liley pads, are named after Liley, too.

In the 1990s you won a number of awards for your computer designs. Are shapes of Oliblocks influenced by that experience? Definitely. I wanted them to be fun and colorful and futuristic, sort of like the modern version of Legos. Although these days, it's funny, but I rarely use my computer. Only for e-mails.

What was your favorite toy as a kid? There was one toy that was basically a hot plate covered by a domelike device that held molds. You'd place the plastic squares onto the hot plate, and the squares would melt into the shape of the molds. I was always burning myself on the hot plate; I'm sure that's why it's off the market. It was a great little toy, though. I wish I still had it.

Do you miss being an architect? I don't consider myself to be out of architecture altogether. There's a lot of overlap between architecture and product design. People still ask me to do projects; I might design a small hotel and residence in Northern California, for instance. But I don't miss building permit code compliance, budget constraints—those are no fun. When I design products, I feel much more free to be creative. I'm really happy with what I'm doing now.

Portrait by Carter Dow; product photograph by David Janssen
Explore Your Imagination

Bring Your Ideas to Life With the Next Generation of CAD Software.

www.nemetschek.net/Archrecord
Visit us at AIA Expo 2003, Booth #2636

CAD for the smart-sized company 888.646.4223

CIRCLE 137 ON READER SERVICE CARD OR GO TO WWW.LEADNET.COM/PUBS/NHAR.HTML
Clock watchers.

Prompt quotes. Smart scheduling. On-time and complete delivery. Our reps watch the clock for you.

1-800-54-PELLA  www.pella.com