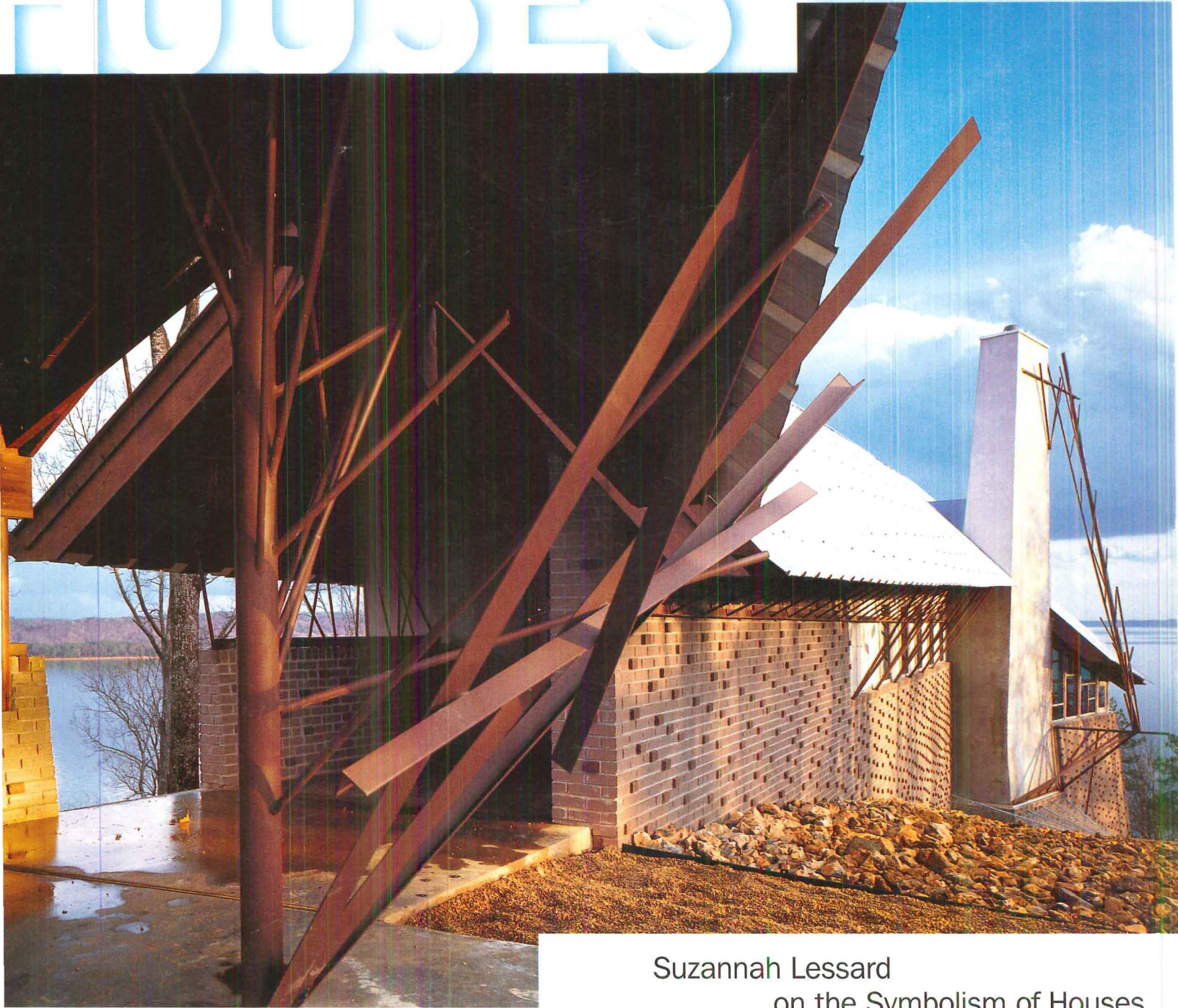


# ARCHITECTURAL RECORD

# HOUSES



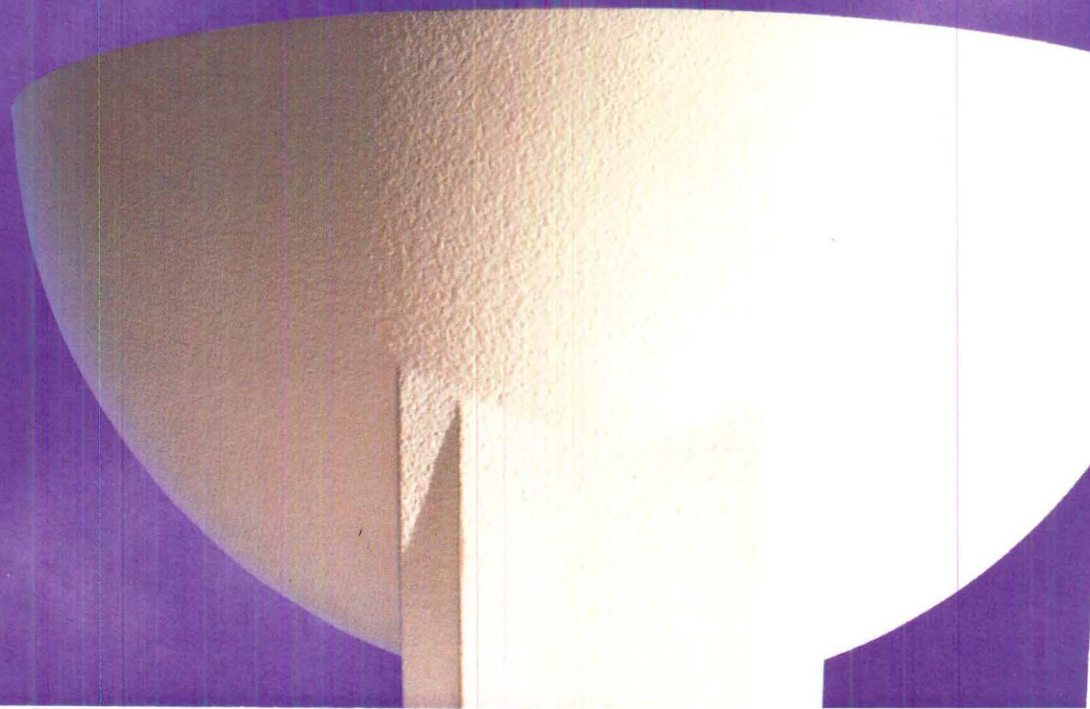
Suzannah Lessard  
on the Symbolism of Houses

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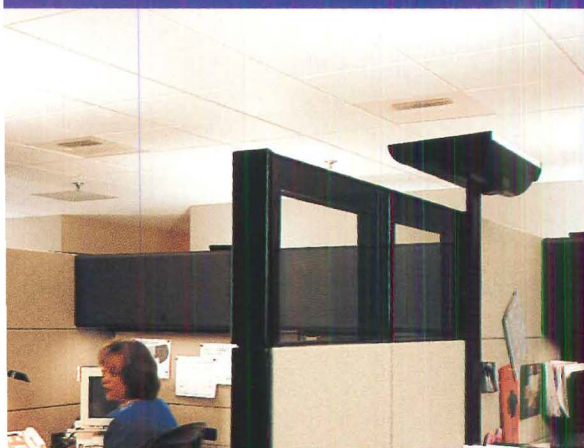


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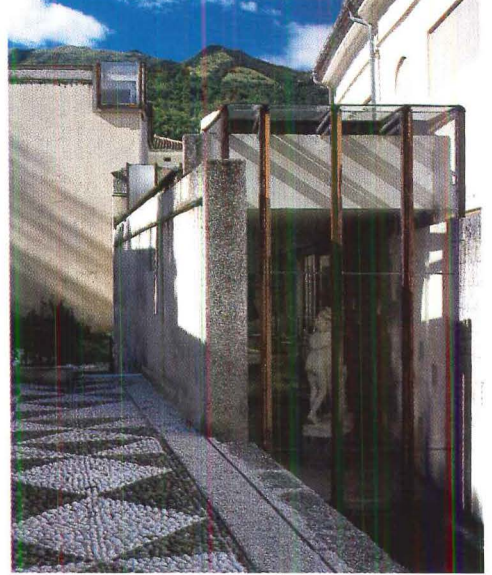
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steel basins flock together.

Design: Prof. Arne Jacobsen, MAA  
Selected for the Design Collection, MoMA.

*For information Circle 100.*



# ARCHITECTURAL RECORD



04.1997

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### Continuing Education:

The residential practice story, “Designing Houses” (page 133-136), is this month’s AIA/ARCHITECTURAL RECORD continuing-education installment.

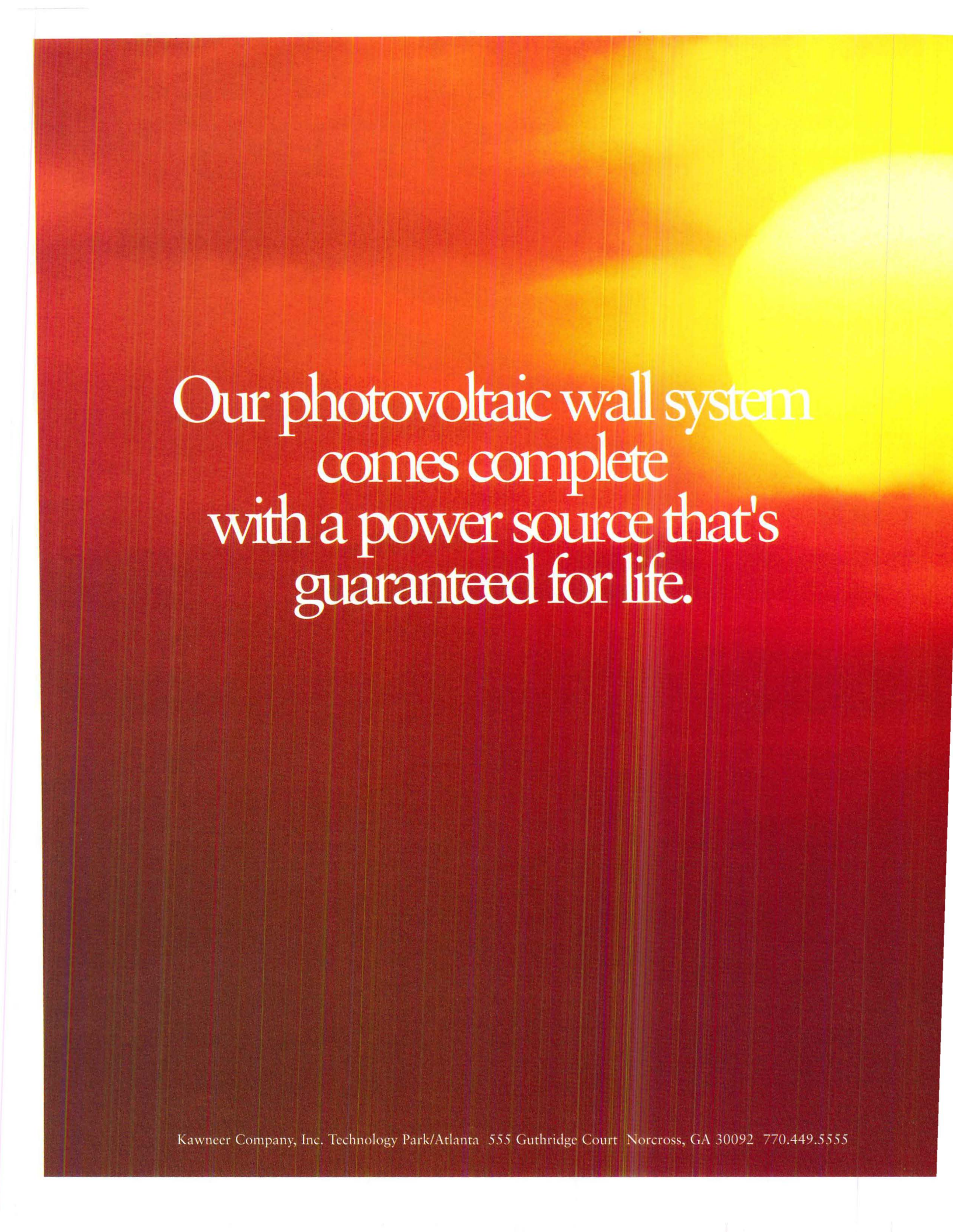
**Cover:** House on the Tennessee River, Hardin County, Tennessee,

*Mockbee/Coker Architects.*

*Photo: © Timothy Hursley. Cover Design: Carbone Smolan Associates.*

**Above:** Canova Museum, Possagno, Italy; remodeled in the 1950’s by Carlo Scarpa.

*Photo: © Richard Bryant/ARCAID*



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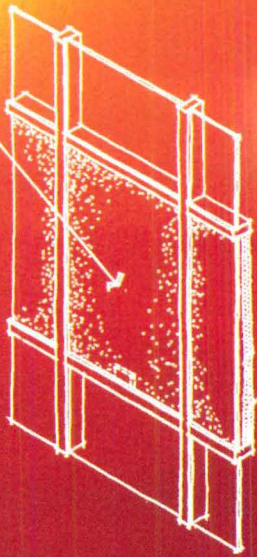
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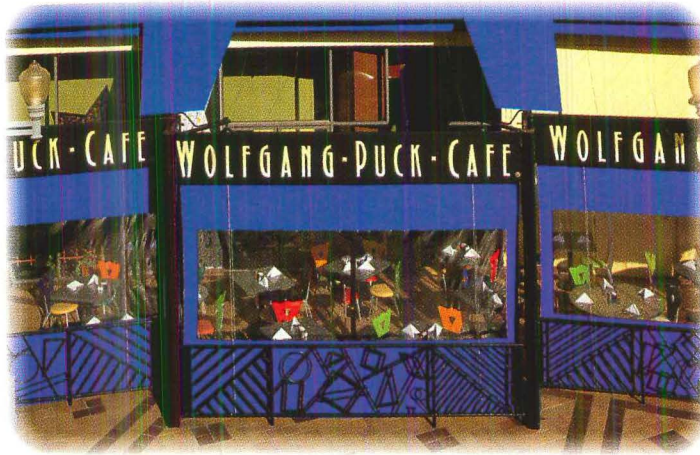
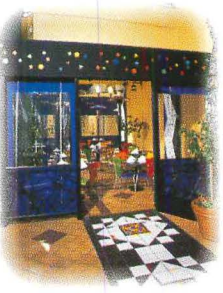
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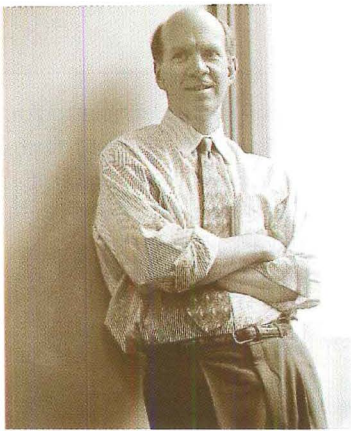
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## EDITORIAL: Seeking Architectural Balance

BY ROBERT A. IVY, FAIA

**A** physician friend, who operates on the human retina with pinpoint laser beams, recently built a soaking tub for his home canopied by an indirectly lit, Tiepolo-like cloud bank. Another acquaintance, bombarded day and night by computer-screen pixels, recently constructed a “meditative chamber,” a tall, dark void with a single cushion and textured walls, where she exchanges ohms for contemplative “omms.”

Both Yuppies, these '60s alumni sought balance in their personal lives, in the very fabric of their houses, from a world reeling with overstimulation. Futurist John Naisbett, writing almost 20 years ago, described the complementary relationship as “High Tech/High Touch.” The further we veer toward rationalized high technology, Naisbett argued, the greater the need for humanizing counterbalance—a bit of yin for your yang. Contemporary architecture seems to be bearing him out.

While shelter books in the consumer press bulge to the breaking point with chintzes and faux bois, this magazine is recording a countervailing trend toward simplicity. It is as if a certain segment of society, hot-wired to the smoking-point during the day, seeks serenity in the muffled echoes of Modernism, freed from its dogma and floating above a European-derived polemic. Modernism with a little “m”.

Some have labeled this trend as minimalism, but the truth is, categorizing the work misses the point. Like the Modernists, this contemporary work is often enriched by a concern for human experience of the inhabitants as well as the larger social milieu. However, for every Modernist rule adhered to, there is an exception among the new practitioners, a neo-Baroque flourish in a curving wall, an anomaly. The glue that unites the group is more spatial than formal, an interplay of interior and exterior voids that binds the architecture to time and place, sometimes extending into and embracing the whole landscape.

Like the Shakers who preceded them, these designers place emphasis on craft, scrutinizing the joint where wall meets floor or arm joins chair-back. Their work is evident in the small, busy shops in San Francisco or Santa Fe or SoHo, where wrought metal sconces, inlaid wood cabinets, and hand-cast glass lamps accentuate bare walls and broom-swept floors. Ironically, the hand-crafted home furnishings are often conceived by former architecture students who have chosen labor-intensive work as momentary or full-time alternative careers.

Materiality is their watchword. Schools of architecture, which serve as harbingers of renewal for the larger profession, are cluttered with highly crafted models that accentuate each building material. Whole doors, built to full scale, line the corridors, their metal surfaces burnished with swirling patterns. Meanwhile, blue-screened laptops whirl atop each student's desk, bathing the hand-made models in a surreal light.

Materiality, craft, flowing space, detail. In the best hands, these simple, real-world attributes add up to soothing architecture, an antidote to excessive speed and hype, a three-dimensional canvas for semi-fractured lives. An architecture in balance.

In our own efforts to tip the editorial scales toward excellence, high craft, and detail, we welcome three additional contributing editors: David Dillon, the respected architecture critic for the DALLAS MORNING NEWS; Nancy Solomon, AIA, an experienced editor on practice and technology matters; and Paris-based Tom Vonier, AIA, who will write about the profession internationally. All three are old friends; all three write with insight and skill. Other names from other places will follow.

## LETTERS

**Comments from Cuba**

In 1996, I met Rachel Carley during her visit to Havana researching information for a book on Cuban architecture. I helped her and reviewed her first draft. Unfortunately, I could not read the text of her article for ARCHITECTURAL RECORD before it was published in the February 1997 issue [pages 90-97].

Carley's article on Cuba's architectural heritage is well written and carries valuable information. Moreover, I would like to think that it conveys a feeling of respect, not only for the value of that built stock, but also for the skill and commitment of the Cubans involved in its preservation. In some way, it may also help in building awareness about the lack of logic in the American embargo on Cuba.

Yet, I find a strikingly different approach between her book and the article, since the latter is mostly on current Cuban politics and economy—the sort you would read in *Newsweek* rather than in RECORD. Maybe this is a subliminal homage to Karl Marx, who first pointed out that economy determines society's superstructure.

There are some quotations in Carley's article that—even if sometimes close to criticisms I have made—are presented out of context, thus introducing an unwanted distortion. The author is not to be blamed for that, since the length of an article leaves little space for a fuller discussion. Most of my criticisms have been addressed to the built-in rigidity in the model of producing the Cuban urban environment during the last three decades. But readers may get the impression that those criticisms were

addressed to the whole of the Cuban model, and that is not true. Probably some will find it naive, but I still believe that a *sustainable socialism* can be possible just as *sustainable cities* continue to glow as a distant but always appealing goal. A 61-year-old Cuban architect may find that worth fighting for, though it can bring him some misunderstanding.

Mario Coyula  
Havana, Cuba

**Samitaur's place in urban renewal**

We enjoyed Suzanne Stephens's review of the Samitaur Building in Los Angeles [RECORD, February, 1997, pages 53-63]. Fred and Laurie Smith, the developers, are great visionaries; their single-minded determination to redefine the Hayden Tract of Culver City deserves a mountain of praise.

The accomplishments of the Smiths, working in conjunction with the Culver City Redevelopment Agency, should serve as a paradigm for cities wishing to revitalize their centers with mixed-use projects.

Moreover, when Fred Smith says, "We couldn't get construction loans, and so we had to use our own money," he points out financial institutions' need to get on board. The Smiths should show the bean counters at banks how the numbers work. We will all be better served in the end with a higher quality of life.  
Gary and Linda Citron  
Pasadena, Calif.

Members of the print media seem intent on rewriting geography in southern California. An example is Suzanne Stephens in her article on Eric Owen Moss's Samitaur Building.

First of all, Culver City is not a "section" of Los Angeles. It is an independent municipality that happens to be all but surrounded by the City of Los Angeles. Second, the Samitaur Building is not located in or even close to South Central Los Angeles. South Central is several miles to the east and, no doubt, residents in neighborhoods to the

immediate east of Culver City would object to the being labeled as living in South Central. More accurately, this area should be called southwest Los Angeles. Of course, all these areas are referred to by local realtors as "Beverly Hills adjacent." (I work in Culver City and live in the Baldwin Hills district of Los Angeles, immediately east of Culver City.)  
Bernard Altman, AIA  
Secretary, AIA/Los Angeles

**The New RECORD**

Congratulations on the January and February, 1997 issues of RECORD. What a breath of fresh air! I am excited! Yes, there are *other* architects in this country doing stimulating and beautiful work. I was so tired of reading only about the stars. I sincerely appreciate your articles on urban and social issues such as housing. Cabrini-Green [February, 1997, pages 84-89] is a challenge that must be documented. I pray for its success. If we cannot make our communities livable, then what is architecture about? Closely guarded, gated communities and cities that close at night do not form an acceptable world in which to design and live.

Historic preservation in Cuba [pages 90-97]! Let us touch the untouchable. Design and art is international and crosses the borders of politics. Thank you! You have restored my interest in architectural journals. I will subscribe to *this* kind of magazine.  
Douglas Claude Rhodes, Architect  
Whitefish, Mont.

I wanted to let you know how much I enjoyed the January, 1997, edition of your newly revamped magazine. It's very sharp and friendly, a nice job. I especially liked the Tipping Building and Phoenix articles. I also thoroughly enjoyed your new *Mentors* page—it's just the kind of feature that a professional magazine should run, but few do. You've made a terrific start. Keep it up.  
David Crook  
The Wall Street Journal  
New York City

I just finished reading ARCHITECTURAL RECORD from cover to cover. I send you my sincerest congratulations! You're bringing a real breath of fresh air to our profession.  
Edward C. Friedrichs, FAIA  
President, Gensler  
Santa Monica, Calif.

I cannot let the month slip by without telling you how much I admire the new RECORD.  
Robert Geddes, FAIA  
President, AIA, New York Chapter

Thank you for reporting the results of the competitions for the World War II Memorial and Greenport Waterfront [March, 1997, pages 31, 25]. For those of us interested in the springboard potentials of competitions, it would be greatly appreciated if RECORD instituted a regular column informing us of current competitions.  
William S. Downing  
Downing Barradas, Architects  
Ithaca, N.Y.

**Bad fad New Urbanists**

The "Ahwahnee Principles" cited in the "Building Types Study 745" [January, 1997, page 132-135] are generally reasonable and desirable (though not very "new"). But the stylized "applications" in most of the published projects tend to diminish and restrict their contemporary potential, which might make them really "new."

Patterns of space and form imposed 100, 500, or 1,000 years ago have only limited relevance to contemporary needs, desires, and capabilities. These featured projects seem to be motivated either by misplaced nostalgia or by the assumption that such nostalgia is a fundamental mind-set of the "consumers" who will live in the proposals. The latter assumption probably has some validity. But stronger design leadership can demonstrate and persuade that there are better alternatives.

Other aspects of the January issue communicated much greater relevance (continued on page 218)



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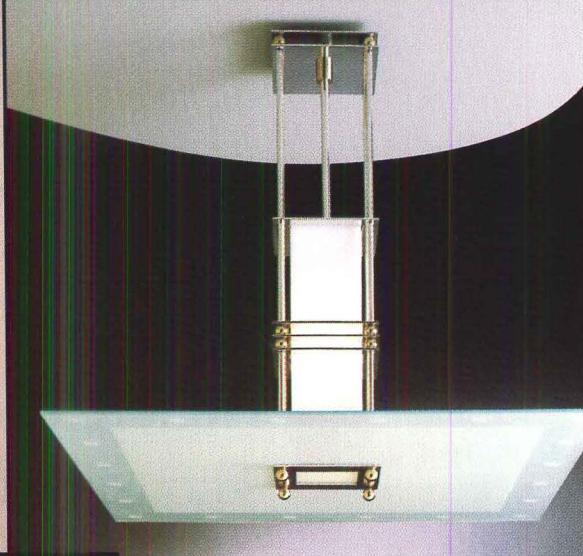
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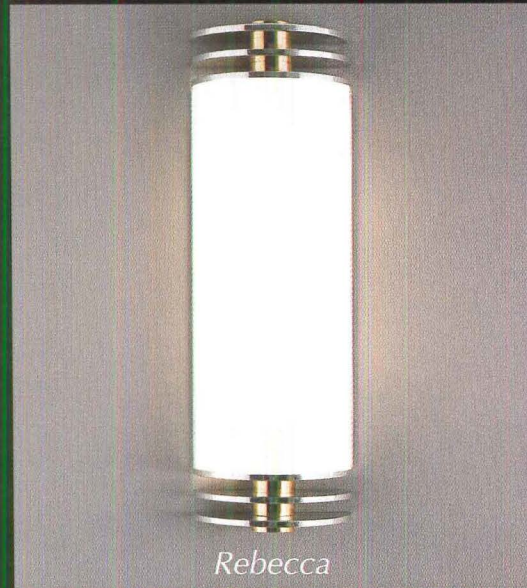
Winston



Willard



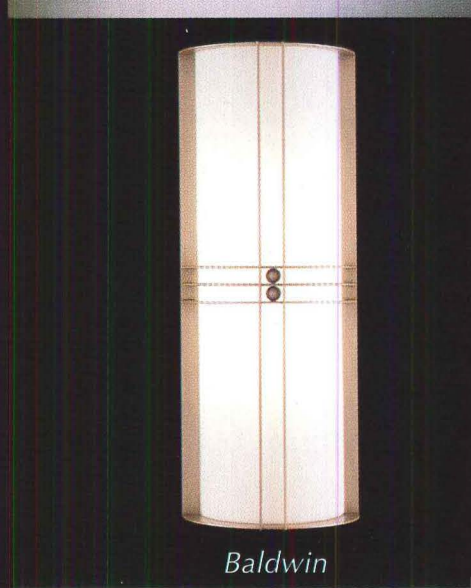
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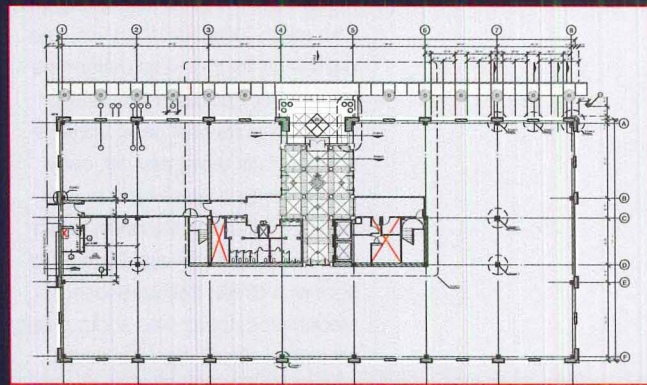
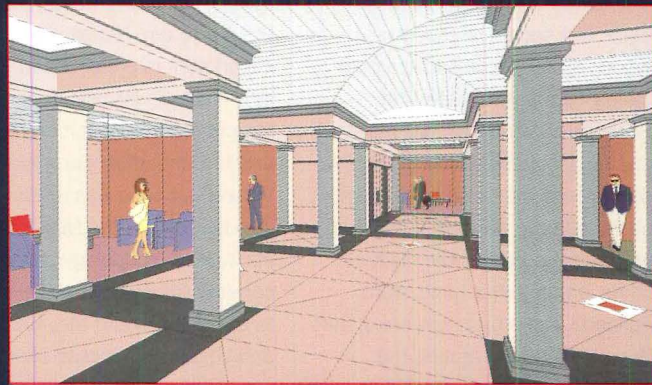


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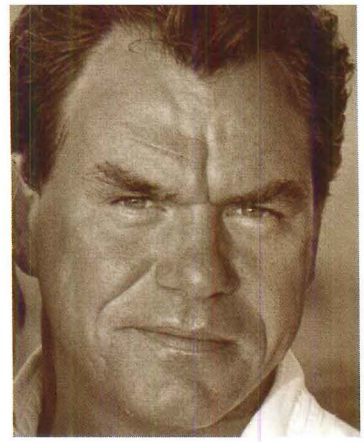
## MiniCad 6—The only thing small is the price.

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CIRCLE 11 ON INQUIRY CARD

# SPEAK OUT: “Utopia isn’t what it used to be”—the challenge of preserving early Modernist houses.

BY ALASTAIR GORDON



*Alastair Gordon is currently writing and co-producing “The Struggle for American Space,” a six-hour documentary series for Public Television about the built environment in the 20th century. Previously, he served as the special projects coordinator at the Princeton University School of Architecture.*

Early Modernist houses present a new kind of problem for posterity. Now that we have reached the end of this century of innovation, how much of it are we obliged to preserve for future generations? Utopia isn’t what it used to be. The lean lines and crisp geometries of the Modern movement have not aged with much elegance. Rain, ice, and mildew do their best to undermine the perfect Cartesian box. Walls warp, flat roofs peel back, chrome flakes off. As they grow old, early experimental houses tend to look wrecked like an automobile, rather than mellowed with age like an old barn or a Greek Revival house. The Modernist esthetic was about clean, smooth surfaces, minimal forms. Buildings were meant to look shiny and new in the spirit of the machine. A little chipped paint and rusting metal could ruin the impression.

But how should we preserve a house that was intentionally designed to push the limits of habitability and challenge 19th-century notions of domestic space? Although attitudes are beginning to change, Modernism is still a hard pill for most preservationists to swallow. There is often little sympathy for the period and, in some cases, outright hostility. For many, it represents the very kind of architecture that drove them into the preservation field in the first place. Early Modern houses used experimental materials and techniques that are no longer available. While it is easy to reproduce a mahogany newel post from a Victorian house, it is not as easy to reproduce a nickel-plated lighting fixture or a Bakelite shower stall.

The Gropius house in Lincoln, Mass., luckily fell into the loving hands of the Society for the Preservation of New England Antiquities (SPNA). Home to Walter Gropius for 30 years, the house has been operated as a museum since 1985. SPNA, which owns many early New England houses, had never dealt with such a relatively new house and had to assume a completely different attitude. The Society’s curators felt that a sense of time should be retained. Despite discussions with Gropius’s daughter, all the chrome was left in its pitted and tarnished state. The old cork floors, on the other hand, were replaced. The bronze screening that Gropius had used around the screened-in porch couldn’t be matched so they used an aluminum screen that was painted black. The silk curtains were replaced with nylon ones for durability.

But the Gropius House was an exception to the rule. More often than not early Modern houses are forgotten, remodeled beyond recognition, or demolished, as was the case with the Robert Motherwell house in East Hampton, New York. The Quonset hut-style house for the noted painter was a bold experiment built at the end of World War II. A precursor of the industrial look of more recent years, it was the only project built in America by the noted French designer Pierre Chareau, who was best known for the Maison de Verre in Paris. It wasn’t old enough to be historically listed or conventional enough to be accepted as a worthy architectural legacy. It was demolished in 1985 to make

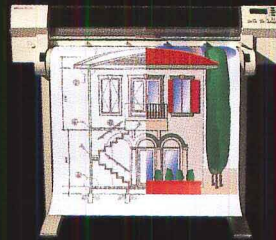
way for a faux “Adirondack style” cottage, but its destruction led to a public outcry.

A few months later, when another experimental house, the Aluminaire House, was threatened, there was enough concern to organize a relief effort. Designed by Albert Frey and A. Lawrence Kocher, the Aluminaire House was a radical experiment in prefabricated technology. Wallace Harrison bought the structure and rebuilt it on his property in Huntington, Long Island. When the house was threatened with demolition, the New York Institute of Technology saved it. They carefully disassembled the structure, moved it onto their campus, and began the process of erecting it as part of a student project. When finished, it will serve as a museum of 20th century housing.

When our grandchildren look back on the architectural legacy of the twentieth century, they may wonder why so little of it remains intact. Certainly, these machine-age ruins of American Modernism have proved to be as ephemeral as the theories that created them in the first place.

**Contributions:** *If you would like to express your opinion in this column, send submissions: by mail (with a disk, if possible) to Speak Out, Architectural Record, 1221 Avenue of the Americas, New York, N.Y. 10020; fax 212/512-4256; or e-mail: rivy@mcgraw-hill.com. Essays must not exceed 700 words. The editors reserve the right to edit for space and clarity. Where substantial editing occurs, the author will receive final text approval.*

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# MENTORS: How many times is enough?

## A designer who has failed the NCARB design exam 30 times.

Robert K. Clough, FAIA, is managing principal and vice president of Loeb Schlossman & Hack/Hague Richards in Chicago. He serves as a trustee for the AIA Trust and Chairman of the National AIA Licensing Committee. A visiting lecturer at the University of Illinois School of Architecture, he has spoken to a variety of audiences about firm management and licensing issues.

Note: A response was requested from the NCARB. Lenore Lucy, the executive vice president, replied that she was unable to comment at this time.



**I am a 48-year-old designer with 30 years of experience. My question is this: How many times is enough? How many times should a hard-working, professionally talented “designer” be required to take the only subjectively graded division, the design section of the NCARB exam, and fail, before he or she should be able to be licensed by grandfathering or other means, i.e. interview or professional subscription? Remember the stated purpose of this portion of the exam is to test the “minimum graphic competency” of the applicant.**

**The reason and background for the question is this: I have taken and failed the design section 30 consecutive times in the past 15 years at a personal cost of about \$45,000 (test, lost wages, lodging, etc.). I passed eight of nine parts of the first test in 1981. I continue to take this exam because I have wanted to be an “architect” since I was 10 years old. My exam solutions are well done, simple, complete, and I always finish. The NCARB reasons for my failure are never adequate—for example, “did not develop structural vignette.” Of course I developed the structural vignette; in college, I was a paid structural tutor and a few years ago, I worked as a draftsman in a structural engineer’s office.**

**I sincerely hope you will publish this letter with some sort of response, and I hope someone out there involved with**

**the NCARB will recognize that something is wrong with the system. How many times is enough? I do not use a computer. Now what?**

**—Bracken Raleigh, AIA Assoc., Telluride, Colo.**

**P.S. I do have my own design firm. Next year’s estimated building cost out of this one-man design office is \$5.3 million.**

*Robert K. Clough, FAIA responds:* My advice is to do what it takes to prepare yourself to pass the exam. I appreciate your frustration, but the Architecture Registration Exam is one requirement that is universally required to practice architecture. The trend in licensing is to allow less opportunity for those who do not follow the path of obtaining an accredited degree, IDP training, and passing the ARE. Fewer and fewer opportunities to develop equivalencies are being provided by states.

NCARB recently voted to require an NAAB accredited degree in architecture to qualify for an NCARB Certificate. This eliminates the opportunity to meet the education requirement through a combination of formal education and training. Once the accredited degree is required for the certificate, many states will follow suit requiring it for reciprocal licensing.

The AIA, by the way, has long supported the use of reasonable equivalencies to meet certificate requirements for education and training.

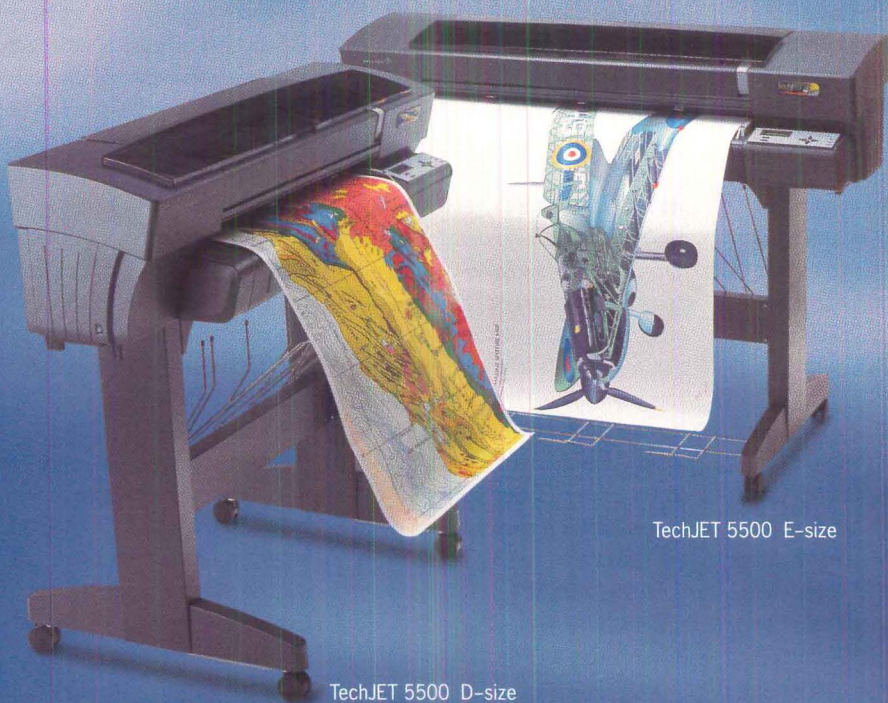
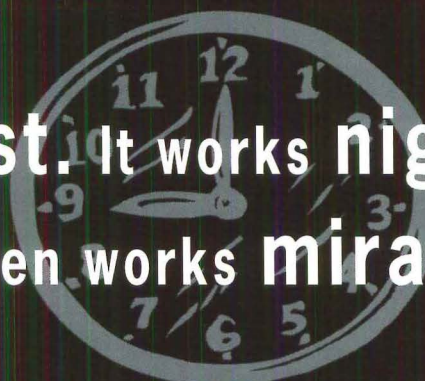
One argument for computerizing the exam has been to reduce

the “subjectivity” of human graders. The result is to replace a holistic design with a series of vignettes. The exam now costs twice as much as the paper exam, and eliminates from the exam the need to assimilate competing requirements into a comprehensive building solution. The subjectivity is gone, but so is evaluating the one skill that makes architects unique from other design professionals. Ours is a subjective profession. Completely removing the subjectivity to accommodate standardized computer testing is not in our long term best interests if the result is to remove testing a core competence of the profession.

If I were you, I would find someone who has been a grader of the paper exam to better understand the grading criteria. You must practice to become proficient with the CAD program, research the building type used for the exam to become conversant with the program issues and basic parts, and study life-safety requirements in which you are not fluent. It is clear that you have great determination. Prepare yourself, and go into the exam with the conviction that you will pass.

**Questions:** *If you have a question about your career, professional ethics, the law, or any other facet of architecture, design, and construction, send submissions: by mail to Mentors, Architectural Record, 1221 Avenue of the Americas, New York, N.Y. 10020; fax 212/512-4256; or e-mail: rivy@mcgraw-hill.com. Submissions may be edited for space and clarity.*

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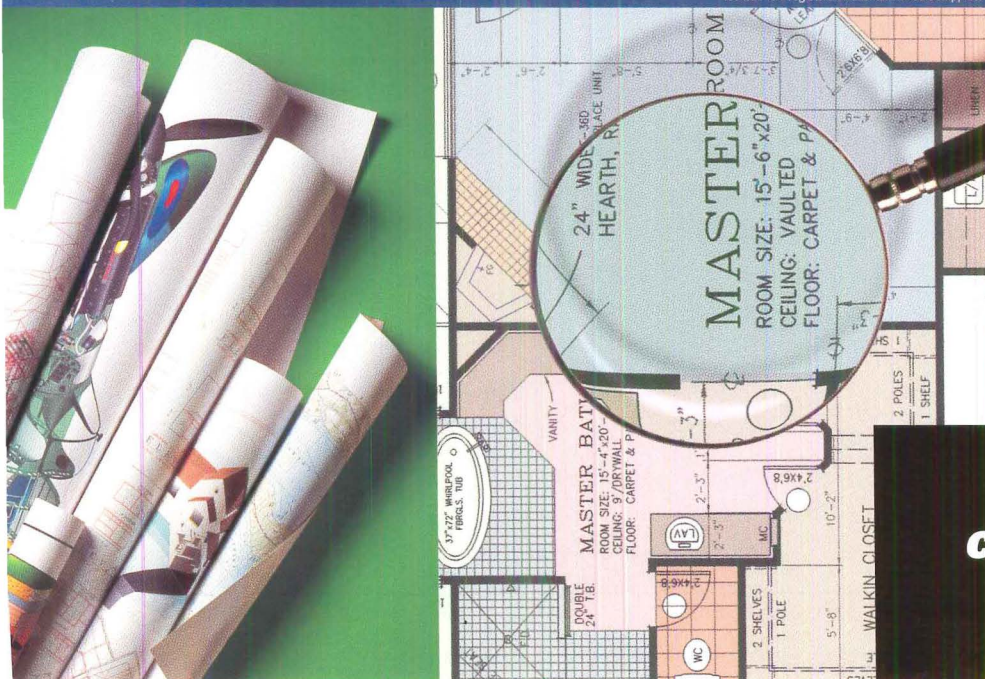
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# PULSE: RECORD readers were asked: Does design review in historic districts restrict creativity?

NO: 79%

YES: 21%

**No:** "The question increased my pulse rate. As a preservation professional, I've seen far too many architects and developers blame the review process for their own mediocre designs. It is not the review process itself you're really questioning, but the guidelines. In New Orleans, the French Quarter's district commission is charged with protecting the 'quaint and distinctive charm of the Vieux Carre.' That is the guideline. Sound restrictive? In North Carolina, historic district commissions are required to insure that exterior changes are 'not incongruous.' Again, is this restrictive? What both of these guidelines have in common is to provide a context within which the design process should take place. An architect unfamiliar with preservation design philosophy needs to be sensitive to the surroundings beyond the skin of

his client's building. Rather than seek input from a commission's review committee, this brand of architect brings only his large ego to the table. Then, when his proposal is challenged, he can fall back on the easy excuse that commission members are obstructionists, elitists, or worse. This self-defeating attitude smothers creativity, not the design review process."

—Lauren Malinoff, AIA Associate  
North Carolina Main Street Center  
Raleigh, North Carolina

**No:** "Guidelines and/or design review enhance the potential for creative solutions by defining the boundaries within which an architectural team must work...As we all should have learned in school, you can't solve a problem if the problem to solve has not been defined. [This] is a concept perfectly suited to the

continually evolving historic district. The success of Portland's urban planning process comes largely from the enlightened approach we've taken to preserving our historic districts." —Gary R. Bley, AIA  
Portland, Ore.

**No:** "Great architecture results from creative solutions to design problems involving a myriad of constraints, including site, client, program, budget, etc. Historic district regulations are merely another constraint. We've been up against review panels, the decisions of which seemed arbitrary, but in general such review is important. Sometimes they help to keep us on the right track, as long as their role is clearly defined."

—Robert J. Hotes, AIA  
Susan Maxman Architects  
Philadelphia, Pa.

**Yes:** "Is this bad? No. How important is creativity in the urban context? Negligible. Personal artistic creativity is an outmoded concept that has been seen as the architect's right since the triumph of the Modern movement about 40 years ago. A far more worthy definition of architectural creativity is the expression of a community's aspirations. Design review restricts personal creativity, but enhances creativity for the community's sake."

—David Weaver, Architect  
Newport Beach, Calif.

**Yes:** "Design review in historic districts does restrict architects' creativity. But restrictions on architects' creativity are not only in historic districts but in the architectural profession as a whole."

—Carwell Dera  
Boston, Mass.

**This Month's Question:**

## Do gated communities have value?

A recent poll conducted in *USA Weekend* magazine asked readers, "Would you live in a gated community?" The result: 65 percent responded yes, 35 percent said no. Those in favor say gated communities are safer and more communal. Those against say they are divisive and offer a false sense of security. Eight million people now live in 20,000 gated communities across America.

**Do you believe in the value of gated communities?**  Yes  No

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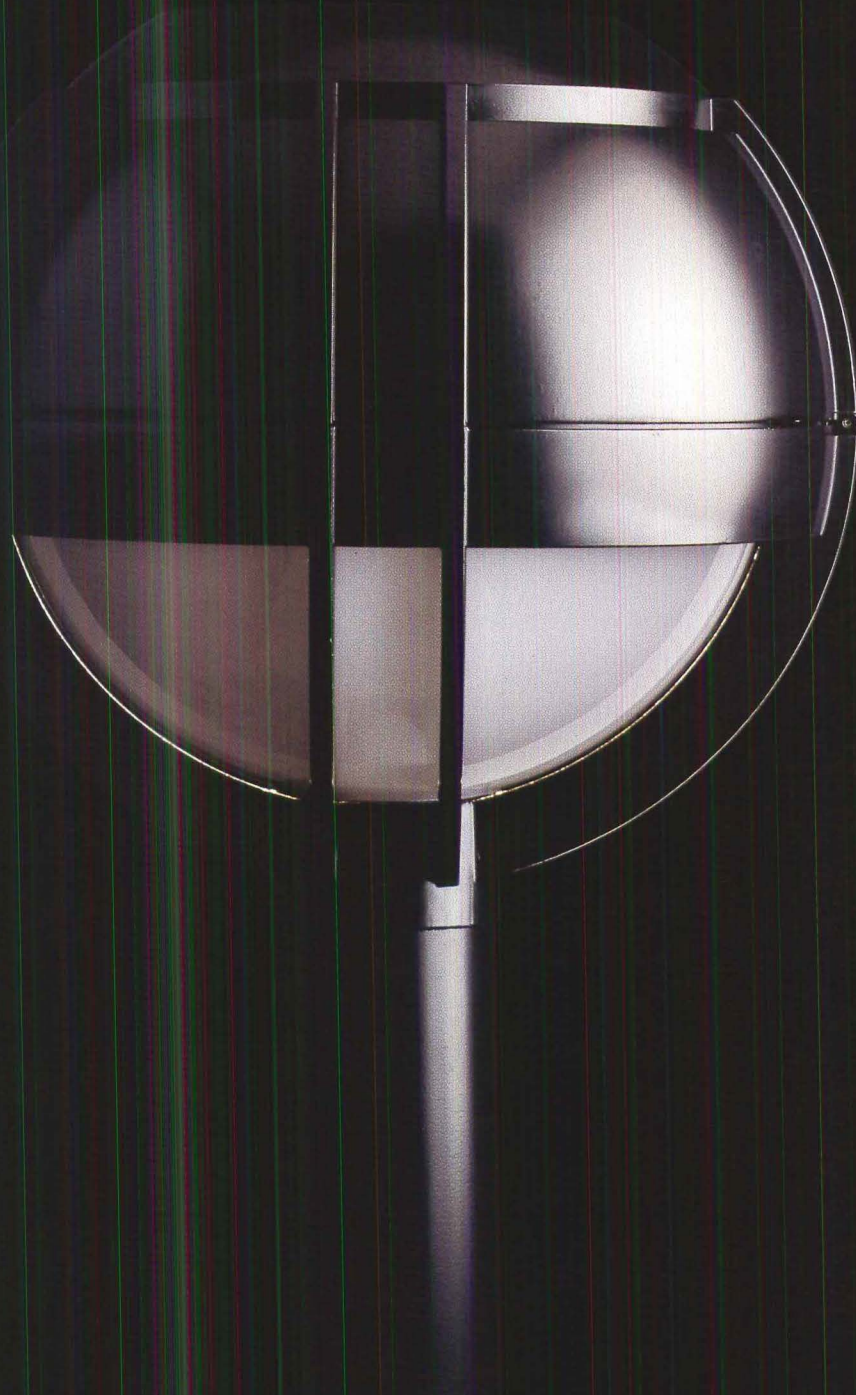
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**May an editor contact you for further comment?**  Yes  No

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CIRCLE 14 ON INQUIRY CARD

# AND TO THINK OTHER WINDOW MANUFACTURERS SAID I

Architect Richard Smith grew up in Montana's Flathead River valley, exploring its forests, paddling its lakes and streams and marveling at the abundance and variety of its wildlife. So when he was asked to design a home perched above the waters of Flathead Lake, his inspiration was the majestic bird that makes its home in the same idyllic setting: the osprey.

Since the windows would be the key element in creating the look of a bird in flight, Richard spoke with all of the top manufacturers. More than one claimed they were impossible to build. Others were eliminated from consideration because their solutions compromised the design. Still others, because they couldn't provide the low maintenance finish the owner requested. Only one company rose to the challenge. Marvin Windows & Doors.

True to Richard's vision, yet mindful of builder Len Ford's timetable, Marvin's architectural department began designing the windows and creating the necessary production specifications. But a change in plans became necessary when the owner brought up his concerns about the frequent high winds coming off the lake. So Richard designed a special steel framework for the window openings and Marvin produced 24 direct glazed units with custom radii. Clad in the company's exclusive extruded aluminum, the windows conform to A.A.M.A. 605.2-92 standards;





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despite their unusual, non-standard configuration. Another 63 Marvin windows and doors in various shapes and sizes were also installed in this extraordinary home.

In the end, Richard Smith and Len Ford were as impressed with the process as they were with the product. And today, "the osprey house" is a required part of every boat tour of Flathead Lake.

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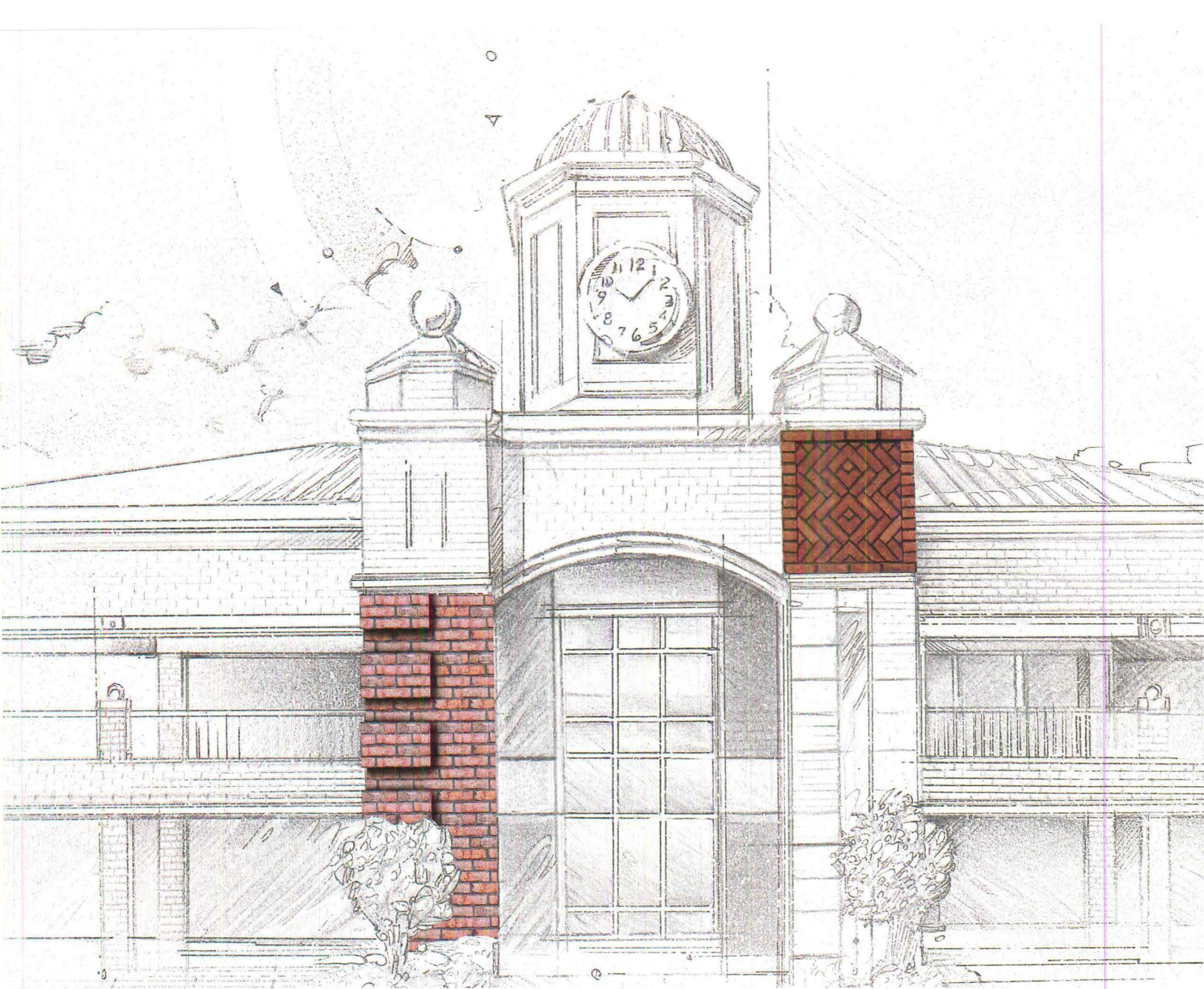
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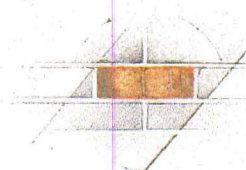
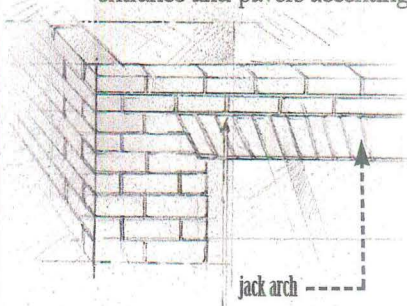


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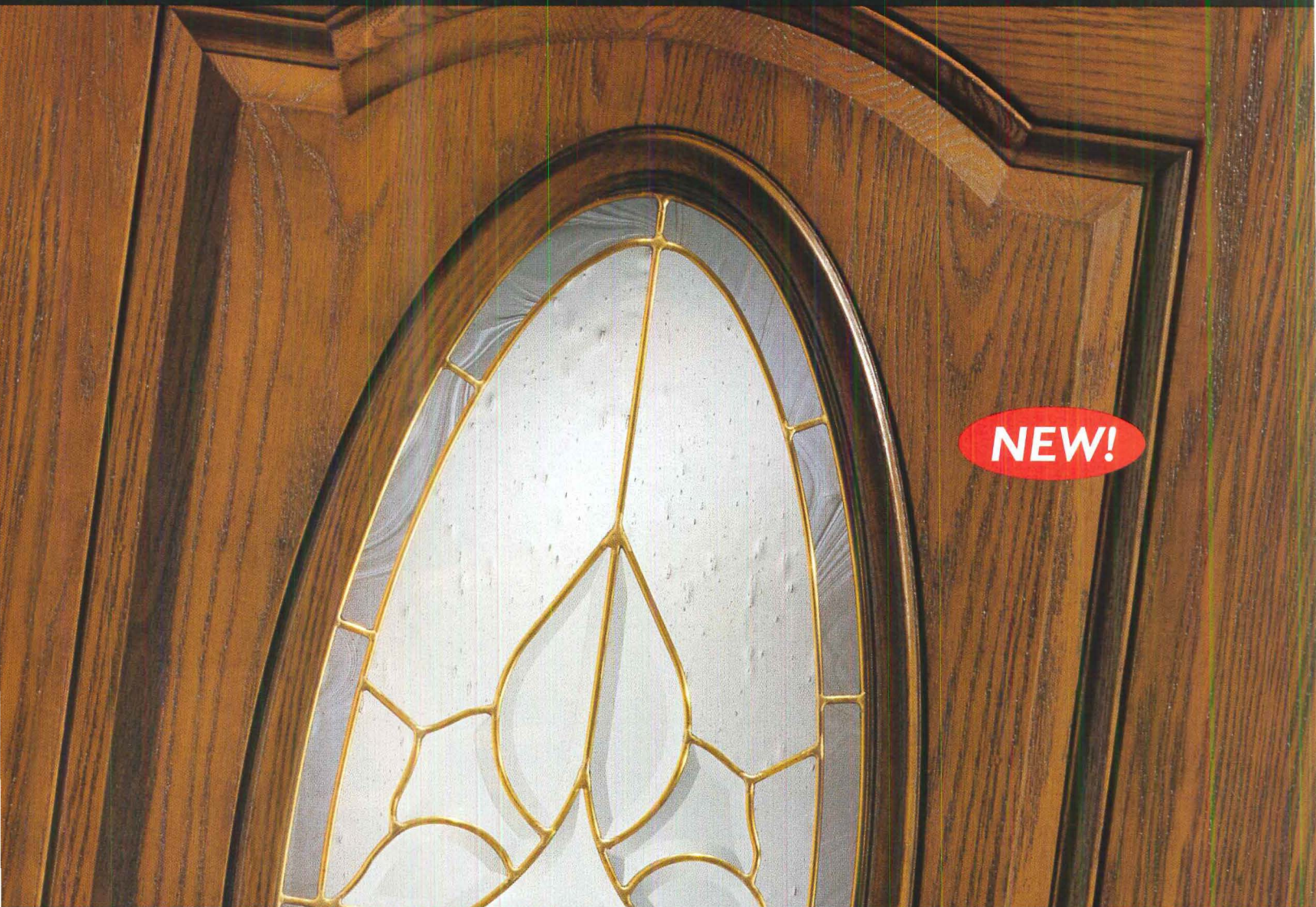
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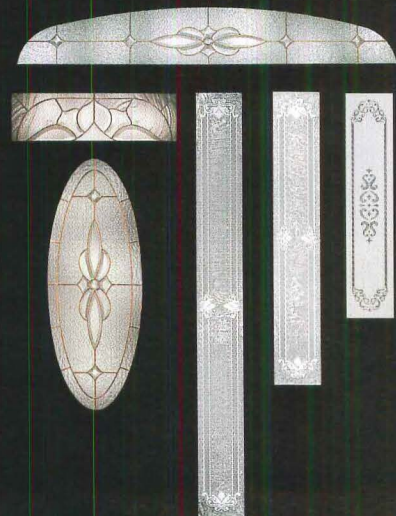
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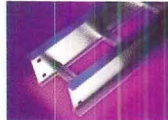


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CIRCLE 18 ON INQUIRY CARD

## CHICAGO FIRM TO DESIGN REPLACEMENT FOR BOMBED FEDERAL BUILDING

Nearly two years after 168 people died in the massive bombing of the Alfred P. Murrah Federal Building in Oklahoma City, the Chicago firm of Ross Barney + Jankowski has been selected to design a replacement complex that probably will be within walking distance of the blast site. Because survivors of the April 19, 1995 attack will be working in the complex, defensible space will be high on the design agenda.

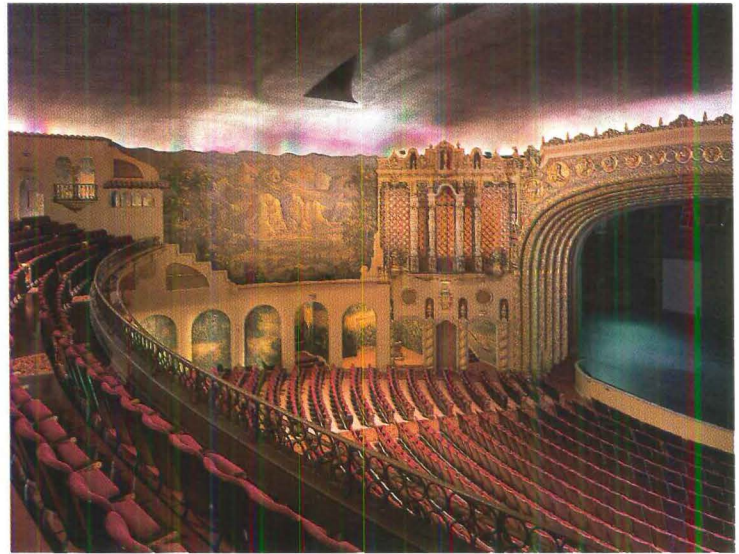
The job was awarded by the U.S. General Services Administration (GSA) as part of its Design Excellence Program. Twenty firms responded to a request for qualifications and five finalists were interviewed. The process was separate from the ongoing international design competition for an Oklahoma City memorial honoring the victims and survivors of the bombing. A winner of that competition is to be announced this summer. The projects, however, are related.

The probable site for the new federal complex is a four-block stretch that is kitty-corner to the

future memorial. If the memorial, which will encompass the Murrah Building footprint, is supposed to heal past wounds, the new building can demonstrate that terrorists have not triumphed by forcing the nation into fortress architecture.

Teamed with an Oklahoma City firm, The Benham Group, Ross Barney + Jankowski appears well-suited to this challenge. In AIA Honor Award-winning projects, such as a Chicago elementary school in a gang-plagued neighborhood [Seward Hedges Area School, RECORD, August, 1993, pages 92-95], the firm has created sanctuaries from urban violence that convey joyfulness by using bright colors and bold geometry.

The GSA has not mandated whether the complex will consist of one or more buildings. But the project almost surely will be low-rise, in part, because small-scale structures are less inviting targets for terrorists. Completion date for this project, expected to cost \$22 to \$32 million, is 2001. *Blair Kamin*



## "HELLO DOLLY" KICKS OFF REOPENING OF PHOENIX'S ORPHEUM THEATRE

Phoenix's 67-year-old Orpheum Theatre, the city's only historic theater, was recently reopened with great fanfare as crowds lined up at the box office to see Carol Channing perform in "Hello, Dolly!" The restored 1,400 seat vaudeville house underwent an eight-year, \$14.2-million adaptive reuse program and renovation by vanDijk, Pace, Westlake Architects of Cleveland, Ohio.

The first phase of the Orpheum project included expanding the size

of the stage and constructing a modern loading dock and rehearsal facilities. The exterior renovation in the second phase included adapting a marquee design found in the original architect's designs but never built. A new lobby and box office were constructed around the octagonal tower at the building's front.

The lavish Spanish Baroque interior was carefully restored in the third phase, including such details as the zodiac signs in the lobby door panels, a peacock design on the circular staircase, and the auditorium's landscape mural that is accompanied by a ceiling that transforms a sunset into a starry sky. The Spanish courtyard design on the walls was created to give the illusion of a villa with views of distant landscapes. Inspired by the Italian Davanzati Palace, the mezzanine lobby features glazed-wood paneling with faux-stone upper walls.

The theater receives water, electricity, and cooling from the modern 20-story Phoenix City Hall, located southwest of the theater and connected to it by an atrium. "The Orpheum was an exciting destination in 1929," said architect Paul Westlake. "In that era of movie palaces, the theater was considered to be as important as the show." History may be repeating itself in Phoenix. *Danielle Beaugureau*

## WORK IS UNDERWAY ON INDIRA GANDHI CENTER DESIGNED BY AMERICAN ARCHITECT

Construction is well underway on the initial phase of the 1.5-million-sq-ft Indira Gandhi Centre for the Arts in New Delhi, India, designed by American architect Ralph Lerner, dean of the School of Architecture at Princeton University. When the entire complex is completed in about 10 years, it will consist of five components arranged around five courts: a tribal and folk arts research center, research libraries, central administration, a research institute for the arts, and a theater complex containing a symphony hall seating 2,000, a national theater seating 800, and a traditional Indian theater.

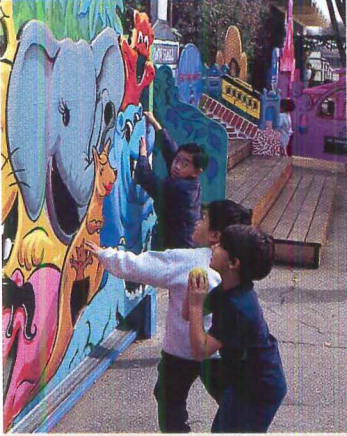
The center, which will be India's premier cultural institution, follows an east-west axis, covering about a quarter of a 25.5-acre site located at the heart of the Indian capital, between the seat of government and the India Gate War Memorial. The site is in accordance with a master plan for the city created by Sir Edwin Lutyens in 1921. "New Delhi is a fantastic city, and working at the geometric heart of it has been very interesting from every point of view," said Lerner. "It has been a tremendous challenge to orchestrate the urban design issues and the architectural issues."

Lerner's design was selected from among 200 entries in an international design competition sponsored by the International Union of Architects in 1986. The phase now under construction—a 325,000-sq-ft building section housing the research institute and libraries—is expected to open in about a year. *Virginia Kent Dorris*



**KINDERGARTNERS LEARN ABOUT ARCHITECTURE** When the parents of kindergartners at a magnet school in Los Angeles decided to give the playground a facelift, they made it not only fun but a place to introduce the kids to architecture in a "natural, interactive way," according to architect David Echt, whose firm Mackler Echt & Associates donated expertise and \$500 to the project.

The Kindergarten Interactive Design Space (K.I.D.S.) at South Carthay Community School was built over four weekends, all with volunteer labor and donated materials. Among the highlights: a replica of the Carthay Circle Theater, a neighborhood landmark lost to the wrecking ball; a replica of the Brown Derby restaurant; a pop-architecture post office; a ball throw that allows kids to "feed" jungle animals; double painting easels resembling a drive-in movie theater; a pretend movie studio; and a rebuilt playhouse.



## PUSH IS ON TO USE DESIGN STUDIO METHODS IN NATION'S SCHOOLS

Is there something about the way architects are educated in the design studio that could benefit students in the nation's elementary and secondary schools?

The American Architectural Foundation and The Carnegie Foundation for the Advancement of Teaching think so. The two organizations have teamed up to sell the idea that methods found in the best design studios—critical thinking, problem-solving, teamwork and integrative learning—might be just what America's struggling public schools need to meet reform goals.

Representatives of the two foundations suggested this idea to 200 teachers and principals at a meeting in New Orleans of the National Consortium for Specialized Schools of Mathematics, Science & Technology. The consortium is made up of 55 schools, including the Bronx High School of Science; the Louisiana School for Math, Science and the Arts; and the North Carolina School of Science and Mathematics.

The idea is not to create "mini-architects" or to heap a new subject onto already-crowded high school curricula, Alan R. Sandler, director of

education at the American Architectural Foundation, told the gathering. Rather, the objective is to use design studio methods to help students draw more sophisticated connections among subjects such as math, science, and the arts.

The long range benefit, Sandler explained, is "a thoughtful citizenry, equipped with skills and values, taking reasoned action necessary to shape cities, towns, and countryside into better places to live."

Sally Reed, a senior consultant at The Carnegie Foundation, noted that only a smattering of teachers around the country teach about architecture in any meaningful way. And shockingly, she added, not a single state includes specific knowledge of architecture in its curricular mandates.

"We have such a tendency to focus only on math and science at our schools," agreed Steve Lynch, a teacher at the Bronx High School of Science. "We need to find ways to integrate math and science, and the arts. We need to give education a soul." Learning more about architecture, Lynch said, might be the way. *Lee Mitgang*

## PARSONS STUDENTS DESIGN/BUILD ART GALLERY FOR HIGH SCHOOL

A dozen architecture students at the Parsons School of Design in New York City got to do what few architecture students ever get to do—design and build a project from start to finish. The project, a 1,000 sq-ft art gallery at Washington Irving High School in Manhattan, was theirs alone from drawings to opening exhibit.

Along the way, something remarkable happened: The project galvanized everyone connected, especially the staff and students of the high school, Washington Irving, one of the city's premier art schools. "In this school system, it's almost impossible to get something done...this was amazing," said Toby Needler, assistant principal, who dreams of finding the funds to open the gallery to the public and neighborhood artists. "Everyone was asking when the gallery would be finished...Now they say we don't just have a school gallery. We have a real art gallery."

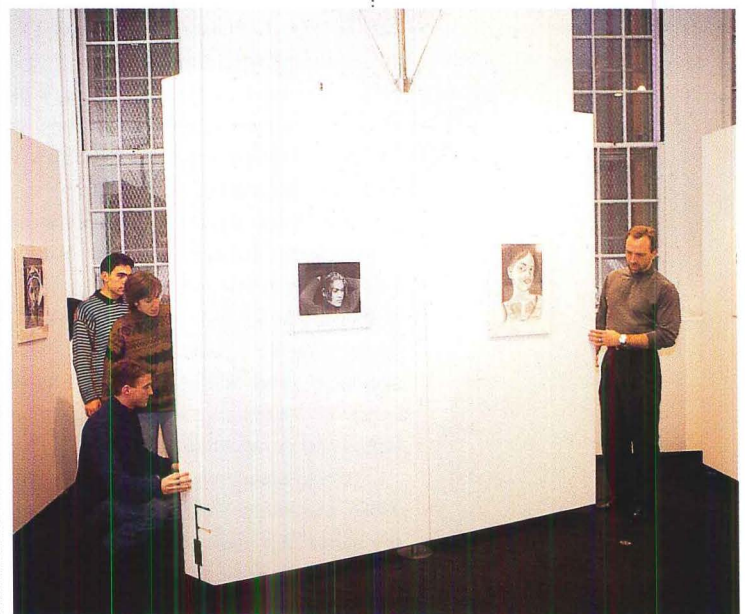
The Parsons students designed the white-on-white gallery in their construction technology course taught by architect James Garrison. They began by demolishing a warren of offices and extricating 75 old file cabinets. Construction standards were kept high: Pivoting exhibition

walls were carefully prefabricated, and supporting cables were ordered from Switzerland.

For the students, "it was a very synthetic experience," said Garrison. It was "particularly important for female students, who are less likely to get hands-on building experience," added Karen Van Lengen, chair of Parsons' architecture and environmental design department. Rachel Zwick, 24, found herself wielding sledge hammers and lugging heavy sheets of drywall. And John Dohlin, a 34-year-old former biologist (one of six students pursuing architecture as a second career), found the "amount of detail that goes into a project like this eye-opening...there's so much."

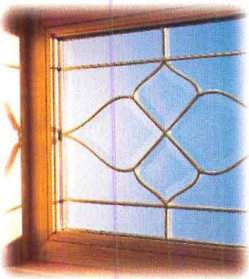
The gallery was made possible by a \$25,000 grant from 1930 Washington Irving alumna Evelyn Stefansson Nef. The project received help from New York-based Jack Kaltner Construction Management, and materials from Lightolier Inc. and General Electric Corp. On the open market, the gallery would have cost \$75,000, according to Van Lengen. *Carol Reed*

**Parsons students adjust the pivoting display wall in the art gallery they designed in a Manhattan school.**



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CIRCLE 19 ON INQUIRY CARD

## TEXAS LEGISLATORS BATTLE OVER ARCHITECT REGISTRATION EXAM

The new computerized Architect Registration Examination (ARE) is causing a flurry of heated debate in the Texas State Legislature. At the core of the argument is Bill 218, which would drop the state's statutory but long unenforced \$300 cap on fees for the ARE. The issue, which arose because of the nearly 100 percent fee increase for the computerized exam, has legislators now focusing attention on the whole question of how the state oversees the certification process.

The bill sailed through the Senate but ran into strong resistance from Representative Jessica Ferrar, D-Houston, in the House. Ferrar, who has an undergraduate degree in architecture from the University of Houston, was outraged that the fee rose from \$545 in 1996 to \$1,020 this year for the computerized version. She was further disturbed that with no cap—bogus or not—the state relinquishes its control over any future increases in test fees by the way it contractually allows The National Council of Architecture Registration Boards (NCARB) to set prices. The fees are passed through to state registration boards, such as the Texas Board of Architectural Examiners (TBAE), then to test-takers, often with additional state fees tacked on.

"The [test price] increase seems especially disproportionate to architectural interns who stand to earn substantially less than starting doctors and attorneys," Ferrar said. Doctors pay \$800 and lawyers \$275 to take professional licensing exams in Texas.

Besides opposing Bill 218, Ferrar has since tacked a rider—which passed unanimously—onto an appropriations bill, House Bill 1, which passed the House March 20 and is currently in the Senate.

The rider prohibits students in Texas from taking the ARE at the current price. At press time, the TBAE is scheduled to meet with NCARB representatives to discuss

alternative test options. Rep. Ferrar is pressuring NCARB to allow students to take the old paper and pencil test, but thus far NCARB has refused.

NCARB, for its part, claims the computerized test, which it spent 14 years developing, is priced fairly. According to Lenore Lucey, executive vice president, NCARB did "a good job of passing along only the actual costs of developing, administering, and grading the ARE."

Further, she argued, the fee that NCARB collects from member boards and Canadian associations for developing the exam has actually gone down, from \$485 in June 1996 to \$427, a decline she attributes to the efficiencies gained from a computer-administered exam.

The cost has skyrocketed, Lucey claims, because of the \$533 fee now charged by the Chauncey Group International, the test's administrator, which covers the costs of operating test centers, maintaining test security, operating a scheduling system, and maintaining a database of applicant appointments.

Although students and interns generally applaud the advantages of the computerized test, many are dismayed at the price tag. "We don't buy NCARB's numbers or their arguments," said Casius Pealer, national vice president of the American Institute of Architecture Students (AIAS). "Our feeling is that the computerized version should cost much less to administer, not more. We also feel that the cost of the test is prohibitive, and that NCARB's reply that payment can be extended on a credit card is gratuitous at best for interns whose average yearly salary is about \$20,000."

As the saga plays out in Texas, 13 other states are reportedly holding off on signing their agreements with NCARB, "for a variety of reasons that may or may not have anything to do with test fees," Pealer said. *Julie Moline*



## AMID DISPUTES, ARQUITECTONICA DESIGNS NEW MIAMI HEAT ARENA

An argument between two sports team owners, followed by a citizens' protest over the choice of site, form the backdrop for Arquitectonica's selection as designer for the new Miami Heat basketball arena in downtown Miami.

The Florida Panthers hockey team and the Heat had shared the nine-year-old Miami Arena before a split developed between Heat owner Mickey Arison and Wayne Huizenga, owner of the Panthers.

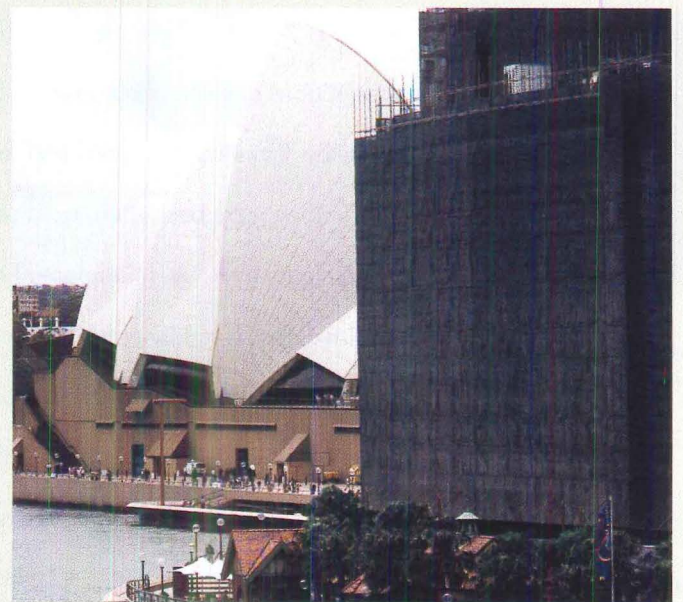
The new Heat arena will sit at the edge of Biscayne Bay, a site hotly contested by citizens' groups, who unsuccessfully sought a voter referendum on the location. The arena will have 19,364 seats with

133 corporate suites. Sheathed in glass and concrete, the \$165-million facility will allow views of the Miami downtown skyline or of cruise ships berthed in Biscayne Bay from various concourses. Outdoor balconies and terraces will allow more unobstructed views. Parking for 1,800 cars will be tucked below the 14-story structure.

Arquitectonica of Miami will design the arena in conjunction with Heinlein Schrock of Kansas City.

A second, \$172-million, 20,184-seat arena for the Panthers, designed by Ellerbe Beckett of Kansas City, is under construction 30 miles away in suburban Fort Lauderdale.

**PROTEST IN SYDNEY** Thousands of protesters demonstrated recently over the construction of a massive apartment building (pictured) near the Sydney Opera House. The 237-unit building is the first of three that will block the once-sweeping view from Circular Quay, the site of the first British landing in 1788.





# V I S I O N A R Y

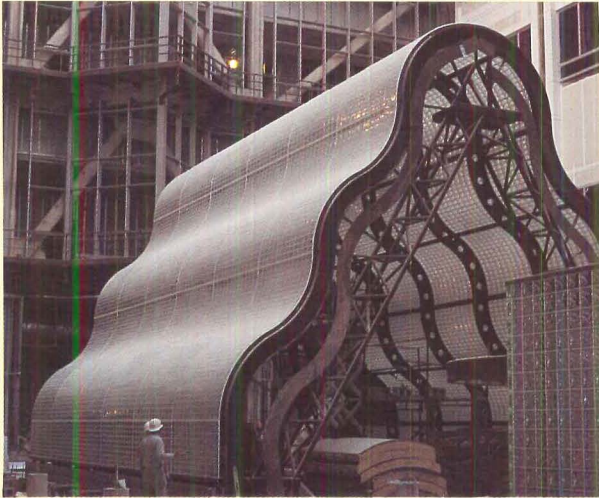
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## ABOUT THE COVER

A work in progress, the chapel at the Veteran's Administration Hospital uses light to inspire parishioners. Pittsburgh Corning's glass block fills the rotunda with natural daylight, bouncing off the metallic supports, enlightening all who enter.



Veteran's Administration Hospital Chapel • Detroit, MI  
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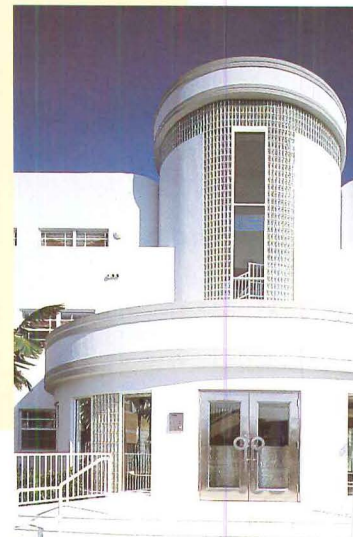
You know it once you've seen it. Bold design combined with a striking material to create something entirely new. Glass block from Pittsburgh Corning works that way, too. Whether an elegant expanse or a subtle accent, it makes people take notice.



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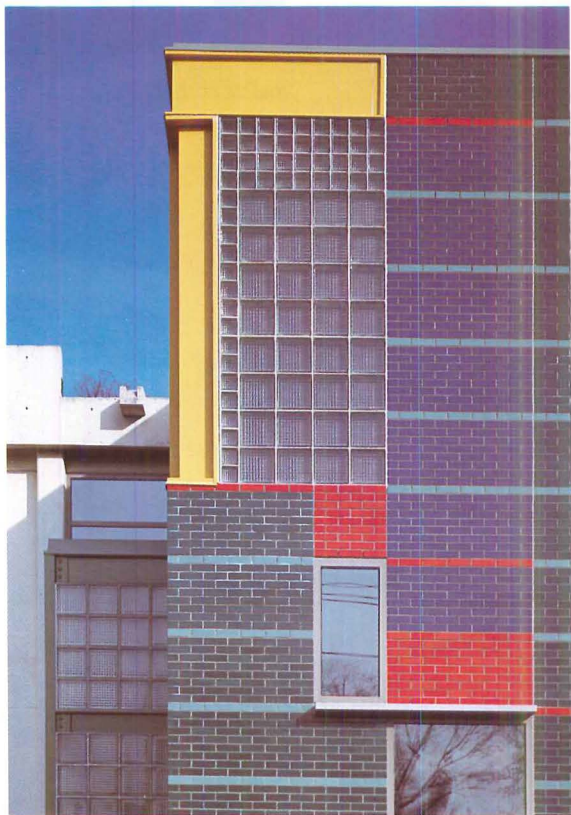
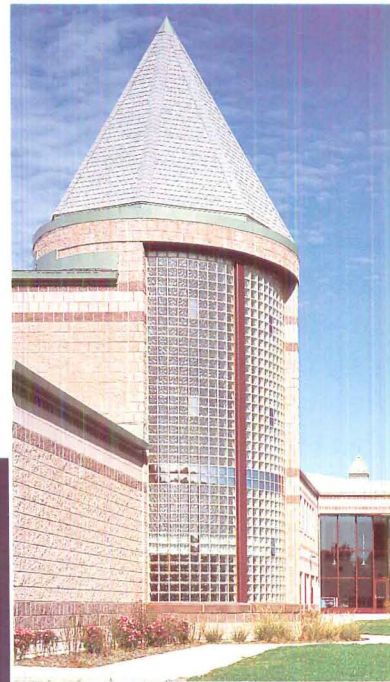
*“ This is a transition building. In the renovation, we're relating the old with the new and glass block enabled me to do that. It had flexibility for the form, with the curves in the project, as well as transparency and the emission of light. ”*

Martin J. Hyman, Architect

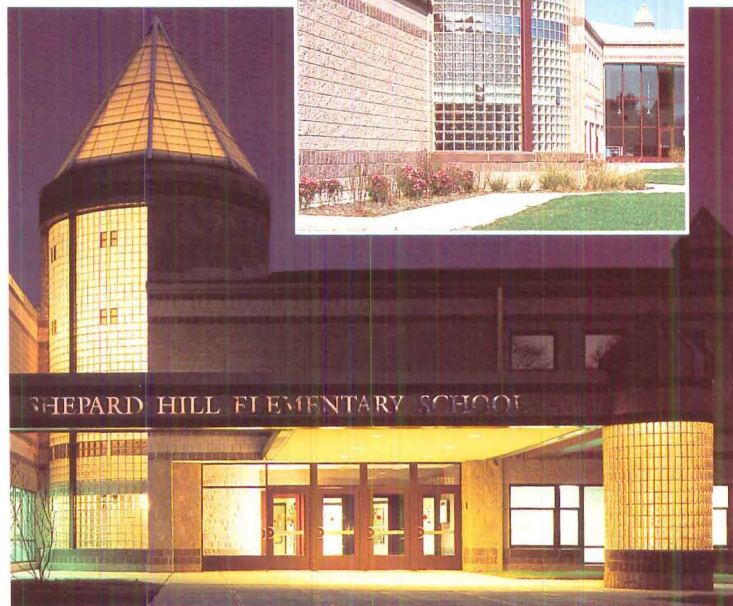




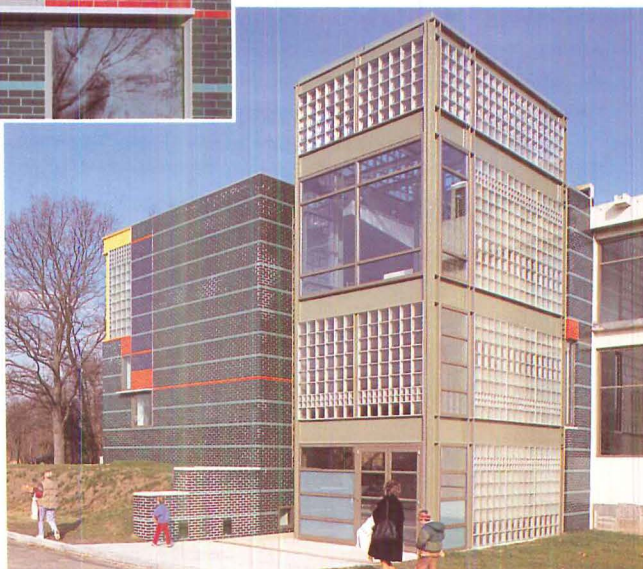
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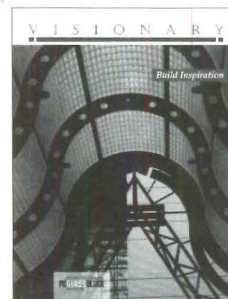
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A/R (4/97)

## CASINO FUNDS \$135-MILLION NATIVE-AMERICAN MUSEUM CENTER

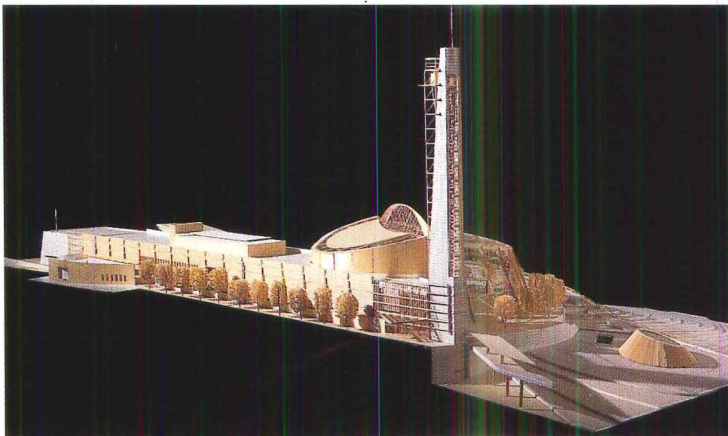
The Pequot American Indian tribe of coastal Connecticut, 437 members strong, is constructing a \$135-million museum and research center devoted to American Indian histories and cultures—the largest Native-owned institution of its kind. To be opened on June 1, 1998, the center is located on the wooded Mashantucket Pequot Reservation, reconstituted in 1983 at its original Mystic River basin site by returning Pequots, who also own the nearby Foxwoods Resort Casino.

It is the phenomenally successful casino that has supplied most of the money for the center.

museum enclosed by an undulating glass and stone wall, a landscaped terrace, and a four-story research center, two levels of which are below ground.

Exhibit space designed by DMCD Inc. and Design Division Inc., both of New York City, consists of 90,000 sq ft of dioramas, displays, films, and interactive computer programs covering Pequot ancestry from 11,000 years ago through a 1637 British massacre that nearly annihilated the tribe, to the present.

The Mashantucket Pequot Museum and Research Center will contain a 150,000-volume research



The 2.5 million-sq-ft resort facility contains four casino halls, a 312-room hotel, and a separate, 280-room inn.

"We have worked hard to re-establish our community on tribal land, and the opening of the center will be the culmination of that effort and determination," explained Richard "Skip" Hayward, chairman of the Mashantucket, Conn., Pequot Tribal Council.

Architect Polshek and Partners of New York City has designed a low-rise circular and linear structure looking out toward a verdant cedar swamp that is considered a Pequot "sacred place," said design principal James Stewart Polshek. A unifying, circular gathering space with soaring 42- to 60-ft-high glass with cedar and steel walls at the center's entrance leads into a two-level

library, a 10,000-volume children's library, a storytelling room, and a 450-seat auditorium. Research-sharing agreements have already been signed with the Smithsonian, the British Museum, and the Newberry Library of Chicago.

The center's archaeological and ethno-history resources will make it "one of the premier institutions in the U.S. for anyone interested in learning about the American Indian," said Theresa Hayward Bell, museum and research center director.

The center's 316,000 sq ft make it "considerably larger than even the American Museum of the American Indian on the Mall in Washington, D.C.," Polshek noted, adding that the site "resonates with the voices of Indians thousands and thousands of years ago."

## ARCHITECTURAL PRESS ROUNDUP

### TO GATE OR NOT TO GATE

*USA Weekend*, January 31-February 2, 1997 "Which side of the fence are you on?" is the cover story in the Gannett weekend newspaper supplement with a readership of 40 million. According to author David Diamond, an estimated eight million people in the U.S. now live in 20,000 gated communities. The article raises such questions as: Do gated communities accelerate economic and social fragmentation? Could they divide the nation in ways similar to racial segregation in the past? Are they indeed safer or do they merely give a false sense of security? Readers were invited to call a 900 number and answer the question, "Would you live in a gated community?" The result, printed in a subsequent issue, showed 65 percent responding yes and 35 percent no.

### THERE GOES BERKELEY!

*Harper's Magazine*, March, 1997 "It's as if after the eruption of Vesuvius, Pompeii had reinvented itself as Las Vegas," writes David L. Kirp, in his article "There Goes the Neighborhood." Kirp, a professor of public policy at the University of California-Berkeley, is referring to the Berkeley Hills today, five years after a wildfire destroyed thousands of homes. Too many of the replacement houses are "architectural contraptions risen crazily from the ashes," he bemoans, including such instant landmarks as the submarine, saxophone, and Air Stream houses. Writes Kirp: "I came to these ominous hills last summer in hopes of understanding how this happened—how so many seemingly well-intentioned people, most of them possessed of large sums of insurance money...could make such shambles of what was once a lovely hillside."

### RANKING ARCHITECTURE GRADUATE SCHOOLS

*U.S. News & World Report*, March 10, 1997

1. Harvard 2. MIT 3. Princeton 4. Columbia 5. Yale 6. Rice, 6. Berkeley 6. Virginia 9. Pennsylvania 10. Texas-Austin. The East continues to dominate. What else is new? The magazine sent questionnaires last fall to deans, top administrators, and senior faculty of accredited schools offering the master of architecture program. They were asked to rank the reputations of schools, taking into account the school's scholarship, curriculum, and the quality of faculty and graduate students.

### PORTMAN IN PROFILE

*The Wall Street Journal*, February 21, 1997 In a kind of "whatever happened to..." profile, the *Journal* reports that "three decades after John Portman Jr. dazzled the U.S. design scene with the Hyatt Regency Atlanta...the 72-year-old architect is making a comeback in Asia." Says Portman, who has projects in seven Pacific Rim countries, "We don't think the world has run out of opportunities for what we do."

### ARCHITECT PITCHES AIRLINE

*In many newspapers*. Architect Shin Takamatsu of Kyoto, Japan, in an advertisement for Northwest/KLM, says "Architecture is like calligraphy. The power isn't in the structure, it's in the space around it. Which is why I appreciate the space in World Business Class." As pitch lines go, not as catchy as "Coke is it."

## SAN FRANCISCO PALACE PACKING THEM IN AFTER SEISMIC RETROFIT

If attendance is any criteria, the \$36.5-million seismic retrofit, restoration, and expansion of San Francisco's Palace of the Legion of Honor, the museum housing the city's ancient and European art collections, is a success. Five times as many people visited the beautified

Beaux Arts structure in 1996, just after it reopened, as in 1991, just before it closed. In 1997, attendance has leveled off to a projected 300,000 visitors annually—still double the 150,000 visitors a year before work began, according to a museum spokesperson. The

renewed museum has also become a favored venue for world-class art exhibits and hundreds of special events from marriages to concerts.

Designed by George Applegarth in 1924, the Palace underwent three years of seismic retrofitting—the largest ever for a museum and one that garnered an \$850,000 grant from the National Endowment for the Arts as a model program. Architects Edward Larrabee Barnes and Mark Cavagnero also restored the building's delicate interior architecture, renovated public service and support areas, installed state-of-the-art environmental and security systems, and added two underground levels for galleries and other public spaces, increasing the museum size from 79,000 sq ft to 117,000 sq ft. In addition to the grant, funding came from \$23.8 million in donations and a \$12-million city bond.

Cavagnero, who became the architect of record after Barnes retired, said the difficult planning,

design, and construction consumed him for seven years. "The real beauty of the project was threading all the [seismic] bracing through a fragmented weave of stage-set architectural finishes that were extremely brittle. The challenge was how to integrate all this without destroying the building and, in the end, actually enhancing it," he said

For many problems, Cavagnero's team knew of no precedents, so they had to be inventive. They saved exquisite ornate plaster cornices, for instance, by suspending them whole from guy wires, stripping down the old walls to the studs and removing ceilings, then constructing new, heavily reinforced walls that were tied into other seismic upgrades. These included a steel truss in the attic, shotcrete shear walls, and steel bracing, which anchored the original structure to the two new subterranean levels.

He had skilled artisans from a company in Berlin duplicate faux



*The digital engineering printer that*



marble or scagliola, a 17th-century Italian plastering technique. Three coats of plaster mixed with marble dust and colors were applied, then scored, and 12 coats of paint were used to duplicate the original imitation of marble. Other faux finishes were keyed to the original scagliola to get a "seamless blend of tonalities throughout the upper [original] level," Cavagnero said.

He carefully saved Tennessee pink marble floors throughout and Napoleon gray marble walls in the restored, monumental entrance hall. He produced a popular new sculpture garden—opened in mid-1996—that looks over olive and cypress trees to the ocean. "In a lot of ways," he said, "we created a brand-new building in an historical container." *Carol Reed*



**O'KEEFFE MUSEUM WILL BE FIRST IN U.S. DEDICATED TO A MAJOR FEMALE ARTIST** When the Georgia O'Keeffe Museum in Santa Fe, N.M. opens July 17, following a \$1.3-million renovation and expansion, it will become the largest permanent collection of the artist's work. It will also be the first American art museum dedicated to the work of an internationally acclaimed female artist.

According to Richard Gluckman of Richard Gluckman Architects, New York City, the 13,000-sq-ft project involves the complete renovation of a former Spanish Baptist church (already adapted into a gallery in 1990) as well as the construction of a 7,300-sq-ft addition.

The collection of O'Keeffe's paintings, drawings, and watercolors will be displayed in 10 galleries daylight by six skylights with fixed external metal louvers and north-facing windows. "We tried to relate the design to the nature of space and light in the work," Gluckman said. "We accomplished that by making the natural lighting devices slightly eccentric. The light pulls one through the building on a slightly more interesting path of spatial experiences, and relates to the nature of the subject."



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CIRCLE 20 ON INQUIRY CARD

## DESIGN OF NEW COURTHOUSE PLAZA CAUSES HUBBUB IN MINNEAPOLIS

Designer Martha Schwartz's new civic plaza featuring earth mounds that suggest a field of glacial drumlins or a Native American burial ground is causing a stir in Minneapolis. The block-long plaza fronts the new U.S. Courthouse designed by Kohn, Pedersen and Fox Associates, and is located across from city hall.

Built over a city-owned parking ramp, the plaza could not be configured as a wide open space for security reasons. The General Services Administration (GSA) requested a design solution evoking Minnesota's natural history.

To symbolize the state's natural landscape, Martha Schwartz, Inc., of Cambridge, Mass., used earth mounds, planted with small jack pine trees and narcissus. Alongside the mounds are log benches stained silver to represent the state's lumber industry heritage.

"Too humpy," said a local architect of the mounds. "Aren't they like Indian burial mounds?" suggested a businessman. Schwartz responded: "They are not at all the same shape as burial mounds. We met with Native American groups to make sure." The earth mounds are tear-shaped and range from three to

nine ft in length. As for staining the logs silver, the designer explained, "I wanted to transform that image into the present context."



At city hall, where offices directly overlook the new plaza, the city's chief administrator said, "It's an unfortunate use of public space. Why not be realistic?" Countering that view was local architect Milo Thompson, who supported Schwartz in the review process. "People may think it's a bit bizarre but once they learn what was intended, I think they'll find it extremely engaging," said Thompson.

### COMPETITION CHALLENGES STUDENTS TO DESIGN BLUEBEARD'S CASTLE AND POOH'S HOUSE

Graphisoft and the American Institute of Architecture Students (AIAS) have announced that Richard Meier, FAIA, will chair the 1997 jury for the Graphisoft Prize Student CAD Competition to be held June 18 in New York City.

The competition, sponsored by Graphisoft, AIAS, Architectural Record, Apple Computers, and The Architectural Review, requires students to use virtual-reality technology to present architectural interpretations of myths, legends, literary works, and musical compositions. Using ArchiCad as a design tool and QuickTime VR as a visualization tool, entrants will offer their conceptions of Bela Bartok's "Bluebeard's Castle," Italo Calvino's *Invisible Cities*, Douglas Adams's *Restaurant at the End of the Universe*, "The House of the Rising Sun" by The Animals, Nathaniel Hawthorne's *The House of Seven Gables*, Jean-Paul Sartre's *No Exit*, the Church of Reason from Robert Persig's *Zen and the Art of Motorcycle Maintenance*, Isabel Allende's *House of the Spirits*, A.A. Milne's *House at Pooh Corner*, and Asgard from Norse mythology and Marvel Comics. The prize is open to all university students of architecture, landscape architecture, urban planning, or allied disciplines from any country. The prizes include cash, traveling fellowships, and Apple Macintosh computers and software. This is the fourth year that Graphisoft has sponsored the competition.



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**NEWS BRIEFS**

**Terry McDermott resigns as CEO of AIA** Effective July 1, 1997, Terry McDermott, Hon. AIA, executive vice president and chief executive officer of the AIA, will leave office to assume a similar role at the National Association of Realtors in Chicago. McDermott, who has held the dual post at AIA for three years, said he will "miss the membership enormously," but that the new position at the 800,000-member realtor association offered a "personal and professional challenge."

**Five finalists for SCI-Arc director job** The five finalists to succeed Michael Rotondi when he concludes his 10-year term as director of the Southern California Institute of Architecture (SCI-Arc) are Neil M. Denari, principal, Cor-Tex Architecture, Los Angeles; Sheila Kennedy, principal, Kennedy & Violich Architecture, Boston; Samuel

Mockbee, partner, Mockbee/Coker Architects, Canton, Miss./Memphis; Lebbeus Woods, Architect, Lebbeus Woods, New York City; and the team of Robert Mangurian and Mary-Ann Ray, principals, Studio Works, Los Angeles. The decision will be announced in May.

**Pratt Institute names winner of dormitory competition** Pasanella Klein Stolzman Berg of New York

**Pratt's new dorm will sit on the eastern edge of the Brooklyn campus.**

City was the unanimous choice of jurors to design the Vincent A. Stabile Residence Hall. The residence will house 250 freshmen on the Pratt Institute's 25-acre Brooklyn campus. The three other finalists in the competition were Gwathmey Siegel & Associates, Hardy Holzman Pfeiffer Associates, and Polshek and Partners.

**Top books honored by AIA** Two books published by Yale University Press, *Hadrian's Villa and Its Legacy* by William L. MacDonald and John

A. Pinto, and *The Work of Antonio Sant'Elia* by Esther da Costa Meyer were winners of the Books of the Year award. In a new category, the 1997 Book of the Century title was awarded to *Sir Banister Fletcher's A History of Architecture*, edited by Dan Cruickshank and published by Butterworth-Architecture. The Monacelli Press of New York City was honored as Publisher of the Year.

**Smithsonian gets rare engineering collection** More than 5,000 original engineering drawings dating back to the mid-1800's have been donated to the Smithsonian's National Museum of American History by Lockwood Greene, a consulting, design, and construction firm. The largest single collection of early American engineering and architectural drawings, they provide a detailed look at how the nation evolved as technologies such as electricity were introduced (*Briefs continue on page 52*)



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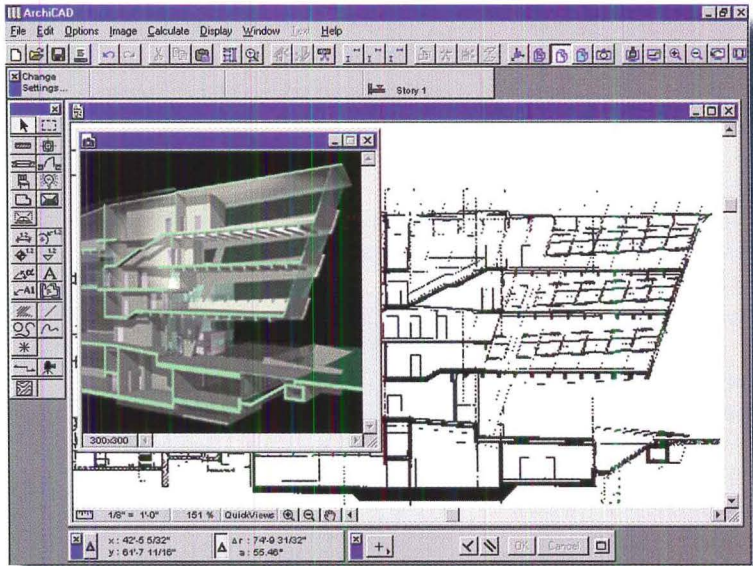
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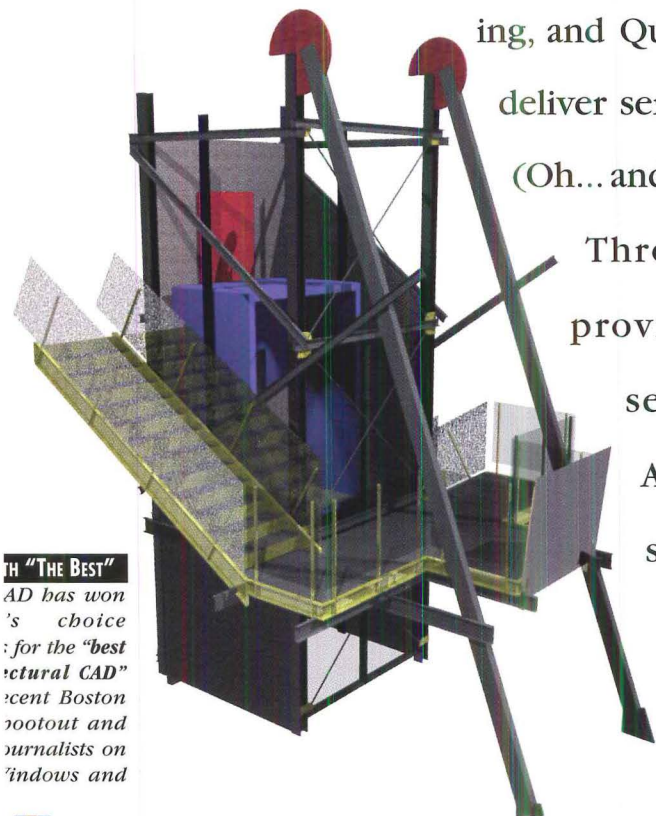
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(Briefs, continued from page 50)

### Graham Gund Architects wins arts center commission

Graham Gund Architects of Cambridge, Mass. will design the new \$28.4-million Performing and Visual Arts Center for Western Carolina University in Cullowhee, N.C. Competition for the project included Antoine Predock Architect, Hardy Holzman Pfeiffer Associates, and Hammel Green & Abrahamson. The center, to be completed in 1999, will include a 1,000-seat theater and a 250-seat music performance hall.

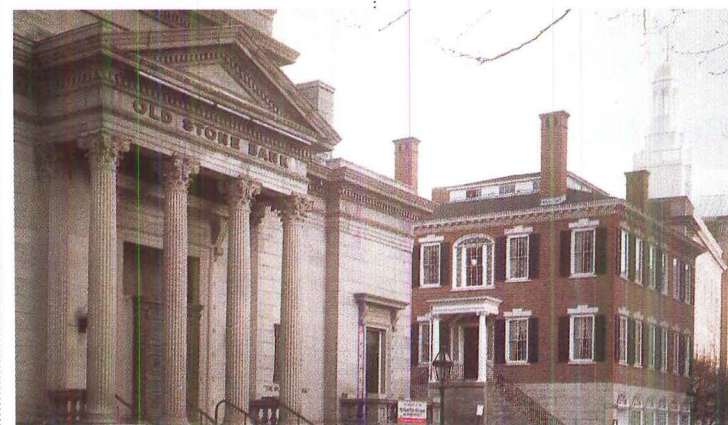
### AIA Names Top Architecture Educator

Donlyn Lyndon, FAIA, chancellor's professor and chair of the department of architecture, University of California, Berkeley, was awarded the 1997 Topaz Medallion for Excellence in Architectural Education by the AIA in conjunction with the The American Institute of Collegiate Schools of Architecture.

### Eisenman to Design Staten Island museum

A new waterfront museum will be a part of the rebuilt Staten Island Ferry Terminal at St. George, N.Y. Both the \$32-million terminal and the \$40-million museum, new home of the Staten Island Institute of Arts & Sciences, will be designed by Peter Eisenman. Construction will begin in August, 1998, for an opening by 2001.

### Philip Johnson's Glass House becomes landmark



Secretary of the Interior Bruce Babbitt announced the designation of 14 properties as National Historic Landmarks. Included are Philip Johnson's 1949 Glass House in New Canaan, Conn.; Grand Canyon Village in Grand Canyon National Park, Ariz., a significant example of American town planning in the 1920's; and the 1935-46 development of Greenbelt, Md., the first

### Brown's new anthropology museum will be housed in these buildings.

government-sponsored planned community in the United States. The Glass House was designated as a landmark because it "has long been regarded as one of the premier representatives of Modernism."

### Basketball Hall of Fame names architect

Gwathmey Siegel & Associates, with Bargmann Hendrie + Archetype, has been selected to develop the architecture for the \$100-million expansion of the Basketball Hall of Fame and the Springfield, Ohio riverfront.

### Anna Beha to design Brown U. museum

Brown University has retained Boston-based Ann Beha Associates as architect for the Haffenreffer Museum of Anthropology, a \$15-million, 38,000-sq-ft museum and education center to be developed in existing buildings—The Old Stone Bank and The Benoni Cooke House in downtown Providence, R.I. The museum will open in 2000.

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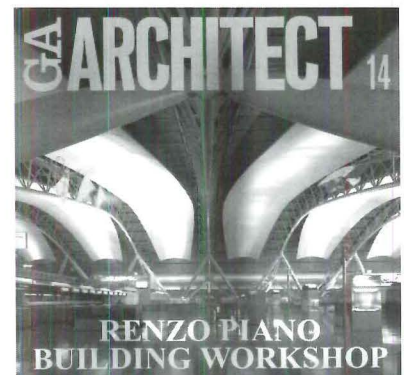
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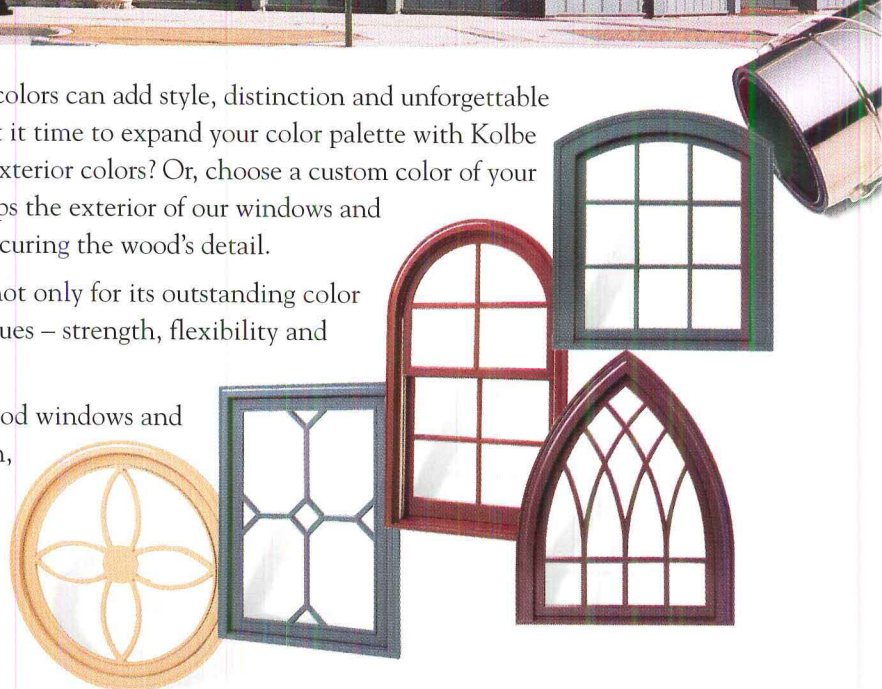
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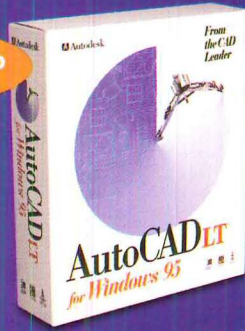
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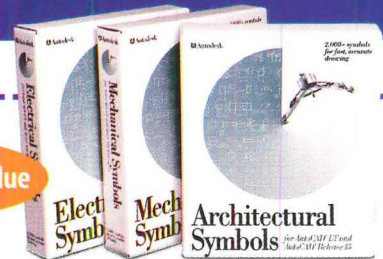
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CIRCLE 31 ON INQUIRY CARD

# Record Houses 1997

**H**ouses surely are, as Suzannah Lessard writes in the essay that follows (pages 62-63), “the stuff of dreams.”

A single-family home is the dream of most Americans and the fantasy of most architects—a way of launching a fledgling career or indulging in a level of artistic experimentation not possible in other work. Even though house projects offer an intimate scale and a satisfyingly high level of detail, many architecture firms both large and small shy away from residential work because profitable house design is no easy feat. Yet as this issue featuring eight houses documents, some of the most talented, sought-after architects of our time continue to devote

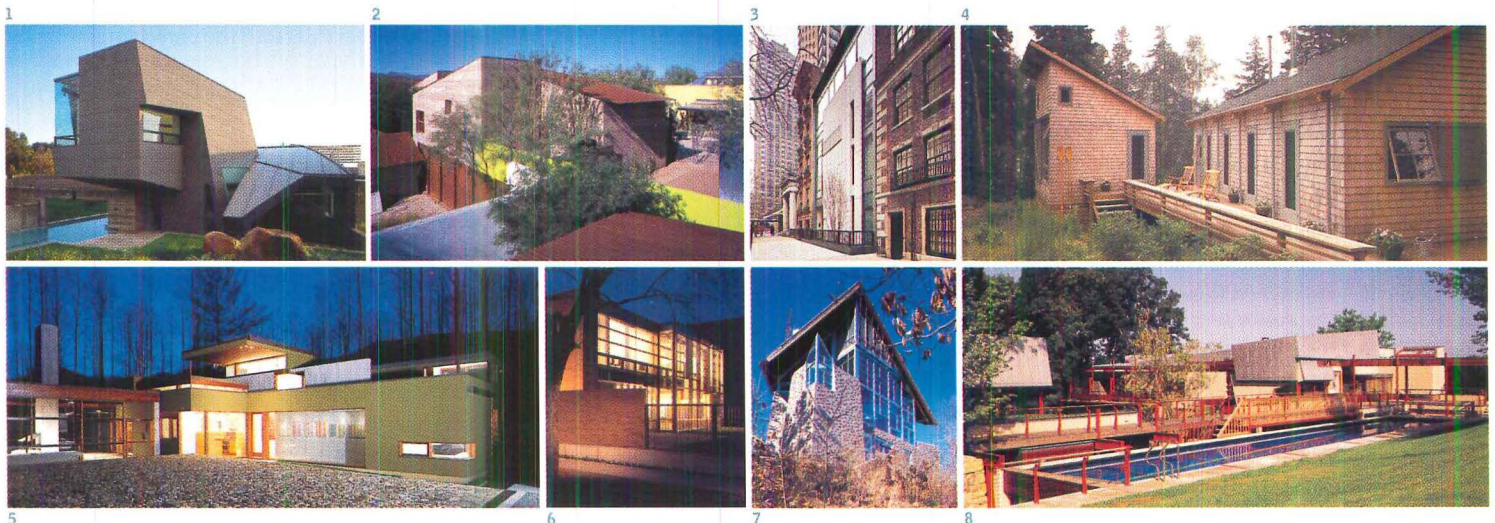
themselves to designing houses because the commissions are professional “touchstones,” and because “they are laboratories of design,” we are told. These houses are like portraiture and what often eludes most bystanders to the design process is the actual subject of the portrait. While the architects whose work is shown in the following pages clearly enjoyed some level of self-expression in the houses they designed,

the person or people that are truly being expressed are the clients. Houses reveal what clients value, how they live, where they live. In a successful project, the house expresses a resonance between a client and an architect’s vision. Houses can be art, but they are always more. Most of the projects presented here are primary residences so they must accommodate everyday requirements, like eating, sleeping, working, and entertaining. These requirements deemphasize whatever trophy aspect there may be to the building program, which often resides more in the public’s eye than that of the owner or architect. Clients say that houses can change their lives—sometimes in subtle and unexpected ways. They are a backdrop to life’s big and small events, but they can become almost like family members too—with their own blessings and peccadillos. Most clients don’t set out to commission a masterpiece, but all agree that good design would help make their home a better place in which to live. Surely people’s dreams are varied and highly personal. What seems like a visual nightmare to some is another’s secret fantasy realized in three dimensions. But in this dream world of custom-designed houses, the architect weaves it all together.

—Karen Stein

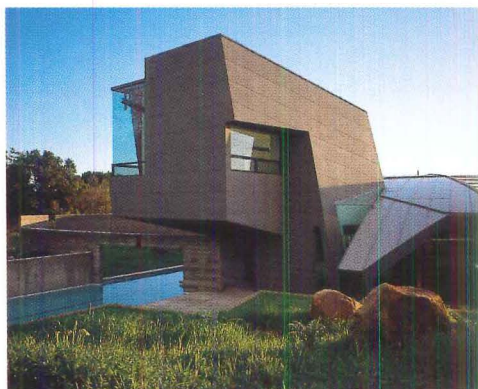
The houses featured in this issue are by:

1. Morphosis
2. Rick Joy Architect
3. Tod Williams Billie Tsien and Associates
4. Susan Rodriguez, Architect
5. Scogin Elam and Bray Architects
6. Krueck & Sexton Architects
7. Mockbee/Coker Architects
8. RoTo Architects





# Landscape and building interlock in a house by **MORPHOSIS** for a couple who lost their previous home in a fire.



Charred remains of their 1,400 sq-ft 1960's ranch house were what greeted the Blades on their return from a business trip (below right). Morphosis was charged to create "something brand new" (left and opposite).

**I**n mid-June 1990, Vickie and Richard Blades went on a brief business trip to Chicago. When they returned to Santa Barbara, California, their home of 13 years, and everything in it, was gone, destroyed by a fire that ravaged some 500 structures in their idyllic ocean-front community. In fact, their 1960's California ranch-style house, complete with a cementitious Class A fire-rated roof recently installed by Richard Blades himself, had exploded. Ironically because of its fire resistance, the roof trapped heat and, in effect, turned the structure into an oven, with temperatures inside reaching 8,000 degrees Fahrenheit.

After surveying the charred remains, the Blades contemplated moving out of town, outside California, somewhere far away. But as their shock subsided, they decided to build again on their Santa Barbara property. "We realized that we were attached to the place, no matter what house was there," explains Richard Blades.

Unlike neighbors who quickly put up facsimiles of their previous homes, the Blades decided to build something completely different. "When you have nothing, it's a clean slate," says Vickie Blades. The couple's search for the appropriate architect eventually led to the Los Angeles-based firm Morphosis. "We liked what we saw," remembers Vickie Blades after the couple studied a monograph of the firm's work and visited the Morphosis-designed Crawford house in nearby Montecito. Following "a mutual interview process," the couple hired the firm, led by Thom Mayne, to create what Vickie Blades calls "a house that didn't previously exist."

Mayne, who likens his ongoing series of projects to "branches of a [single] tree," immediately took to his clients' notion of charting a new direction. Also, it motivated his own three-dimensional critique of the

by **Karen Stein**

Crawford house, which was designed in the late 1980's during his long-term partnership with Michael Rotondi. (Mayne and Rotondi dissolved their partnership and Rotondi now has his own Los Angeles-based firm, RoTo Architects, also featured in this issue.) Mayne says that the split with Rotondi accounts less for the difference between the Crawford and Blades houses than for design lessons learned along the way. "The changes [in the architectural practice] are not within the formal realm, but in my [newly active] role with the client," explains Mayne. While he and Rotondi sought to make the Crawford house what he calls "an anti-villa"—dissolving a formal distinction between house and landscape—he now says of the project, "strangely, it's an object."

For the Blades, Mayne returned to his idea of fusing outside and inside, but this time, he says, he sought to join landscape and building by "operating" on the site, a strategy aided by the site's clear need for renewal. As a result, the 5,700-sq-ft structure burrows into a gentle hillside, while a lap pool winnows its way beneath the jacked-up north end of the main volume, and curved concrete walls puncture the building envelope to make indoor and outdoor "rooms" that have no obvious beginning or end.

Project architect Kim Groves reports that the Blades didn't want the house to have rooms in the traditional sense, instead asking Morphosis to make spaces that "bleed" into each other. However, Richard Blades, a steel, glass, and bronze artist, did want a separate gallery to display his work and the work of like-minded colleagues. The main living spaces are contained within an approximately 100-ft-long by 17-ft-wide rectangular loft-like box set into site contours, and rising at its apex to 15 ft high. The gallery, with its own mezzanine loft for art storage, occupies a separate box to the east and is connected by a narrow hallway. A second-floor study, (*text continues*)



**Project:** *Blades House*  
Santa Barbara, California

**Owners:** *Richard and Vickie Blades*

**Architect:** *Morphosis—Thom Mayne, principal-in-charge; Kim Groves and*

*Mark McVay, project architects*

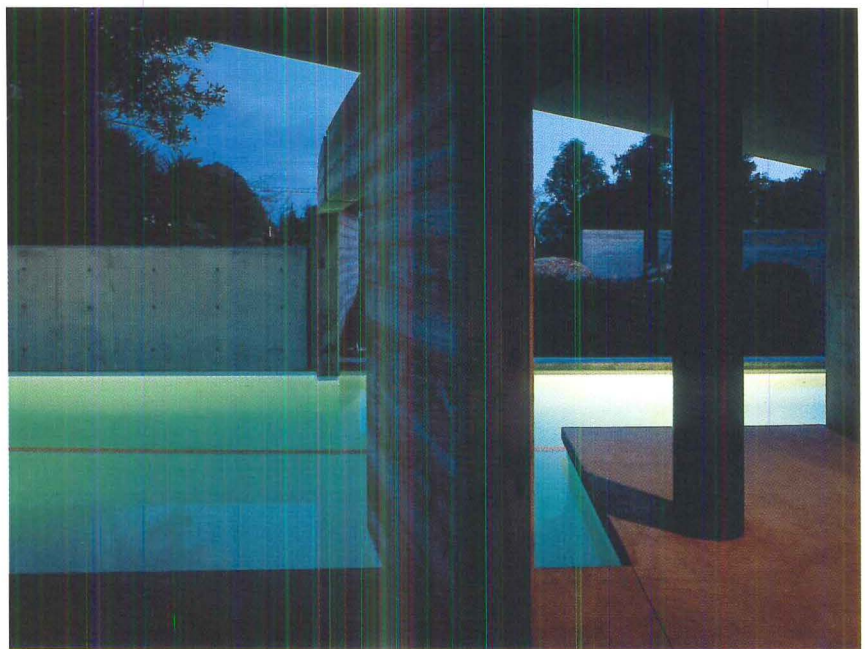
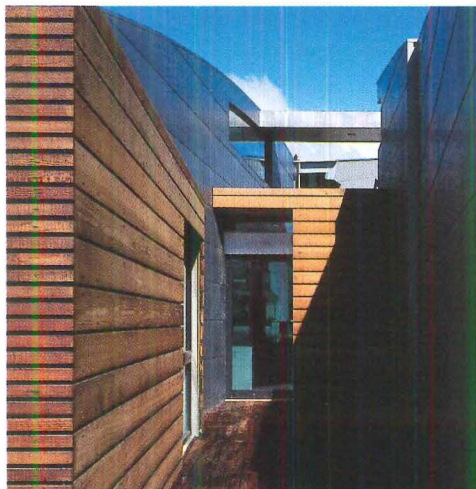
**Engineer:** *Joseph Perazzelli (structural)*

**General Contractor:** *Froscher Lewis, Kirk Lewis*

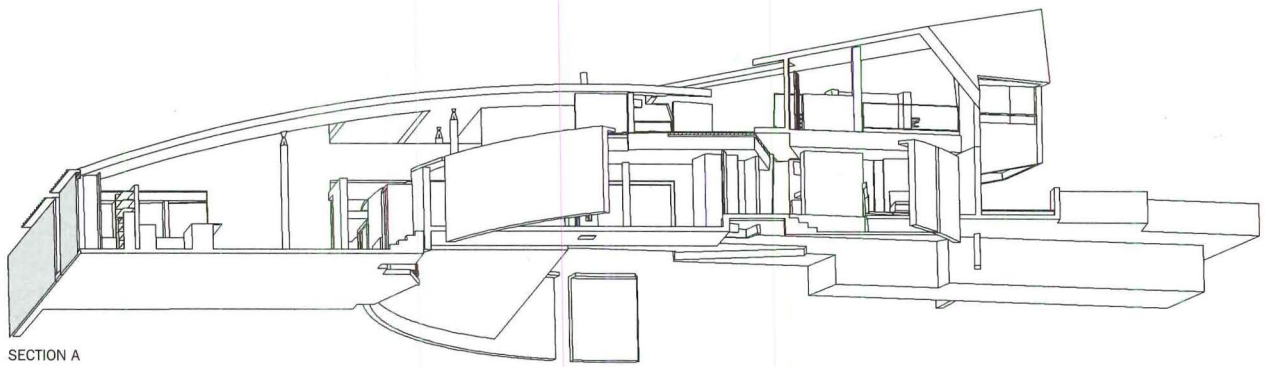


A painted metal standing seam roof juts out over the north side of the master-bedroom suite (above) and the second-floor study cantilevers over the pool to comply with the clients' request for

shade (right). Redwood strips line the street-front south-facing wall and the recessed entrance (below), like a protective wrapper for the volumes of stucco and acid-washed galvanized metal.

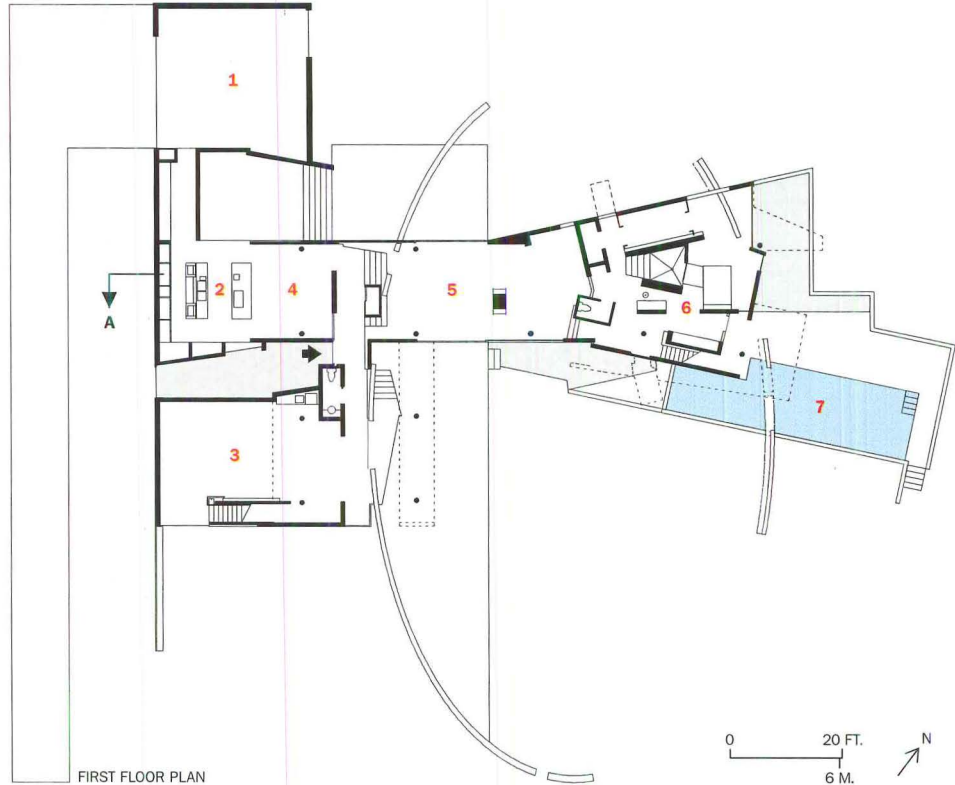




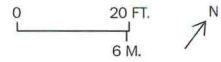


SECTION A

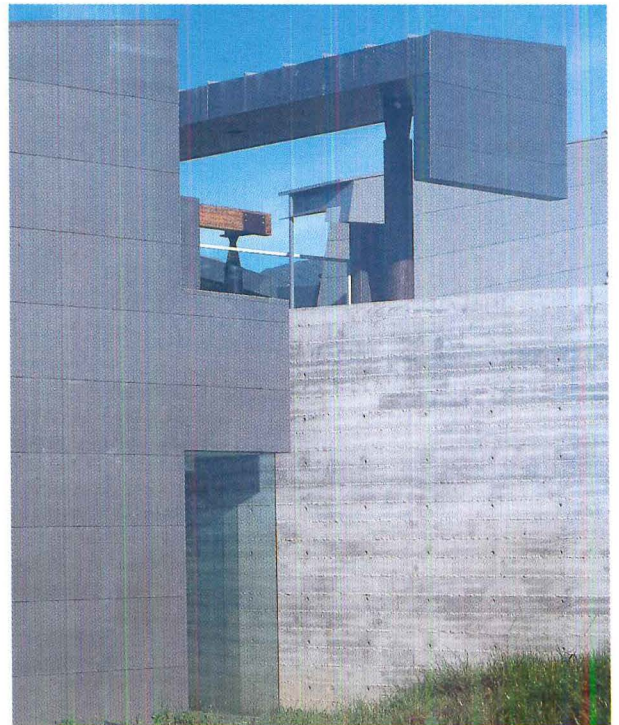
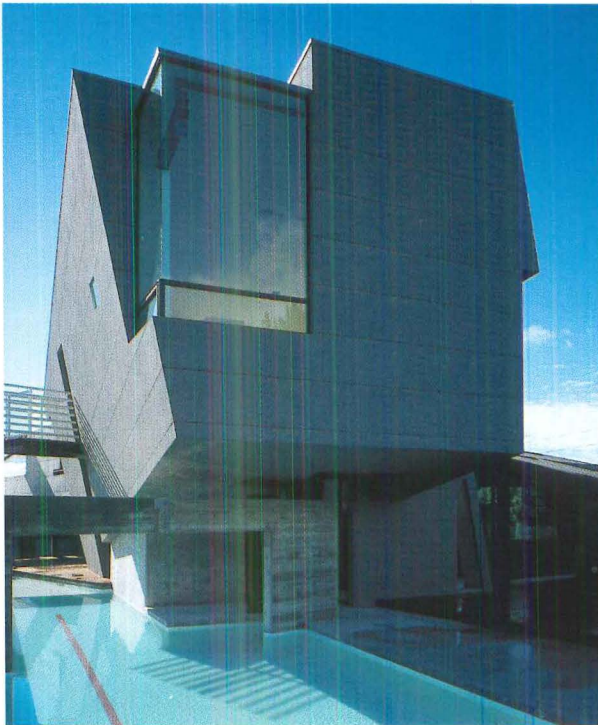
1. Garage
2. Kitchen
3. Studio/gallery
4. Dining room
5. Living room
6. Master bedroom
7. Pool



FIRST FLOOR PLAN



Outdoor and indoor volumes overlap, interlock, and interpenetrate: Vickie Blades's study hovers over the pool (near right), which appears to flow through the ground floor of the house, while a curved concrete wall slides past a window of Richard Blades's studio/gallery space (far right). The boards of the formwork give the concrete a strong wood "grain."

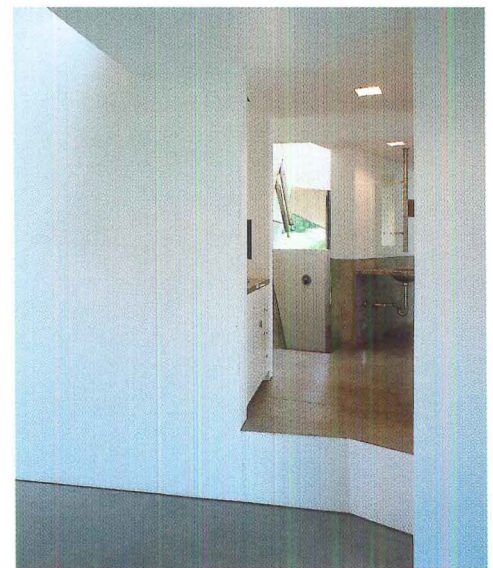
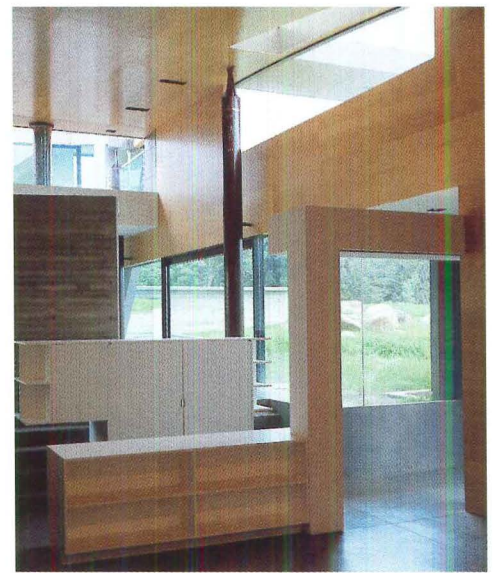




On entry, the house appears like a loft, with a single uninterrupted space dominated by a fireplace. "Rooms" are

implied by steps in volume (opposite). The bedroom (below) overlooks the shower (bottom right) and the

swimming pool. Clerestories bring light in from above and project beguiling patterns on blank walls (top right).



cantilevered over the bedroom is Vickie Blades's retreat and, observes Groves, it's like a "bird's head poking out from beneath its wings."

While the reference hints at the more relaxed geometry of this design compared to the Crawford house and other previous works' complex linear procession of solids and voids, the dissolution of boundaries between outside and inside remains, in Mayne's view, partly unrealized.

## WALLS PUNCTURE THE BUILDING TO MAKE INDOOR AND OUTDOOR ROOMS WITH NO OBVIOUS BEGINNING OR END.

He had planned additional architectural and landscape strategies to further emphasize a sense of collapsed space, including a metal line that would bisect the floor of the house, and continue outside on both sides as a slight depression in the earth, which would be filled with gravel to match the interior ground plane of concrete (see floor plan on the preceding spread). For now, that aspect of the project remains incomplete.

Though a sense of sliding planes and borrowed views pervades the interior of the house, metal siding and a street-front redwood slat wall with only a narrow opening gives the exterior an opposing image, one of

impenetrability. But instead of an actual bunker that would seem to provide the Blades maximum fire protection, by opening the house to the yard through large operable planes of glass that provide added means of heat or pedestrian escape, the architects have made a building that is more truly protective. What's more, the Blades appreciate the shifting image of their house from protective cocoon to environmental lens, which is only heightened when the sun goes down. "The biggest surprise is at night," says Vickie Blades of the overall effect. "The slanted wall opposite our bed is like a movie screen with a light show." For all of its special effects, for Mayne, "The building is still very much an object." Mayne seems dedicated to pushing even further his vision of architecture imbedded in its site. Of residential work currently in design, he says: "We're going back [to try] again." ■

*Manufacturers' Sources*

**Painted-metal roof:** *Copper Sales, Inc.*

**Anodized aluminum windows:**

*Metal Window Corporation*

**Blue-green glass, skylight glazing:**

*Libbey Owens Ford*

**Steel doors:** *Custom by architect*

**Interior light boxes:** *Custom by architect*

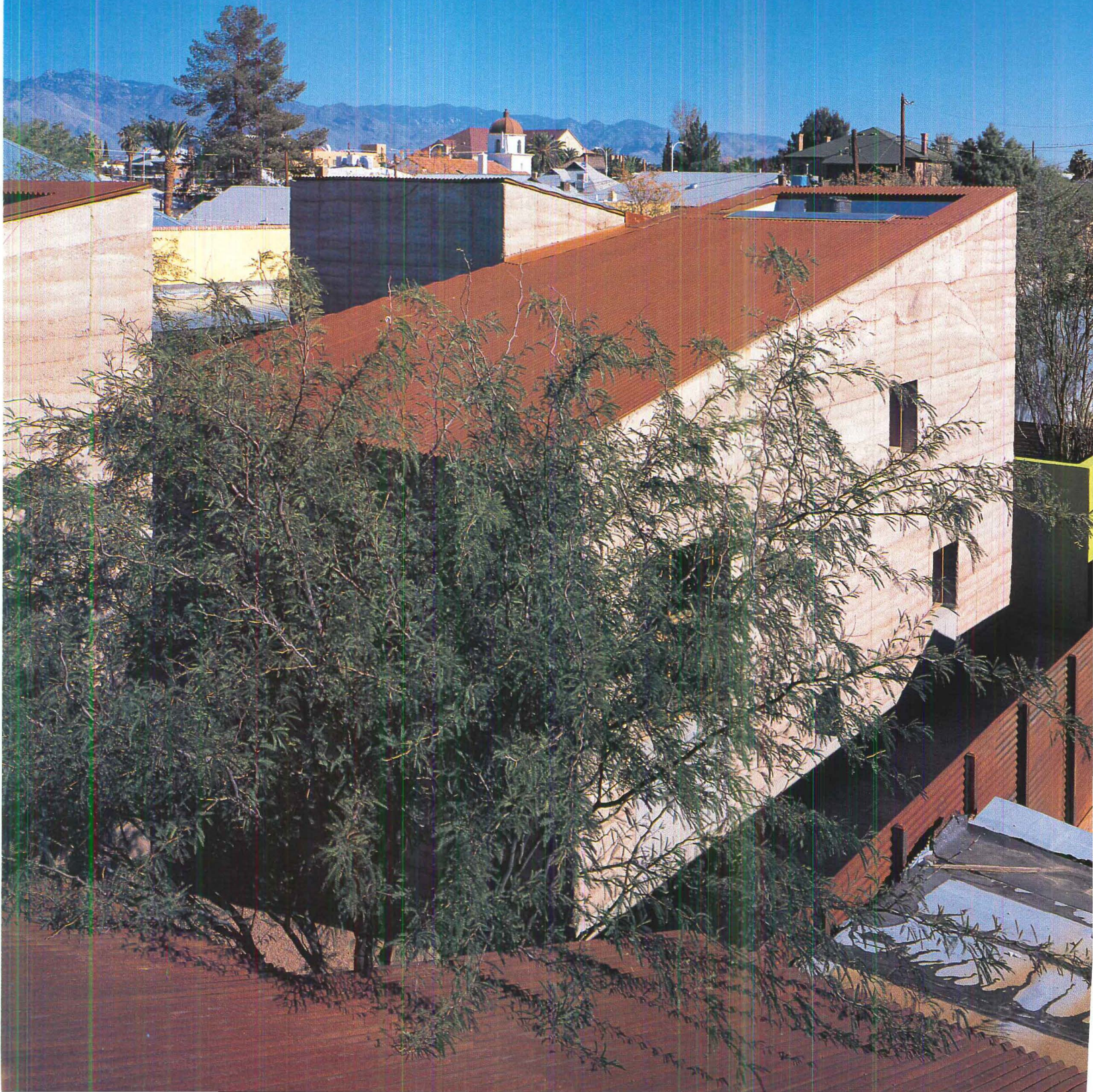
**Custom steel plumbing fixtures in**

**master bathroom:** *Fabricated by*

*Tom Farrage*

**Bathroom valves, faucets:** *Grohe*

As is traditional in Tucson's barrio historico, several small buildings occupy one parcel of land, creating narrow walkways and small courtyards (this page and opposite).



# In Tucson's historic barrio, **RICK JOY** designed the Convent Avenue Studios to emulate but not copy their neighbors.



**W**e didn't want to fake anything," says Rick Joy of the three small houses he designed and built on a narrow lot in the *barrio historico*, the 19th-century Hispanic heart of Tucson. So instead of trying to copy any of the styles found in the barrio, he designed new buildings that are "of their own time" and restored a fourth that is a small adobe house or *casita*. By understanding the forces that shaped the old buildings in the area—such as the desert climate and simple building materials—Joy created a group of houses that respects the historic setting: "I wanted to create a romantic place, not a nostalgic one."

When he started work on the project, the old *casita* in the southwest corner of the site was in danger of collapse, a fate that had already befallen its two neighbors to the north. The architect inserted a new stone foundation for the *casita* (which had previously rested directly on the ground), resurfaced its adobe walls with traditional lime plaster, and added new mechanical services as well as a new bathroom and kitchen. The only remnant of the other *casitas* on the property was an adobe wall fronting on Convent Avenue, which Joy restored as a freestanding element. What had been entrances to the two old rowhouses now serve as gateways to the project's front courtyard.

All new elements are clearly identified by either color or material. For example, new concrete-block walls running through the site are plastered, then painted lime green, while restored adobe walls are kept white. New mailboxes and gates are weathered steel, which can't be confused with any historic materials. Wherever a new element is inserted into an old one, Joy left a reveal around it so the two eras don't quite touch. Although the Secretary of the Interior's guidelines on historic preserva-

by Clifford Pearson

tion call for making clear distinctions between old and new, a few members of the Tucson landmarks board questioned the new steel elements inserted in the old adobe. To that, Joy says, "Copying old styles only degrades the importance of the historic."

Joy designed the three new live-work studios as rammed-earth structures, as a way of emulating the simplicity of adobe and experimenting with an alternative building system. "I love the monolithic quality of rammed-earth buildings," he says. Made of dirt mixed with a small amount of portland cement that is compacted inside metal forms, these structures are thick-walled buildings that require no reinforcing and no internal or external finishes. Like adobe, rammed earth stores heat from the desert sun and distributes it indoors during the cool evenings when outdoor air temperatures can drop as much as 40 degrees. Rammed earth, though, is more stable than adobe and doesn't require periodic resurfacing. Joy also likes the longevity of the material. "These buildings will last 200 years, so they'll be historic buildings someday."

The long narrow site, which had been vacant for more than 40 years, presented a host of planning challenges. The client, Vancouver businessman Rick Brezer, bought the property while spending a year in Tucson (*text continues*)

1. Casita (restored)
2. Studio
3. Laundry
4. Storage
5. Future studio



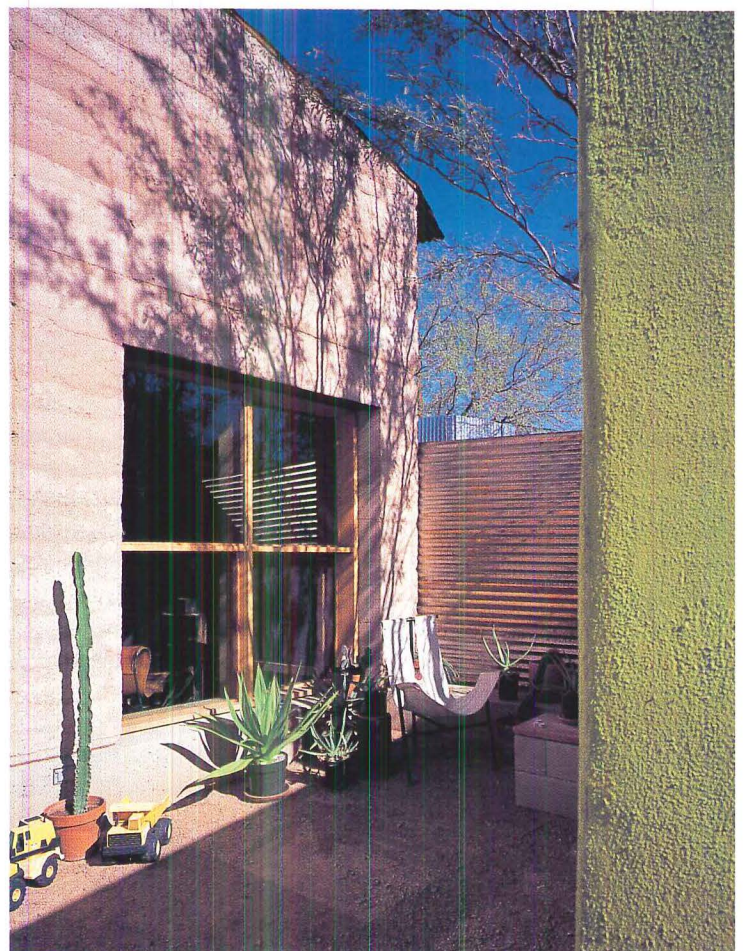
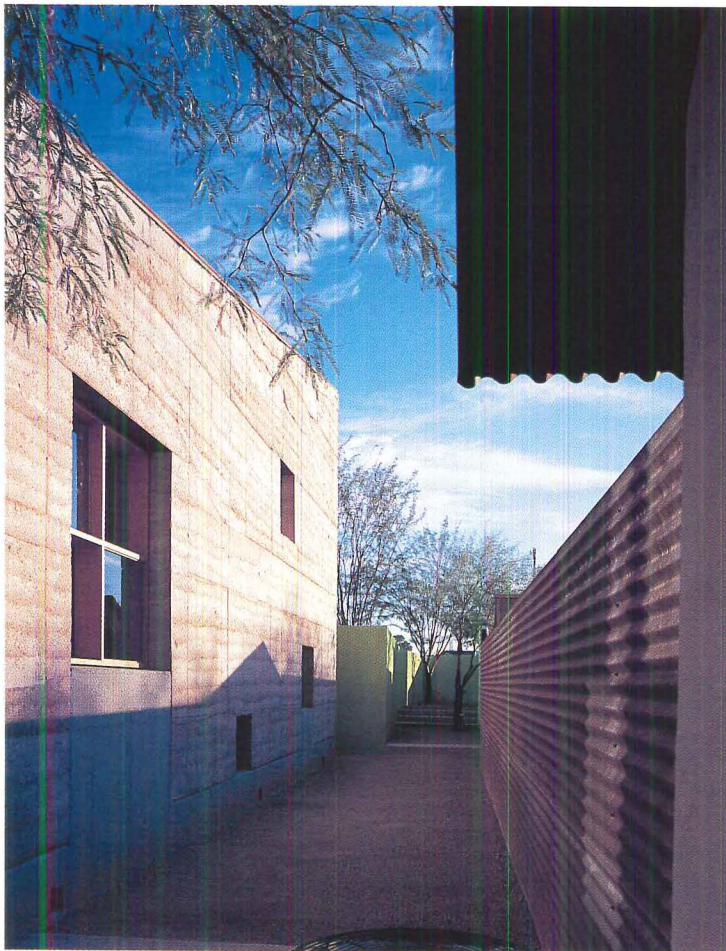
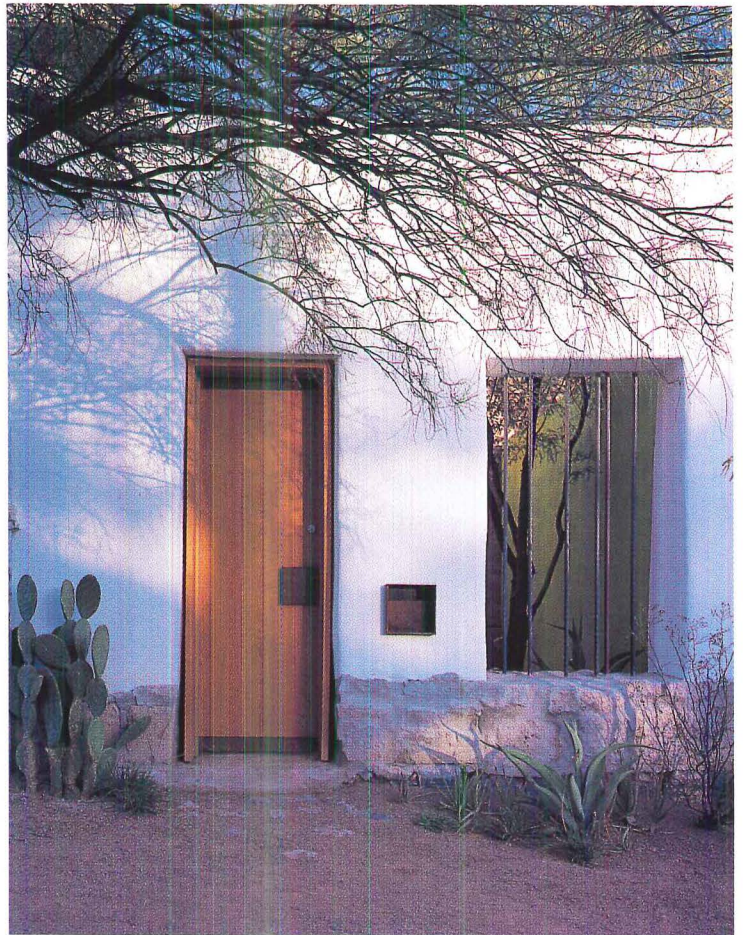
**Project:** Convent Avenue Studios  
Tucson, Arizona

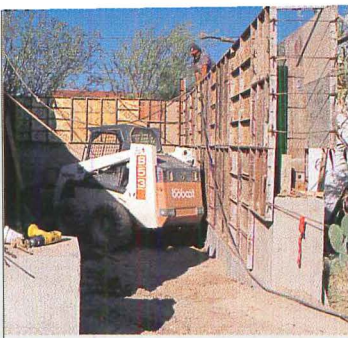
**Owner:** R.J. Brezer

**Architect:** Rick Joy Architect—Rick Joy, principal; Franz Bühler, construction supervisor/carpenter; Holly Damerell

**Engineers:** M.R. Behnejad/Southwest Structural Engineers (structural); Roy T. Otterbein (mechanical/plumbing)

**Builders:** Rick Joy Architect; Quentin Branch Rammed Earth Solar Homes (walls, foundations)





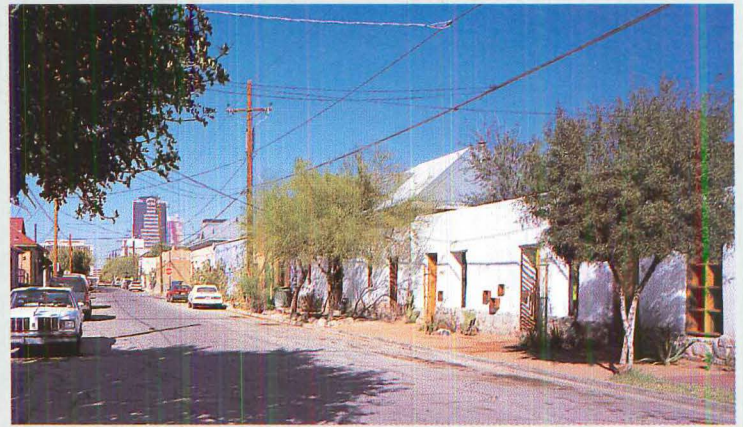
## CONSTRUCTION

### Building with rammed earth and restoring with adobe

Although rammed-earth construction dates back at least to the Great Wall of China, it is a relatively new way to build in Tucson. With builders looking for more environmentally friendly methods in the last 30 years, rammed earth has been used in the Southwest along with such alternative materials as baled hay. Like the more traditional adobe, rammed-earth structures work well in the desert because of thermal lag—the material's ability to store heat from the daytime and

distribute it slowly during the cool nights. But while adobe requires resurfacing every year or so, rammed earth is nearly maintenance-free. And unlike baled hay, which requires a termite shield, steel lathe, and a surfacing material, rammed earth is monolithic.

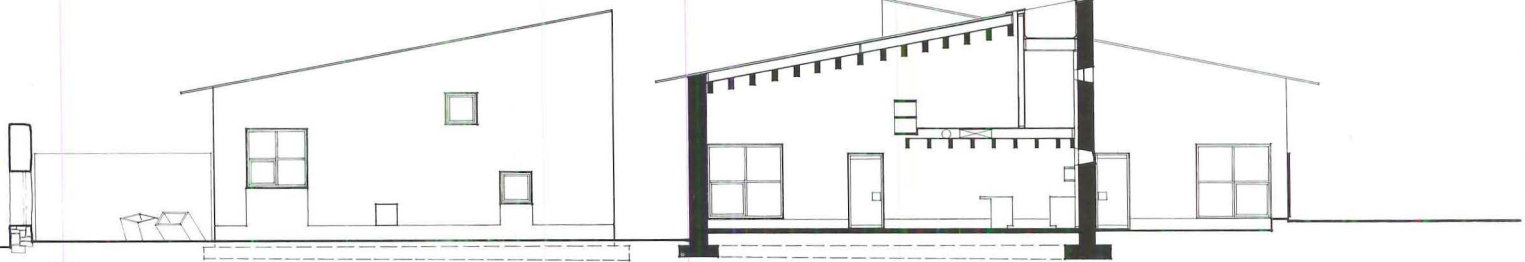
Most of the walls for the Convent Avenue Studios are 18-in.-thick, though end walls are 24-in. Rammed earth was cast in standard concrete-slip forms in 10-in. lifts and then compacted by hand-held power hammers to 5-in. (photo, above left). Each of the 1,000-sq-ft studios weighs about 180 tons. The earth used here was a combination of soils from three different local sources (to get a gradation of colors) blended with a small amount of red pigment and 3 percent portland cement. Because the walls require no curing, the metal forms with plywood facings can be removed almost as soon as the earth is



cast. While some architects apply a stucco or plaster finish to rammed-earth walls, architect Joy wanted to expose the material on both the interiors and exteriors. Openings for doors, windows, and roof beams had to be inserted between forms, because rammed earth crumbles if cut. Local building codes required the rammed-earth walls to sit on concrete stem walls, even though Joy believes this is unnecessary. Concrete is also used below window sills to prevent water penetration.



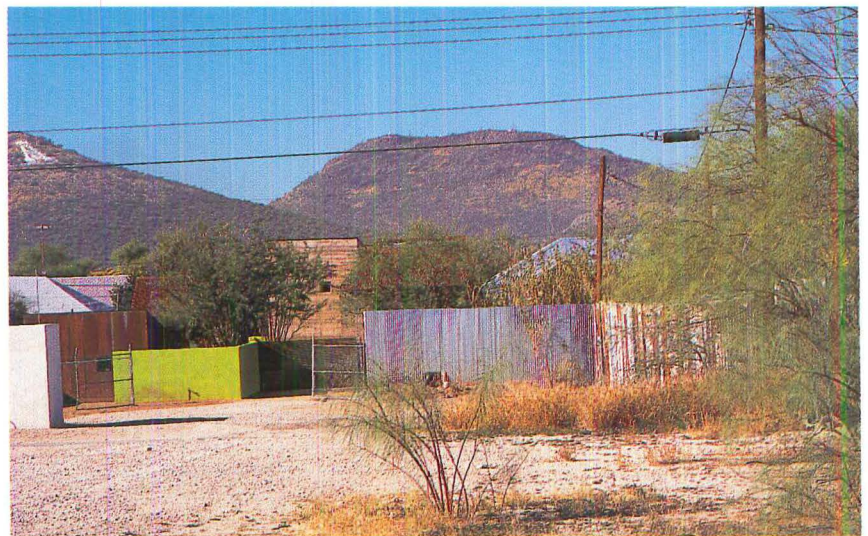
An old adobe wall (above) was restored as a freestanding entry (top) using traditional lime plaster. Existing openings were used for a new door, gate, and windows.



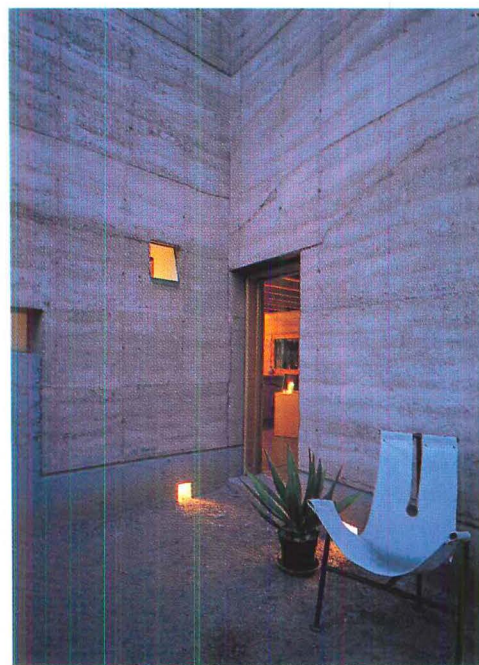
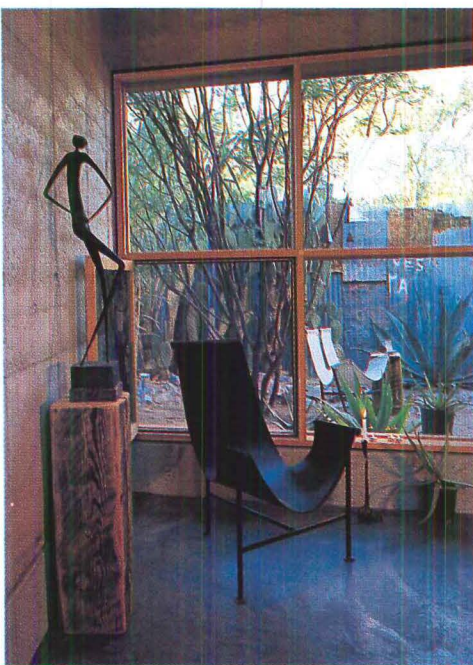
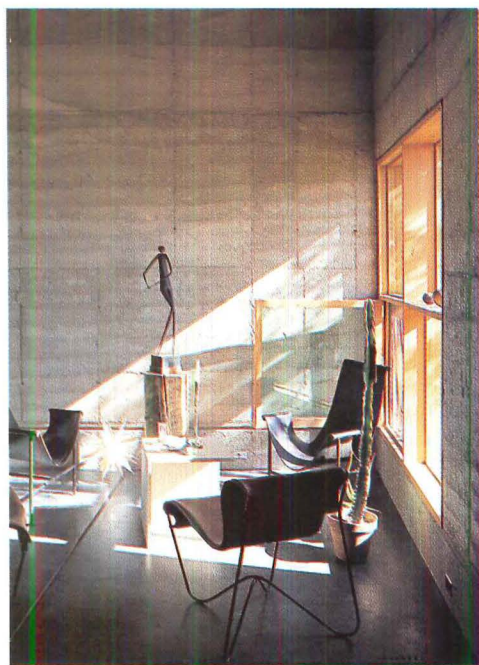
EAST — WEST SECTION

Automobile access to the project is from Rubio Alley in the back of the site (right and opposite top left). Visitors arriving on foot or parking on Convent Avenue enter a front courtyard through a restored adobe wall. The door, weathered steel mailboxes, and window bars are new (opposite top right). A walkway leads past one of the new studios and toward Rubio Alley

(opposite bottom left). A private courtyard acts as an outdoor room for one of the units (opposite bottom right). The studios cost about \$90 per sq ft to build and each one rents for \$895 a month. The restored *casita* rents for \$595 a month. Each unit is equipped with a heat pump to help when warmth held in the rammed-earth walls isn't enough.



The interiors of the studios are all about controlling the amount of sunlight that comes in while providing views outside. A private courtyard (bottom right) serves as an outdoor living space.





without knowing exactly what he would do with it. "I fell in love with the neighborhood—the colors, the nature of the materials, the feeling that this is a well-grounded place," explains Brezer. A neophyte developer, Brezer called on a number of recommended architects in Tucson to discuss what could be done with the property. Not satisfied that he had heard the right answer, he picked up the Yellow Pages. That's where he found Joy, whose office happens to be on the same street as the property. After one meeting with Joy, Brezer hired him. Brezer liked the boldness of Joy's work and also that he builds what he designs. Together, client and architect developed a program for three 1,000-sq-ft live-work studios that could be rented to artists and young professionals.

Starting with simple shed forms that could fit like jigsaw pieces on a small parcel of land, Joy developed a wedge-shaped plan for the houses. "We wanted a small kitchen and bathroom and a larger living area," says Joy, "so we got a wedge that's narrower at one end and expands at the other." The wedge also opened up outdoor spaces between units that could be used as private courtyards. Although building codes allowed the architect to place the houses along one property line, Joy set them back to allow north- and south-facing windows and to create the courtyards. This scheme also maintained sun access for houses on adjacent properties, helping to earn the goodwill of neighbors.

Walking through the project, from the freestanding adobe entry wall on Convent Avenue to a new wood-frame, rolled-steel-clad laundry building that all the tenants can use, visitors pass a series of shared and private outdoor spaces recalling old parts of Southwestern towns.

Mesquite trees and creosote bushes salvaged from other sites are planted throughout the project, while old corrugated metal is used for a perimeter fence. Dirt, gravel, and old stones are the main paving materials.

Inside the houses, the 18-in.-thick rammed-earth walls are the dominant feature. Complementing the simple beauty of the walls are rough-sawn Douglas-fir roof beams, concrete floors, fir ceilings and windows. "We used wood only where it could be experienced," explains Joy. Sunlight is treated as a precious commodity, almost totally blocked on the east and west, and brought in through a narrow skylight above the bedroom and through windows that frame tight views of courtyards. In a place like Tucson, a little sunlight goes a long way.

Because the walls are such powerful elements, Joy wrestled with how to detail the houses. Standard door handles and windows would have looked weak next to the rammed-earth enclosure. In the end, he decided the best approach was to keep the details simple but strong—like square steel door pulls, rough-hewn wood windows, custom-made red-birch cabinets. "Restraint is a big part of what I'm doing," states the architect. ■

*Manufacturers' Sources*

**Glass:** PPG (Solex); Monsanto (Saflex laminated-glass interlayer)

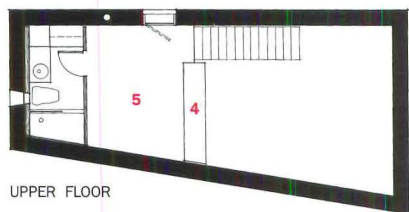
**Exterior latex paint:** Dunn Edwards

**Hardware:** Schlage Lock Co. (dead bolts); Lawrence (hinges)

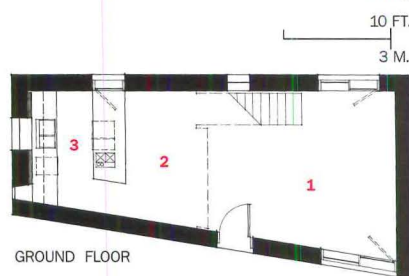
**Furnishings:** Max Gottschaulk (Pretzel chair, "K" bar stool and dining chair); Giorgio Belloli (sling chair)

**Cook top and oven:** G.E. (Monogram)

**Refrigerator/freezer:** U-Line



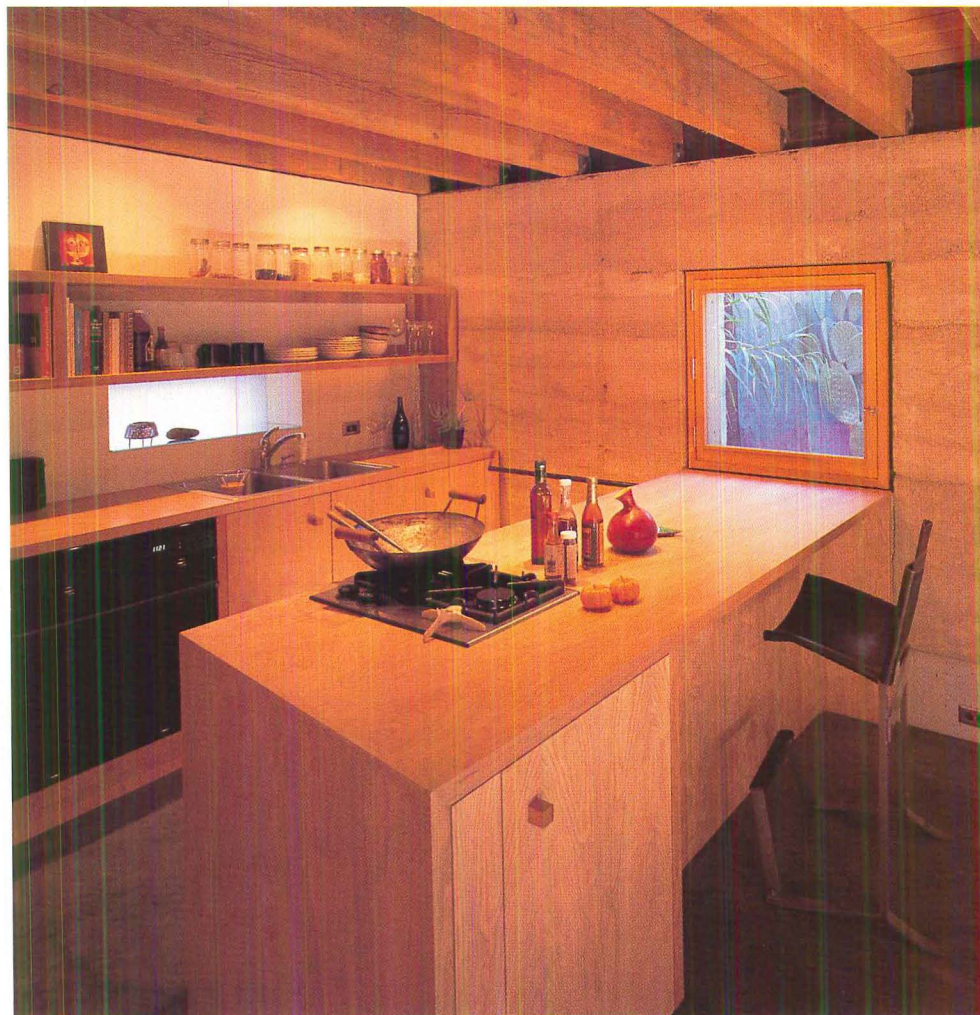
UPPER FLOOR



GROUND FLOOR

- 1. Live/work
- 2. Dining
- 3. Kitchen
- 4. Storage
- 5. Sleeping

To make the 1,000-sq-ft studios as efficient as possible, Joy designed built-in shelves and cabinets for the kitchen (right) as well as the sleeping loft.





The limestone face with heavy-picked finished accents is, according to zoning mandate, at the property line. A glass "cornice" admits daylight to upper bedrooms and the center of the townhouse.

# Family home or Modern icon?

## WILLIAMS AND TSIEN do both at once.

by Karen Stein

I have a friend, an architect, who is obsessed with this house. My friend, let's call him Bill, lives near it on New York City's Upper East Side and since construction began on the building in June, 1995, has monitored its progress with an attentiveness surpassed only by its owners and its architects, Tod Williams and Billie Tsien. For Bill, the house represents a victory of sorts over the momentum of city politics and client taste that would seem to necessitate a historicist design in such a venerable "uptown" address. That the house is so obviously Modern—it is, in fact, just outside the restrictive limits of a New York City Landmarks district—is more than a triumph to him: it's a beacon of change, in that something forward-looking is comfortably and not aggressively at home in the most old-world of the city's neighborhoods. Good student that he is of architectural history, Bill sees the building within a lineage of two previous Manhattan townhouses, both iconoclasts of their respective generations and now Modernist icons—Philip Johnson's 1950 Rockefeller Guest House and the 1970 townhouse by Paul Rudolph, known by the name of its most famous fashion-designer owner [RECORD, Mid-May 1970, pages 42-45]. "It's the best thing since Halston," claims Bill.

When told of the comparisons, Williams and Tsien are pleased. "They're great buildings," says Williams, noting that the Rudolph, in particular, was an "important building for me when I moved (*text continues*)

**Project:** New York City House

**Architect:** Tod Williams Billie Tsien and Associates—Tod Williams, Billie Tsien, partners-in-charge; Vivian Wang, project architect; Peter Arnold, Christopher Haynes, Matthew Pickner, Marianne Shin, project team

**Architect of Record:** Schuman Lichtenstein Claman Efron Architects—Peter Claman, partner-in-charge; Richard DeMarco, project

architect; Pio Graiff, job captain

**Engineers:** The Canto Seinuk Group (structural); Cosentini Associates (mechanical)

**Consultants:** Plant Specialists (landscape); Richard Shaver (lighting); Cerami and Associates (acoustical); Israel Berger and Associates (window wall); Electronic Systems Associates (security)

**General Contractor:** Turner Interiors

PHOTOGRAPHY: ©MICHAEL MORAN





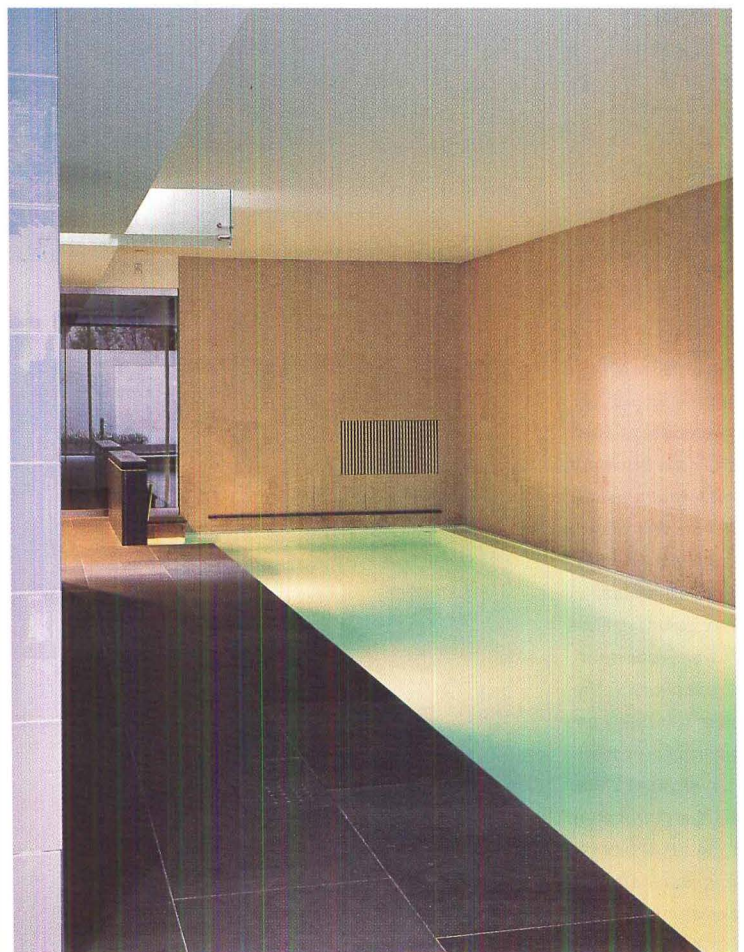
Lap pool  
 Mechanical  
 Laundry  
 Lower garden  
 Upper garden  
 Foyer  
 Family room  
 Library  
 Living room  
 Master  
 bedroom  
 Bedroom



LONGITUDINAL SECTION



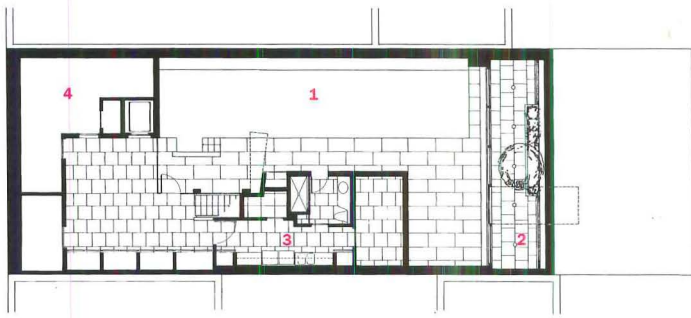
The south-facing garden (above and below left) steps down from street level to bring light to the underground pool area (below right). Sandblasted glass is used as a railing for the bridge.



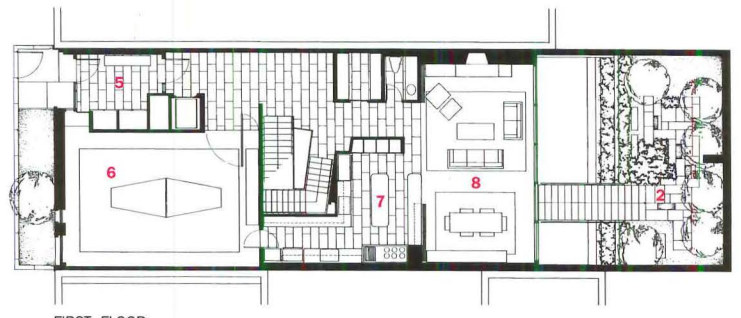


The double-height *piano nobile* (above) accommodates such large-scale artwork as a Frank Stella over the fireplace. Williams and Tsien designed rugs and coffee tables. Cherry paneling lines the foyer (near right) and reappears in the kitchen (far right) and family room (opposite left). A skylight illuminates the grand stair and the art dispersed among its landings (opposite right).

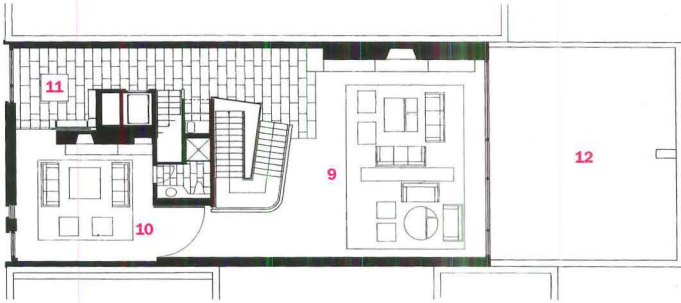




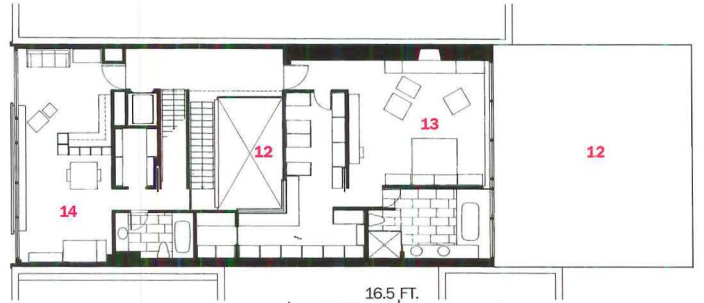
BASEMENT



FIRST FLOOR



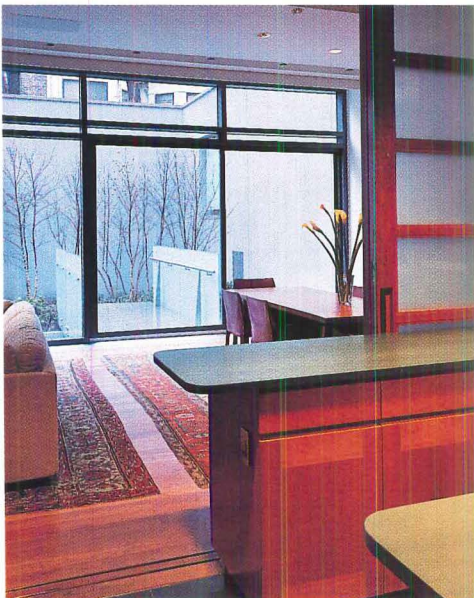
SECOND FLOOR



THIRD FLOOR

16.5 FT.  
5 M. N ←

- |                |                    |
|----------------|--------------------|
| 1. Lap pool    | 8. Family room     |
| 2. Garden      | 9. Living room     |
| 3. Laundry     | 10. Study          |
| 4. Mechanical  | 11. Library        |
| 5. Foyer       | 12. Open to below  |
| 6. Dining room | 13. Master bedroom |
| 7. Kitchen     | 14. Bedroom        |



The interior "painting wall" with a work by Iimi Knobel is lit from the skylight above. A mezzanine level overlooks the second-floor living room.





here.” The duo are, however, disinterested in its heady implication of design stardom. “We realized we were playing in the big league, where few have succeeded,” explains Williams of obtaining the sought-after commission following an interview process that included Johnson himself on a who’s-who list of potential architects. Adds Tsien: “You have that realization and then you turn your back on it and take small steps [to complete the project]. You’re caught up in the intensity of the relationship with the client.” About the public spectacle, says Tsien: “I don’t care.”

That Williams and Tsien are assertive about their goals yet unconcerned about self-promotion is key to their architecture. It is, in fact, what gives their work its double nature: stature *and* modesty. Their ability to embrace such dualities without sacrificing aspects of either extreme is what won them this job on a public site for a family that wants privacy, says the wife of the client couple. She says it was their ability “to strike a compromise that offers *all* the options.” Perhaps even the dual nature of their practice—two strong-minded designers who don’t speak for each other, but with each other (the two give joint public presentations of their work with alternating commentary)—played its part.

Reconciling differences was the main part of the programmatic charge, since each item of the clients’ wish list was about mediating the potentially conflicting goals of two equally strong-minded people. Observes Tsien of her clients: “They are very joined and very different.” And her client agrees: “My husband and I have radically different ideas about formal [versus informal] living. We wanted it to feel like a loft space, but be nearer [than the SoHo warehouse district] to the [mid-town] office,” with a “comfortable place for large-scale entertaining, and cozy enough for family living.” Also, the clients insisted that the street profile be “a non-event—very quiet without being hostile.” Added to the mix is a vast museum-quality art collection—constant only in its scope, primarily works from the 1960’s to the present, and large scale: “It gives my husband great pleasure to buy something new and stir things up,” says the owner of her spouse’s constant shifting of art through the house.

In response, Williams and Tsien devised the concept of a blank front facade—a surrogate surface for art—that penetrates the house literally, reappearing in the center atrium as a backdrop for paintings. For all their unorthodoxy, Williams and Tsien also do play by traditional rules, at times making those rules three dimensional. In composing the front, for example, the recessed entrance meets a zoning mandate since it is 25 percent of a facade that must otherwise abut the street. Its 4-in.-thick limestone plane floats atop a glass and aluminum frame as a conforming street wall. Even the fence around the front garden, which is leased from the Department of Transportation, is strictly regulation. While two brownstones were demolished to make way for the 13,760 sq ft structure, the site’s floor-area-ratio would have permitted 34,000 sq ft. Why not sell the property for more profitable development? The owners, like the architects who wanted their house to be framed by taller buildings on either side, showed neighborly restraint. My friend Bill appreciates that. ■

#### Manufacturers’ Sources

**Steel beams:** *Steel Services Corp.*

**Indiana Limestone cladding:** *Stone Truss Systems*

**Kynar-finished window wall, insulated glass and skylights:** *Lynbrook*

*Glass and Architectural Metals*

**Exterior muntz-metal clad entrances:** *Coordinate Metals, Inc.*

**Cherry doors, cabinetwork:** *Modern*

#### Industries Architectural Woodworking

**Concealed hinges:** *SOSS*

**Lever locksets:** *Omnia Industries*

**Paint:** *Sherwin Williams*

**Kirkstone, Pietra Cardoso flooring:**

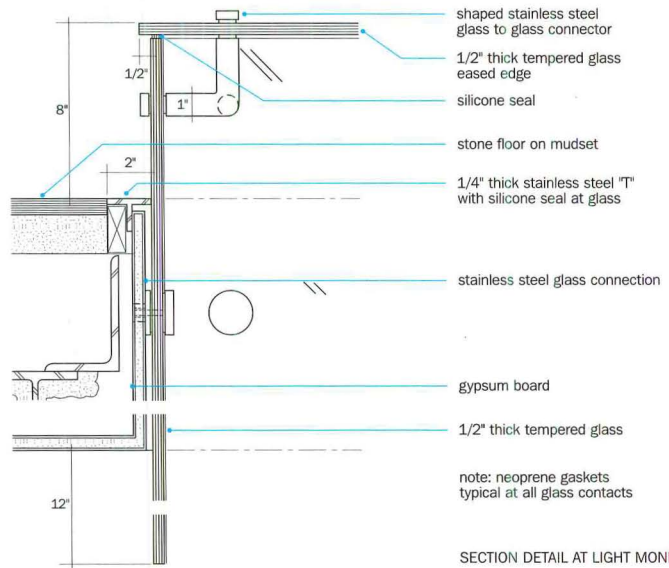
*Domestic Marble and Stone Corp.*

**Downlights:** *Edison Price*

**Rugs custom by architects:** *V’Soske*

**Couches, chairs:** *Nienkamper, ICF,*

*Cassina, Tentazoina, Maralunga*



**Architect of record, Richard DeMarco, who specializes in high-rise residential work, says “every corner was a challenge to maintain the simplicity of finishes and structural integrity.” Precision is evident in handrails (left) and the glass box (above and below) that brings light to the pool.**





## A VOYAGE

Building a cabin on an island presented contractor Clarence Conway and architect Susan Rodriguez (above) with certain logistical challenges, both in terms of communications and in construction of the building itself. Rodriguez, who lives in New York City, and Conway held daily 7:00 a.m. telephone conferences to check progress and exchange questions, and kept their fax machines humming as they worked out details on paper.

All materials for the job, and the two construction vehicles on the site—a backhoe and dump truck—were ferried to the island by a barge. The barge was towed into position by a boat and then anchored by a pair of long vertical

pipes, which were driven into the mud. The goods were hoisted off by a small on-board crane. Everything had to be delivered at high-tide, however, even if this meant traveling by the light of the moon, at midnight. Hiring the barge at a cost of \$500 per hour meant Conway had to anticipate what materials would be needed and plan loads far in advance.

To speed up construction, Rodriguez chose a post-and-beam frame for her cabin. It was fabricated of hemlock in Bath, Me., and brought to the island when it was surrounded by what she describes as a “pea-soup fog.”

The erection crew, specialists provided by the manufacturer, The Shelter Institute, expected that machinery would be available to hoist the frames to their vertical resting places once they had been assembled on the cabin’s already completed floor. But no such luck. Instead they improvised, using come-alongs anchored high in

nearby trees, and inched the frames into place by hand. The crew finished putting it up in two and a half days. “The crew was very ingenious in the way they improvised the rigging,” says Rodriguez, “and I was also really glad we left a lot of trees close to the cabin.”



gives him a 1/4-in. scale cardboard model to help explain details of the cabin’s structure that are not so easily understood from the drawings.

The cabin will be of hemlock post-and-beam construction and its infrastructure will be contained entirely on the island. Well water and rain collected from the roof will be stored for use as potable water. Sewage will be collected in a holding tank and pumped to a septic field periodically. Propane will be the only imported source of energy, fueling the generator, water heater, lighting, and refrigerator. When necessary, heat is provided by a wood stove. “Everything was designed with the idea of no maintenance,” Rodriguez says, “because when you can’t be here all the time, the last thing you want to do is worry about fixing things up.”

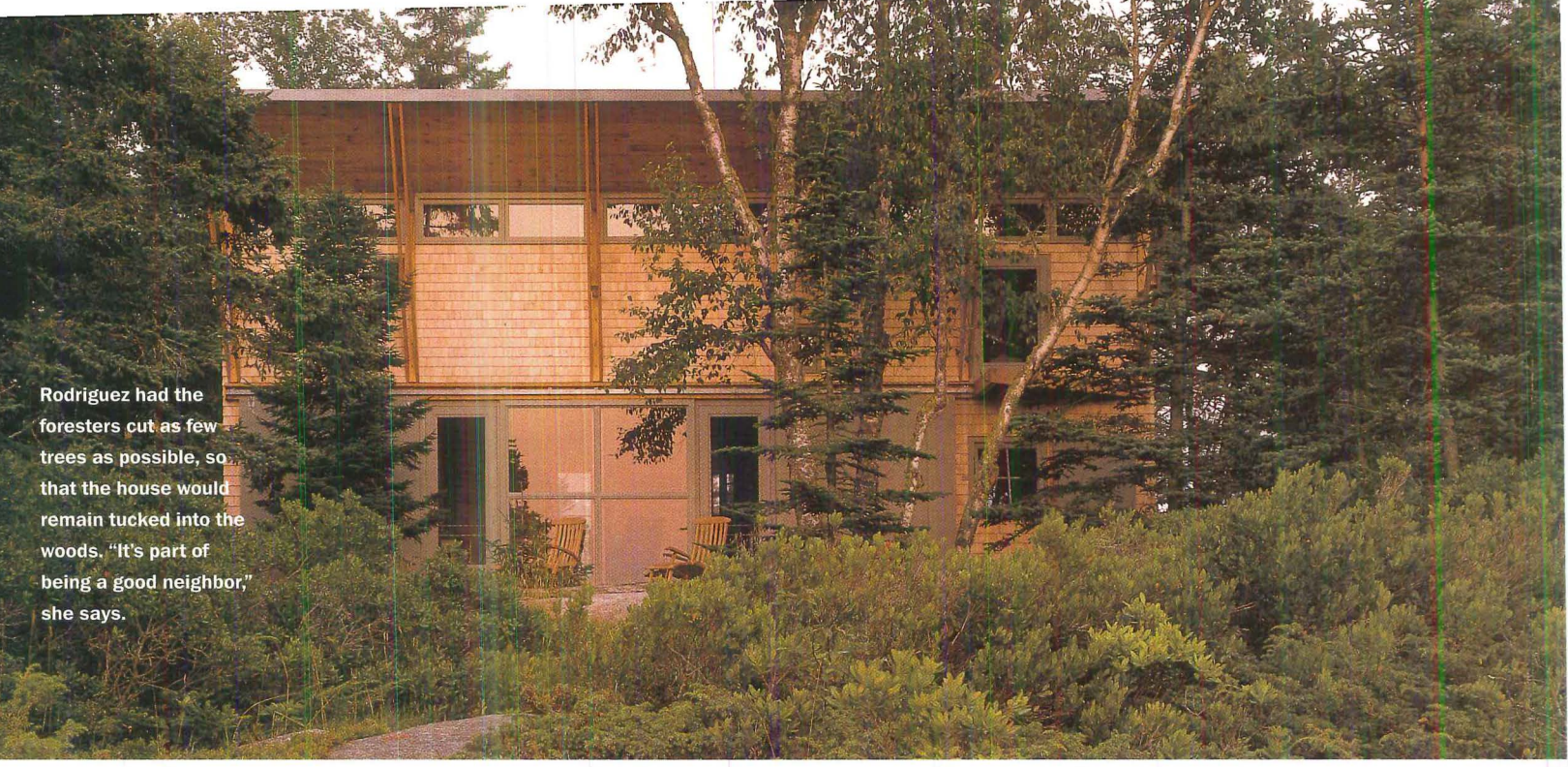


**SUMMER 1994** Materials and construction machinery are delivered to the island at high tide on a barge towed by a boat. Meanwhile, the Ames Brothers, a crew of local foresters, clear a rough access road from the shore to the site, then the site itself, and install the septic field. “The leaching field went in first,” says Rodriguez, “because we had to know it would work before we went ahead and built the house.”

After the cabin footprint is laid out, Conway and his crew drill steel pins into the granite shelf below so that the concrete foundation can be anchored. The surface of the rock, while solid, is so irregular that at one point the crew must drill through 16 ft of hardpan before hitting rock, while at other points the granite is exposed. After the foundation is poured, they build platforms of pressure-treated heavy timber set into custom-made stainless steel shoes so that the post-and-beam contractors can assemble and raise the timber posts and trusses that will frame the cabin. “The frame went up so fast, it was like a barn raising,” says Rodriguez. “I felt we had really made the right decision to go with post-and-beam frame, since this would allow the work to go on much faster.”

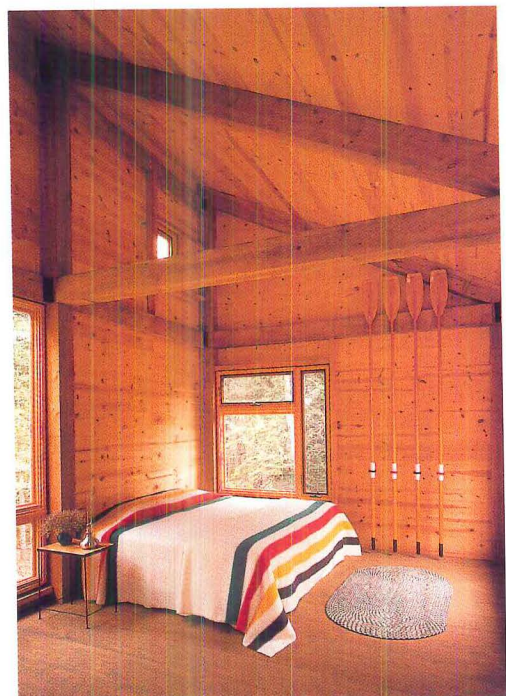
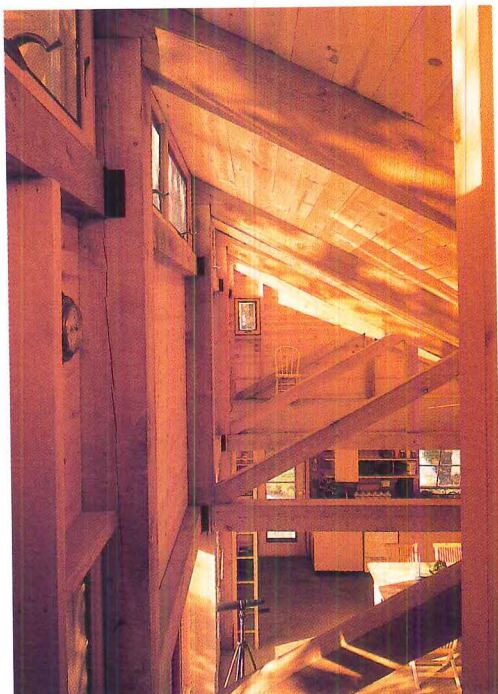
The cabin walls are sheathed in 2 1/4-in.-thick tongue-and-groove decking that is made of three layers of 3/4-in. laminated ponderosa pine. The decking is secured to the posts using 20-penny nails and structural adhesive, with 8-penny nails on 20-in. centers used to toenail the decking together between posts. This allows the decking to act as a massive diaphragm to oppose lateral loads instead of the diagonal bracing normally used in post-and-beam construction. The cabin is wrapped with a vapor barrier and covered with wood shingles. Asphalt shingles cover the roof, and by mid-November the cabin is enclosed.

Rodríguez had the foresters cut as few trees as possible, so that the house would remain tucked into the woods. "It's part of being a good neighbor," she says.



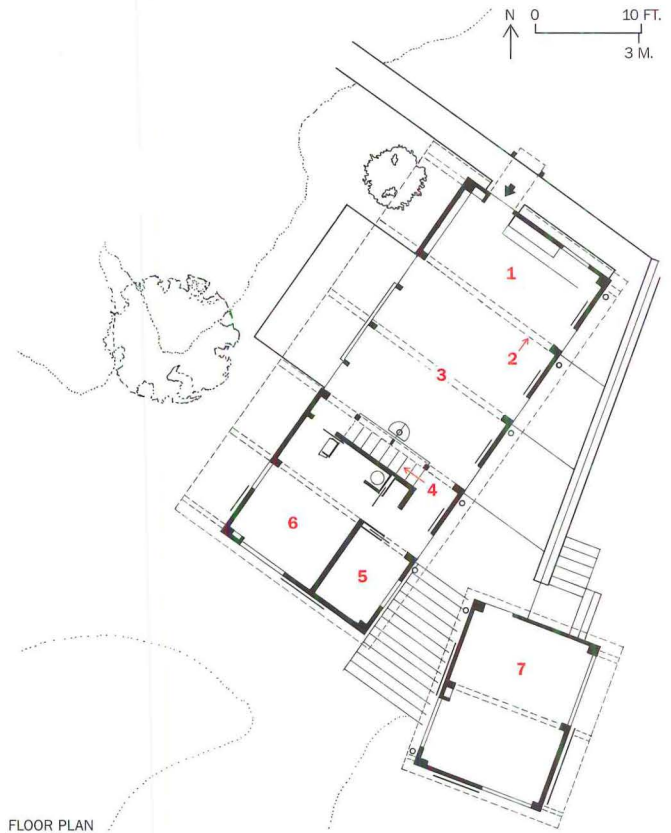


The living room's huge picture windows (above) take in every possible square inch of the island's exceptional views. Clerestory windows (right) allow light to graze the living-room ceiling in late afternoon. Laminated-wood decking, used as sheathing, doubles as the interior wall finish in the guest cabin (far right) and elsewhere.





- 1. Kitchen
- 2. Loft above
- 3. Living/dining
- 4. Up to bedroom
- 5. Bath
- 6. Bedroom
- 7. Guest cabin



**SUMMER 1995** This season is spent on finishing touches. Everything is custom-built by Conway and his son, Mont, including interior and exterior trim, pine kitchen cabinets, whose shelves suspend from threaded steel rods over them, and the cedar screen that separates the stairway to the loft from the living room.

Outdoors, they build the decks and shutters of pine to cover windows during the winter. The larger of these slide on barn-door tracks and are kept flat and square by crossed tension rods fabricated at the local boatyard. Smaller shutters swing away from the windows and are hung from massive custom-made hinges. The shutters make closing the cabin for the season or opening it up again a quick and easy procedure.


As this work continues, the water system is under construction. Water can be pumped from an existing well or collected from the roofs and stored in three 500-gallon polyethylene tanks located in the crawl space under the guest cabin. Once collected, water from the tanks is pumped to a 1,000-gallon Alaska-cedar water tank, built on a post-and-beam platform at the high point of the island, to pressurize it for use. "Here's a typical 'Clarence' invention," says Rodriguez, referring to her builder and pointing to a clear plastic tube that runs from the bottom of the wooden tank to the top. "You can measure the water level by where the ping-pong ball floats inside the tube."

**SUMMER 1996** Rodriguez, Lowrey, and their young son, Jamie, vacation in the completed cabin for the first time. "Coming here is like being at peace, and it's a wonderful thing to be in nature—you're sort of held hostage by it when the weather is really bad, but yet it's thrilling in that regard," says Rodriguez. Sometimes, however, it would seem that even a person with her own island paradise just cannot get far enough away from city life—like the time Clarence Conway revved up his small boat with the outboard engine and motored all the way from Vinalhaven to Fiddlehead to make an unexpected delivery. It was a Federal Express package from Rodriguez's Manhattan office. ■

*Manufacturers' Sources*

- Post and beam frame:** *The Shelter Institute*
- Laminated decking:** *Potlatch*
- Asphalt shingles:** *Iko*
- Wood windows and doors:** *Marvin*
- Screen doors:** *Brosco*
- Custom hardware:** *Hopkins Boatyard*
- Loop door pulls:** *Simons Hardware*
- Floor stain:** *California Paint Co.*

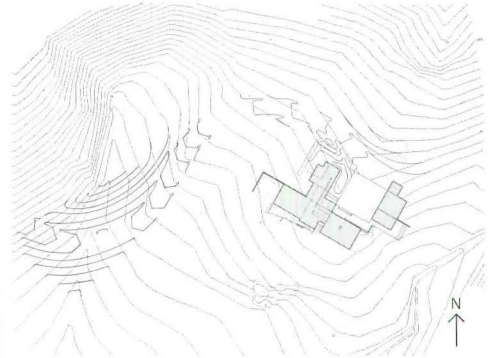
- Wood chairs:** *Smith and Hawken*
- Propane Lamps:** *Humphrey*
- Low-flush toilet:** *Kohler*
- Water tower:** *Hall-Woolford Tank Co.*
- Polyethylene water tanks:** *Hancor*
- Generator:** *Honda*
- Woodburning stove:** *Rais*
- Gas refrigerator:** *Servel*
- Skylights:** *Velux-America*

A photograph of a modern house featuring a courtyard paved with local river stone. The house has a mix of materials, including olive green stucco, dark wood, and concrete. A glass-enclosed entryway is visible, leading to a tall gallery. The courtyard is raised a few steps from the main level. The background shows bare trees, suggesting a winter or late autumn setting.

The entry court (opposite) is paved with local river stone and raised a few steps to enhance its status as a separate element. The primary entrance (this page) leads to a tall clerestory-lit gallery.

# A house in the north Georgia mountains by **SCOGIN ELAM AND BRAY** finds common ground for opposing elements.

by Clifford Pearson



If some architecture today glorifies the collision of building elements or forces, this mountain house in northeastern Georgia searches for balance. Designed for a couple with varied backgrounds and interests, the house accommodates differences by finding common ground. The result is a house that is urban and rural, formal and informal, but never contradictory.

The clients, whose children by previous marriages are grown and live elsewhere, come from different parts of the country: the husband from Missouri and then the Washington, D.C., area, and the wife from Atlanta. He is a journalist and avid collector of regional art, while she has become a knowledgeable gardener and landscaper. But just as husband and wife have learned to share in each other's avocations, the house itself brings different elements together—blending indoors with outdoors, for example. “There isn’t a clear-cut his-her dichotomy in the house,” says Merrill Elam, AIA, one of the three principals involved in the project. “We wanted to keep things seamless.” A weekend retreat that is a two-hour drive north of Atlanta, the house will eventually become the couple’s primary residence.

The first clue that a delicate balancing act is going on here is the arrival court, an elegant stone-paved drive around which the major parts of the house are arranged. “We liked the idea of placing this urban element in a rural setting,” says Elam. “It isn’t exactly a new idea, since the French and English often did it with their country estates,” she adds, “but it works.” The juxtaposition of city and country is heightened by centering a large screened porch on the entry court, an arrangement that offers visitors views through the porch and toward the trees even before they leave the confines of their cars.

Because the house is broken into three major components—a guest house and garage, the screened porch, and the main house—it can seem either large or small, depending on how you define it. Certainly, 4,095 sq ft is a lot of space for a two-bedroom house. But if you subtract the guest house/garage and screened porch from the total, the house is a more modest 2,400 sq ft. From some perspectives, the house seems to disappear in the landscape, while from others its cantilevered roofs give it a strong presence. “I love the enigmatic scale of the house,” says Mack Scogin, AIA. “You don’t quite know if it’s big or small. It keeps changing.”

Set in the foothills of the Appalachian Mountains less than a mile from Georgia’s border with North Carolina, the structure spreads out along the ground. “We didn’t want the house to compete with the rolling forms of the mountains,” explains Elam. Indeed, the flat roofs and strong horizontal lines were designed to contrast with the verticality of the hills and the site’s slender poplars. Although heavily wooded when the clients bought it, the property had been cleared and farmed earlier in the century. A small stream called Barker’s Creek runs near the southern edge of the site, supplying power for an old grist mill and water (*text continues*)

**Project:** Mountain House  
Dillard, Georgia

**Architect:** Scogin Elam and Bray  
Architects—Mack Scogin, AIA, Merrill Elam, AIA, Lloyd Bray, AIA, principals; Denise Dumais, Kevin Cannon, Beth Morris, Kathy Wright, design team

**Engineer:** Palmer Engineering Co.

(structural)

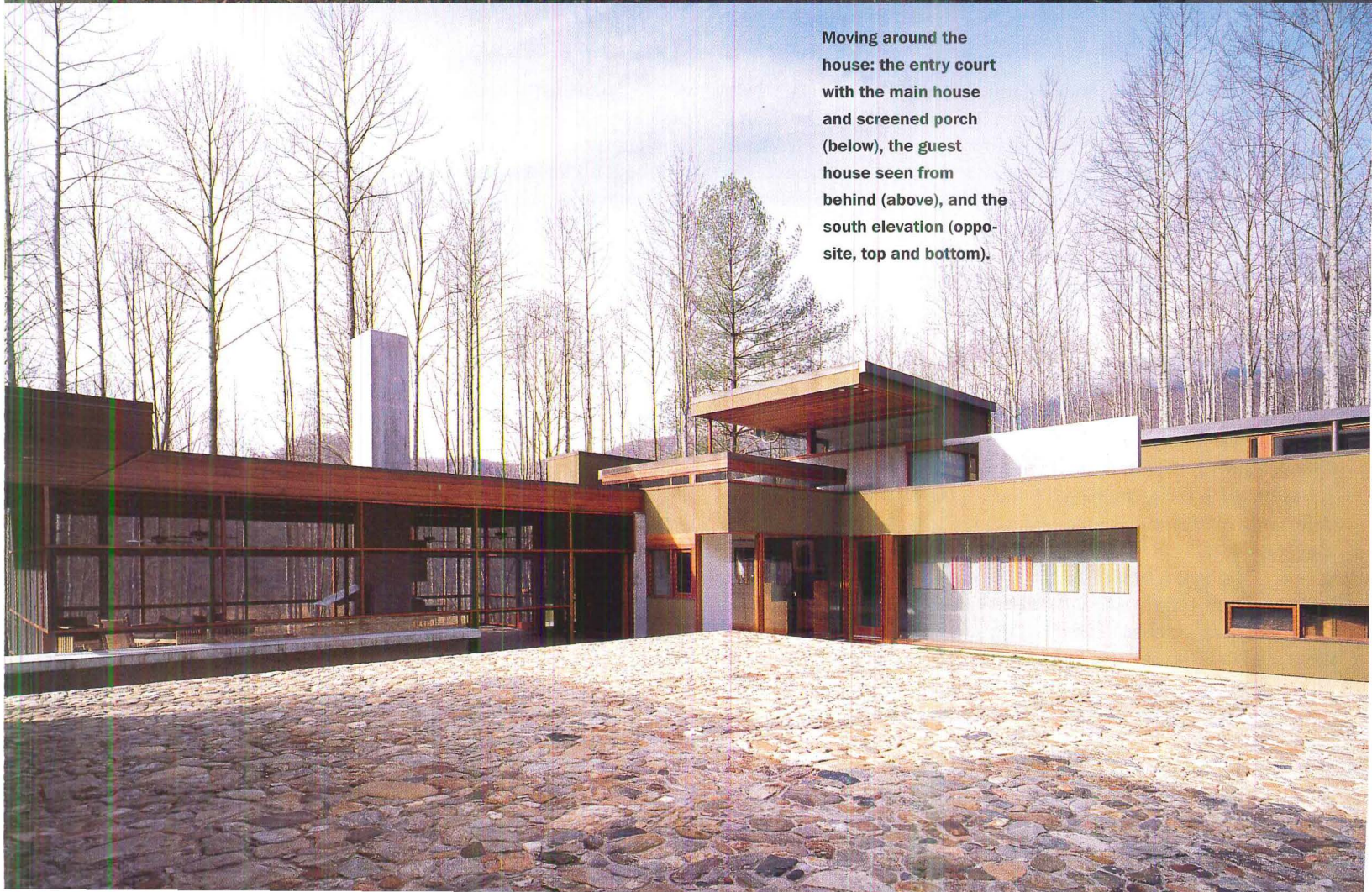
**Landscape Designer:** Marchant Martin

**Consultants:** Ramon Luminance Design (lighting); Waller Davis & Assoc. (hardware); Parker Sales Co. (hydronic heating)

**Builder:** Winfred McKay Construction



Moving around the house: the entry court with the main house and screened porch (below), the guest house seen from behind (above), and the south elevation (opposite, top and bottom).

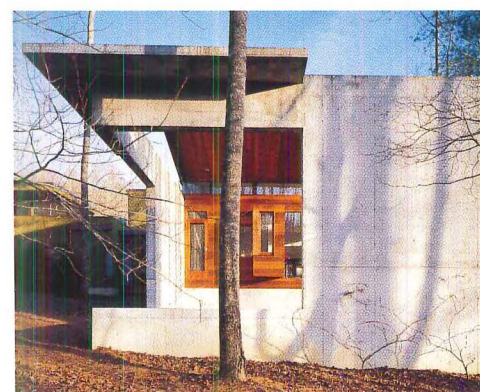






Various spaces offer a range of outdoor experiences. The 900-sq-ft screened porch is practically an indoor space, with its built-in concrete bench (left in photo below), cooking grill, and radiant-heat

floor. A porch off the living room (top right) offers views to a neighbor's pasture, while a concrete wall with its corner cut away (bottom right) helps define an outdoor room to the west of the house.



for horses in a neighbor's pasture. An artists colony is also nearby.

While the site is undeniably beautiful, it presented the architects with a host of challenges. The first was finding the right place on the property to build the house. An old farmhouse had once stood at the foot of a large oak tree near the road leading to the property and the clients originally thought they would build there. But after walking the site with the architects and builder Winfred McKay, the clients agreed that the house should sit farther in on flatter land that had more privacy and offered better views of the pasture. That meant building a long driveway curving through the property. McKay, a third-generation builder born and raised in the area, found evidence of an old access road on the site and followed it, adjusting the route to save as many trees as possible. McKay also used the base of the driveway to form a small dam and create a pond west of the new house.

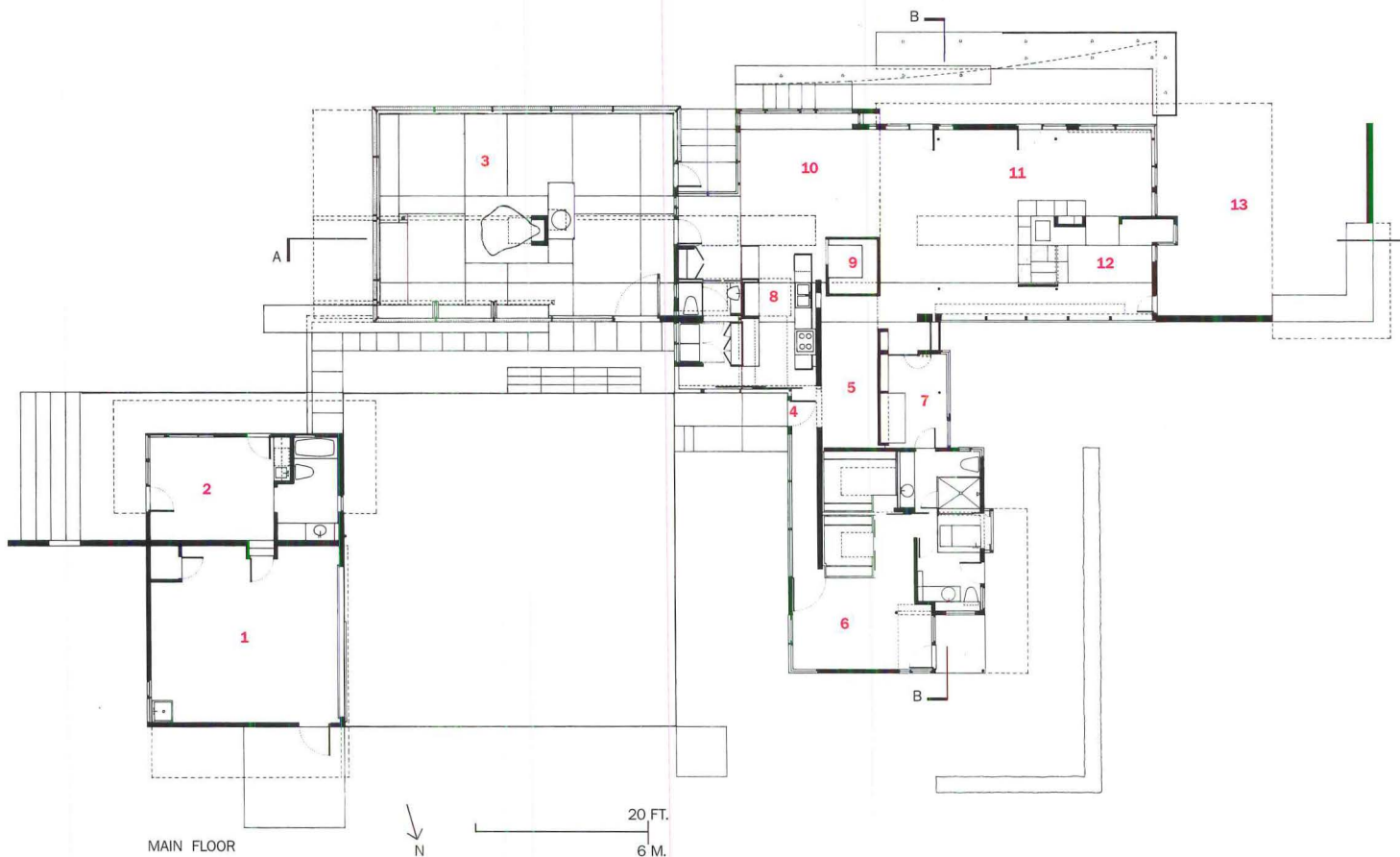
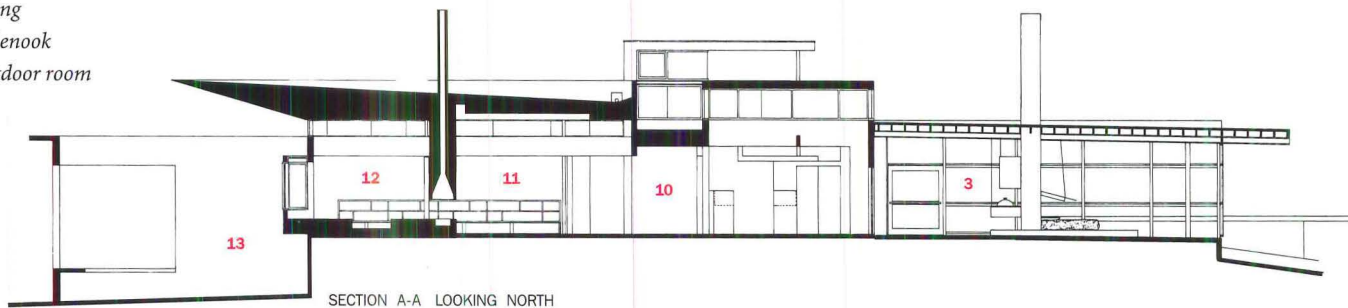
Another problem with the site was the abundance of water. The northeast corner of Georgia is one of the wettest areas on the Eastern seaboard and, as McKay explains, "There's a world of underground springs and streams" on the property. So concrete footings and foundation walls were built to create a partial basement, allowing water to run around the house and down to the creek to the south. A pleasant discovery about the area, though, was the number of local subcontractors who

did high-quality concrete work, a result of the need for retaining walls in a hilly county that gets a lot of rain. Scogin Elam and Bray saw this as an opportunity to use concrete as a key element in the design of the house.

Mostly wood-framed, the house includes some steel and poured-concrete elements. The screened porch, for example, is framed in steel, and steel beams were used for some of the cantilevered roofs (such as the one over the front door). Interestingly, the longest roof cantilever (on the west side of the main house) is supported by wood trusses that, because they run deep into the living room, can extend far beyond the building envelope without the aid of any steel. Steel columns, though, are used to support the open porch on the back of the main house.

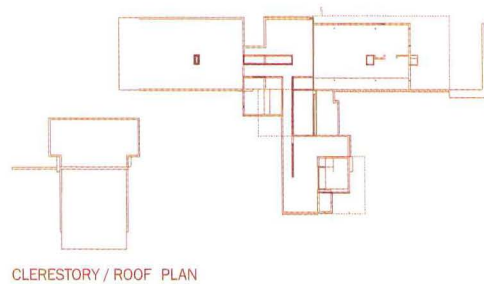
Concrete is put to use for both practical and expressive means. Forming the foundation and base of the house, poured concrete performs much of the structural grunt work. But it is also used to extend the house into the landscape and provide a link between ground and architecture. An exposed concrete wall running through the kitchen and entry gallery in the center of the main house and a concrete chimney in the middle of the screened porch help anchor the house to the land. At the same time, a right-angled concrete wall reaches beyond the western end of the house to partially enclose an "outdoor room." On the opposite side of the house, another concrete wall extends past the guest house.

1. Garage
2. Guest
3. Screened porch
4. Entry
5. Gallery
6. Bedroom
7. Office
8. Kitchen
9. Pantry
10. Dining
11. Living
12. Inglenook
13. Outdoor room



Built for less than \$200 per sq ft, the house combines wood-frame construction with some steel and poured-concrete elements. It arranges three main components—an 800-sq-ft guest house and

garage, a large screened porch, and a 2,400-sq-ft main house—around a central court. A clerestory/roof plan (right) shows how the architects brought in sunlight from above.







A two-story entry gallery (left) provides wall space for art. Wood floors throughout the house are Australian Sydney Blue and have radiant heat-

ing below. The living room (below and opposite) is a sweeping space but has some areas like an inglenook (opposite top) that are more intimate.



This project is just the second house that Scogin Elam and Bray has completed—the first being the Chmar House in Atlanta [RECORD HOUSES, April 1991, pages 76-85]. “We don’t really seek out residential work,” says Elam, “but I enjoy the close client contact you get with a house.” She also likes the chance to combine different kinds of construction systems. “Wood-frame construction is so different from the sort of commercial or institutional work we usually do. We ended up combining what we knew from our other projects with what we learned on this one.” The firm now has two more houses under construction, one in Massachusetts and one in Maine.

The clients found Scogin Elam and Bray through a mutual friend and then remembered seeing the Chmar House on a house tour. The wife’s visit to the architect’s office convinced her to hire the firm. “Talking to Merrill in her war room with all those amazing models, I knew this was the firm we wanted,” she remembers. In terms of requests, the clients asked for just two things—wall space for artwork and lots of views to the outdoors. As part of the balancing act that runs throughout the project, the architects opened the house along much of its south side to views of the creek and pasture and attached a long open porch here as well. The north side of the house is more closed off, providing the wall space needed for the clients’ collection of regional artwork.

The couple moved into the house last summer and what surprises them the most is the changing nature of the daylight (and even moonlight) that comes inside. Although the horizontal sweep of space in the living room, the back porch, and the screened porch is quite strong, the architects provided vertical accents with extra height in a few places, such as the entry gallery and a portion of the master bedroom. Wherever the roof is raised, clerestory windows bring light in from above.

The clients also like the fact that the screened porch essentially acts as a second living room—playing country cousin to the more urban indoor one on the other side of the house. Equipped with a built-in concrete bench that extends beyond the screens on the north side, a large grill hanging off a central chimney, and radiant heating in the concrete floor, the 900-sq-ft covered porch works year-round for entertaining.

By setting the guest house a few feet from the main house, the architects provided privacy while maintaining the feeling of a closely knit compound. Although small, the guest house has its own outdoor porch overlooking one of the property’s two ponds and has proved comfortable for adult children and in-laws.

“The house has some radical moves that seem perfectly natural,” explains Scogin. “Things such as centering the house on the screened porch—a void—and treating the entry drive as an object raised slightly above grade are really quite radical. But they don’t hit you in the face.” Looking back on the project, Scogin concludes, “The house is much like the clients. It seems simple and straightforward at first, but becomes more complex the better you get to know it.” ■

#### Manufacturers’ Sources

**Redwood windows:** custom by Simpson Millworks

**Glass:** Clayton Mountain Glass & Mirror Co.

**Mahogany doors:** custom by Simpson Millworks

**Maple and slate cabinets:** Peter Bull; Gillespies Cabinet & Furnishings Shop

**Paints and stains:** Glidden; The Martin-Senour Co.

**Paint on metal:** Duron

**Stucco paint:** Tnemec Coatings

**Plastic laminate:** Wilsonart

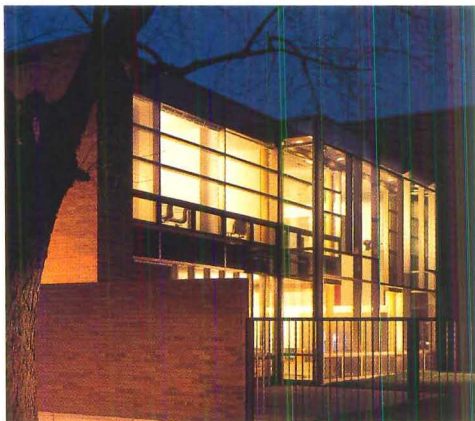
**Ceramic wall tile:** Dal-Tile

**Australian Sydney Blue wood floors:** Woodrich Wood Floors



2637

# Set among historicist neighbors, a house in Chicago by **KRUECK & SEXTON** provides a welcome break with the past.



**By putting the two-story curtain wall on the rear of the house (rather than on the front, as originally proposed), the architects opened up the house while preserving a sense of privacy.**

by Cheryl Kent

development association passed the plan, indeed, expressing admiration for the Krueck & Sexton house.

Despite the house's cost of \$2.2 million (including the price of the land) and rich features like marble, granite, terrazzo, and imported glass tile, together with much built-in cabinetry and furniture, the house does not feel opulent in the material sense. Rather, it is the luxurious disbursement of space and the natural light (which is generous, even on a gray February day) admitted through the towering two-story glass curtainwall that give the house its sensuality and warmth. Designed for a couple, their two young sons, and a live-in sitter who were tired of the narrow rooms and limited light in their old residence, the house provides a welcome contrast to the past. And while they tended to crowd into just one part of their former residence (a speculative house built in the 1980's), they find themselves enjoying all of the new one.

Warmth is not a word usually associated with Krueck & Sexton's work. The firm is mostly known for a series of Chicago apartments in which steel featured prominently and highly lustrous paints (some actually intended for painting cars) and furniture upholstered in metallic leathers created a coolly futuristic feeling [RECORD INTERIORS, mid-September 1988, pages 50-59].

Not so this house. At the center is the double-height living room which is visible from nearly everywhere in the house. Sexton says, "If you want, you can be in touch visually with everyone and all parts of the house." Design principal, Ron Krueck, FAIA, adds, "It's like a Roman house; you don't have to be in [the living room] to participate in it." Indeed, the living space is like an ancient Roman house's central courtyard, through which one must pass to get to another room. This implied connection with all parts of the house lends an intimacy to the design that industrial materials cannot undermine.

The second level forms a U-shape wrapping three sides of the living area below. At one end is the modest-sized master bedroom and bath. A skylit corridor overlooks the living area and leads (*text continues*)

**T**ucked into Chicago's North Side, among new residential developments flaunting bulging bays and faux antique details, is an unapologetically Modernist house—steel-framed, with a two-story curtain wall, looking self-possessed and completely plausible in this unlikely neighborhood.

Designed by Krueck & Sexton Architects, the house was originally designed to have a glassy facade that would visually bridge the housing developments on either side. The clients—despite their attraction to a nearly transparent house—feared the scheme provided too little privacy. So the architects rotated the house 90 degrees. "That was the breakthrough," says project principal Mark Sexton, AIA.

From the street, the house now presents a modest, relatively narrow face largely composed of masonry, rather than a length of glass. Instead of a bridge, the house has become a punctuation mark between neighboring developments. With its tight brickwork, yellow canopy supported by an off-center yellow column, and vertical strip of windows, the street elevation achieves a Mondrian-like feeling of poetic geometry, at once rigorous and open.

The land for the 6,000-sq-ft house came with conditions. It was purchased from the adjacent development and required the architects to conform to certain design guidelines and submit their plans for approval by the development association. The architects made no attempt to match the neighbors' historicist details. But by using required materials, such as masonry and limestone, they were able to meet the design standards. The

*Cheryl Kent is a former correspondent for Progressive Architecture and writes about architecture and design from Chicago.*

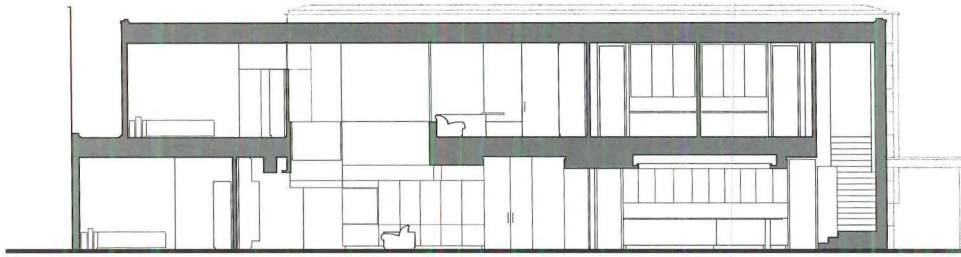
**Project:** Brick & Glass House  
Chicago, Illinois

**Architect:** Krueck & Sexton  
Architects—Ronald Krueck, FAIA,  
design principal; Mark Sexton, AIA,  
project principal; John Carhart, project

architect; Hans Thummel, John Ronan,  
design team

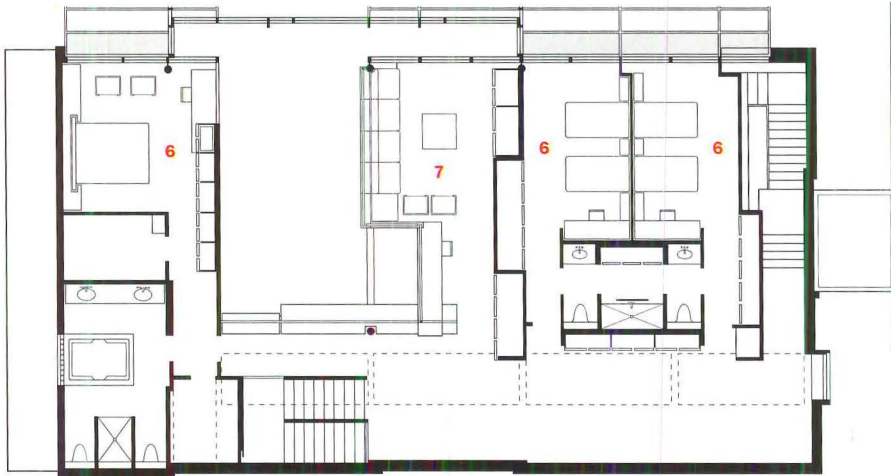
**Engineer:** Tylk, Gustafson & Associates  
(structural)

**General Contractor:** Fraser  
Construction

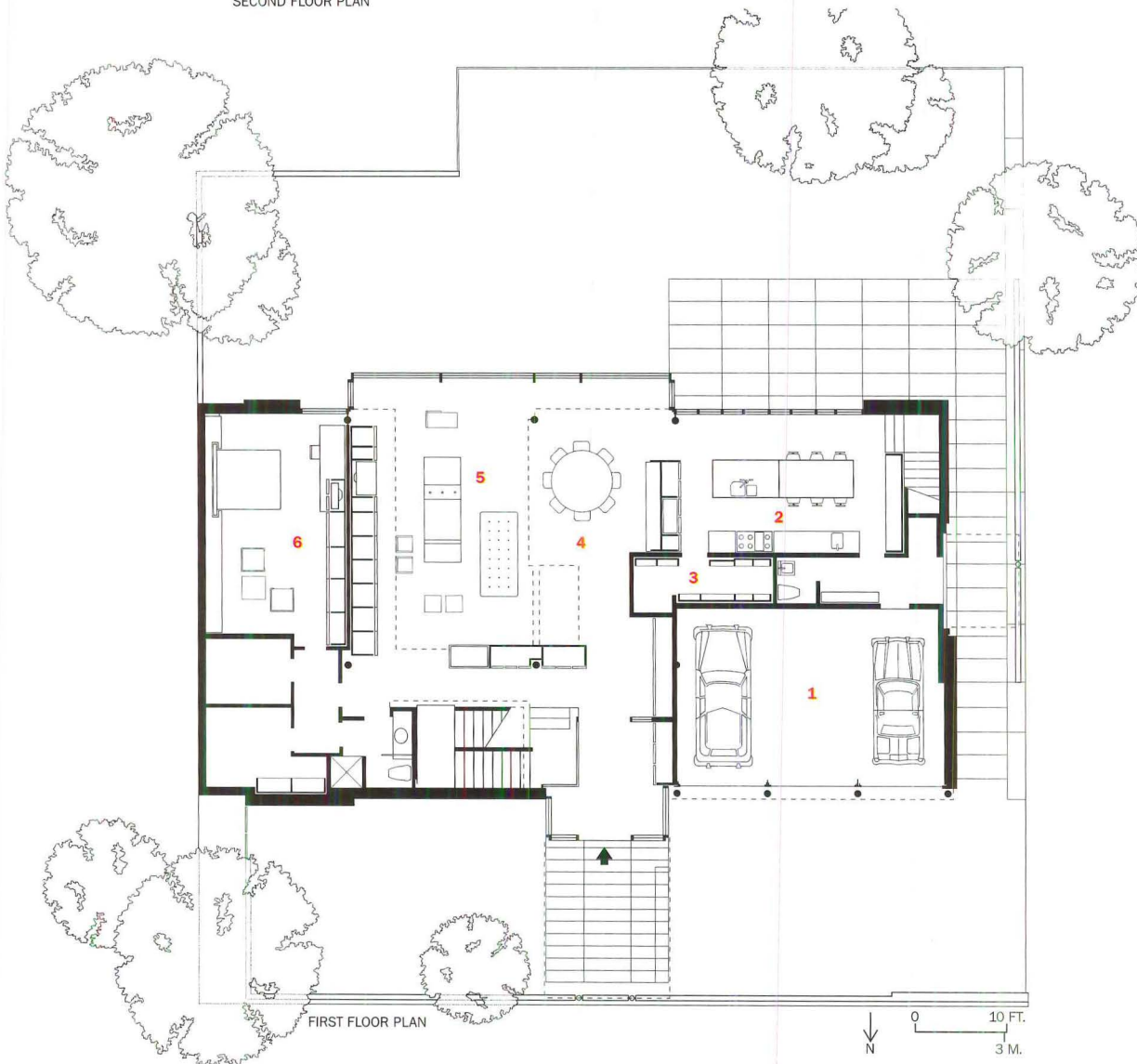


SECTION

- 1. Garage
- 2. Kitchen
- 3. Pantry
- 4. Dining
- 5. Living
- 6. Bedroom
- 7. Library



SECOND FLOOR PLAN



FIRST FLOOR PLAN

The 6,000-sq-ft house sits on a 100-ft-by-88-ft lot that is bordered by new townhouses on either side. Although the architects initially conceived of the house as a pure rectangle, they eventually decided to express a variety of volumes that overlap and interconnect. The two-story curtain-wall facade on the rear of the house is a Mondrian-like composition that also opens up views to the south (opposite).







In the living room (left, above, and opposite), cabinets are surfaced with low-lustre paint in a subtle range of col-

ors. Projecting and recessed surfaces serve as a kind of mural and add spatial complexity to the room.

past the library cantilevered over the dining space, and on to the boys' bedrooms and common bath beyond. A back stair at the end of the hall leads down to the kitchen, adjoining mud room, and rear entry.

There are built-in cabinets throughout the residence—cantilevered into the living room or standing free—and these are responsible for some of the house's sculptural moments. The cabinets also accommodate the detritus of daily life, leaving few distractions from the architectural quality of the space.

To gain the greatest spatial freedom, the house is framed in steel. Slender yellow columns on a 20-by-26-ft bay punctuate the central living space. Just as steel framing is rare in a residence, so too is a two-story curtainwall. Using a bronze-tinted aluminum, off-the-shelf system appropriate for any high-rise, the architects manipulated the dimensions and framing of the glass, ultimately making 60 sheets of drawings to detail the elevation.

An unpleasant surprise came early in the project when soil borings showed the ground was too unstable to support a conventional foundation. As a result, the architects decided to sink caissons to a depth of 40 ft to guard against catastrophic settling. The new foundation added \$50,000 to the cost of the house and meant that a planned basement had to be eliminated.

The house's entry sequence has created some confusion among visitors. Despite all the clues to the contrary, the canopy visible from the street shelters a secondary entry to the house. To reach the main door, one proceeds along the side of the house past three garage doors to two grand glass doors that offer views through the house to the opposite side yard. There is no doubt that this is the formal entry once you are there, but the confusion until that moment is real.

Krueck & Sexton had methodical clients who had spent years living in a well-built but poorly laid-out house, a year looking at existing housing and finding nothing they liked, months more searching for an urban site for a commissioned house, and every Saturday for six months in the public library looking at foreign architecture magazines for design ideas. In the end, the clients asked the architects for a kitchen separate from the dining area, a mudroom where their small sons could take off their shoes and coats, and a two-story living space. Bedrooms are small, so extra space could go into the living area. "We don't live in the bedrooms, so I said, 'Keep them small,'" recalls one of the clients.

Although all of their friends warned them not to build their own house and told horror stories of cost over-runs and late schedules, they went ahead with the project. In the end, they enjoyed the experience so much they are eager to do it again and with the same architects. ■

*Manufacturers' Sources*

**Wood joists:** TJI

**Brick:** Carolina Ceramics

**Aluminum curtain wall:** Active Industries

**Low-E glass:** Midwest Glass

**Double-plastic skylights:** Exarc

**Full-mortise locksets:** Schlage Lock

**Hinges:** Hager

**Pulls:** Builders Brass

**Cabinetwork and custom woodwork:** Alexander

**Paints and stains:** Benjamin Moore

**Wall coverings:** Maharam and Knoll

**Plastic laminate:** Nevamar

**Terrazzo floor:** Metropolitan Terrazzo

**Carpeting:** Karastan Bigelow

**Custom perforated-metal chairs:** Tesko

**Custom tables:** Midwest Glass

**Custom upholstery:** Joe's Upholstery

**Interior ambient lighting:** Wiremold

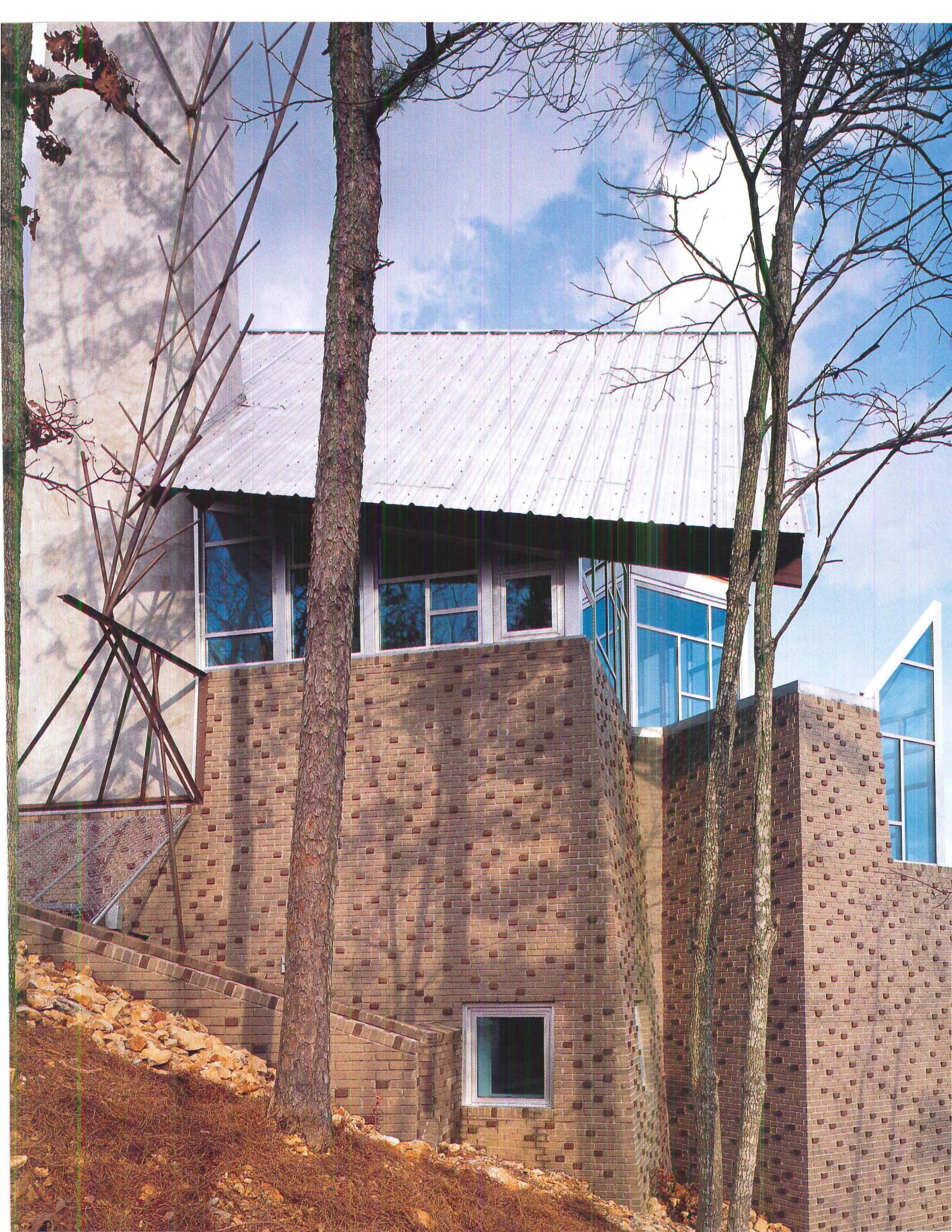
**Downlights:** Lightolier

**Exterior lights:** Lightolier and Bega

**Light controls:** Honeywell

**Toilets and sinks:** Kohler



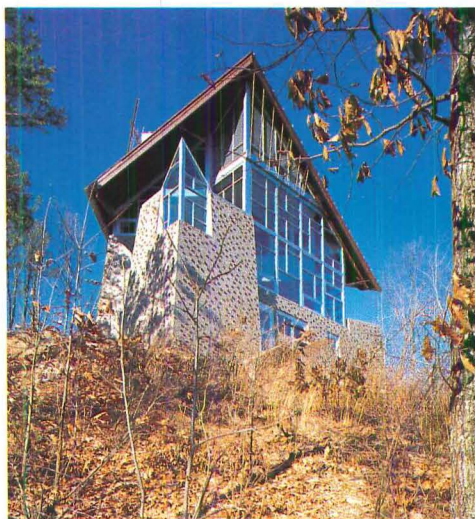


# On a ridge above the Tennessee River, MOCKBEE COKER designs a weekend retreat that steps down its site and reaches toward the sky.

by Karen Stein

It was designed in section," says Samuel Mockbee of his and partner Coleman Coker's latest house. Part of an informal series of residential projects that the duo has produced in the rural South over the last decade [RECORD, April, 1992, pages 132-139], this one steps down its dramatic site, a bluff above the Tennessee River, as if to exhibit its x-ray approach. The setting—three miles from Mississippi, across the water from Alabama, but on Tennessee soil—seems to mirror the architects' position in the profession: all over the place, but firmly rooted in the South. Both architects have struggled with the limitations of the rubric "regionalist." In fact, Coker echoes Antoine Predock's adage that being called "a regionalist means you can get a job out of state." Says Coker: "We look at where we are and try to make connections to it." As for being comfortably ensconced in the South, Coker demurs: "We're considered so 'far out' here. We're getting more criticism than clients."

That Mockbee Coker's work eludes simple categories of style is not surprising, considering that they themselves seem to eschew traditional architectural practice. Business-minded principals, a permanent staff, even an actual office, all have been tried and abandoned over the almost 15 years of the Mockbee Coker partnership. What survives is an ongoing sharing of design goals and teaching ideas that withstands the oscillations of the peripatetic Mockbee and the more methodical travelings of Coker. Mockbee is a professor at Auburn University in Alabama and shuttles between the school's home base and an outpost in Greensboro [RECORD, March, 1996, pages 74-77], and commutes as a visiting critic, for this semester at least, to Yale in New Haven, Connecticut, but calls Canton, Mississippi, home. Coker, who spent part of last year in Rome as a fellow at the American Academy and a majority of 1993-94 in Cambridge, Massachusetts, as a Loeb Fellow at Harvard, lives in Memphis, where this year he helped establish the Memphis Center for Architecture. Although unlikely types to be championing the virtual office (they draw, paint,



1. Bedroom                      3. Study  
2. Living/dining                4. Master bedroom

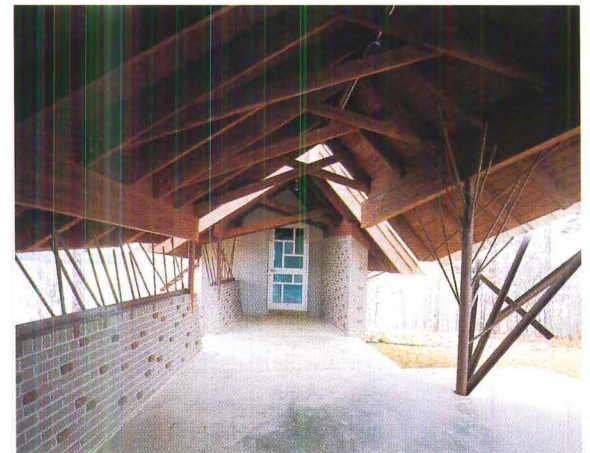
make sculpture, and write letters by hand), that, in effect, is what they have. Of the bond, the art-school trained Coker says: "He's a painter. I do sculpture. We don't sit around talking about architects. We talk about Klimt, Degas."

The architects work differently on each house, giving their process an extemporaneous feel that seeps into their designs. For this house, Coker went to Greensboro equipped with site photographs and documentation of existing conditions. He and Mockbee sat together over an evening and the following day, drawing and discussing their ideas. "The site is such a strong factor. It gave the direction to head in," Coker says of the scheme that steps down a hill, long in its approach to the water and suddenly tall at the waterfront with materials chosen for their woody texture or, in the case of galvanized aluminum siding, for its industrial agricultural reference. On his return to Memphis, the scheme was translated immediately to model form. "What the model is, is (*text continues*)

**Project:** House on the Tennessee River  
Hardin County, Tennessee

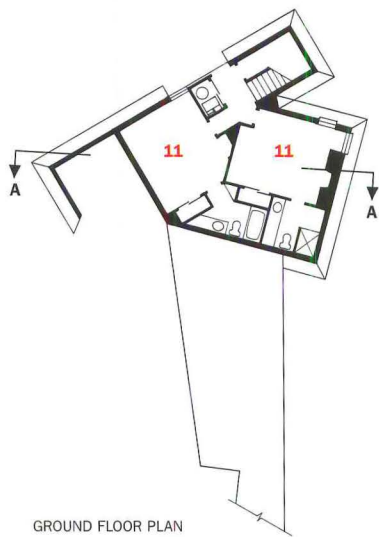
**Architect:** Mockbee/Coker Architects—  
Coleman Coker, partner-in-charge;  
Agrippa Spence Kellum, Patrick  
Johnson, Samuel Mockbee, project team

**Interior Design:** Schecter and Flom  
**Consultants:** Tom Pellett and Michael  
Hatcher (landscape); Graham's  
Lighting (lighting)  
**General Contractor:** L.D. Briley  
Contractor

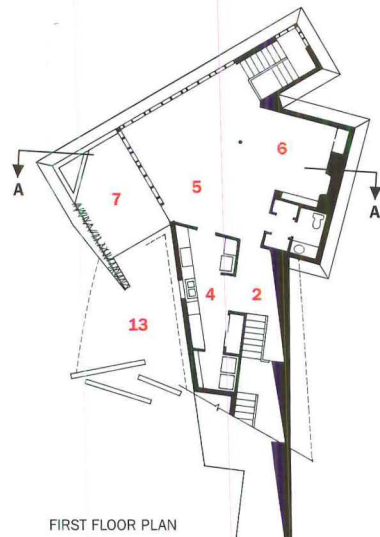


The upside-down V form of the carport, which appears to float on steel rods and beams, reinforces the structure's horizontality (top). The roof also screens neighbors without blocking views

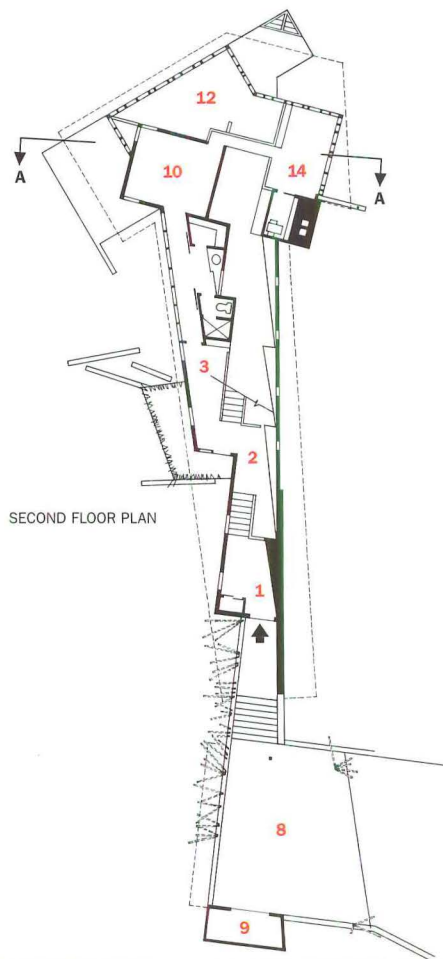
of the Tennessee River (opposite). Its open-jawed north end beckons toward the entry (above). From door to "prow," the 100-ft-long house steps down 30 ft to the river.



GROUND FLOOR PLAN

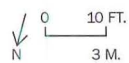


FIRST FLOOR PLAN



SECOND FLOOR PLAN

- |                  |                    |
|------------------|--------------------|
| 1. Entry         | 8. Garage          |
| 2. Gallery       | 9. Storage         |
| 3. Sitting room  | 10. Master bedroom |
| 4. Kitchen       | 11. Bedroom        |
| 5. Dining        | 12. Open to below  |
| 6. Living        | 13. Terrace        |
| 7. Exterior deck | 14. Study          |



what we ended up with," says Coker. Details were faxed back and forth.

The simplicity of the process was made possible by the clients, two brothers, both doctors, who live in Memphis and wanted a weekend retreat. "They were," says Coker, "completely receptive." The older brother reports that it's a family hobby to look at land with no particular agenda, but when this 1 1/2-acre parcel became available, the duo felt compelled to buy it and build on it. When the brothers sent away to *Better Homes & Gardens* for a set of plans that would be their house, a mutual friend questioned their approach: As collectors of contemporary photography and Pre-Columbian artifacts, why shouldn't they exhibit the same level of connoisseurship in their house? The brothers called Mockbee Coker.

One brother, clearly mesmerized by what he repeatedly refers to as the "unfolding" of overlapping spaces as the house traverses the site, calls it a family "art project." Unfolding also characterizes the way the house was built. Coker convinced the clients to negotiate a package deal with the contractor, with whom the architect had previously worked, rather than solicit competing bids, in order to remain within the \$350,000 construction budget. This required more intense site supervision, but also allowed for on-the-spot invention. With direction from Coker, it was the masons who created the random pattern of maroon brick set perpendicular to greyish-brown brick (for splayed walls, the brick set on its edge

**A river barge (right) is a typical view from the suspended study (below right). Andres Serrano photos line the stair (below left).**

offers structural support, preventing sag within the air space) and the steel workers who arranged the bundled rods that act as deck railing. Says Coker of the method, in what could be a motto for the Mockbee Coker partnership: "It's the importance of making and thinking at the same time." ■



*Manufacturers' Sources*

**Veneer brick:** *Tri-State Brick Company*

**Aluminum curtain walls, windows and doors:** *Kawneer Architectural Products*

**EPDM roofing:** *Carlisle Syntec system*

**Galvalume roofing:** *ASC Pacific, Inc.*

**Light blue low-E glass, skylights:** *PPG Industries*

**Exterior stain:** *Pratt and Lambert*

**Lever locksets:** *Sargent (10 Series)*

**Interior paints:** *Donald Kaufman Company*

**End-block flooring:** *Oregon Lumber Company*





A work by Kiki Smith is part of the owners' collection of photography and pre-Columbian artifacts. Sunlight gathers in a pool at the southeast the end of the house, filtering

toward the front door over 100 ft away. Exposed rafters echo the structural expressionism of the exterior's artfully bundled steel rods and pipes.



A wood-clad projecting volume signals the stone-paved entrance of the Teiger house. Upper-level glazing is protected on this south-facing elevation by a brise soleil.



# A mathematical ordering system helped

## ROTO ARCHITECTS

### sculpt a complex scheme.

by Wendy Moonan



The wing at bottom in photo left focuses on views. A pool ties the wing to guest quarters. In an earlier design, bedrooms had been placed in the gap.

Clark Stevens and Michael Rotondi of RoTo Architects regard change during design as positive. In the case of the Teiger house, that's a good thing. In 1991, two years into the planning of this 6,500-sq-ft house in rural New Jersey, there was a major modification in the program: the client got divorced. Redesigning the children's wing and replacing a library with a folk-art-display space were only two of the most conspicuous design changes. Since 1991, when Rotondi, a founding partner of Morphosis, left to form a new Los Angeles firm with Stevens, he has been redefining the way he works as an architect. And taking change in stride, "trying to integrate idea and experience," he says, is part of the process. "Over the years I realized that when you are moving through the world, your body is experiencing things and information is coming from all directions. Your body is a receptor. How do you take this complexity of experience and come up with an ordering system?"

David Teiger, the former owner of a management-consulting firm, chose RoTo over 20 firms. He produced a 28-page program (down to the sock drawers) and told the designers, "I spent 40 years thinking about this house."

Teiger knew the spectacular site well because he had covered every inch on horseback. It is a five-acre rectangle that begins in a forest and opens onto a grassy plateau that drops into a valley dotted with pastures. There are uninterrupted views to the hills 30 miles to the northwest. Rotondi decided to tuck the house into a slope at the end of a 100-year-old bridle path, where the forest opens onto a meadow. *(Text continues)*

Wendy Moonan is a contributing editor at House & Garden magazine.

PHOTOGRAPHY: © JEFF GOLDBERG/ESTO



The complex layering could only be achieved by obsessive attention to detail. The metal roof, for example, was installed by a sculptor: perfectly calibrated reveal edges take the place of the usual flat fascia. The wood-clad volume of the dining room (below) and a canted extension of the living room (north elevation opposite) express the interpenetration of the two main ordering systems. Tilted roofs, visible at the entry courtyard (top right), evoke site slopes. The house is carved into the site so that the upper-level pool is at grade (right).





The evident complexity of the design comes out of highly specific responses to site and program issues. It is an assertive sculptural presence, but it hunkers low into its site. “Rotondi had the idea that the house be of the land and not on the land,” Teiger says, in a reference to Frank Lloyd Wright. It was designed, says Rotondi, from the inside out as much as the outside in. The architects developed an ordering system to enable the design to respond to a range of issues—whether environmental, programmatic or a combination, and on a range of scales—from the expansive view to the alignment of cabinet-door edges at a window. Operating horizontally, vertically, and on a diagonal, “It’s a system of volumes, frequencies and grids that are derived from the siting of the house,” explains Michael Brandes, the site architect.

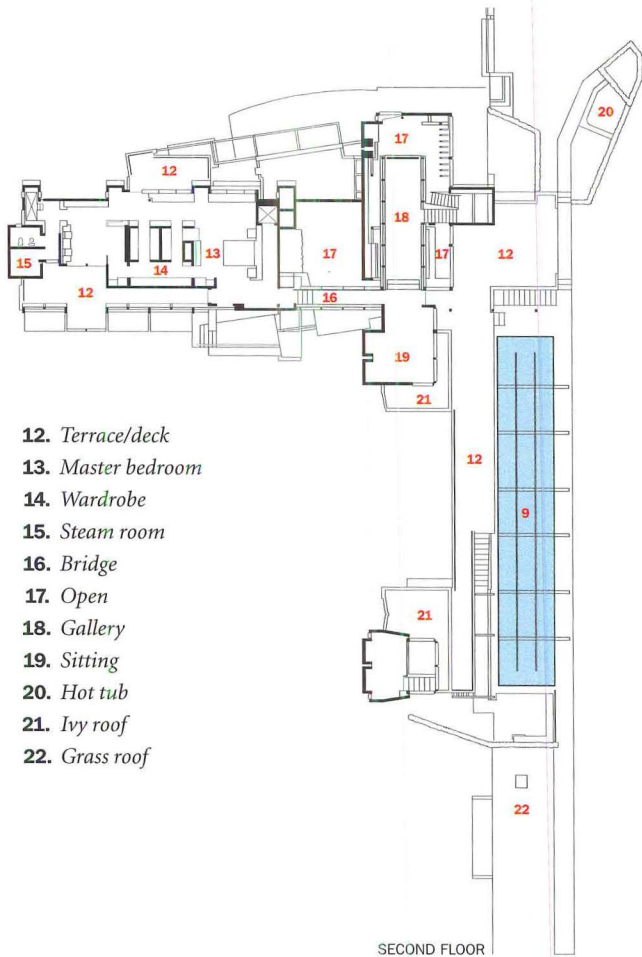
**Project:** *Teiger House*  
Somerset County, New Jersey  
**Owner:** David Teiger  
**Architect:** *RoTo Architects—Michael Rotondi, Clark Stevens, principals; Brian Reiff, Craig Scott, Kenneth Kim, Tracy Loeffler, Yusuke Obuchi, project team.*  
**Site Architect:** *Brandes:Maselli Architects—Michael Brandes, Donato Maselli, principals*

**Consultants:** *Douglas T. Lawton (owner’s representative); Walter S. Carell, Jr. (landscape); Brigitte Semtob, Ivan Chermayeff, Frank Maresca (art installation); Sandy Grotta, Brigitte Semtob (interiors); Fisher Marantz Renfro Stone (lighting); Chermayeff & Geismar (graphics)*  
**Contractor:** *F. J. Korfmann Contracting*

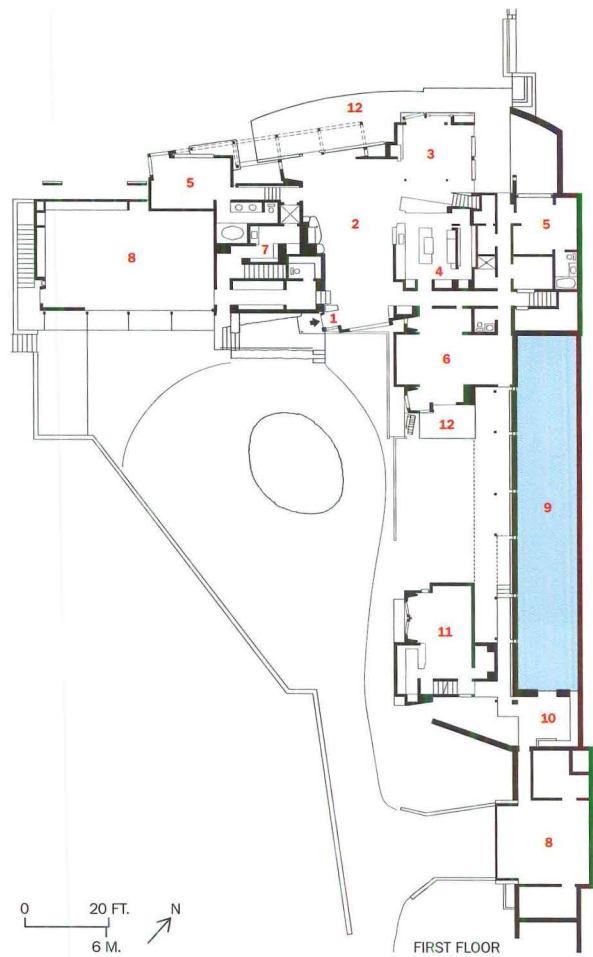
The house was designed as an L, which completes the rectangular edge of the forest defined by farm fields. The heart of the house is the outside corner of the L where the wings meet, “passing through each other like interfering magnetic zones, creating a third zone for the family and living area,” Rotondi says.

Each wing has a different formal ordering system. The east-west wing is laid out on a 20-ft bay system that is marked by vertical light monitors (previous pages), and is divided further into both fourths and fifths. These divisions offer a rich but systematic way to align centerlines of doors, walls, and windows—even the beams above the bed, which vary in width and spacing to conform to the system. “We are trying to get multiple rhythms working simultaneously,” Rotondi explains. The north-south wing is organized on 10- and 12-ft increments. Vertical spacing is organized on a separate system, with important datum lines at 18 in. and 7 ft. “It was almost like learning a language. The house has such a precise vocabulary,” says Doug Lawton, a Cambridge Seven architect who served as the client’s representative during construction.

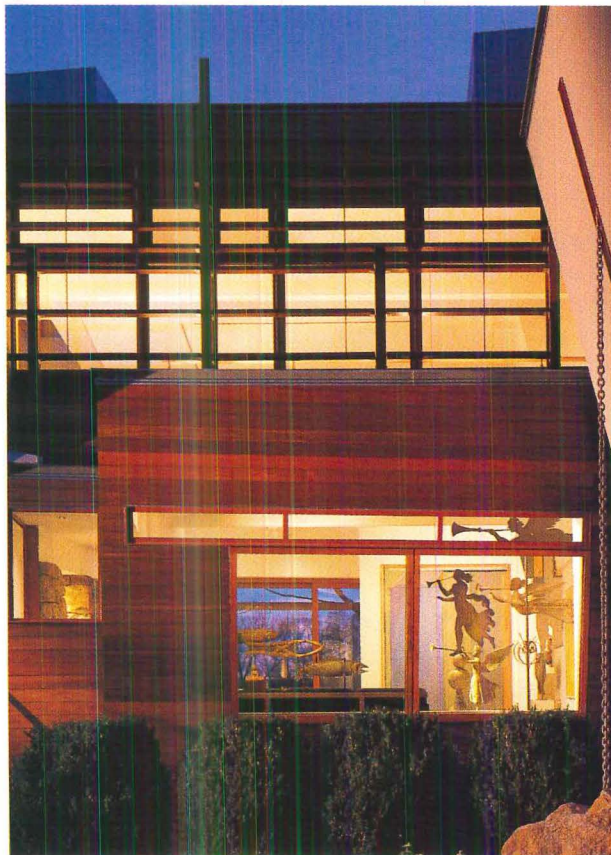
Once the system was established, the designers overlaid a palette of materials. A central fieldstone hearth and fieldstone retaining walls lock the structure into the site, a direct reference to Wright. A “structural” grid of timber framing is alternately revealed and shrouded by drywall within and synthetic-stucco cladding outside. A teak-like wood siding, called Pau Lope, expresses the interpenetration of one modular system by the other.



- 1. Entry
- 2. Living
- 3. Dining
- 4. Kitchen
- 5. Bedroom
- 6. Media room
- 7. Mud room
- 8. Garage
- 9. Pool
- 10. Grotto
- 11. Guest suite
- 12. Terrace/deck
- 13. Master bedroom
- 14. Wardrobe
- 15. Steam room
- 16. Bridge
- 17. Open
- 18. Gallery
- 19. Sitting
- 20. Hot tub
- 21. Ivy roof
- 22. Grass roof



The house's overall ordering system is most evident on the southern entrance elevation (right), where the horizontal 1-ft datums are called out by a Pau Lope wood brise soleil, which is extended to protect a terrace (far right). Posts and beams that appear extruded from the house lead the eye to northwestern views (opposite).





Left: Dining room from living room; bottom left: gallery; below: living room looking toward entry.



For example, a second-floor bridge to the master bedroom passes through the gallery to emerge as a canopied walkway at the pool. There were additional layers of “rules.” Windows, for example, were placed at changes in plane or materials—the trim altered to reflect the adjacency of a cabinet, soffit, or grid line. There are windows of every shape and size, most custom-made in teak trimmed in ash.

Because the system was so complex, however (it includes a preference for L-shapes that lock elements into each other, for example), Rotondi compares the design process to “riding a bronco.” Indeed, the concept required decisions at such a level of specificity that even voluminous plans could not cover them all. “The change orders were gigantic,” says contractor Frank Korffman, who worked there for four years. “We could have built the World Trade Center with the papers we had.” Still, as on-site craftspeople began to understand the system, they started making suggestions, such as jogging a closet-door thickness to recognize the change in an adjacent wall plane. Teiger, the architects, and site mechanics all contributed to the realization of the design.

The creation of such “rules” for the Teiger house had one serendipitous effect. It became a means to accommodate the numerous

program changes requested by the client. Each change could be considered within the terms of the system, and adapted to it. To handle the project’s complexities, Brandes was sent east from RoTo’s California offices with architect Donato Maselli. (Brandes and Maselli have since opened their own office in New Jersey.)

Considering its evident complexity, the experience of the house is that the sculptural elements recede. The L shapes in plan causes the visitor to move through the house like a ballet dancer, veering to one side of a column, guided to the next space by a sun-splashed surface. The house is delineated by light. The quietude many visitors feel, offers Rotondi, “comes from your being the focal point of all those lines.” ■

*Manufacturers’ Sources*

- EIFS Cladding:** Sto
- Roofing:** Vulcan (EPDM) and lead-coated copper
- Glazing:** Duratherm (wood); Hopes (steel); Fiore (metal skylights)
- Millwork:** Pine Brook Cabinets (Jerry

*Laracca)*

- Architectural metal:** Aileron Design, Red Hook Fabricators
- Hardware:** Technolumen, Stanley
- Telecommunications:** Franklin Central Communications
- Tile and stone:** Charles Lehr

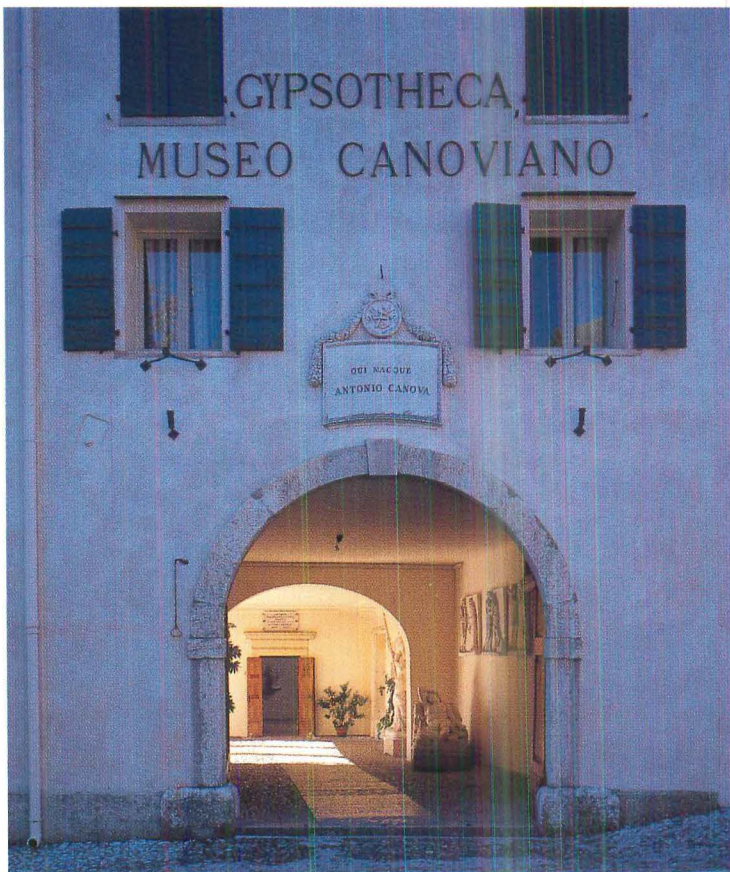


# A look back: One artist, one architect, one photographer's obsession.

**RICHARD BRYANT TRAVELS THE WORLD PHOTOGRAPHING THE BEST NEW ARCHITECTURE.**

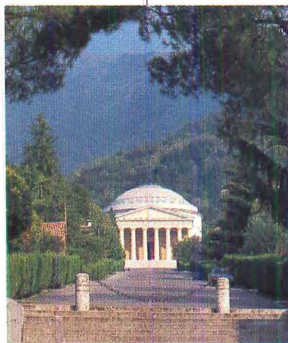
**ON SUCH A TRIP, HE FIRST SAW THE MUSEUM OF 18TH CENTURY SCULPTOR ANTONIO CANOVA, REMODELED IN THE 1950'S BY CARLOS SCARPA. HE VOWED TO RETURN.**

photo essay by Richard Bryant



**F**ive years ago while in the Veneto photographing Andrea Palladio's Villa Barbaro at Maser, I first visited the Canova Museum [former home and studio of 18th-century sculptor Antonio Canova] in the village of Possagno, Italy. The small, uninspiring entry, where a few books and postcards were for sale, gave no hint of what lay beyond. Entering the *gipsoteca* (gallery of cast models) proper, I knew I had to return to indulge my obsession with interpreting through

*London-based Richard Bryant studied architecture in Kingston.*



photography the combination of form, space, and light. Recently, I spent six days photographing in the museum—intensely hard work and pure pleasure. The original plaster casts of Canova's great works have a raw power that is sometimes lost in the highly polished sculptures installed around the world. In 1955, Carlo Scarpa was commissioned to restore the buildings, rearranging the sculpture and adding a wing to the overcrowded museum. The result is dramatic. ■

**Canova's casts line the 18th-century *gipsoteca* (above). Canova is buried up the hill (left).**



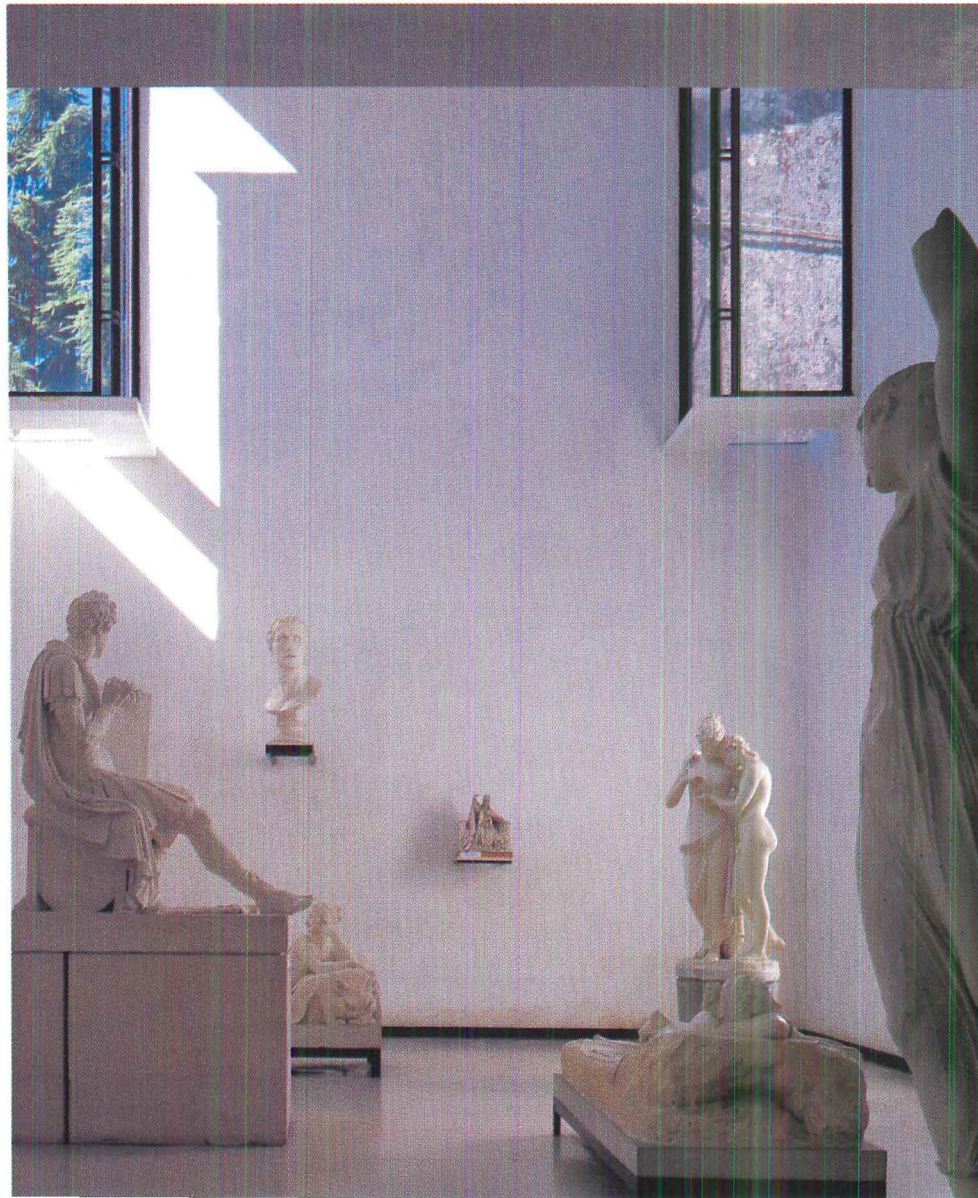
**“THE ALCHEMIC COMBINATION OF SCARPA AND CANOVA PROVES TO BE A POTENT ONE. SCARPA’S GENIUS FOR MANIPULATING SOLID AND VOID AND LIGHT, COMBINED WITH CANOVA’S FORMS, RESULTS IN AN ARCHITECTURAL JEWEL.”**







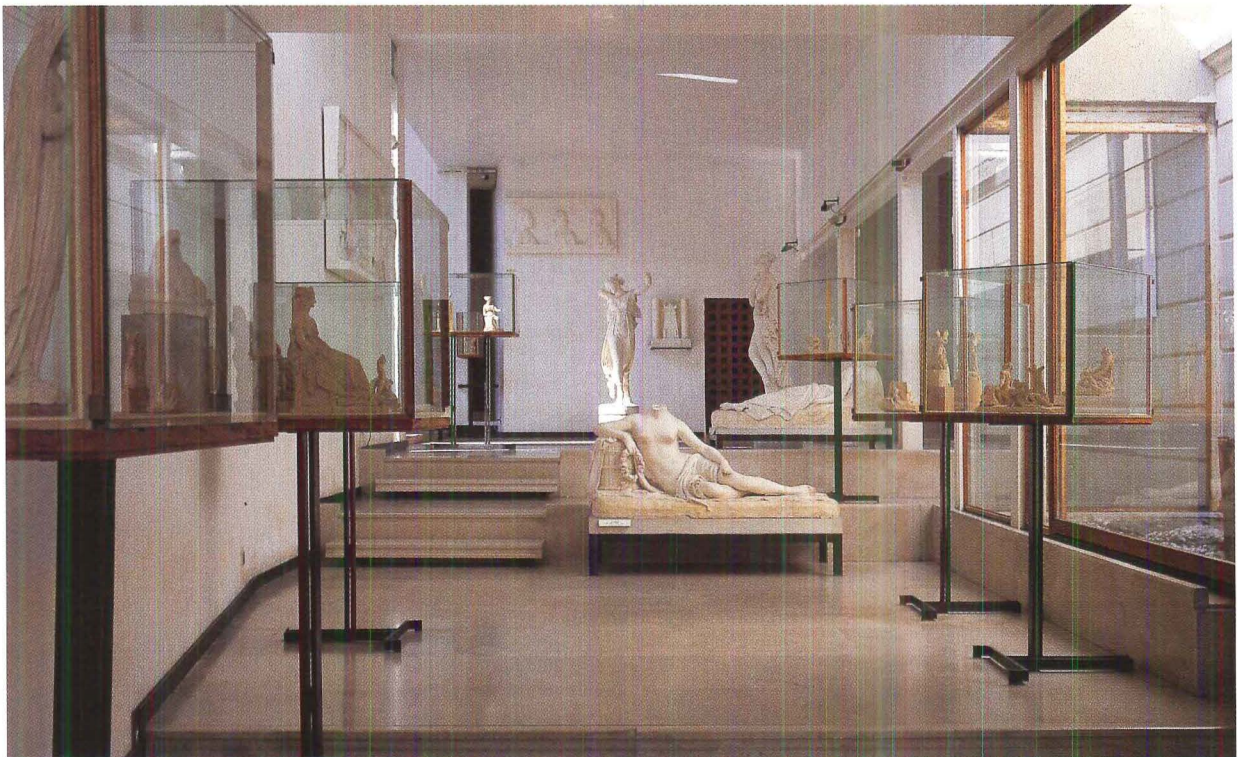
**“CANOVA’S 18TH-CENTURY PLASTER CASTS HAVE BEEN KEPT TOGETHER AND PRESERVED IN POSSAGNO, WHERE HE LIVED AND WORKED. IN 1957, SCARPA BROUGHT HIS SENSITIVITY TO LIGHT, SPACE, AND MATERIALS AND HIS ATTENTION TO DETAIL TO CREATE A UNIQUE AMALGAM.”**







**"IN THE LIFE OF A PHOTOGRAPHER, THE IDYLIC PROJECT COMES RARELY. THIS WAS AN OCCASION WHEN ALL THE PLEASURABLE PARTS—LIGHT, ESTHETIC QUALITIES OF THE SUBJECT, AND PLACE—WERE IN PERFECT HARMONY."**





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# Designing Houses: How skillful firms succeed in a tricky business

**ARCHITECTS CAN MAKE A GOOD LIVING AND REAP THE SPECIAL REWARDS THAT SMALL-SCALE CONSTRUCTION AND CLOSE PERSONAL RELATIONSHIPS OFFER.**

by Nancy B. Solomon, AIA

A single-family custom home is the dream of most Americans and the fantasy of most architects. At least sometime in a designer's worklife, he or she will envision doing a unique home, perhaps as a way of launching a fledgling career, satisfying the desires of a well-heeled client, or indulging in artistic experimentation after years of corporate work. Even though house projects offer intimate scale, a manageable level of detail, and creative opportunities typically not found in other types of construction, many architecture firms shy away from residential work. Whether or not houses are a firm's primary business, they can too often feel like a labor of love rather than a viable business proposition. But some firms, both big and small, have found that residential work can be both rewarding and lucrative if properly structured and administered. Their methods of practice are nearly as varied as is house-design itself.

## Making it with a housing focus

Many architects chose the field of architecture because houses are what they love to do. But at fee levels as low as 5 or 7 percent of construction cost, doing house design profitably is no easy feat, especially as houses increasingly require the services of consultants for structural, hvac, even audio-visual and "smart house" wiring. The key to obtaining profit-making fees, successful architects say, is not to shortchange those services clients value, and to get owners involved in selecting design services they

are willing to pay for. Many house clients are inexperienced with building, and need to see several alternatives to feel comfortable. Separating the fee for preliminary design into one that is an hourly or fixed fee for a defined scope gives clients more control over how fees are spent. Indeed, those aspects of the process that are most hands-on can be most profitable, because clients can see the effort that goes into developing alternatives or shopping for suitable finishes. Interior designers often command much higher fees at lower risk because of their emphasis on personal service. Architects can obtain fees as high as 25 percent by offering a high level of personal service. But clients willing to pay these fees expect close and constant personal attention and they expect to be catered to at the level of the bathroom vanity mirror and the closet sock drawer.

Many residential architects are convinced that specialization is the key to success. "Unfortunately, a lot of commercial architects will do a home on the theory that it is easy," reports Jerry Gloss, a principal with Knudson Gloss Architects, a 20-person firm, based in Boulder, Colo., that concentrates almost exclusively on residential design. "I don't agree. Nine times out of ten, when hiring someone who doesn't have strong residential experience, the budget is busted because they don't know what they are doing."

But for some non-specialist firms, house-design is important, and they keep up to date on products and budgeting by keeping a steady flow of residential work in the office. "We generally have between one and four house projects at a time, so the staff is continually exposed," reports Richard Beard, a principal with Backen Arrigoni & Ross in San Francisco. In 1996, single-family houses represented 14 percent of the 80-person firm's total revenue.

## Bedside manner

Any firm that does a lot of residential projects will agree that one of the biggest challenges in this market is the clients themselves. Residential clients are much more demanding of time and attention than their commercial counterparts. "The clients are more emotionally invested in the building—after all, it is usually their dream house," explains Richard Stacy, a partner with the 20-person firm Tanner Leddy Maytum Stacy Architects in San Francisco. "They want it perfect." Homeowners want to

*Nancy B. Solomon has joined RECORD as a contributing editor, writing on architecture, architectural technology, and professional practice.*



**Continuing Education** This month's installment of the ARCHITECTURAL RECORD/AIA continuing-education series covers residential architectural-design practice. Use the following learning objectives to focus your study. After reading this article, complete the questions (page 234), and check your answers on the page indicated. AIA members may fill out the self-report form and send it in for two AIA Learning Units—Mark Scher, Director, AIA Continuing Education Programs and Products.

**Learning Objectives** After reading the article and completing the exercises, you will be able to:

1. Identify at least ten pointers for working more effectively and profitably with clients.
2. Explain the advantages and disadvantages of alternative residential project-delivery methods.
3. Describe two ways for medium and large firms to internally structure their design teams for residential projects.



## PROFILE

**An unusual partnership offers clients a wide choice of design approaches.** If the RECORD HOUSES issue is often about distinct and innovative architectural design visions, Mulfinger, Susanka, Mahady & Partners offers nearly the opposite architectural approach. Not only do partners tailor their work closely to the traditional notions of home held by most clients, the 30-person firm is organized horizontally, rather than hierarchically, with 11 architects who are each responsible for their own projects.

The firm does not have a signature style, nor does it attempt to

forge a coherent body of work based on commonly held ideals. This office works more like a series of architectural practices under one roof. Architects work independently, are given credit for the projects they design—even market themselves independently. The firm is thus able to offer clients a variety of working styles and design styles. A prospective client may interview several staff architects before selecting one.

As a result, the office's built work exhibits a striking diversity. Sarah Susanka designed the hipped-roof prairie-style structure (previous page), while Kelly Davis did the similarly Wright-inspired house at top left in the photo grouping at right. (It is located in Somerset, Wis.)

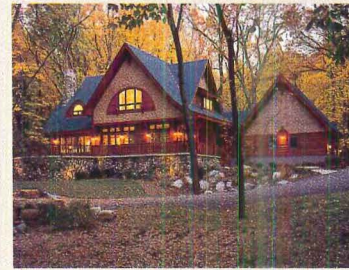
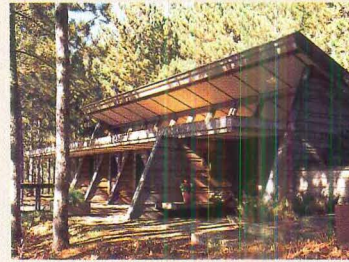
Contemporary western design motifs infuse the Stratton Transformation, top right, Inver Grove Heights, Minn., by Michaela Mahady. Mahady also designed the Maple Forest House in Minnetrista, Minn. (bottom left). It was featured in the television program,

*Hometime*. At left is the bungalow-like Dillon/Lohman cottage, Madeleine Island, Wis., by Robert Gerloff. Gerloff is among the firm's project architects who have left to found firms of their own. At bottom right, Dale Mulfinger designed the New England-influenced Rotileie Residence in Shoreview, Minn.

The firm markets itself aggressively, in part because it actively

seeks a clientele that may feel it cannot afford architectural services. The firm's work has not only appeared on television, it is often published in home-plan, decorating, and home-building publications and appears frequently in local newspapers. The partners feel these are the outlets where their target customer will more readily find them.

*James S. Russell*



see options for virtually all details, for example, and will call the architect in the evenings and on weekends.

Of particular note, explains Mark Simon, a partner at Centerbrook Architects and Planners in Essex, Conn., is that residential clients generally come in pairs with equal say. Often, the two partners in a relationship are very different from each other in terms of personal style and interest in architecture. That means a lot more negotiating both in meetings and behind the scenes. Sarah Susanka emphasizes the impor-

## TODAY, MANY RESIDENTIAL ARCHITECTS ARE MORE FLEXIBLE IN THEIR APPROACH TO PROJECT DELIVERY.

tance of drawing out the quieter partner so that both clients are ultimately attended to. She is partner with Minneapolis-based Mulfinger, Susanka, Mahady & Partners, which specializes in custom homes. And when arguments do arise during meetings, she politely encourages them to talk it out during a time when she is not being paid to listen. "I often joke that a residential architect needs to have an honorary degree in marriage counseling," she quips. The practitioner must be adept at interpersonal skills because building a house can add stress to a relationship, sometimes even leading to divorce. Architects find that the design decision-making process can dredge up issues in a partnership that hadn't previously been examined. By being sensitive to such possibilities, the

architect can help a couple create a house that's truly reflective of both partners' interests and needs.

Simon cautions residential architects to be prepared for changes in clients' minds that seem to occur unexpectedly. "Marriages tend to have a lot of behind-the-scenes negotiations that don't get resolved quickly," he observes. "The owners will give an initial direction, then later another direction." His best advice is to get sign-offs from the clients at appropriate phases. Despite these obstacles, architects who enjoy residential work feel that the clients are also one of the joys of the building type. "Clients are a source of inspiration," Simon explains, "allowing the exploration to be all the more exciting." He credits the wide stylistic variety of houses designed at Centerbrook to the unique vision of each client.

### Structured for intimacy

Duo Dickinson, who heads a seven-person firm, believes a lot of architects go unpaid because of their attitude. "Those architects," explains Dickinson, "conduct themselves as if they are artists and their clients are idiots." He condemns this elitist attitude and argues that the number of projects actually built by an architect will be inversely proportional to the degree of pretentiousness on the part of the practitioner. "You have to have confidence in the people who hired you," he adds. This includes something as basic as always returning their phone calls.

No matter what the size, firms that successfully undertake custom homes have developed internal structures to allow for close, frequent

contact with the client. Dickinson's Madison, Conn., firm does about 60 percent residential work, but he maintains a high level of personal involvement in every project: "I go to the house, do the slide show, speak one on one. All the meetings and site observation will be handled by me, not my office." Large firms will organize the project team so that it feels like a small office. When Backen Arrigoni & Ross accepts a house, for example, one of the partners will begin work with a staff member. Depending on the project size, the team may grow to as many as nine people to develop working drawings, and then shrink back during construction administration. "You can't saddle the project with the larger bureaucracy," explains Beard. "It is more important to have the team lean and responsive."

### Negotiating scope of services

Traditionally, architects have offered clients a full scope of services within a design-bid-build delivery method. The architect enters into a contract to provide programming services; undertake schematic design, design development, and construction documents; assist the client in the bidding

that the client can make informed decisions about whether certain materials or assemblies should be reduced in scope to lower the construction costs. The client also knows at the beginning what the percentage applied to a subcontractor's bid to cover the contractor's overhead and profit is. "Building can be a difficult and stressful process," says Stinson. "By resolving as much up front as possible, we save time, energy, and effort."

### Working independently for the client

Although Stinson and Streeter work closely together, both architect and builder remain separate business entities. Other architects have turned to design/build, in which a single entity provides both architectural and construction services. These businesses can be led by an architect, a contractor, or some partnership between the two. In this scenario, a client enters into one contract with the design/build firm, rather than two separate contracts with architect and builder. Indeed, many architects have become design/builders because the delivery process gives them far more control over the completed project. Based in Lawrence, Kan., Dan Rockhill designs and builds his own projects because he knows his

## THE PRACTITIONER MUST BE ADEPT AT INTERPERSONAL SKILLS BECAUSE BUILDING A HOUSE CAN ADD STRESS TO RELATIONSHIPS, SOMETIMES EVEN LEADING TO DIVORCE.

of documents among several contractors; and oversee construction administration. Many residential architects are today more flexible in their approach to project delivery. Charles R. Stinson, who heads a seven-person residential firm in Deephaven, Minn., prefers teaming up with a builder in the planning stages. He does about 70 percent of his custom homes with one contractor and a group of subcontractors with whom he has had good experience.

Some say that working this way, in which the contractor builds the project for a negotiated fee, is more costly because the subcontractors and the builders don't need to negotiate as hard as they would in a bid environment. Stinson finds that the close working relationship with the builder, Streeter & Associates, also of Deephaven, permits better technical solutions, more suitable product specifications, better cost estimating, and a smoother and higher-quality construction process—which dwarfs the advantages of any cost savings that might accrue from the more-adversarial bid process.

Because some clients are concerned that the negotiated contract may be too high, Streeter has agreed to share bids from subcontractors so

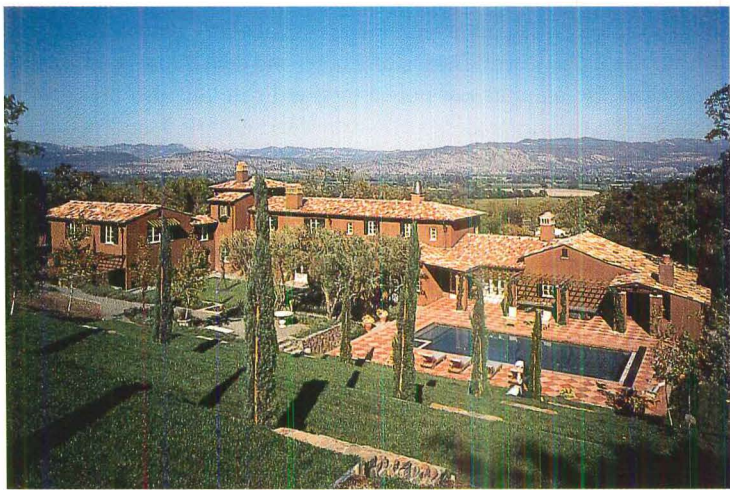
unconventional use of metal and other materials better than most builders would. Architect-led design/build entails taking on additional risks, but it permits the architects to reap the rewards of being a contractor as well. And some clients appreciate a turnkey approach to their project. (Others, naturally, prefer the checks and balances of a traditional business separation between architect and builder.)

In another twist, Mulfinger Susanka Mahady offers a smorgasbord of options. Not only will they do any size project, from a \$5,000 bathroom remodeling to a new multimillion-dollar house, but they will provide different levels of service. "The vast majority of houses done by architects are very expensive because the profession is accustomed to doing a high level of detail. But there is a general populace who could benefit from design-solving skills without the detail," says Susanka.

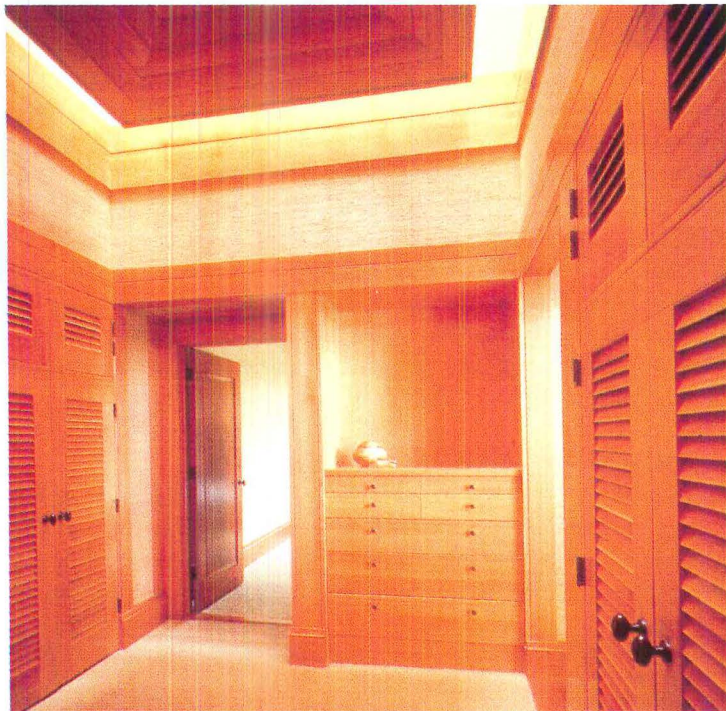
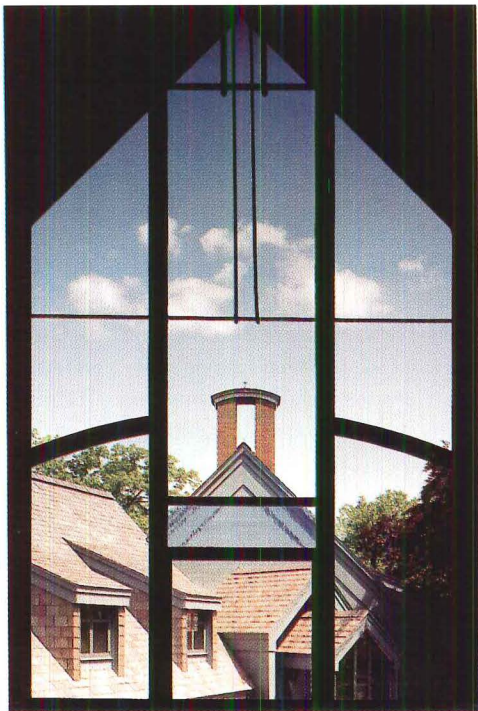
She and her partners will sometimes provide a limited set of drawings from which a trusted builder will work. "We are filling a void. Projects will be less detailed, but a vast improvement over a developer house," Susanka says, admitting there are reasons to worry about not doing a thorough set of drawings. But unlike commercial work, she explains, a builder can in most states construct a house without architect-sealed drawings. She has found that most architects provide builders much more direction than they are accustomed to. By offering more limited services, her firm can reach out to a middle-class clientele that may be intimidated by the costs of full services. "I am sure that legal counsel would tell us it is not smart to be doing less than a full set of drawings, but the facts are there is a vast sector of the market that can't pay for 25 sheets of drawings and the majority of new houses in this country get built from

**Backen Arrigoni and Ross was able to bring its non-residential experience to the design of this house and winery for the Staglin family.**

three or four sheets drawn up by drafting services," explains Susanka. Her firm offers a limited set of drawings in two ways: If the client only wants a schematic design, the architects will develop floor plans, elevations, and sometimes sections on no more than four sheets. They do not place the firm's title block on the sheets; they stamp the drawings "not for con-



Centerbrook Architects does many houses along with its institutional work. Right is a home of several linked pavilions. Key for many residential clients is attention to detail. In this master bedroom (bottom), also by Centerbrook, storage is ample and carefully lit.



struction,” and they make sure the homeowner understands that he or she will need assistance from a drafting service or contractor to complete the documents. The architects will also help the client find a builder of high caliber and will sometimes review the subsequent working drawings to insure that design intentions were met.

When clients want a house with more detail than a schematic design can offer, but have their hearts set on a contractor who is not accustomed to detailed drawings, the firm will design a house of simple form, produce a set of working drawings consisting of about 12 sheets, and increase their role during construction to resolve any questions that may arise. In this case, clients may not be saving much money but the architect offers a more effective way to work with the contractor.

In Susanka's experience, the residential market has not been particularly litigious and her firm has never had a legal problem with their limited services. Although she agrees that architects are rightly worried about liability, she also believes that these concerns need to be balanced with the realities of the market. “The profession needs to look at the skills and services we can offer to the residential market and figure out how to best apply them within the infrastructure that exists,” she says.

Still, some firms insist on providing a full scope of services. “We like the traditional process for residential,” explains Centerbrook's Simon. About 15 percent of the 60-person firm's billings comes from houses. “We have turned down jobs in which we were asked not to participate in construction because we find that it is critical to do the quality of work we want to do.”

#### Work process

Architects rely on various techniques to ensure that they are most efficiently providing their clients with what they want at the budget they can afford. Susanka begins with two long programming meetings to determine her client's preferences. “The more I can find out about someone's dreams before designing, the closer I can get to what they will like earlier in the process,” she says. She asks them not only about the specific rooms

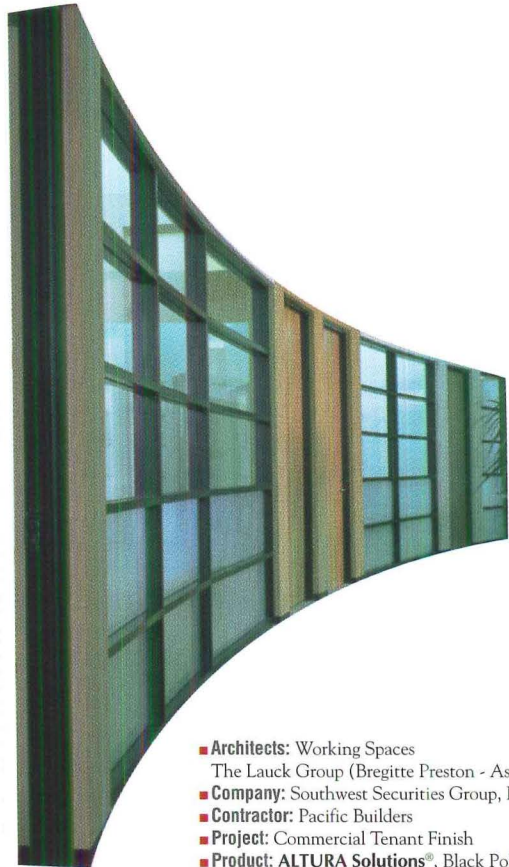
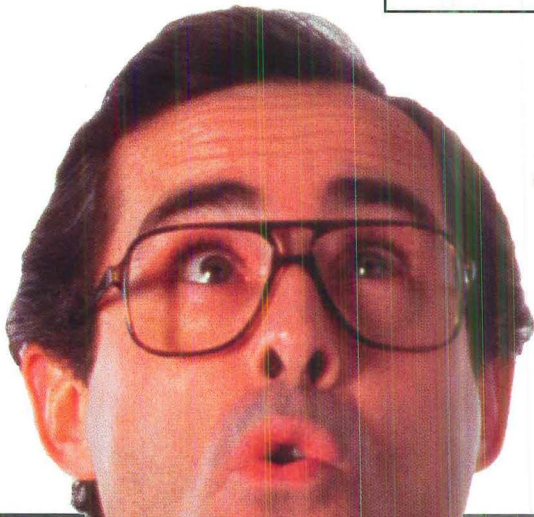
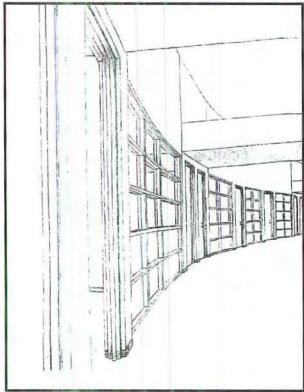
they desire but about their daily activities. And she will show images of spaces to determine their preferences in a room's shape and size or a window's placement. During schematic design, Dickinson will show between two and five alternatives. He eschews elegant presentation models, preferring a more modest chipboard representation that can be easily drawn over or ripped up during meetings. In this way, the clients can get more involved in the planning of their house.

**“IT'S A REAL ART TO KNOW HOW MANY PLANS TO DO IN ORDER TO GET SOMETHING DONE WELL . . .”**

Limiting documentation is critical to residential work, contends Jeremiah Eck, whose seven-person firm in Boston does about 75 percent residential. “It's a real art to know how many plans to do in order to get something done well without intimidating the client or contractor. Allow the contractor to interpret a little themselves,” he says. Equally important is getting an accurate idea of cost early in the process. Dickinson sends out 1/8-in.-scale preliminary drawings with door, window, and basic material specs plus essential structural notes and details to several reliable contractors. He requests not only a total estimate but also breakdown prices for the various trades, such as sitework, electrical, and masonry, and specific cost deductions for various alternatives, such as stained clapboard when clear red-cedar shingles might prove too costly. Dickinson uses this information to complete design development. When the actual construction documents are sent out to bid, contractors must detail itemized costs for project components and alternative materials.

When done well, the personal rewards of house design can be great: residential clients often express more enthusiasm about their projects than commercial or institutional clients do. A successful house becomes almost a family member—perpetually entering into stories and lore. Eck conjectures that he could take a trip from Maine to South Carolina in which he stayed only in houses he has designed. ■

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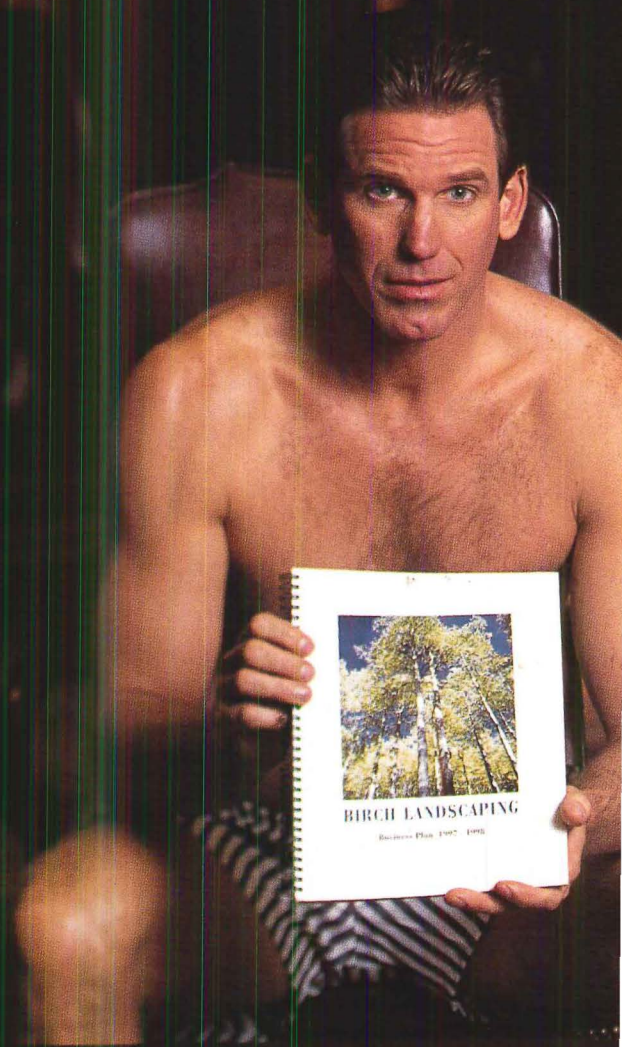
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9. Spell Checker includes standard and custom dictionaries.

22. You can suppress the first or second dimension line.
23. Baseline and Continue dimensioning have been streamlined.
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25. DDIM dialog box allows preview prior to input and improves access to properties.
26. Dimensioning better follows industry and international standards, including ANSI, ISO, and JIS.
27. Dimension styles are more flexible and easier to create.
28. Override feature allows you to change properties on a per-dimension basis.
29. Geometric tolerancing creates and edits tolerance control frames automatically.

43. The ability to create and use custom linetypes with text and shapes.
44. Assign linetype scale factors per object (versus per drawing).
45. ISO Compliance of linetypes.
46. DDMODIFY has been dramatically improved.
47. Direct Distance Entry eliminates laborious coordinate keyboard entry; allows you to move the mouse in desired direction and enter a single distance value.
48. Object snap now snaps to extended intersections.
49. Running object snap dialog box is now transparent.
50. New Apparent Intersection snaps to display intersections regardless of the object's UCS.

63. Boundary edges don't need to physically cross the objects you wish to Extend.
64. Grab all visible objects as boundary edges by hitting enter at the first EXTEND prompt.
65. Lengthen or shorten a line or arc to a specific length with the new LENGTHEN command.
66. New overlay option in the Xref command avoids circular references.
67. The Xref command now searches the AutoCAD path to find referenced drawings.
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69. Easy to create construction lines that extend infinitely in both directions (XLINE).
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85. Solid profiling commands allow you to convert 3D (SOLPROF/SOLDRAW/SO) objects you wish to Extend.
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89. Fillet and chamfer.
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96. Phong shading supports highlights from colored surfaces.
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10. Easily import a TXT file.
11. Create stacked fractions for better readability.
12. Single-line MTEXT editor for DOS users.
13. Map slower fonts to faster ones (FONTMAP).
14. Fill in text fonts (TEXTFILL).
15. Font Substitution during file open simplifies drawing transfer and font changes (FONTALT).
16. Move, rotate, erase, copy, mirror, stretch, or scale each text object.
17. Automatically stack fractions in dimensions.
18. Inferred linear dimensioning automatically distinguishes between horizontal and vertical dimensions and repositions text.
19. Creating dimensions requires fewer steps.
20. Dimension Style Families allow you to define dimension type differences within one dimension style.
21. Continued dimensioning works on ordinate dimensions.

30. Easier to modify dimensions.
31. Dimensioning has its own units settings.
32. Create splined leader lines.
33. Create multiple lines of text in leaders.
34. Automatic island detection finds a complete boundary with one pick.
35. Associative hatching automatically updates hatch to modified boundaries.
36. The restructured BHatch dialog box is simpler and faster to use.
37. Drive the BHATCH command from the command prompt if desired to run scripts.
38. Create a hatch boundary manually on the fly.
39. Easily edit hatch properties without redrafting the hatch.
40. New ISO compliant hatch patterns included.
41. Load linetypes from within the Layer dialog box.
42. Visual representation of linetypes for selection before loading.

51. New FROM object snap can reference a point from within a command.
52. Object Cycling insures that you select the correct object every time.
53. Improved Fillet command can be used to cap parallel lines.
54. Fillet between a line and a polyline.
55. Fillet without trimming the existing geometry.
56. Fillet that doesn't cancel when you miss the object.
57. Chamfer by length and angle.
58. Chamfer without trimming the existing geometry.
59. UCS restrictions are gone for fillet and chamfer commands.
60. Trim using cutting edges that don't physically cross the objects to trim (implied edge).
61. Cutting edges don't need to be on the same UCS as the objects you're trimming.
62. Grab all visible objects as first TRIM prompt (two less steps).

71. Group objects together by name with object grouping (GROUP).
72. Draw multiple parallel lines using a variety of linetypes and colors (MLINE).
73. Intersection clean-up for multiple parallel lines simplifies wall creation.
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76. True geometric Ellipses.
77. Snap to the center or quadrants of an ellipse.
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79. Create NURB splines.
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81. Explode blocks with varying X and Y scale factors.
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83. Create ACIS solids with solid primitives.
84. Perform Boolean operations on solids and regions (union, intersect, subtract).

98. Assign materials for each layer.
99. Import and export to other formats.
100. Render to file with options; supports over a dozen new file formats.
101. Windows standard icons for high-usage icons for management and drawing editor navigation functions.
103. Easy to create and manage custom toolbars.
104. Toolbars can be docked.
105. Object Properties palette offers quick access to color and linetype for objects.
106. Easy to understand with tool tips.
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**141.** The ability to turn off the automatic Backup files.  
**142.** Improved control over memory management.  
**143.** OLE 2.0 with drag and drop allows you to dynamically embed spreadsheets, video clips, Word documents into

**154.** Optimized for 32-bit Windows operating environments, resulting in 20%+ increase in performance over 16-bit Windows 3.1x.  
**155.** WHIP driver (High Performance Driver for Windows) increases performance, including near instantaneous redraws.  
**156.** Real-time Pan.  
**157.** Real-time Zoom.  
**158.** Incremental saving of the drawing file.  
**159.** Faster regens due to more drawing data stored in memory during working session.  
**160.** No regen on Window resize.  
**161.** Optimized output on selected Windows system printer drivers.  
**162.** Improved HP GL/2 plotting performance on Windows and DOS platforms.

We understand. You may not have the time to read them all. But, suffice it to say that we have added scores of new features to AutoCAD® Release 13 to make your life on the job easier and less labor intensive than ever before.

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**144.** AutoCAD SQL Environment (ASE) allows access to data from external database management systems, including SQL2, ODBC 2.0, Informix (DOS), Oracle (Win 3.1/NT).  
**145.** Read drawing files created in previous AutoCAD releases.  
**146.** Save as a Release 12 drawing file.  
**147.** ARX(object-oriented development platform) allows for tighter integration with 3rd party software.  
**148.** Broad peripheral support.  
**149.** Undo support for external database links and operations.  
**150.** Output to STL format.  
**151.** Xref and Block support for non-graphic links.  
**152.** ASI access to ASE link mechanism.  
**153.** ASILISP contains new LISP functions for accessing external databases.

**163.** ADS applications run faster.  
**164.** AutoLISP programs run faster.  
**165.** Pager included for large drawing memory management.  
**166.** Multiple sessions of AutoCAD.  
**167.** Windows 95 user interface.  
**168.** Support for Long Filenames.  
**169.** Supports Universal Naming Convention (UNC) for Files and External References.\*  
**170.** Supports UNC for configuration files.\*  
**171.** Uninstall from Windows 95 or NT through the control panel.\*  
**172.** Email enabled for MAPI compliant programs allows users to attach DWG files to an email.\*  
**173.** DOS, Windows 3.1x, Windows NT 3.51, Windows 95.  
**174.** Windows NT on Alpha Systems.  
**175.** UNIX®, Sun® Solaris®, HP-UX®, SGI IRIX,™ IBM-AIX.®  
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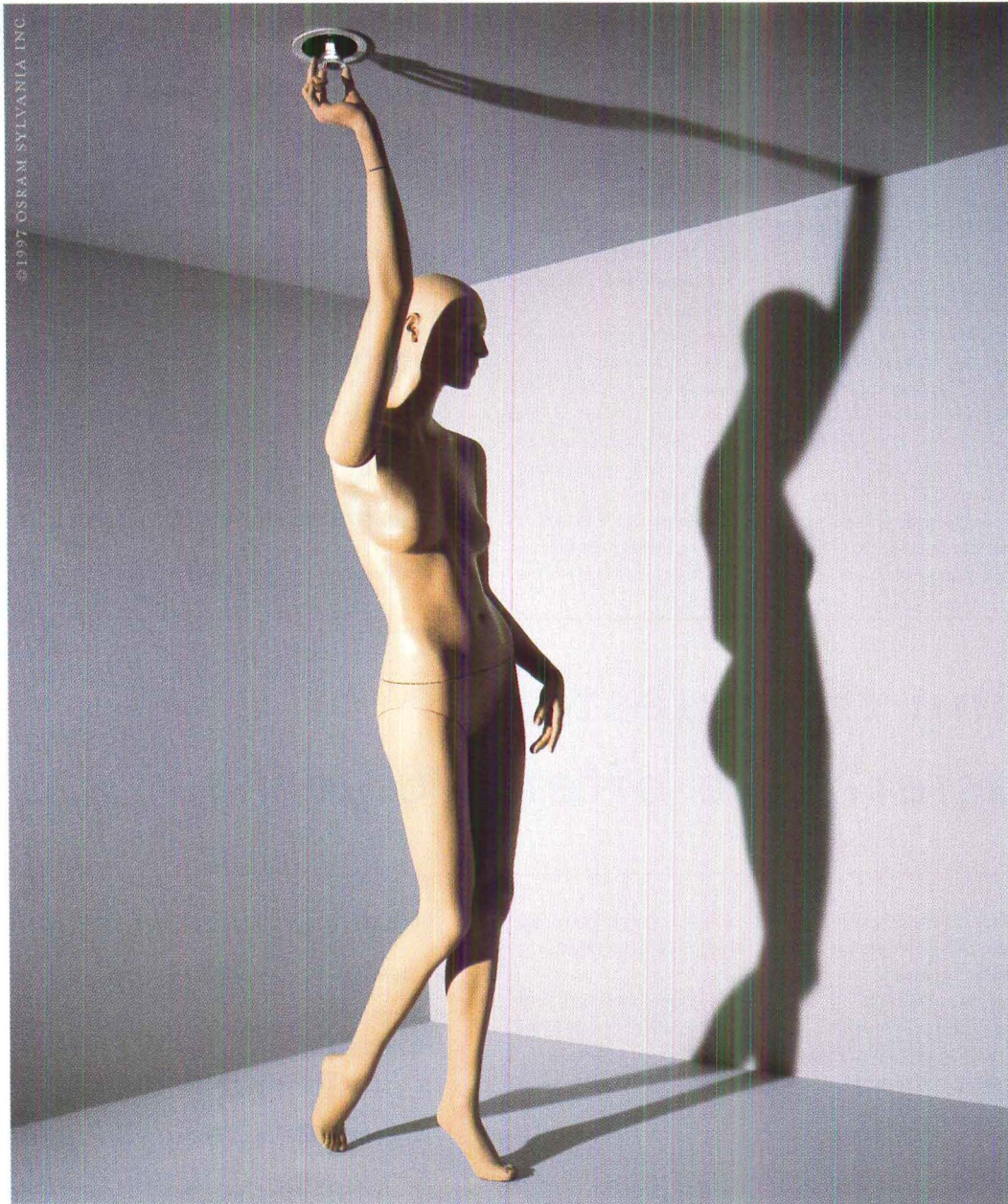
if you were working on Windows® 3.1x.

Release 13 also supports AutoCAD Runtime Extension (ARX) applications from developers like KETIV Technologies, Inc., ARCHIBUS, Inc., and Softdesk, Inc. These next generation tools use the object-oriented database in R13 to provide you with a seamless and associative design environment. Plus, R13 has Internet support, so now you can view, send, and share design content over the Internet.

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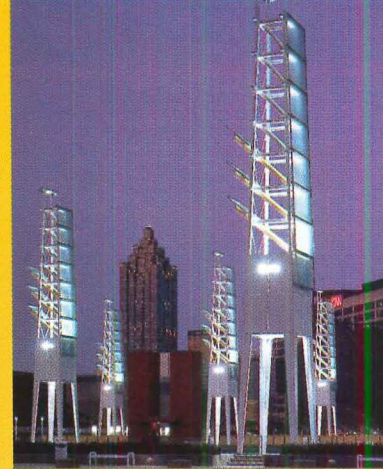
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# LIGHTING...



Occasionally over the past few years, *RECORD LIGHTING* has published articles about the National Council for the Qualification of Lighting Professionals (NCQLP). The non-profit organization was founded in 1992 to develop a peer-review process to determine the experience, education, and testing requirements for certification in the lighting industry.

After years of hard work, the NCQLP is getting ready to administer its first examination on November 20 at 20 sites across the U. S. To take the Lighting Certification Examination, candidates must have either a bachelor's degree from an accredited college or university and three years of lighting experience, or six years of lighting-related experience. The exam covers the following basic lighting principles and their application: surveying and auditing of existing conditions; lighting design; financial planning; installation and commissioning; operations and maintenance, and regulatory compliance.

The examination will include 100 multiple-choice problems and four simulation problems. Those who pass will be entitled to use the appellation "LC" after their name, meaning they are "lighting certified."

There has been much controversy over lighting certification among architects. This stems from the fear that if the NCQLP's Certification becomes a standard, the state licensing of lighting designers is but a step away, and unless certified, architects might be excluded from designing lighting. This seems farfetched to me, but suppose a state board of technical professions did become convinced that architects involved in the design, installation, and auditing of lighting should be required to show by exam a certain level of knowledge? As long as lighting education in architecture schools is as good as it should be,

architects shouldn't feel threatened by lighting certification. If they wanted to be certified, the lighting examination would just become one more thing to study for, and pass. Architects might even view lighting certification as an opportunity.

What's a shame is that I really doubt that many practicing architects could pass the exam cold. I doubt if I could. Unfortunately, most of us have been ill-prepared by our educations to tackle really difficult lighting design problems. If we don't hire lighting consultants to help us, the buildings we design never really reach their full potential. Yet, because there are consultants out there to help us, there is little pressure on schools of architecture to spend more time teaching this vital subject. This is to take nothing away from the fine teaching done by my friends at the Society for Building Science Educators. But perhaps the introduction of lighting certification, which seeks to establish standards of qualification in a field that has never had them before, will make mandatory a more comprehensive teaching of the subject. For more information on the NCQLP, phone 301/654-2121. ■

—Charles D. Linn, AIA

**147 Lighting Observations**

**151 A Consultant's Primer:  
Lighting for Kitchens and  
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Steven L. Klein

**157 Lighting Leads Visitors to  
a Room with a View**

Light Source Design Group;  
Exciting Lighting

**163 Galactic Gourmet:  
Boston's Museum of  
Science Gets a Star-  
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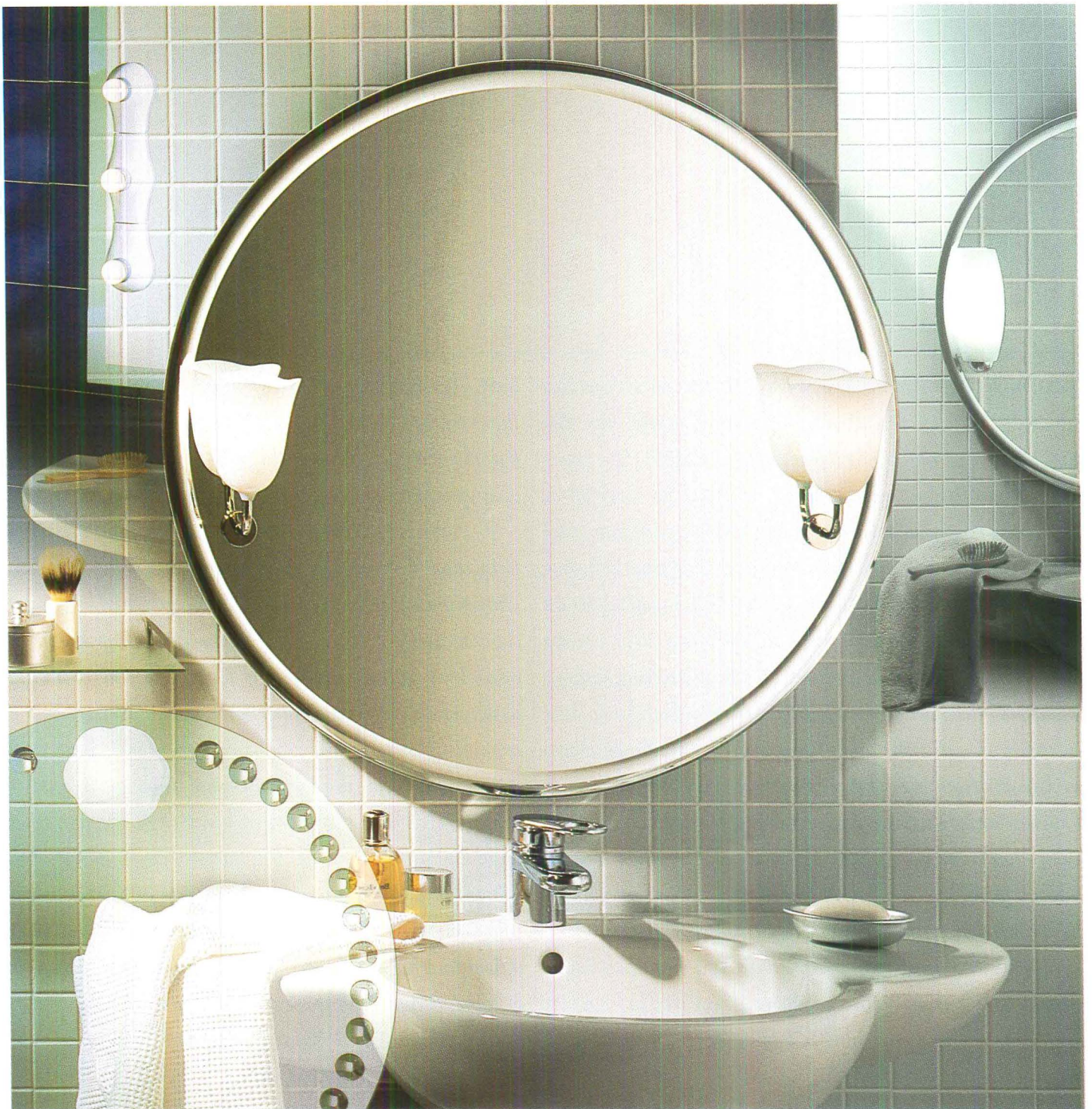
Craig Roeder and Associates

**170 Designing Residential  
Lighting Control Systems**

**175 Lighting Resources**

**182 Lighting Book Reviews**

Above: Light towers at the Georgia International Plaza, Atlanta, by Thompson, Ventulett, Stainback Associates, architects; lighting design by Rosser International, page 148.



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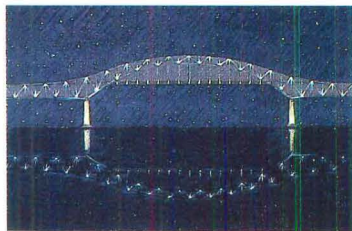
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# CREATIVE USES

## BRIDGE OVER SPARKLING WATERS

As a part of the reconstruction of the 1961 John A. Blatnik Memorial Bridge, which connects the twin port cities of Duluth, Minnesota, and Superior, Wisconsin, the Departments of Transportation of Minnesota and Wisconsin hired lighting design-



ers Horton • Lees of New York City to light the center-span arch structure. Horton • Lees proposed that the architecture of the structure be emphasized as in the rendering (below left), which shows the lighting concept. 70W clear metal-halide fixtures were installed where the web members connect with the top and bottom chords, grazing the trusses and giving the structure a sparkling quality. Similar fixtures light up the portals. The piers, which support the bridge, have been lit with 1000W metal-halide floods. "The lighting of



the piers brings the structure to ground level," says Jules Horton of Horton • Lees. "On still nights, the lights are mirrored by the water below." Crowds gathered on both

sides of the bridge when the switch was thrown for the first time on November 21, 1996. The bridge is visible for many miles, and is now the pride of the area. ■

## AN ONYX WALL GIVES A NEW GLOW TO THE UPPER WEST SIDE

Located on the upper West Side of Manhattan, 1965 Broadway is a new high-end rental building. The lobby, designed by Gary Edward Handel and Associates, is disciplined in its use of space, but opulent in its use of materials. A spectacular onyx wall is the lobby's main attraction. "We try to make our residential lobbies modern," says Handel, "but with warmth and intimacy. This is not easy." In this case, Handel accomplished the task through his choice of materials and in the way they were lit.

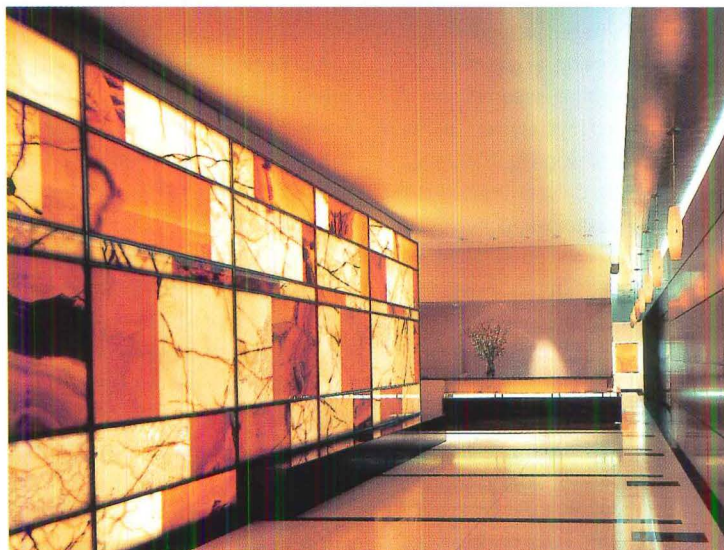
"Lighting the onyx wall was the challenge," says lighting designer Ann Kale of Ann Kale Associates. Initially, the architects had planned to use white travertine. But they found that when backlit, the appearance of the stone was too cold. As an alternative they chose a mixture of thin onyx in light and dark shades accented by brown veining. This was installed in what Handel calls a "Mondrianish" pattern. Kale then lit the wall so that it would give off a warm glow during the day, and cast enough light for the space at night.

Working within the confines of

a very shallow 9-in. wall cavity, and taking into account access and maintenance issues, Kale specified rows of incandescent PAR16 lamps 9-in. apart, as well as rows of T8 3000K white fluorescent lamps at the top and bottom of the wall. These graze the surface of the stone, backlighting it. The fluorescent fills in the scalloping caused by the spots, and creates a warm, even glow of light. A translucent layer of acrylic on the top of the wall creates a hard shadow line so that the wall seems to float in space.

The flamboyant onyx wall is balanced by a quiet, wood-paneled wall on the opposite side of the lobby. A cavity above this wall conceals cold-cathode fixtures, which reflects off ceiling laid up of 4-in. squares of aluminum leaf.

White-resin pendants with incandescent lamps strung across a dropped soffit off the wood-paneled wall provide a sense of movement, and also emphasize the asymmetry of the space. "The white resin has this translucent quality that echoes the onyx," says Kale. ■



## A GLORIOUS FESTIVAL OF LIGHTS FOR B'NAI JESHURUN SYNAGOGUE



A renovation of the turn-of-the-century B'nai Jeshurun Synagogue in Manhattan called for the replacement of a damaged, ornate plasterwork ceiling, and a completely new lighting scheme, one that would add mystery and drama to the rituals of worship. The architects, Bromley, Caldari Architects, proposed that the plaster ceiling be removed and replaced with a space-frame that would act as a visual reference to the original structure, and also provide a framework for the lighting.

The congregation wanted a more flexible space. The original axial seating with a sloping floor was thus replaced with a flat floor and stack seating that can be arranged in different formations for various occasions. Accordingly, the lighting

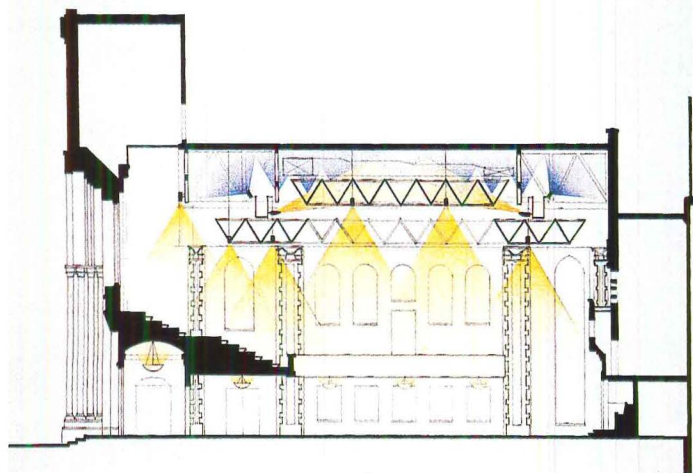
had to be flexible enough to accommodate these needs.

"We decided we needed four types of lighting," says lighting designer Charles Coster, of Charles Coster Theater Design. "Ambient lighting, accent lighting, architectural lighting—to frame architectural elements—and special lighting to add mystery."

Ambient downlighting for the space (see rendering below) is provided by high-bay pendants with 500W quartz lamps hung from the ceiling. Chosen because of their asymmetrical beam, eight "shovel lights"—fitted with 500W halogen lamps—have been mounted on a catwalk constructed around the space frame. Gelled in amber and aimed at the space frame, these fixtures, along with blue-gelled PAR38 halogen 90W lamps directed at the ceiling, create a dramatic halo above the congregation.

Accents for architectural elements such as arches and coves have been provided by theatrical framing projectors with 575W lamps. All lighting in the synagogue has been programmed to preset "moods" to suit the various uses of the synagogue.

The newly renovated synagogue was opened for worship last Hanukkah, the Jewish festival of lights. ■



## LAX RESTAURANT CHANGES ITS SPOTS

Built in the early 1960's, "The LAX Themed Building" with its skeletal, flying-saucer-like appearance, has become somewhat of a landmark for the city of Los Angeles.

The building is now the site of Encounter, one of the city's newest restaurants. While lighting the building, Michael Valentino, Senior Show Lighting Designer with Walt Disney Imagineering, specified AR500 lumi-

naires by Iridion, a high-output floodlight with an internal, dichroic color-changing mechanism. The fixtures have been mounted at the base of the central core of the building radiating outwards, so that the building appears to float in space.

Every 15 minutes, there is a small, spectacular show of color, and then the building does a slow fade into a different color. ■

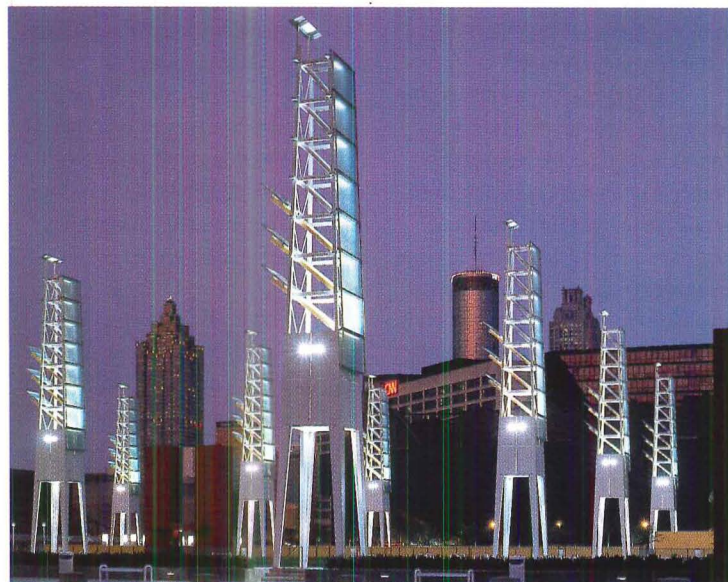


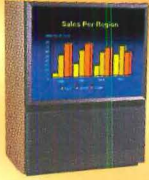
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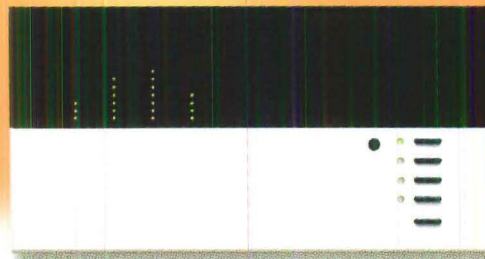


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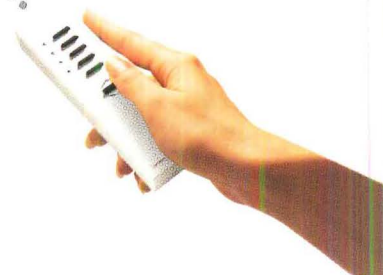


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**CIRCLE 45 ON INQUIRY CARD**



# A Consultant's Primer: Lighting for Kitchens and Dining

By Steven L. Klein and Jane M. Klein

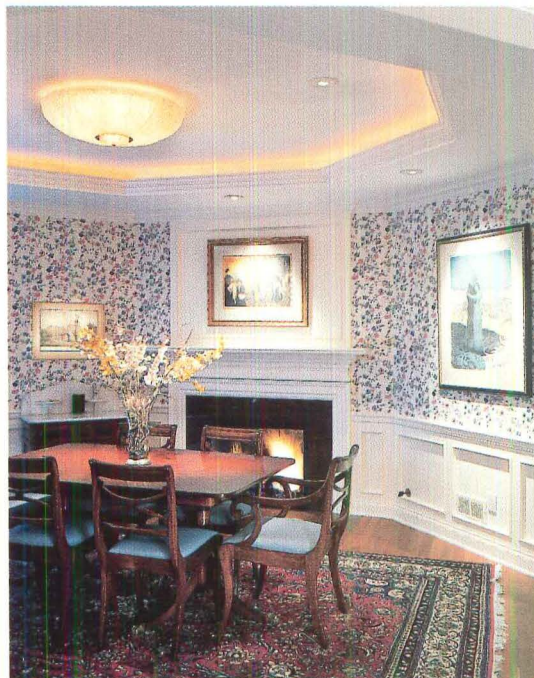
**I**t's time to update or even discard conventional wisdom about lighting for kitchens and dining areas. Once separate rooms with their very own distinct purposes, these spaces have grown and blended together. The idea of a dining room as a formal space, and the kitchen as a utilitarian workspace for servants, is obsolete as far as many clients who commission residential lighting are concerned. Many want dining areas that flow into open kitchens—often enormous gathering spaces at the heart of the home.

## Dining in style

But some clients may still insist on a formal dining room. The dining rooms shown here illustrate what can be accomplished when lighting and architectural details are used to define space. In these dining rooms, luminous coves are part of the answer. Coves work because perimeters define space. To make a narrow space appear wider, direct light to the walls; to make a low ceiling seem higher, direct light to the ceiling.

Chandeliers are a holdover from the days when formal dining rooms were the rule. When correctly used, chandeliers should be suspended over the center of the dining room table, and proportioned appropriately for the room and the table. But no matter how beautiful these fixtures may be, they impose limitations—they tend to redefine the visual height of a space because of their brightness patterns. As a suspended object with space above and below it, a chandelier tends to light the whole room, making it impossible to exploit light's great potential for reinforcing and revealing the architecture and enhancing function. It can easily become imposing, drawing attention to the center of a room, which may not always be where social interaction is taking place.

However, in a cove-lit dining room (above left and right), concealed lines of light organize the ceiling's relationship to the table below, and the depth of the cove is enhanced because the lower ceiling is silhouetted against the higher one. Light reinforces the separation, and the



upper ceiling appears to float, with its brightness confined to a specific and well-defined area. To successfully light a cove, it is important to have an even and continuous line of light. Although neon, cold cathode, side-emitting fiber-optic cable, and staggered fluorescent are sometimes used, 12V and 24V incandescent-light rails are preferable because of size, simplicity of installation, and their warm, familiar color.

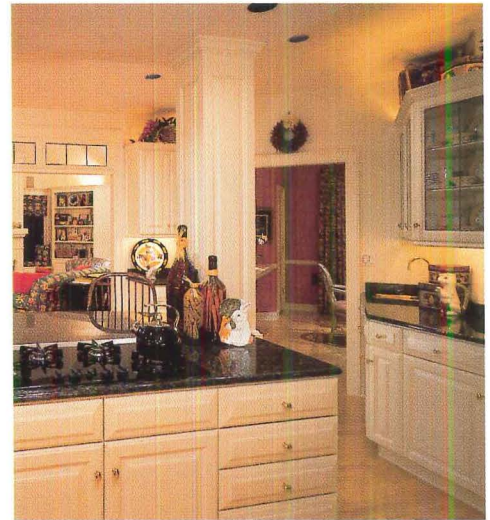
When a client prefers to use a decorative fixture in combination with cove lighting, close-to-ceiling fixtures (above right) can fulfill the function of a chandelier, but without the imposition. More to the point, some close-to-ceiling decorative luminaires create a refractive light pattern on the surrounding ceiling that seems to expand the luminaire. The fixture itself doesn't have to be big to create a big impact.

A dining room table can be made to appear self-luminous by cross-lighting it with recessed low-voltage adjustable spotlights. The ultimate benefit of this technique can be seen when the table is set with cloth, glassware, plates, and silver—the tabletop glitters in a spectacle of sparkle and shadow. Five-inch pinhole apertures are a particularly good choice

**Uninterrupted lines of warm incandescent light divide the ceiling planes (above left and right), layering the area above the dining tables. The tables are cross-lit without spill by narrow-beam MR16 lamps in adjustable, pin-hole aperture downlights so the table-tops have the appearance of a self-luminous surface.**

*Steven L. Klein is a lighting consultant for Standard Electric Supply Co. in Milwaukee. He frequently consults with his wife, Jane M. Klein, ASID.*





**Black Alzak-cones in downlights (above) completely eliminate glare at the ceiling plane. A-19 lamps in open reflector downlights cover lots of horizontal space.**

because the faceplates blend into the ceiling plane. Narrow-flood 50W MR16 lamps are perfect for the application if the fixtures are correctly aimed and well-maintained. Great care must be taken to ensure that the beam spreads are cut off below the line of sight of anyone seated at the tables; simple hex-cell louvers that pop into the fixture may be needed to help control this unwanted brightness. When lighted artwork is used in a dining room, the same type of pinhole spotlights can be used to light it. Beam-elongator accessories help make these accent lights more sympathetic to framed art than the scallops projected by some fixtures.

#### **Gathering around the hearth**

Both dining rooms and kitchens ought to be places where people assemble to enjoy each other's company. The same lighting fundamentals that

in a dining space without imposing formality, overcabinet lighting can do the same in the kitchen. Kitchen overcabinet lighting may not be as familiar to designers as undercabinet lighting. Both can play a vital role. Overcabinet lighting guides the eye to a truer appreciation of ceiling height, in a room where cabinetry and ceiling often blend together in a dim blur. A pleasant glow at the ceiling perimeter also offers a source of low-level ambient lighting for transitional scenes, such as when people drift in for evening conversation, or paperwork, and snacks.

Low-voltage incandescent strips are ideal for mounting both over and under cabinets. Holding the specification may require some extra knowledge and effort. Otherwise, the electrical contractor may substitute poor-quality fluorescent strips—and probably at the wrong place. Linear low-voltage strips should be installed at the front edge of the cab-

## **THE RELATIONSHIP BETWEEN A CLIENT AND THE HOUSE THEY ARE BUILDING IS DIRECT AND INTIMATE, MAKING THE RESULTS THAT CAN BE ACHIEVED THROUGH LIGHTING EXTREMELY REWARDING.**

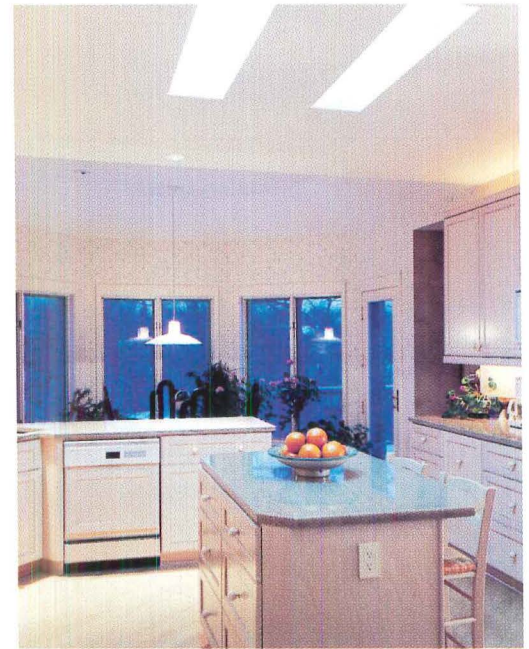
apply to dining rooms also apply to kitchens. The expansive island dominating a large kitchen and dining area (opposite and above left), is an example of lighting being fully integrated into the architectural details. The architect of this kitchen was striving to achieve an honesty of form, and the "halo effect" of the light cove was accomplished with pure, logical detailing, although actually building in the 24V light-rail wasn't an easy task. The only difference between this kitchen cove and the dining room coves on the previous pages is that in the kitchen, the brightness pattern on the ceiling is not confined to a well-defined area, but silhouettes the form of the curved soffit and compliments it. Clear alzak-cone aperture downlights with very narrow floods provide task lighting on the countertop without glare or light-trespass into other areas.

Just as cove lighting can help to define and enhance architecture

in a dining space without imposing formality, overcabinet lighting can do the same in the kitchen. Kitchen overcabinet lighting may not be as familiar to designers as undercabinet lighting. Both can play a vital role. Overcabinet lighting guides the eye to a truer appreciation of ceiling height, in a room where cabinetry and ceiling often blend together in a dim blur. A pleasant glow at the ceiling perimeter also offers a source of low-level ambient lighting for transitional scenes, such as when people drift in for evening conversation, or paperwork, and snacks.

Low-voltage incandescent strips are ideal for mounting both over and under cabinets. Holding the specification may require some extra knowledge and effort. Otherwise, the electrical contractor may substitute poor-quality fluorescent strips—and probably at the wrong place. Linear low-voltage strips should be installed at the front edge of the cabinet. This is critical to hiding the light source, which prevents glare and lamp imaging. The lighting consultant should coordinate this detail with the millwork designer to ensure that a shielding valance of adequate depth is specified. In the undercabinet position, the lamps should be aimed at the counter's backsplash.

It's important to mind the concerns of contractors and inspectors when specifying low-voltage lighting, especially when the components of a system come from different manufacturers. The lighting consultant should write full specifications requiring UL-labeled components. It may be appropriate to approach the inspector for pre-approval, rather than waiting until the contractor's materials are ordered and even partially installed. A remote transformer can be located in the basement or pantry as an alternative to the cabinet. To prevent voltage drop along



The trick to designing faux skylights is to frame the opening above the finished ceiling line. This breaks up the ceiling plane and makes the “skylights” appear to be higher.

the string of lamps, and thus ensure uniform brightness and color, specify that a #12 double-conductor-stranded wire be run between the transformer and load. Using a Class III-rated conductor can ease approval from inspectors, and contractors appreciate eliminating junction boxes.

For high-activity food preparation and socializing, kitchens need task lighting on work surfaces (downlighting and undercabinet lighting) combined with bright, diffuse ambient lighting. Improved-color fluorescent lighting can solve the ambient problem perfectly. Surface-mounted fluorescent fixtures might give the impression of cheapness, but homeowners love skylights. So, imitate a skylight by using a fluorescent light box recessed in the ceiling. The “skylight” fixtures shown here have a 2-in. recessed edge and are actually tucked between the second-floor joist spaces on 16-in. centers. The interior of the box is painted white to reduce light loss. Each box has two side-mounted fluorescent strips to increase the distance from a 3/16-in. matte opal diffuser, thus minimizing lamp images in the diffuser. Fully dimmable ballasts enable the client to adjust the “skylight” brightness to suit the situation.

Open-reflector downlights lamped with ordinary A-19 lamps are also a good way to provide ambient light unobtrusively, and the fixtures are inexpensive and easy for the homeowner to maintain. Black Alzak cones help eliminate distracting glare at the ceiling plane.

#### The risks and rewards for clients

Homeowners who agree to have custom-built fixtures installed, and accept unconventional recommendations, deserve credit for taking a leap

of faith. These clients may not have much experience visualizing architecture or interior design, but their relationship to the project is direct and intimate. For them, the results of good lighting are rewarding because light is such a potent way to communicate basic emotions. ■

#### Project credits

• **Project:** Residence, name withheld (photo page 103, right)  
**Architect:** Lakeside Development Co.—Richard Sherer, Jeffrey Van Loon  
**Interiors:** James Mark Connelly  
**Lighting Designer:** Steven L. Klein; Lynn Howard, project manager  
**Ceiling fixture:** Barovier and Toso  
**Recessed fixtures:** Lightolier  
**Cove lighting:** Celestial Lighting  
 • **Project:** The Luck Residence (photos page 103, left, and this page)  
**Interior designer:** Bill Manly Associates  
**Lighting designer:** Steven L. Klein  
**Recessed adjustable downlights and framing projectors:** Lightolier  
**Light rails:** Celestial; Lightolier

#### Pendants: Leucos

• **Project:** Residence, name withheld (photos page 104 and page 105, left)  
**Architect:** Lakeside Development Co.—Richard Sherer  
**Interior Designer:** Sturgeon Interiors—Joann Sheridan  
**Lighting Designer:** Steven L. Klein  
**Light rails:** Ardee International  
**Recessed downlighting:** Lightolier  
 • **Project:** Residence, name withheld (photo page 105, right)  
**Architect:** Lakeside Development Co.—Richard Sherer, Jeffrey Van Loon  
**Lighting Designer:** Steven L. Klein; Lana Nathe, associate  
**Light rails:** Ardee International  
**Recessed downlighting:** Lightolier

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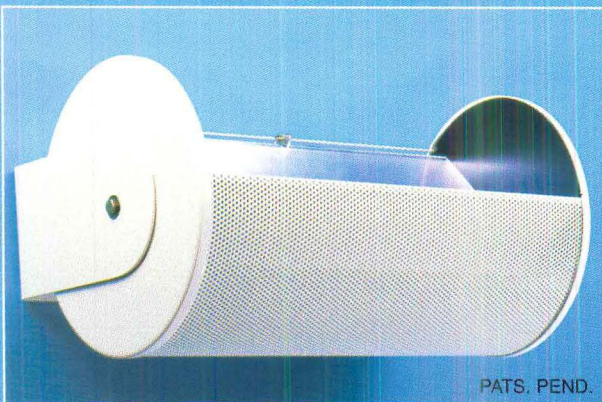


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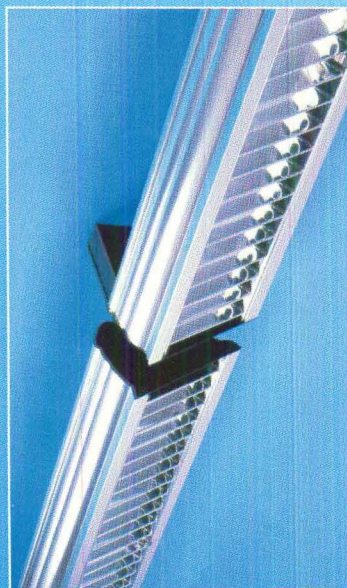
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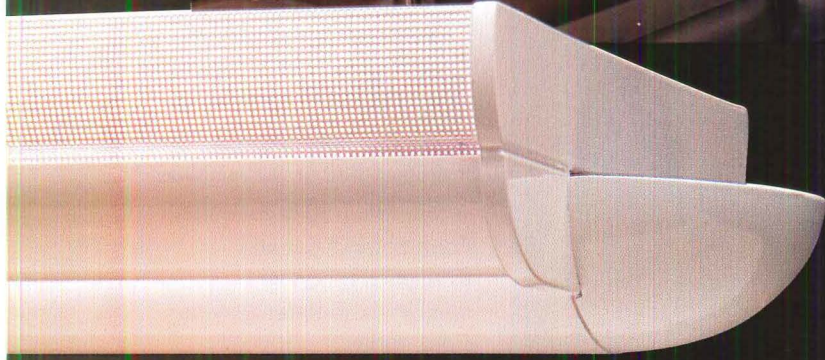
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CIRCLE 47 ON INQUIRY CARD

# Light Guides Visitors to a Room with a View

by Gareth N. Fenley

**A** residential remodeling in Indian Wells, California, offered a rare opportunity for an unusual design team to work together with light as a guiding element. The house wraps around a central courtyard with a pool. The main social areas and a highly prized view to the desert are at the side of the house opposite the entry, and frequently visitors needed guidance to reach this destination.

Upon entering the home today, the visitor is at once welcomed and directed by a standing figure of nickel-plated iron, holding a glowing pod of hand-blown glass. The “Seed Bearer” is the most elaborate of several luminous objects designed and sculpted for the site by Pam Morris of Exciting Lighting. The statue gently encourages visitors to begin turning left. They are drawn to continue in that direction by a large, illuminated Georgia O’Keefe painting of daffodils at the corridor’s end—part of the extensive art collection owned by the residents.

Interior designer Helen C. Reuter of Details, Inc., was mindful of her clients’ artistic sophistication when she suggested that Morris join the project. Reuter had already brought on board Randall Whitehead and Catherine Ng of Light Source Design Group to create the lighting and dimming system. They made use of the home’s existing architectural features to hide indirect fixtures, allowing Morris’s sculptures to shine in the artistic foreground. Her creations function primarily as symbolic and apparent sources of light.

“We are big advocates of ambient lighting in homes,” says Whitehead. “You want the decorative elements to be the sparkle. In any interior, there are three things that you’re lighting: the art, the architecture, and the people. We start with the people.”

The home abounded in coves and other details that were tailor-made for indirect lighting. Ambient fill light helped create a new sense of comfort in the space, adding a warm overall glow and softening shadows on human faces. Recessed adjustable low-voltage fixtures were added to

*Gareth N. Fenley is a freelance writer living in Atlanta, Ga. She has been writing and editing articles about lighting for the past 10 years, and also writes about interior design and architecture.*



**Which way to turn? A potentially confusing choice is clarified by illuminated art in the entry hall.**

highlight art and dramatize key architectural elements. Reuter led and inspired the lighting designers by defining colors, textures, and forms—often refined from the surrounding desert—to be used throughout the home. Most of the colors used are muted or off-white. Reuter was careful to ensure that the interior features would be sympathetic to the clients’ art collection. “They are doing a splendid job of filling the walls,” she says. “The interior must not clash or take over.”

The clients enthusiastically welcomed Morris to participate in the project, approving all of her suggested creations for their home, including the elaborate Seed Bearer. Her sketches followed a consultation with Reuter at the residence. During the trip, Reuter also took the artist to a garden of agave plants owned by the home’s remodeling contractor, Richard Miller of Western Preferred Builders, Inc. The designers made sketches and took cuttings. Reuter recalls telling Morris, “Whenever in

**Project:** Private residence  
Indian Wells, California  
**Interior Designer:** Details, Inc.—  
Helen C. Reuter  
**Lighting Designer:** Light Source  
Design Group—Randall Whitehead

and Catherine Ng, project team  
**Light Fixture Sculptor:** Exciting  
Lighting—Pam Morris  
**Remodeling Contractor:** Western  
Preferred Builders, Inc.—Richard N.  
Miller



doubt about anything, just think of the agave.” Morris agrees that the garden trip was a key to the collaboration. “I used the agave garden as a catalog for Helen to look at, so she could point out shapes and textures sympathetic to the overall design,” says Morris. “She was creating a very site-specific project.” But Morris adds that the design was never trying to replicate the natural surroundings. “My challenge was to make pieces that would take into account native forms, not to make something that looks like nature. Art needs to be inspired by or distilled from nature. When you try to copy natural forms, the real things always look better.”

Four sconces in the living room are Morris’s closest thing to a literal interpretation of the agave. Conjuring the spirit of a sprout emerging from rock-hard ground, they are placed to frame the room as visitors enter from the front hallway, helping to create a sense of entry into the living room. The sconces have cast-bronze bases with cast-glass diffusers formed in tusk-like shapes. “There’s an energy about them that is compatible with desert energy—a growth pattern of life pushing up and out,” Morris says.

Flanking the living room’s French doors are a pair of sculptural torchères, positioned to project cool diamond-shaped beams onto the gabled ceiling. The beams call attention to the vast panes of the transom, while the fixtures themselves function as symbolic markers, beckoning visitors toward the prized view beyond.

Although the torchères may not appear plant-like, they were inspired by the sharp, newly parted leaves of a growing agave. “They become quiet, strong and powerful,” says Morris, “not gaudy and demanding. Again, that is the energy of the desert.” Ambient light in the living room is provided primarily by cove lighting. A golden light emanates from the stepped coves, which conceal flexible linear low-voltage luminaires. Recessed adjustable fixtures accent the art objects and seating area.

The living room opens into the dining room, which continues the theme of warm light playing against cool. The lighted cove is particularly effective here, working in concert with lighting concealed below the surrounding cabinets. The concealed strips of warm light give a subtle impression that the walls are afloat.

Capturing attention in the dining room, however, is the insubstantial and yet commanding pendant created by Morris. The floating paper-like art piece consciously echoes the form of the table base below, which was selected by Reuter. The pendant’s slender profile allows an unobstructed view through the windows that comprise one side of the dining room. The glass was kiln-slumped onto a mold handmade by Morris. Its sole source of illumination is a single recessed small-aperture MR16 downlight.

“This was the first time we worked with Pam to create a fixture





True layered lighting comes into play in the living room (opposite). Sculptural sconces and torchères by Pam Morris are inspired by the sprouting forms of the agave plant. The pendant in the dining room (below) is kiln-slumped glass molded by Morris. The media room (left) features a preset dimming system.



Indirect lighting helps to both energize and humanize the large volume of this bedroom. Asymmetric-reflector sconces distribute light where mounting positions are absent.



that was non-electrified,” says Whitehead, who has worked with Morris intermittently for more than a decade. “Technically, this one was so minimal.” Whitehead says that the idea for the pendant spun off from a simpler bathroom fixture in the same residence. To soften the effect of three existing recessed downlights, Whitehead and Ng suspended a flat, sandblasted glass panel 4-in. below the ceiling plane.

For the media room, the interior designer and lighting designer worked together to create a comfortable space with a variety of possible activities and light levels. Whitehead specified a multifunctional lighting system with a four-scene preset dimmer. The system can be activated from a hand-held remote control, conveniently changing the room’s atmosphere to make it suitable for watching movies, reading, or playing games.

A wonderfully large bedroom benefits from abundant ambient light. The interior designer’s goal was to humanize this space, making it comfortable and flexible for the clients. Reuter used furnishings to divide the room into three areas: one for sleeping, one for reading, and one for working. Lighting further emphasized the separation in a subtle way. In addition to indirect lighting installed above the soffit details, four ceramic wall sconces are mounted on the two pairs of columns, where no cove or valance could conceal a light source. The standard sconce uses an asymmetric reflector to ideally distribute light for the application. And finally, recessed adjustable fixtures help add depth and dimension to the overall environment.

Reflecting on the project, Whitehead pays tribute to Reuter for acting as a coordinator orchestrating a team of professionals. “It was her project,” he emphasizes. “But the interior designer was willing to let go of having control of everything.” Collaboration and innovation were the result, as seen in the dining room’s integration of furnishings, wall treatments, and ambient and decorative lighting. Whitehead also notes that the remodeling contractor helped optimize circuitry for the lighting, offering recommendations that made the wiring easier and less intrusive.

It was the participation of Morris, however, that was most extraordinary. Artists are seldom incorporated into a project team as fully as she was here. “Pam was on an equal basis with the rest of us,” says Whitehead. He offers suggestions for designers who may be unfamiliar with consulting a sculptor of one-of-a-kind light fixtures for residences: Identify an artist as a potential contributor to the project. Light sculptures may be on view in showrooms that specialize in high-end residential furnishings. Magazines provide more leads. “Periodicals are the greatest current source of information,” says Whitehead. “If we see a fixture that we think is outstanding, we look up the credits and call the designer to ask how to contact the maker. We’ve never had someone refuse to give information. The lighting community is very accommodating and willing to share information.

“Ask the artist to visit the site or review plans. Be prepared to pay a consulting fee for design review, in the neighborhood of \$150 per hour. The artist will take in the whole lighting concept and come up with a luminaire,” says Whitehead. “A lot of times, it only takes one fixture to create a piece that creates a feeling for the whole space. Finally, have the artist present the idea to the client, as well as showing the client other completed work. Be sure to include pricing information at this point, so the client can make a realistic decision.”

A successful collaboration with an artist will give a project an utterly unique signature. Reuter, who had not worked with Morris before the Indian Hills project, summarizes the artist’s work this way: “It makes the house absolutely sing.” ■

#### *Manufacturers’ Sources*

**Custom light sculptures:** *Exciting Lighting*

**Pharmacy lights and asymmetric sconces:** *Boyd Lighting*

**Small-aperture downlights:** *Sylvan*

**Recessed adjustable downlights:** *Halo*

**Linear low-voltage lighting:** *Starfire*

**Controls:** *Lutron*

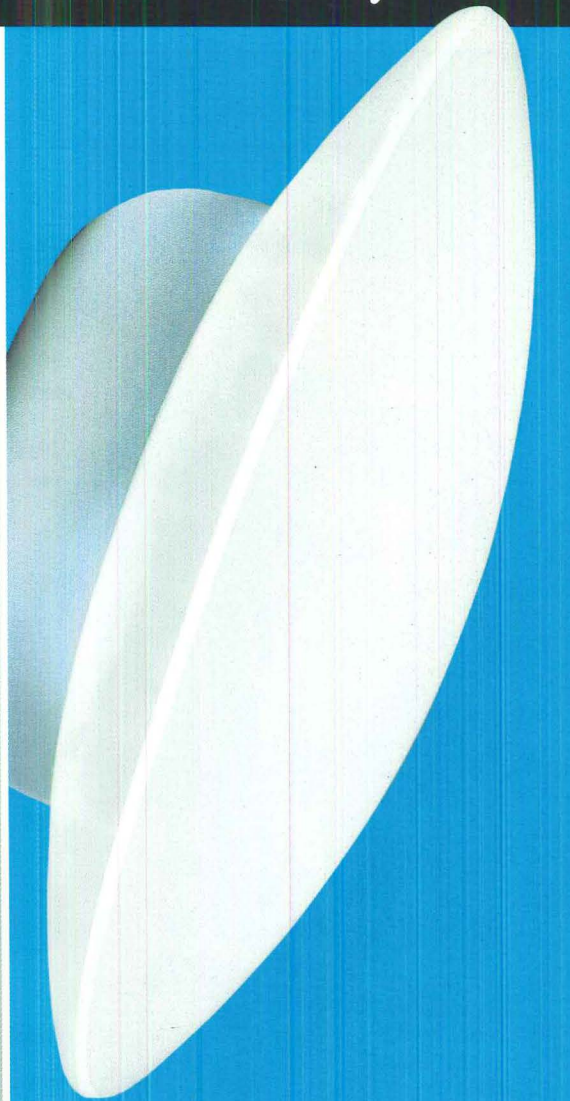
**Exterior lighting:** *Nova Industries*

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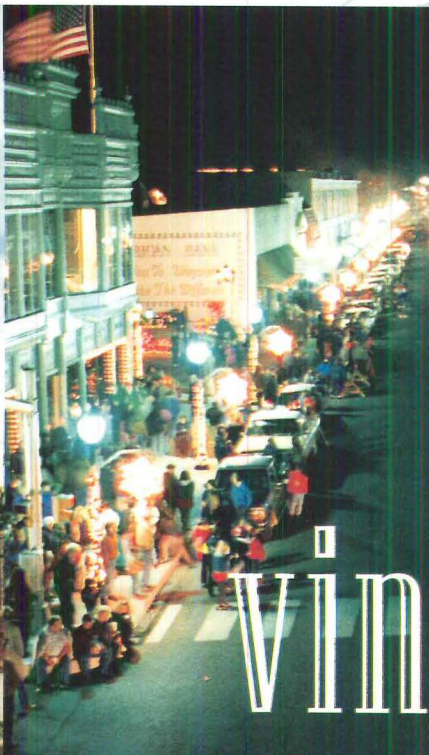
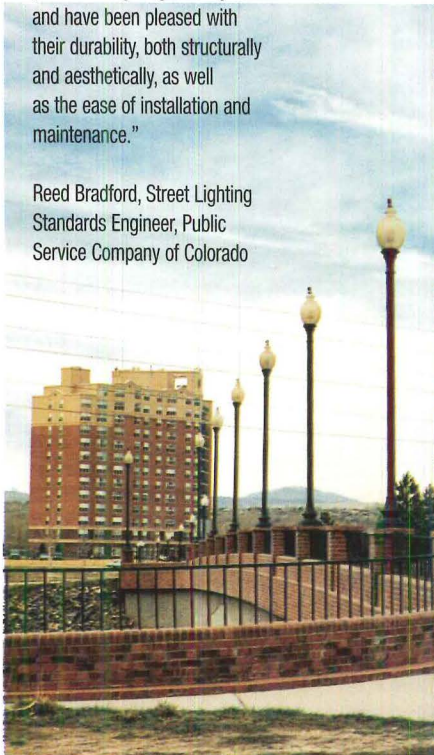
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# Galactic Gourmet: Boston's Museum of Science Gets a Star-Studded Café

by Nayana Currimbhoy



LIGHTING

**A**t Boston's acclaimed Museum of Science, a popular new exhibit—and an interactive one at that—is the Galaxy Café. Designed by Cambridge-based Prellwitz/Chilinski Associates, with lighting design by Craig A. Roeder Associates, the restaurant was conceived to be an extension of the museum experience, a space that would elicit in the children a sense of wonder at the culinary workings of the world.

The museum initially had three separate and rather dingy eating spaces. They were scattered throughout the museum complex, and unable to meet the demand for food. This resulted in whining, hungry kids in long lines for hot dogs, a frustrating interruption of the museum experience. Finally, the museum management decided to consolidate the different eateries into one large, 12,000-sq-ft restaurant with a view of the city and the Charles River. Besides offering a wider choice for parents and children, the arrangement would result in shorter lines at food counters. The resulting Galaxy Café consists of the Starlight Deli, featuring deli-

catessen-styled food in a 1950's diner motif; the Boston Grill, which has grilled meats; the Pizza Gusta, which presents a mix of freshly made pizza and pastas; and Galilio's, which offers a variety of desserts and snacks. The idea was to make eating an enjoyable and relatively healthful experience for parents and children alike.

A joint venture between the Museum and Sodexo, one of Boston's leading food services, the Galaxy Café is designed to treat food preparation and service as an educational experience. Cooking is exhibited in a series of display kitchens and bakeries. The ingredients are there for all to see, much like the experience of a modern market. Pizzas are prepared behind a glass wall, salads are tossed in a playful "salad bowl"

**Project:** Galaxy Café at the Museum of Science, Boston, Massachusetts

**Client:** Museum of Science and Sodexo Food Service

**Architect:** Prellwitz/Chilinski Associates—Wendy Prellwitz, design principal; Bill Whitlock, project

architect; Jessica Russell, Susan Greco, designers.

**Lighting consultant:** Craig A. Roeder Associates, Inc.—Craig A. Roeder, Robert Mapes, and George Balle, design team

**Sculptor:** David Tonnensen

Nayana Currimbhoy is a New York City freelance writer, who frequently writes about architecture, interiors, and lighting design.

The food court and its 500 chairs thread their way through the columns (right). Illuminated by twinkling fiber-optic “stars,” a dark, midnight-blue sky spreads out from the beam-me-up-Scotty central column by artist David Tonnensen (far right).



counter, and the bakery window provides a view of freshly baked bread coming out of the oven. The new 12,000-sq-ft eatery seats five hundred hungry museum goers.

The Science Museum was established in the 1940's in a landfill area off the Charles River, and has grown gradually since so that it now spreads over many buildings. The area earmarked for the café was actually

## THE GALAXY CAFÉ, A JOINT VENTURE BETWEEN THE MUSEUM AND ONE OF BOSTON'S LEADING FOOD SERVICES, IS DESIGNED TO TREAT FOOD PREPARATION AS AN EDUCATIONAL EXPERIENCE.

carved out of three different buildings. As a result, the architects had to demolish quite a few load-bearing walls, leaving the space a maze of columns. “There was this one central column that would just not go away,” says Wendy Prellwitz of Prellwitz/Chilinski, “so we decided to make it integral to the design.”

Now the focal point of the different eateries, this central column has been turned into a colorful, light-scattering sculpture that symbolizes the theme of the Galaxy Café. “Since the café is located near the planetarium, we decided to continue the outer-space theme,” says Prellwitz. The sculpture, a collaboration between the architects, lighting designer Roeder, and Boston-based sculptor David Tonnensen, consists of a metal-clad column topped by a large metal cap, both painted with a semi-reflective opalescent paint that is similar to the coating that might be

found on a movie screen. Brightly colored Plexiglas disks are strung onto aircraft cables surrounding the column. The cables are stretched from the floor to the ceiling. Each disk sits on a custom-designed piece of hardware that clamps onto the cable so it cannot slide down, but are otherwise not fixed to the cable. Disks are free to rotate if they are touched in this semi-interactive display. Narrow-beam MR16 spots are recessed into the

opalescent disk that caps the column, and shine through and reflect off the Plexiglas disks, making the disks luminous as they scatter mysterious pools of light into the surrounding area.

The sculpture is set in the center of a glittering fiber-optic galaxy, built of points of light that radiate from the column's vertical axis. The effect is created by pushing the individual cables from a fiber-optic bundle through the deep blue-painted ceiling material. A metal-halide fiber-optic cable illuminator provides the necessary brightness to make the scheme work.

A fairly simple idea has thus, in the words of the enthusiastic Roeder, been turned into “the holographic-deck dining experience. And,” he adds, “these are definitely not the usual constellations. You are dining beneath a quasar.”





In the main dining room, the blue neon coves are complemented by compact fluorescent downlights, controlled by a four-scene preset dimming system to set lighting levels for different occasions.

“Children are quite fascinated by it; they love to touch the disks, and that’s fine, although we had to put in a railing around the sculpture to prevent the really young ones from grabbing at it,” says Prellwitz. In the eating area immediately surrounding the sculpture, low-voltage MR16 track lighting, on track which radiates from the columns, lights the tables. At the walls, neon—seven shades of it are used on this job—is concealed in coves.

The open food-preparation areas have been illuminated like works of sculpture. Roeder used aimable 3000K, very-narrow-beam MR16 spots to light the food counters, which were built lower than usual to make them more child-friendly than standard-height counters. Recessed compact-fluorescent downlights fitted with louvers are used to light the cooking areas. Roeder prefers using louvered rather than open downlights because they shield glare from the side of the downlight reflector, as well as directly from the lamps themselves. The downlights also use 13W lamps whose 3000K color matches that of the MR16s lighting the counters.

In a larger adjacent dining area, bright blue neon is concealed in coves, while 26W 3000K compact-fluorescent lamps are used in louvered

downlights over the tables. Because this room is used for public dining in the daytime, when high light levels are desirable, and fund-raising activities at night, when lower levels would be preferred, the neon and fluorescent lights are circuited to a four-scene preset dimming system that allows the proper levels to be set for these occasions. An arched blue wall punctuated with compact fluorescent sconces frames a spectacular view of Boston city and the Charles River. On the outer walls, large, 7-by 11-ft photographs donated by NASA offer views of earth from space.

“We wanted to create a fun space. We wanted a space that would appeal the children, and bring out the out the ‘inner child’ in adults,” says Roeder. “The museum management was very supportive,” adds Prellwitz, “although the budget was limited, the director was as determined to get as much into the space as we were.” ■

*Manufacturers’ Sources*

**Recessed lighting:** Halo

**Fiber optics:** Fiberstars

**Neon:** NeNeon

**Track lighting:** Halo; Lightolier

**Wall sconces:** Neidhardt

**Lamps:** General Electric

**Preset dimmers:** Lutron





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# Designing Residential Lighting Control Systems

SO MUCH IS POSSIBLE WITH TODAY'S RESIDENTIAL CONTROL SYSTEMS THAT OFTEN THE PROBLEM IS TRYING TO DO TOO MUCH. AVOID SYSTEMS THAT ARE TOO COMPLICATED TO BE EASILY USED.

by James R. Benya

**D**eciding which control system to use in residential lighting design has gotten to be a rather complicated problem. Frankly, there isn't much you can't do. Even the basic four-scene preset dimmer—one can set four lighting “scenes at the touch of a button”—has become commonplace. The real problem is matching the requirements of the home with one of the many options, keeping your client's pocketbook and level of technical prowess in mind. More than anything else, the best advice in choosing a system is to begin with simple, intuitive approaches and gradually add complexity until the client's technical limit is reached. The power and capability of modern controls make it possible to design systems that can be too hard to learn. Remember, the lighting controls need to be operable by all members of the family and guests, not just the technically savvy teenaged computer nerd.

## Upgrading from switches

Most clients will want to upgrade from wall switches to some type of dimming. Often consideration will also be given to upgrading the switches themselves. For homes up to about 3,000 sq ft, and especially for retrofitting existing homes, this is probably the best approach. The first big step in upgrading is to choose a family of products with the right appearance for the home. The trend is toward the “decorator-style”—rectangular devices which include slide dimmers, large rocker switches, and matching receptacles.

Premium devices typically offer their own unique styles, including touch switches and discreet dimmer controls. For the energy-conservation minded, motion sensors, and sensor-dimmers often are made to match the rest of the system. Most switches and plates are plastic, but it adds a touch of elegance (and expense) to use devices with metal plates and, in some cases, metal touchplates. All can be specified to match interior hardware and detailing. But don't focus exclusively on style; keep technical requirements in mind. When ganging devices, be certain to use plates designed specifically for the number and types of devices needed.

For those restoring older homes, there are modern reproductions—with current UL listings—of traditional push-button switches. It is possible to buy a new dimmer control designed to look like a control made in the early 1900's. And of course, the standard snap-switch remains available, as do many styles of classic rotary dimmers, with plastic, wood, and metal plates to meet a variety of functional and decorative needs.

In a few key rooms, it's easy to replace regular wall switches with devices allowing local remote control. These products range from low-cost switches to infrared remote-controlled dimmers. Remotes are ideal

for renovations: wouldn't it be nice to dim the bedroom lights without getting up? A few systems also permit you to activate one or more lights from a remote that you might have in your car. The next step up—and it can be a pretty big one—is to add scene-preset dimmers. Most of these products have a single box containing four dimmers. They enable the user to select among four pre-determined lighting scenes, each a combination of settings of the four dimmers. Preset dimmers have the primary benefit of cleaning up and simplifying complex dimming systems. Scene preset dimmers are particularly good for rooms with multiple lighting systems, such as living rooms, family rooms, great rooms, and large kitchens.

Without presets, a busy room with multiple entrances and functions has the potential to become a real switching mess. The typical preset dimmer is a four-gang device with single-gang remotes. Some current products include built-in infrared remote control; all you have to do is buy the remote itself. Locate the main device at one of the entrances to the room and remotes at the others. One way to reduce the cost of scene-preset dimming is to employ dimmers that can be mastered onto a scene selector controller. This modular approach allows for up to 10 dimmer channels. It works much the same way as any other preset dimmer. Just keep in mind that one gang is needed for each dimmer, plus one for the scene controller.

## Using master systems

Master systems work with switches, dimmers, and scene-preset dimmers. Each device “on the system” can be controlled normally or from master control stations, which are typically located in the master bedroom and by the exterior entrance generally used by the family. The master stations display the status of each switch or dimmer, and allow them to be turned on or off individually or all at once. Some master systems are intended primarily for manual operation; others include automatic functions keyed to the time of day. Master systems offer two primary advantages: convenience in turning off lights when going to bed, and an added measure of security. The lights can be



Today, almost every conceivable type of control device is available in “decorator-style,” that is, in a rectangular shape. The device in the photo above is a motion detector.

*James R. Benya, PE, FIES, IALD, is a principal with Pacific Lightworks in Portland, Ore. His firm provides lighting design services for commercial and residential lighting projects. He has been designing lighting control systems for the past 15 years.*



A steel column supports the hull-like gallery above the dining room. Douglas fir posts and beams frame the living room (beyond and opposite right). Floors are Yukon White Indiana limestone.

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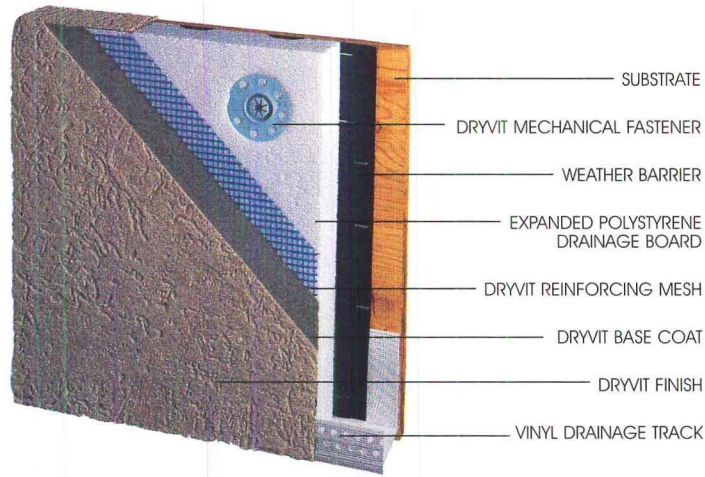


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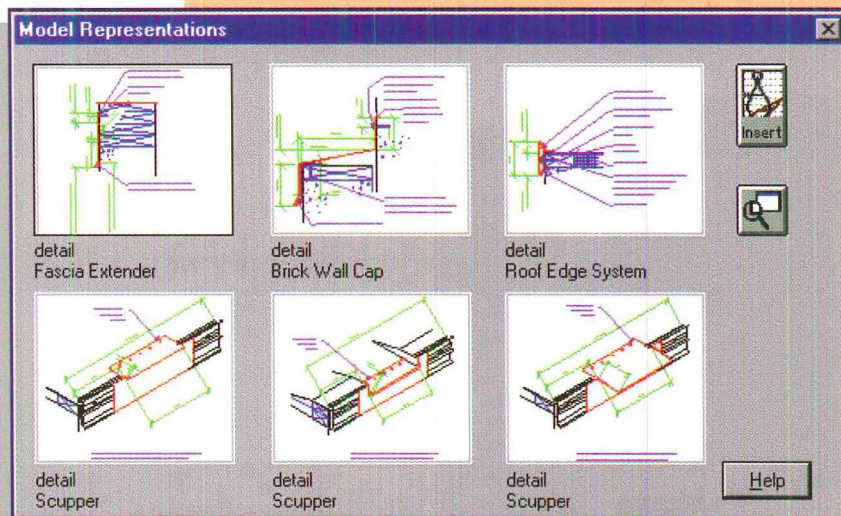


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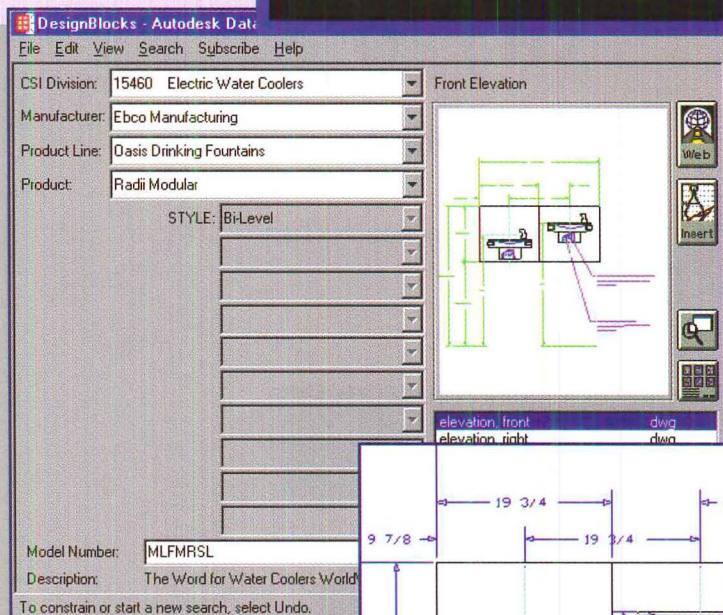


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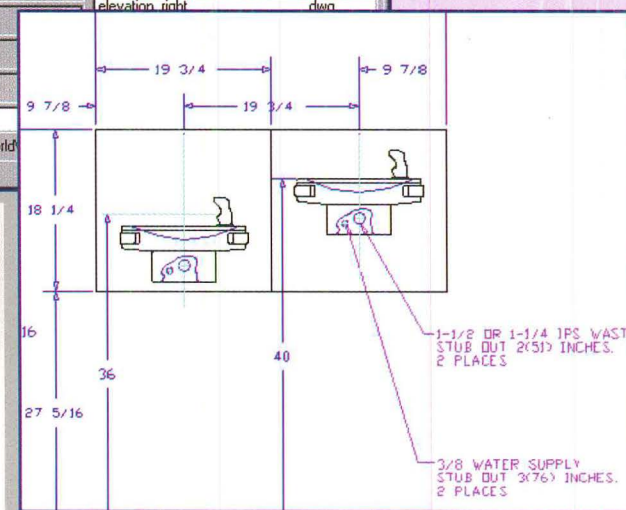
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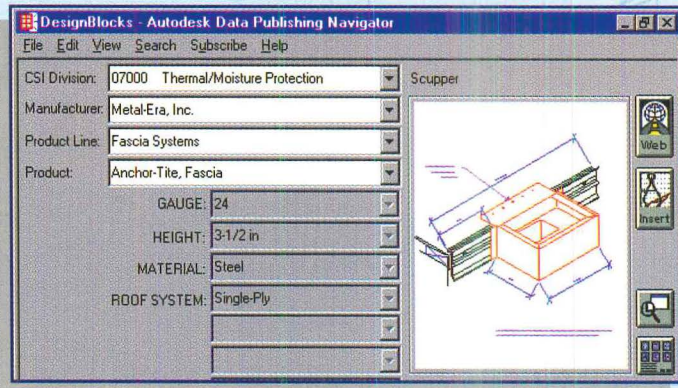
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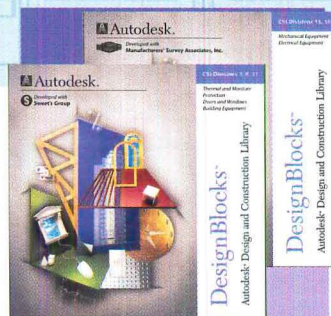
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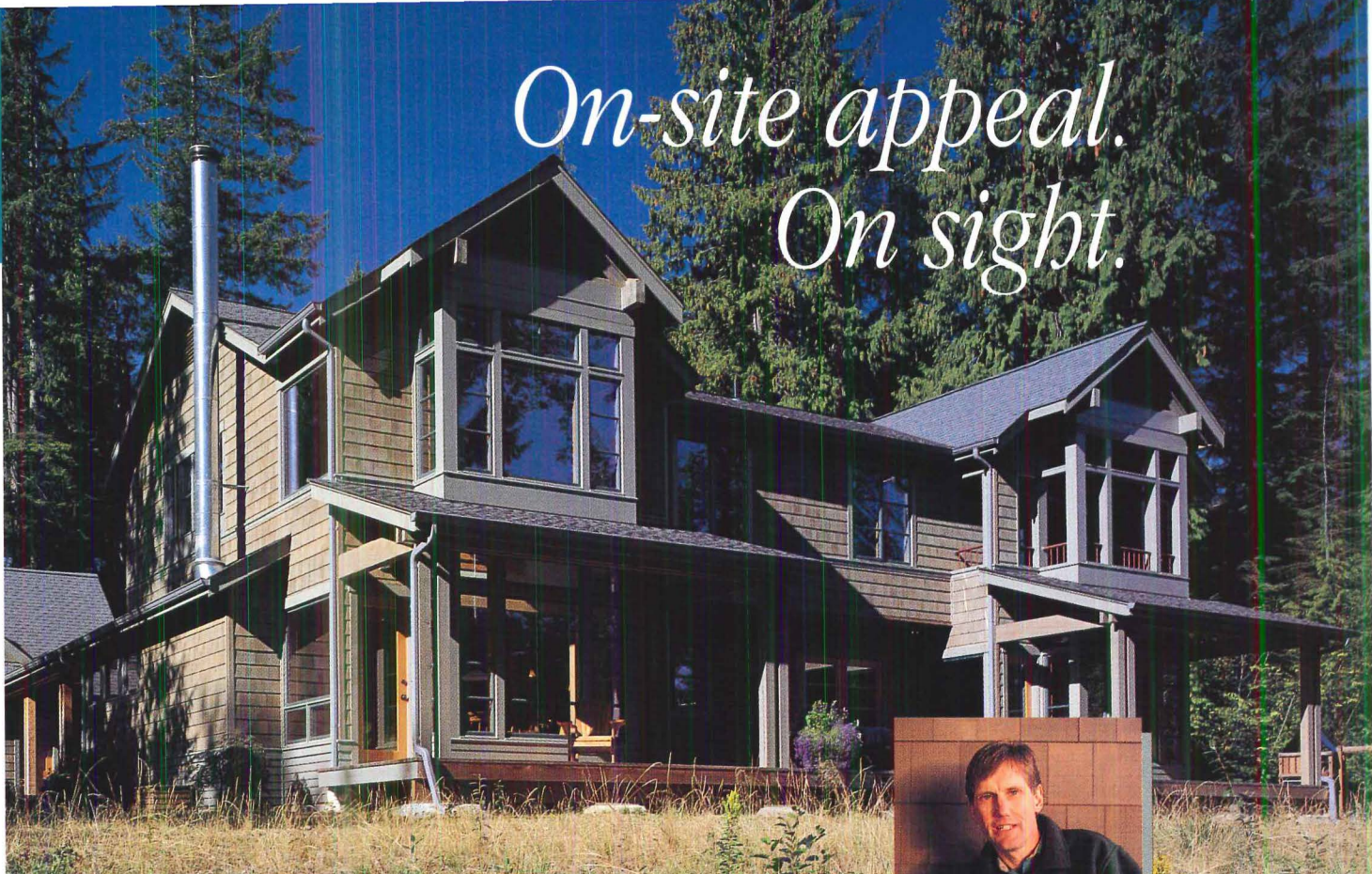
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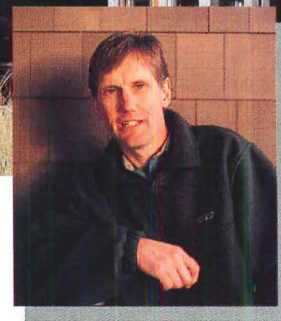




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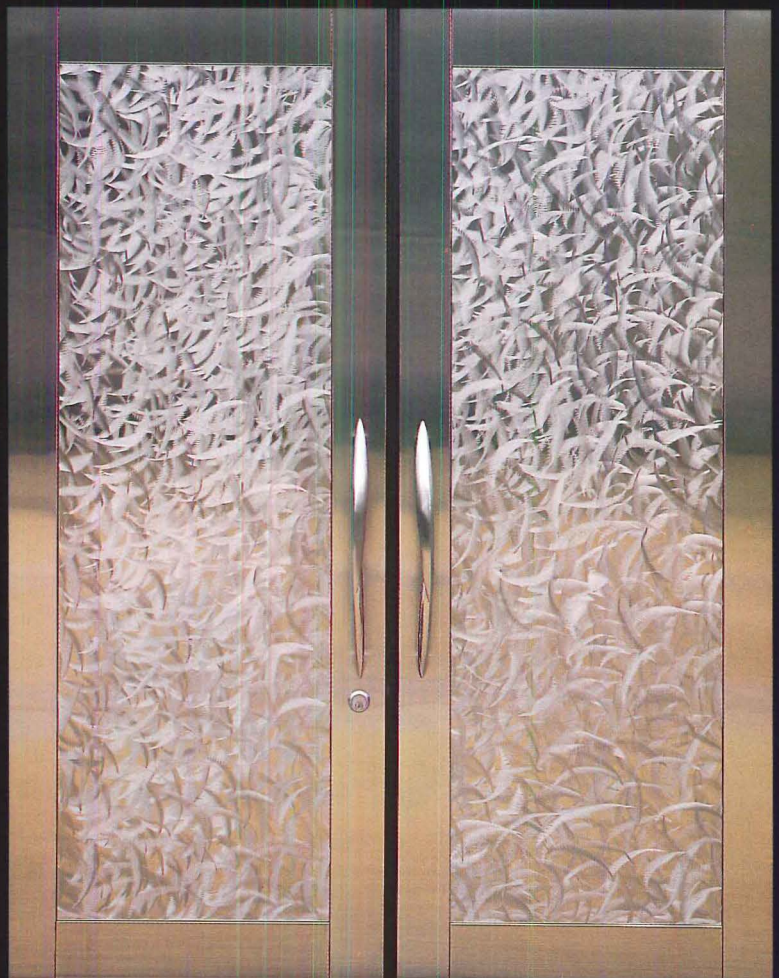
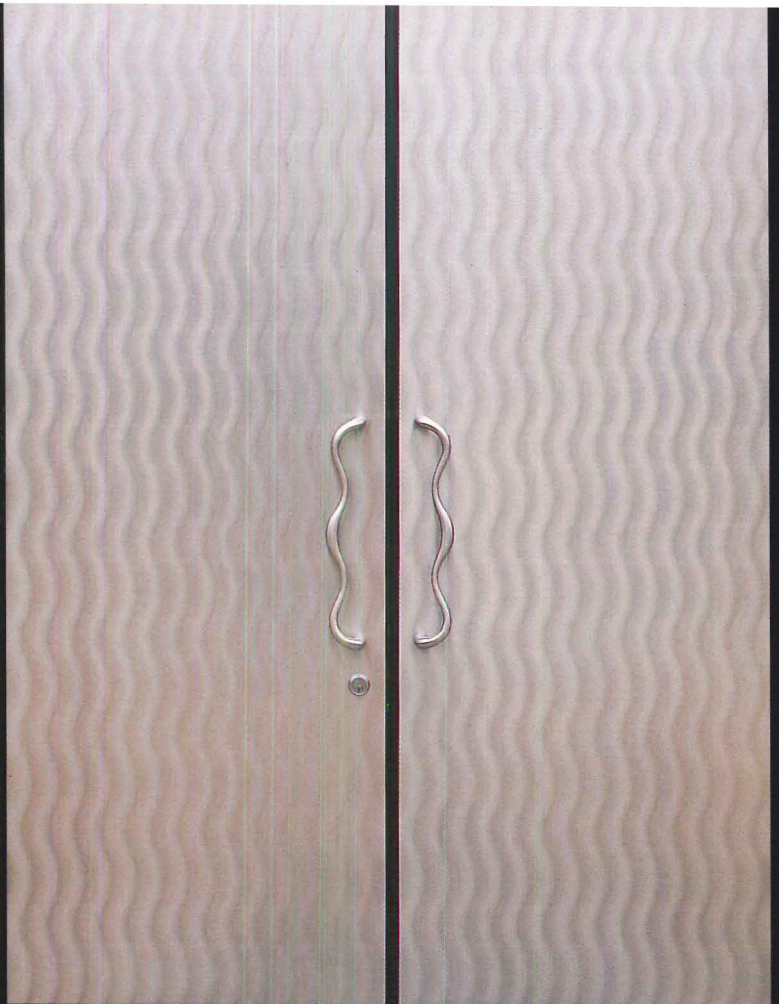


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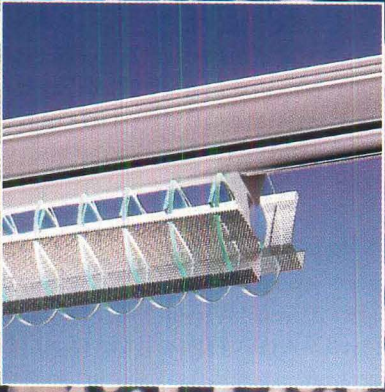
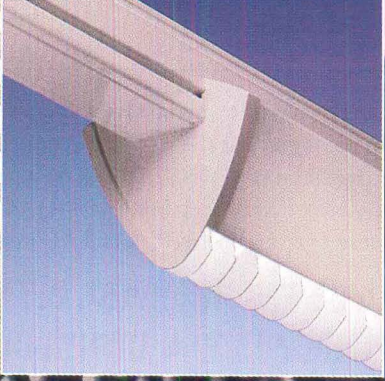
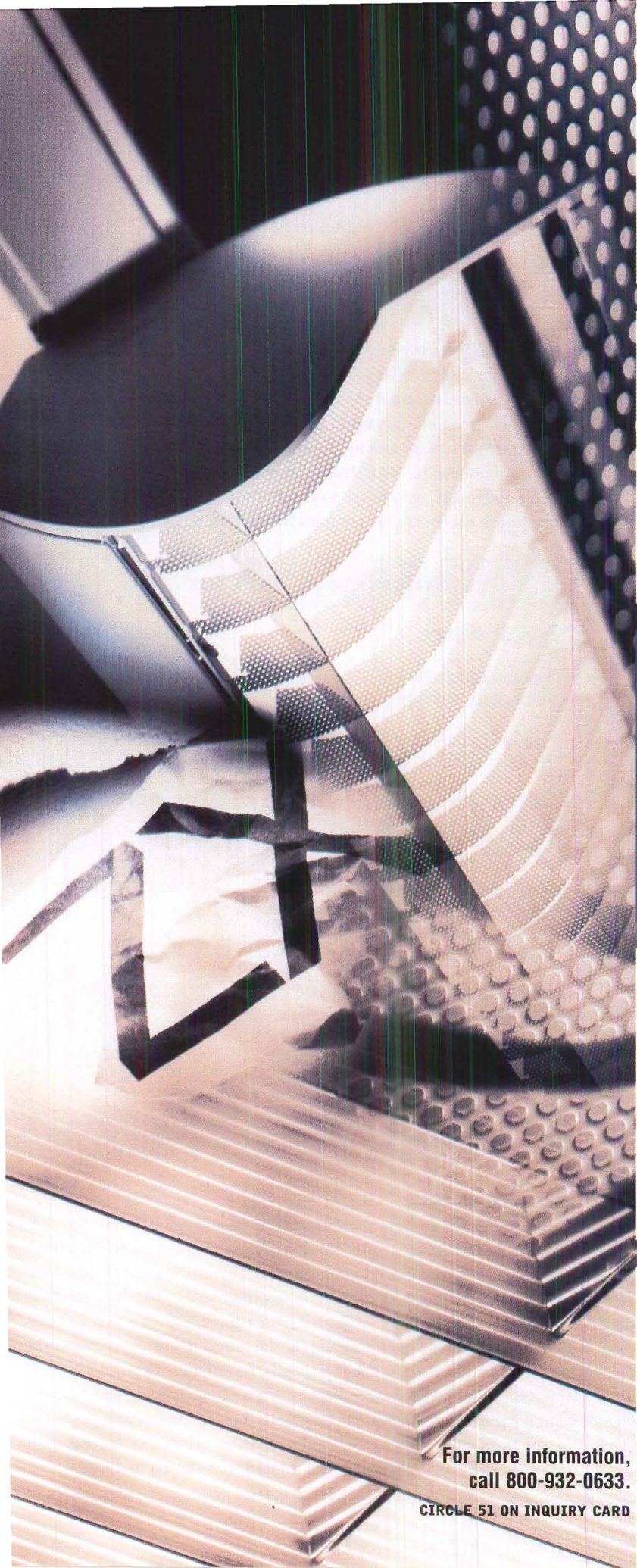
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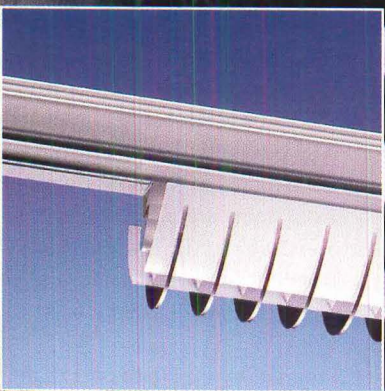
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activated automatically by a burglar alarm or manually by the resident when something goes bump in the night. For these reasons, master systems are recommended for larger homes (3,000-7,500 sq ft) and for homes in which security is a special concern. Keep in mind, though, that a master system adds an expense over and above the cost of ordinary

can be tricky. Portable lights present the biggest challenge, as it's necessary to choose specific receptacles for them. (I generally recommend using a non-standard receptacle that requires you to install a matching plug on the lamp being plugged in—lest a vacuum cleaner be plugged in and burn out the vacuum, dimmer, or both!) Should you choose one of

## WHOLE-HOUSE SYSTEM RELIABILITY WAS A PROBLEM A DECADE AGO, BUT IT'S NOT REALLY A CONSIDERATION ANYMORE. MOST MANUFACTURERS HAVE BACKUP MODEMS TO HELP RESTART SYSTEMS.

switching and dimming. If you choose a master system, you can keep costs down by limiting the number of zones connected to it. For starters, do not connect bedrooms, bathrooms, closets, or other private spaces to the system, unless there is a special desire to control lighting remotely in one of these rooms. Avoid connecting fans and other loads.

### Combine lighting zones in logical ways

The lighting zones should make sense. "Front exterior lights" might include the porch light, post light on the front lawn, and front landscape lights. Most homes can work well with 10 zones: living room, dining room, kitchen, foyer, hall, garage, front exterior, rear exterior, utility/basement, and one other zone. Adding a master system to an existing house can be done in one of three ways. The easiest and cheapest way is to use power-line carrier controls, which simply plug in and send control signals through the house's power wiring. But signal strength problems have made these systems unreliable, especially for larger homes. A new system that employs modern digital radio-frequency communications is a better answer, although cost may be an obstacle. Hard-wiring is a distant third choice, as getting wires through an older home can be almost impossible.

### Whole house systems

At the high end of residential lighting control, a whole house system is wired more like a theater than a house. Dimmer cabinets, each containing 16 to 24 or more dimmer channels, are located throughout the home. Each room then has lighting control stations with push-buttons. The power of the whole house system is that each button can be programmed to whatever function the client wants. Some stations may have one button: push on, push off. Others may have multiple presets. And some stations might even activate multi-room or whole house presets, such as "morning," "evening," and "night." A "party" setting might set all the lights on the exterior and in the non-private rooms of the house, simply with the press of a button. Whole-house systems are particularly suited for mansions and very large homes (over 7,500 sq ft). A whole-house dimming system might seem overly complex for a small home, and yet the system has many advantages. Its features may be exactly what a more demanding homeowner seeks.

The products now on the market have evolved over many years to satisfy sophisticated clients. Most systems have elegant audio-video interface and compatibility. Automatic functions can be easily interfaced with whole-house systems. They offer burglar and fire alarm interface, remote activation from the car, and even computer modem connection, so the owner can check the lighting system from afar. Whole-house systems also are used to control everything electrical, including fans, garbage disposers, and the like. It's easy to hook up detection devices, such as motion sensors or microswitches, to control specific lights. For instance, use a microswitch to illuminate the lights in a closet or a motion sensor to illuminate a garage or basement stair. Laying out a whole house system

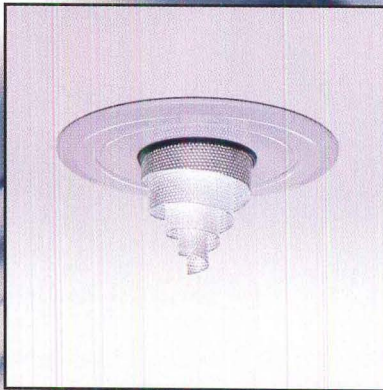
these systems, prepare for it to be expensive and complicated to get up and running. System reliability was a problem a decade ago, but it's not a primary concern any more. Most manufacturers have backup capability via modem from the factory to help restart a system after a problem. Bypass methods allow the lighting to operate, albeit without control, while troubleshooting problematic dimmers and computer devices. And once the technical aspects are working smoothly, if the functions of a whole house system are too complex for the client, change them!

### COMPARATIVE COST OF CONTROL SYSTEMS

TYPE OF SYSTEM	COST/ SQ FT
MINIMUM SWITCHING PER ELECTRICAL CODE	\$0.20 — \$0.30
MINIMUM CODE SWITCHING WITH DIMMING IN DINING AND LIVING ROOMS	\$0.25 — \$0.35
MINIMUM CODE SWITCHING WITH BETTER QUALITY DIMMERS AND DECORATOR SWITCHING	\$0.35 — \$0.50
MINIMUM CODE SWITCHING WITH FOUR-SCENE PRESET DIMMER IN LIVING ROOM, PREMIUM DIMMERS AND SWITCHES THROUGHOUT	\$0.75 — \$1.00
MINIMUM MASTER SYSTEM WITH TEN ZONES	\$1.00 — \$1.50
MASTER SYSTEM WITH TWO FOUR-SCENE PRESET DIMMERS, PREMIUM DIMMERS, AND SWITCHES THROUGHOUT	\$1.50 — \$2.50
<b>WHOLE HOUSE SYSTEM</b>	<b>\$2.50 — \$5.00</b>

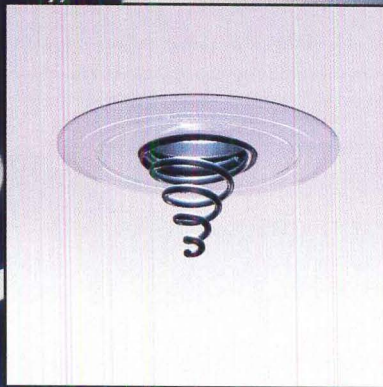
### Cost and complexity

In assessing needs and opportunities for any residential lighting project, it is probably best to first find out your client's awareness of the many options and the potential cost implications. There is no sense in designing a control system that isn't affordable. As a basic rule of planning residential systems, make a point of showing the parts and pieces to the client. Most manufacturers' agents can provide literature and sometimes a working demonstration for the client. It's really important to determine that all of the adults in the household like the control system being selected, and want it in their home. Children and guests must at least be able to use the system. If it's too complex, it will end up like the veritable VCR: never programmed to do all those wonderful things it was chosen to do. ■



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CIRCLE 52 ON INQUIRY CARD

**STAFF** 

## ECHO

Moving forward with indirect asymmetric lighting - not repeating, but evolving.

Echo, adds linear fluorescent to metal halide and halogen.

Echo, simplifies form with integral ballast options.

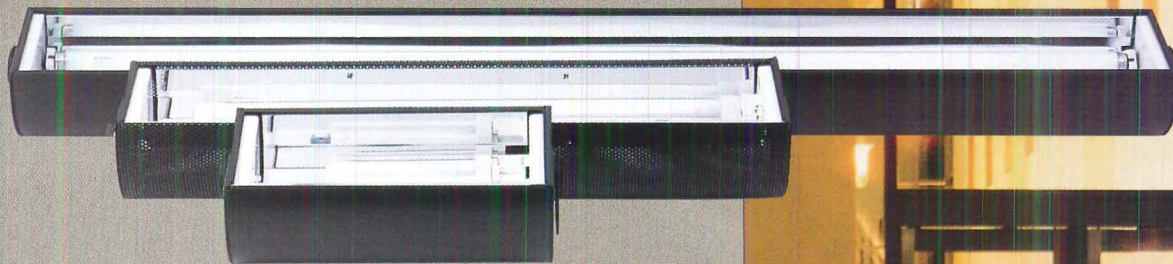
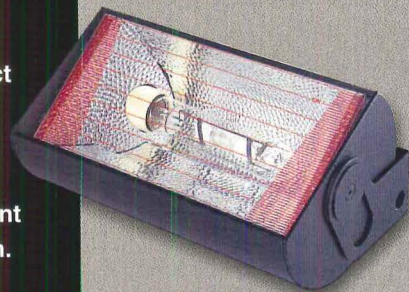
Moves outside with a new weather resistant housing.

Echo, expands flexibility with four diameters of solid or perforated housings, decorative Shapes™ and multiple mountings.

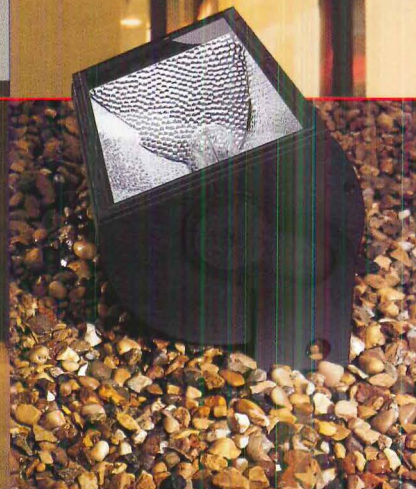
Echo, blends functional design with superior performance in the SPI tradition, again. And again and again.

SPI Lighting Inc.  
10400 North Enterprise Drive  
Mequon, WI 53092

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CIRCLE 53 ON INQUIRY CARD



**SPI**



RESIDENTIAL LIGHTING

► Pastel pendants

Suggested for retail and restaurant as well as residential, Verra cable-hung lights come in these five shapes. Options include clear and four colors of sandblasted-glass shades, and compact-fluorescent, 55W halogen, or medium-base incandescent lamping. 914/698-5959. D'Ac Lighting, Mamaroneck, N.Y. **CIRCLE 250**



▼ Sandblasted acrylic

Based on a custom fixture designed by Robert Gonzalez for Nine West shoe stores, Sea Glass lights come as the pendants below, and also in table, sconce, and floor-light models. Color range as shown; list price: \$190-\$220. R.A.G.E., Brooklyn, N.Y. **CIRCLE 255**



▼ Aysmettric chandelier

Bright integrally colored Murano glass shades in yellow, amber, green, red, cobalt, and white highlight new Actus luminaires. Below: the Actus 6-branch chandelier, a bit over 27 inches overall. Also available, in customer's choice of shade colors, are UL-labeled night-table and reading lamps; ceiling fixtures; sconces; and a floor light. Lamping: 60W frosted E14s. 718/436-2002. Itre, U.S.A., Inc., Brooklyn, N.Y. **CIRCLE 251**



▲ Murano tour de force

A wonderful luminaire for the right spot and the right budget, Artemide's Pantalica chandelier has loops, curves, and globes of handblown Murano glass that cast a flattering glow from frosted 60W bulbs. Made by VeArt as part of the Venexiana line, suspended light can be hung from 32- to 55-in. from the ceiling by adjusting the chrome-plated, telescoping stem at instal-

lation. Glass elements may be ordered in red and white, as well as the blue shown above; all exposed metal parts are chrome plated. Two- and three-light sconces are available in Pantalica styling. Complete dimensions and lamping data given in Artemide's 1997-98 Master catalog. 800/359-7040. Artemide, Inc., Farmingdale, N.Y. **CIRCLE 253**

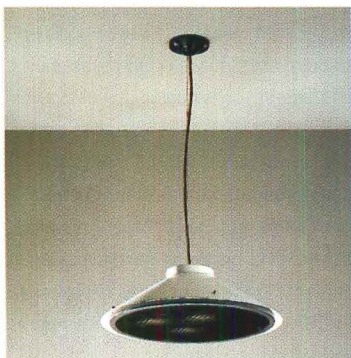
▼ Deco influence

Classic Collection sconces have the gentle curves and low-relief fluting of the Art Deco luminaires that inspired them. ADA-compliant, lights come in nickel and brass finishes. Baldinger Architectural Lighting, New York City. **CIRCLE 256**



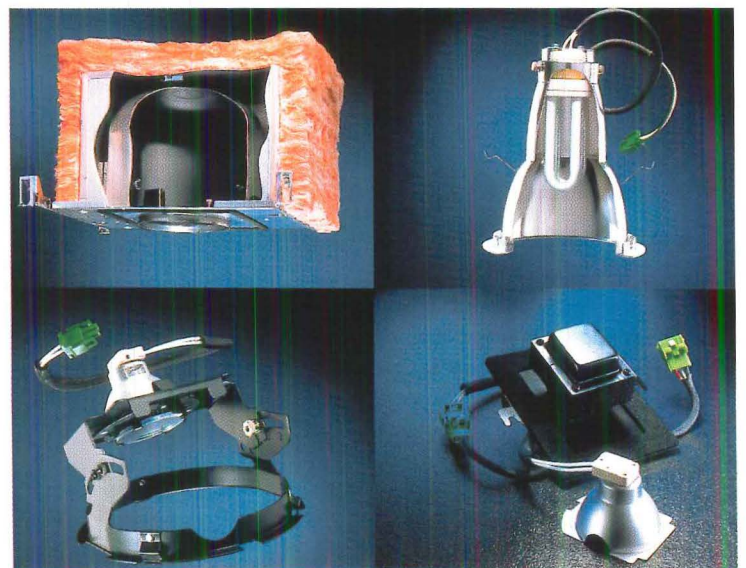
▼ Fluorescent pendant

The RLM pendant has a spun-aluminum shade, suspended by a cable (as pictured) or stem mounted. Suitable for dining or meeting tables, fixtures take triple-tube, 2-D, or other CFLs. Advent Lighting, Greenville, Wis. **CIRCLE 252**

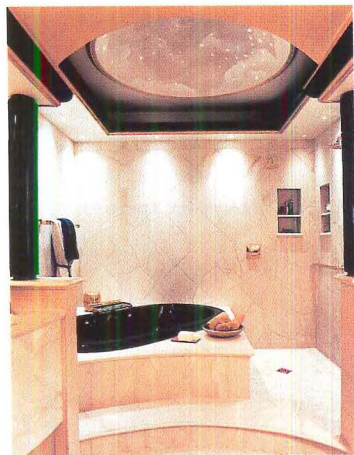


► "Spec grade" for the home

New Iris recessed lighting is said to bring the lamping versatility and high-performance optics of commercial fixtures to a product line appropriate for the residential client. Fixtures meet insulated-ceiling and energy codes, and offer enough punch for today's high-ceiling spaces. The IC platform (top left) is finished an unobtrusive matte black; reflectors (top right) match the cutoff requirements of different sources. Accent luminaires are fully adjustable for precise aiming, while holding their center-aperture position. Quick-connect plugs (lower right) make relamping easy; Iv transformers are acoustically isolated to eliminate hum. Cooper Lighting, Elk Grove Village, Ill. **CIRCLE 254**

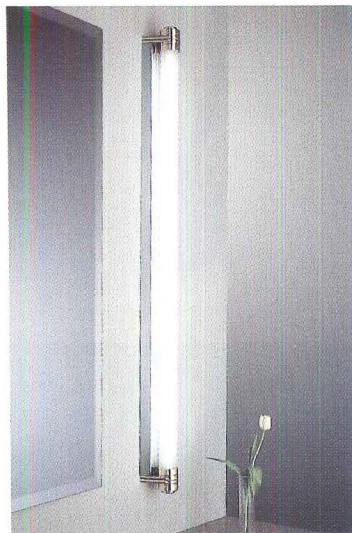


BATHLIGHTING



▲ Point-source illumination

Because of its minimal (3-in.) clearance requirements and moisture resistance, remotely illuminated fiber-optics are a natural for bathroom lighting. Axiom Design used FiberSpots in an Orinda, Calif., showcase home to illuminate an opulent marble bath from a perimeter soffit. They also created a twinkling-star effect by putting fiber-optic strands behind a faux-sky painted dome ceiling. 800/FBR-STRS. Fiberstars, Inc., Fremont, Calif. **CIRCLE 257**

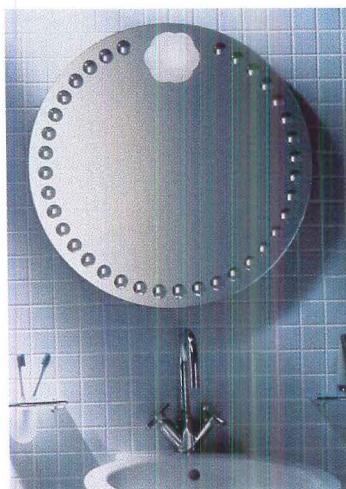
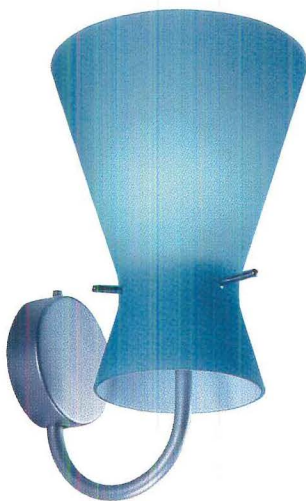


▲ Linear mirror lighting

The Baton vanity fixture encloses an energy-efficient, warm-colored T8 lamp within an extruded-glass cylinder, and provides for easy relamping with a "break away" end cap and socket. Said to illuminate evenly without glare, the T8 Baton comes in 28-, 40-, and 52-in. overall lengths. 415/431-4300. Boyd Lighting Co., San Francisco. **CIRCLE 258**

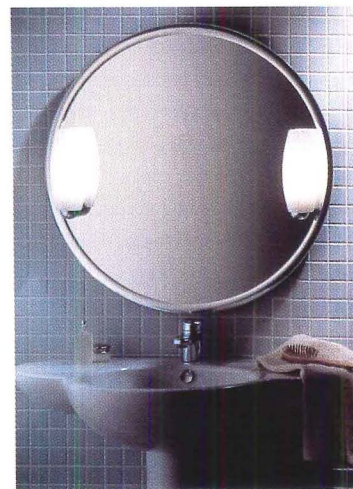
▼ From Italy in color

A source of authentic, hand-blown Murano glass, Vetreria de Majo makes fixtures and accessories with interesting shapes in soft shades of yellow, green, red, orange, blue, white, and gray. Pictured below: Memory sconce in a light blue glass. UL listed fixture takes incandescent, screw-in CLF, or halogen lamps. Also available: two-lamp task light and floor light, and a pendant version. 908/745-9710. Illuminating Experiences, Highland Park, N.J. **CIRCLE 259**



▲ Paired mirrors and lighting

FlosUSA Bagno is a new, coordinated collection of lighting and glass mirrors, both designed for Flos by Matteo Thun. Components are available separately, as mirror or as light fixture, or pre-mounted on the glass, ready for installation. A quick-disconnect plug and 12-volt transformer are furnished for remote installation as required; lights are UL-listed. Mirrors come in dozens of round, square, and rectangular sizes; luminaires can also be fixed on existing glass.



Two possible assemblies of different mirror and light designs are pictured above. At left, the Lucrezia flower wall light is mounted at the top of a 31 1/2-in. diameter mirror surrounded by integral mirrored dots. Luminaire of blown, etched Pyrex glass takes a 35W 12v lamp. Venezia (right) projects about 4 in. off glass or wall; the switch version shown operates by a pull rod in the base. Finish options: white or chrome; white Pyrex shade. 516/549-2745. Flos USA, Huntington Station, N.Y. **CIRCLE 261**

► Sequential incandescents

A mirror light with sparkle, the Mini-Bracelet fixture is available in lengths of up to eight light "sequences" and four decorative, etched-glass shades. The close spacing of the KX2000 candelabra lamps on a shallow brass (or chrome) backplate is said to produce a comfortable, luminous effect. 800/217-7722. Lightolier, Fall River, Mass. **CIRCLE 260**



◀ Halogen lighting for the bath

Robern's Wall Mirror Halogen pendant (far left) works with both traditional and contemporary interior styles. Fully dimmable, light takes 12v halogen bulbs up to 50W; arms may be chrome, as shown, or brass; shade is frosted glass. Sconces (right) are 9-in.-high frosted-glass tubes set on a 3 1/2-in.-wide mirrored backplate either 30- or almost 40-in. high; unit can be mounted between cabinets, as shown, or on the wall to either side of a mirror. Fixture takes 120v halogens up to 150W. 215/245-6550. Robern, Inc., Bensalem, Pa. **CIRCLE 262**



# Music to your eyes

7.1" x 2.4"

the diminutive  
new T5 luminaires  
from Ledalite

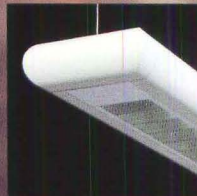
Also available with T8 and TT5 (Biax) lamps

## Minuet

Impressive style and  
performance in a  
minor scale...

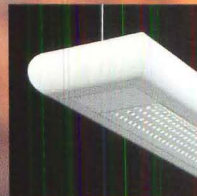
- Classic low-profile design, ideal for smaller spaces
- Precision optics create visually dynamic, glare-free luminous environments
- Takes T5, T8 or TT5 lamps
- Factory pre-wired for fast, easy installation
- Extruded aluminum housing allows mounts up to 12' on center

Direct/Indirect  
Perforated louver



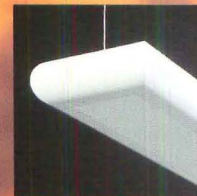
1 T5 - 2610 lumens  
75% up 25% down  
86.2% efficiency  
Peak candela @ 112.5°  
Meets RP-1

Semi-Indirect  
Concave filter



1 T5 - 2610 lumens  
90% up 10% down  
88.4% efficiency  
Peak candela @ 115°  
Meets RP-1

Indirect



1 T5 - 2610 lumens  
100% up  
87.4% efficiency  
Peak candela @ 127.5°  
Meets RP-1



Lēdalite 

THE LIGHT OF REASON

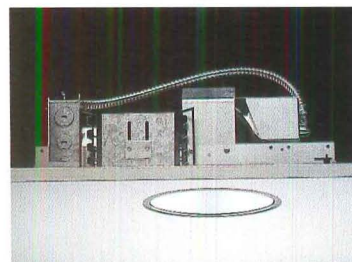
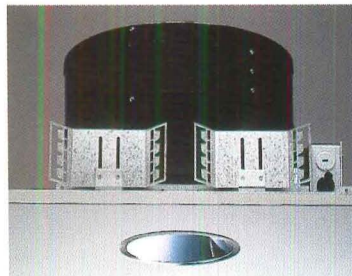
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CIRCLE 54 ON INQUIRY CARD

CONTRACT LIGHTING

▼ Downlighting "family"

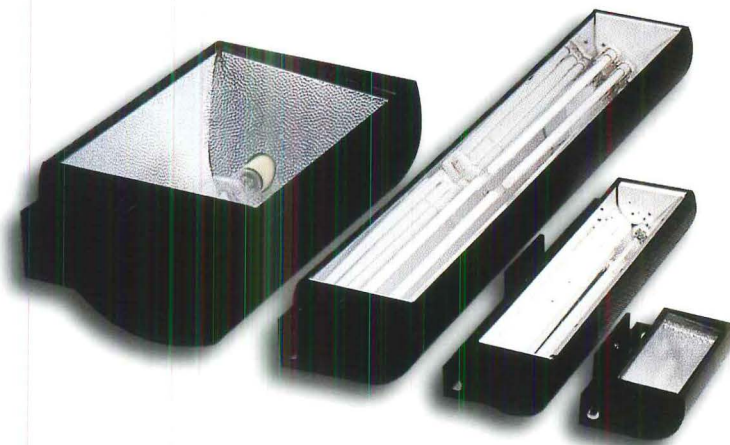
Staff's new Specification Downlighting Series links five light sources—compact fluorescent (including 32W triple-tubes), HID, low-voltage, A-lamps, and incandescent PAR lamps—within a uniform,



4-, 6-, 7-, or 8-in. aperture dimension. A cohesive re-orientation of all Staff high-performance, architectural-grade products, the Series offers a standardized housing and reflector appearance whatever the lamplung. Also new across-the-line: a minimal-width flange detail that presents a very flat, unobtrusive profile on the ceiling. Products are supported by reformatted, tabbed specification binders; many offer 72-hour delivery. 800/932-0633. Zumtobel Staff Lighting, Inc., Highland, N.Y. **CIRCLE 263**

► Interior and exterior

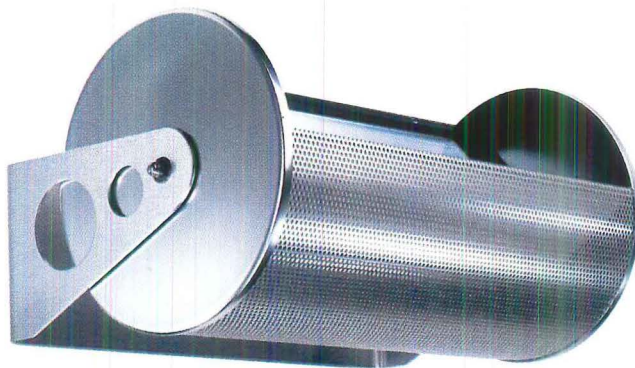
The Echo Series of linear-fluorescent, metal-halide, and halogen lighting for interior and exterior applications is now made with a stronger and more corrosion-resistant extruded-aluminum housing, suitable for wet locations. Versatile ballasting and mounting options permit a continuity of design throughout a space, within a range of four sizes of solid-metal or perforated-steel housings and the new aluminum fixtures in three standard sizes. 414/242-1420. SPI Lighting, Inc., Mequon, Wisc. **CIRCLE 264**



▼ Asymmetric luminaires

Available in two sizes—one for "any grand space" and a smaller model suitable for lower-wattage wallwash and uplight applications—new Dotted Line fixtures are set off by a perforated-aluminum cylinder shielding the asymmetric optics. The round end plates maintain a consistent profile regardless of the aim-

ing angle of the individual luminaire. Finish options include a white semi-gloss and bright-anodized aluminum (shown below). Both styles can be ceiling or wall mounted; the larger fixture, style 137, takes 300W to 1000W halogen and 175W to 1000W metal-halide sources. 203/931-4455. Elliptipar, West Haven, Conn. **CIRCLE 265**

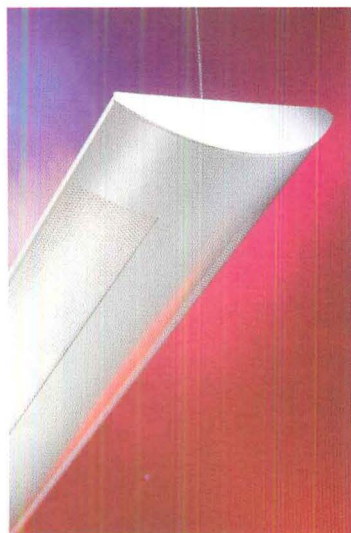


▲ Light and look

Paravision combines MR16 halogens and a continuous-use miniaturized video camera within a sleek straight or arced aluminum light tube. Designed for casinos, retail sales desks, and other applications involving cash sales, the fixture illuminates transaction areas while attempting to minimize the chance of employee or customer theft or cheating. 714/957-6101. Tivoli Industries, Santa Ana, Calif. **CIRCLE 268**

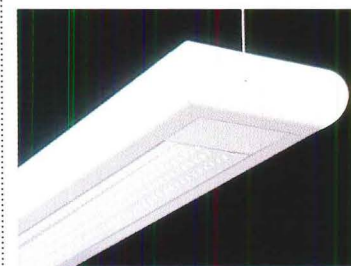
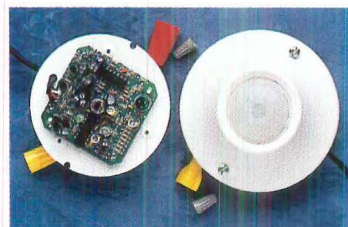
◀ Small-scale indirect

Part of a line of luminaires that seem to get thinner and thinner, the Arcos Perf is down to 2 3/8-in. thick by 9 9/16-in. wide. Ballasting options, including emergency and the miniature Energy Savings unit, permit a number of 2- and 3-T8 lamp configurations as well as 2-lamp compact fluorescents. The perforations (done before the housing is painted) spill light to equalize brightness between ceiling and fixture. Arcos Perf comes in 8-ft lengths that can be connected in rows, or suspended individually; the slim luminaire can be specified in any of 16 standard colors. 617/294-0100. Litecontrol, Hanson, Mass. **CIRCLE 266**



▼ Dual-mode occupancy sensor

Model CMR-PDT solves a common sensor problem: how to know if lights are needed in a restroom where stall partitions can block coverage. For line-voltage installation, the unit uses both infrared technology and microphonics, and can "hear" and "see." 203/265-2842. Sensor Switch, Wallingford, Conn. **CIRCLE 267**



▲ Super-thin VDT luminaire

The smallest Ergoline linear yet, Minuet takes the new 5/8 in.-diameter T5 lamp. Suitable for low ceiling spaces, the fixture comes in all-indirect, semi-indirect (above), and semi-specular louver versions. Extruded housing permits 12-ft on-center mounting. 800/665-LEDA. Ledalite, Langley, B.C. **CIRCLE 269** ■

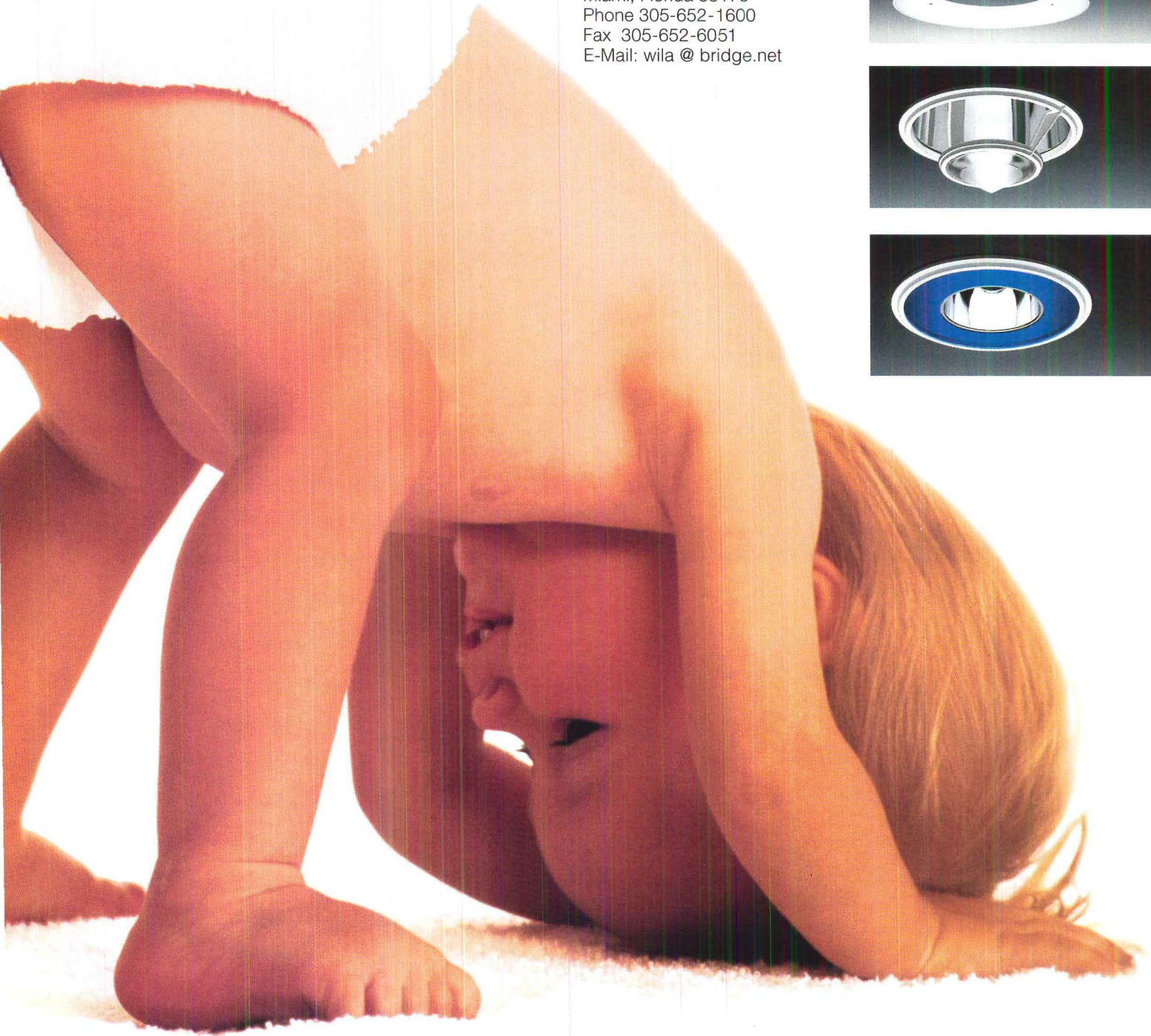
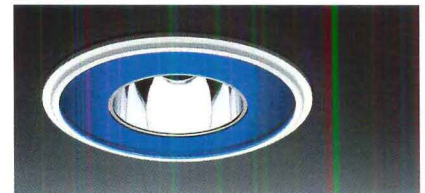
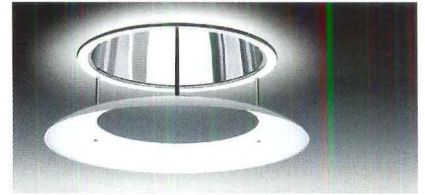
Visual interest is the mystique and unquantifiable aspect of light that adds the finishing touches to a high quality lighting installation.

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## PRODUCT LITERATURE

### Light without energy

A technical brochure summarizes data that demonstrate how higher light-reflectance ceilings can increase work-plane illuminance or reduce initial-fixture and continuing-maintenance costs, regardless of the type of lighting systems installed. When indirect-lighting systems are considered, Hi-LR ceilings can significantly reduce these costs. A chart compares the light reflectance, acoustical performance, and durability of various Armstrong ceilings. 800/448-1405 (opt. 4). Armstrong World Industries, Lancaster, Pa. **CIRCLE 270**

### Italian lighting design

A new 68-page catalog of "affordable high-design objects" commemorates LucePlan USA's inauguration as the American marketing arm of the Milan-based manufacturer, and the resulting reduction in trade prices for many luminaires. Includes lamping, dimension, and finish-option data for each fixture. 212/989-6265. Luceplan USA, Inc., New York City. **CIRCLE 271**

### Residential lighting guide

Useful for both design professionals and homeowners, a new 30-page workbook takes readers through what to light, how to light it, and what to light it with. Using diagrams, drawings, and floorplans, the guide shows typical rooms and suggests ways to analyze lighting problems, demonstrating the effective use of light to create mood, atmosphere, and function in a space. 800/223-0726. Lightolier, Inc., Fall River, Mass.

**CIRCLE 272**

### Emergency lighting

The NEMA Guide to Emergency Lighting is available to help architects, property managers, and others understand the features of available life-safety products and their energy requirements. The booklet explains key points of emergency egress lighting standards and outlines techniques for meeting code requirements. Single-copy cost: \$11.

703/841-3200. National Electrical Manufacturers Association, Rosslyn, Va.

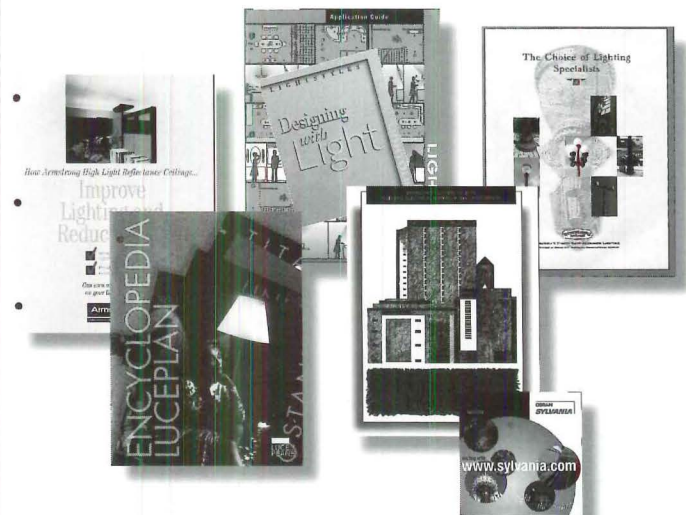
**CIRCLE 273**

### Cast-aluminum standards

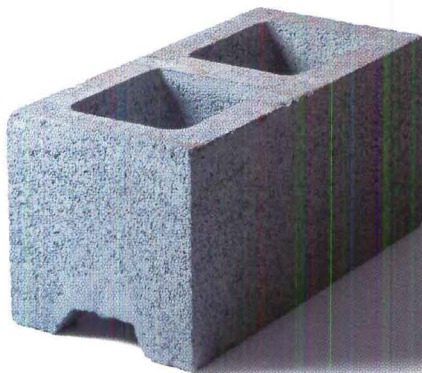
A four-page brochure highlights the custom-design flexibility offered by this maker of traditional style, cast-aluminum poles and luminaires that meet most outdoor roadway, path, or area illumination needs. 610/948-4000. Western Lighting Standards, Div. Spring City, Spring City, Pa. **CIRCLE 274**

### Online lighting information

A Netcom disk helps architects and lighting designers access Osram Sylvania's Web site, a source of information on lighting products and performance solutions to industry-wide lighting applications. <http://www.sylvania.com>. Osram Sylvania, Inc., Danvers, Mass. **CIRCLE 275**  
Continued on page 183



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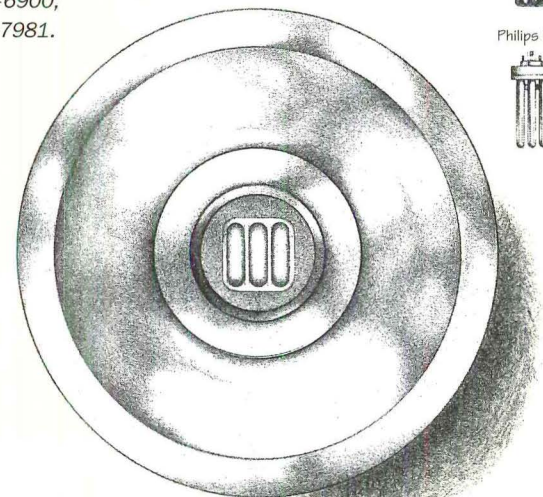
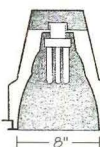
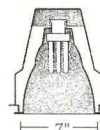
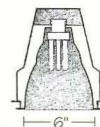
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Today's  
9000 Series  
is still the  
**BENCHMARK**



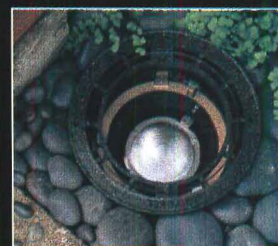
These innovative fixtures introduced new levels of lighting performance; sealed modular construction to eliminate moisture intrusion and resulting corrosion; and greatly simplified installation and maintenance.

Today's 9000 line has expanded to handle new lamps and a variety of modifications to accommodate designer's needs.

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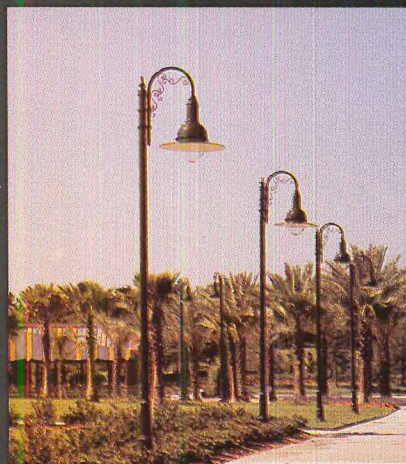
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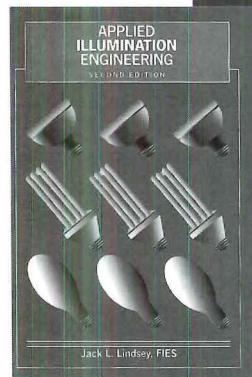
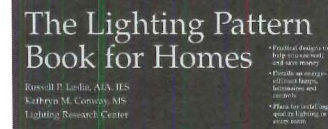
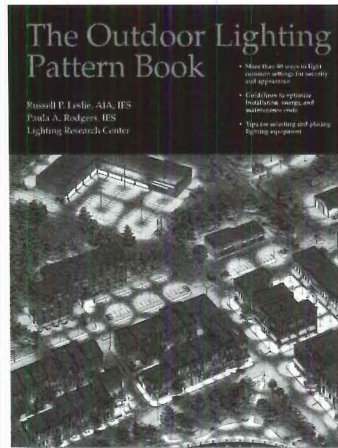
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## LIGHTINGBOOKREVIEWS



### **The Lighting Pattern Book for Homes**

by Russell P. Leslie and Kathryn M. Conway.  
Published by the Lighting Research Center and McGraw-Hill, 1996, 222 pages, \$60.00

### **The Outdoor Lighting Pattern Book**

by Russell P. Leslie and Paula A. Rodgers.  
Published by the Lighting Research Center and McGraw-Hill, 1996, 218 pages, \$60.00

Reviews by Nayana Currimbhoy

The first two titles in a series planned for publication by the Lighting Research Center at Rensselaer Polytechnic Institute and McGraw Hill, *The Outdoor Lighting Pattern Book* and *The Lighting Pattern Book for Homes* are both practical, informative guides aimed at architects, designers, contractors, and lay persons.

*The Outdoor Lighting Pattern Book* provides guidelines for lighting a variety of public places, ranging from parks and shopping malls to city centers. Each "pattern" begins with a page that includes basic information about a site. The typical design represents lighting as it is found in many of our cities and towns. "Upgrades" suggest ways of improving situations using existing hardware and installations, while "redesigns" give a completely new scheme. Each of the patterns in the book is accompanied by illustrations of a generic site and fixture layout, and by an evaluation of illuminance, connected load, costs, and maintenance.

Formatted in a similar, efficient style, *The Lighting Pattern Book for Homes* covers a somewhat broader base. Divided into sections such as techniques, designs, luminaires, lamps, and controls, the book packs in a thorough grounding of indoor lighting. As in *The Outdoor Lighting Pattern Book*, the design section takes

different rooms of an apartment or house and then goes on to illustrate typical lighting, upgrades, and renovations, along with annual operating costs. Although one might question individual points such as the consistent use of fluorescent strips as wall washes in small bedrooms, bathrooms, and studies, chapters are clear and simple, employing illustrations in plan and section in order show how lighting effects are achieved.

Both books offer straightforward, matter-of-fact advice on lighting. The solutions are practical, energy efficient, and affordable. There is no mystification, no glorification of the process of design, no stars, no creative bursts. These are workhorse books where you look, not for inspiration, but for information.

**Applied Illumination Engineering, Second Edition** by Jack L. Lindsey, FIES. The Fairmont Press, 1996, 516 pages, \$73

The 1990s witnessed many changes that have affected lighting design, most significantly, the National Energy Policy act of 1992, which banned the use of many popular lamps, encouraged the introduction of new lamps and fixtures, and increased the use of the electronic ballast. Adapted to address the implications of these changes, the second edition of *Applied Illumination Engineering* is an in-depth, information-packed text that discusses different light sources, their use and measurement, quality and quantity of illuminance, as well as maintenance and control techniques. This book deals with the mechanics of lighting, and is a useful for serious practitioners and students as a learning tool and reference. However, the book is not for the mathematically shy. ■

## PRODUCT LITERATURE

### Large-diameter fiber optics

Color catalogs describe the fiber-optic technology behind Lumenyte Fiber Optics, which uses monofilament fiber to "bridge the gap" between neon-like lighting and incandescent. Lumenyte manufactures all equipment used in its systems, including optics, illuminators, lenses, and fittings; large-scale applications (such as architectural cove lighting) are a specialty. 714/556-6655. Lumenyte International Corp., Costa Mesa, Calif.

CIRCLE 276

### Accessible lighting controls

A 20-page catalog, *Enlightened Alternatives for Lighting* illustrates Universal Design Series products for residential, commercial, and institutional environments. Includes remote-control and sensor-operated devices, as well as illuminated, easy-to-use rocker-style Decora switches. Of note: a three-function security switch with a special Flash function, which causes front-door and exterior lights to flash on and off at one-second intervals, alerting neighbors and summoning emergency assistance. 800/323-8920. Leviton Mfg. Co., Inc. Little Neck, N.Y. CIRCLE 177

### Ballasts and energy regs

A guide shows how ballasts can help meet the National Energy Policy Act of

1992 (EPACT). Text compares the costs and savings involved with three different relighting strategies. 708/390-5000. Advance Transformer Co., Div. Philips, Rosemont, Ill. CIRCLE 278

### FLW luminaires

A collaboration between Japanese manufacturer Yamagiwa and the stained-glass techniques of Wisconsin-based Oakbrook-Esser Studios is responsible for a marvelous collection of Frank Lloyd Wright lighting, including art-glass Sumac-pattern pendants and sconces done for the Dana house. A catalog gives dimensions, lamping, and finish details, and illustrates fixtures in original settings. Fax requests: 818/879-8640. Yamagiwa USA, Westlake Village, Calif. CIRCLE 279

### Modular recessed lighting

An installation guide shows how high-performance German-made downlights permit site adjustments and the addition of decorative trims without compromising optical performance. 305/652-1600. WILA Lighting, Inc., Miami. CIRCLE 280

### Liturgical luminaires

A 46-page catalog illustrates energy-efficient pendants and sconces for religious settings, in styles from Gothic to Contemporary. All metal-finish options shown. 314/773-1340. McFadden Lighting Co., St. Louis. CIRCLE 281 ■



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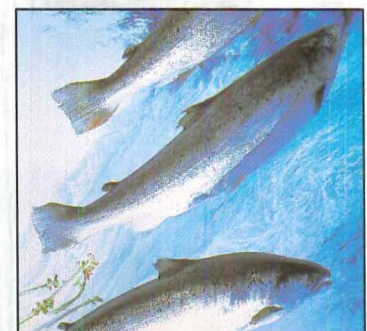
Ninety-five percent of the old growth redwoods are already preserved in more than 88,000 acres of parks. In addition, there are more than 350,000 acres of redwoods in parks and other reserved public property. Over the years, The Pacific Lumber Company has provided over 20,000 acres of easily accessible old growth forest, which are now part of Humboldt Redwoods State Park, Founders Grove, Avenue of the Giants and other popular parks.

On September 28, 1996, our Company reached an agreement with the State of California and the federal government to save the old growth redwoods known as the Headwaters Forest.

This agreement is a "win-win" for all parties involved. It adds 3,000 acres of old growth forests and a 4,500-acre buffer zone to the hundreds of thousands of acres of redwoods already preserved in parks and public lands. It leaves our Company with the ability to grow and harvest redwood on a sustained-yield basis.

This agreement will also protect wildlife. Its provisions state that PALCO establishes a Habitat Conservation Plan to assure that the wildlife on our remaining property will have sufficient food and cover. We also are required to submit a Sustained Yield Plan that monitors the growth and harvest rate of our forest in 10-year increments over a 120-year period.

If you are interested in the details of the Headwaters agreement and our efforts to save this forest, visit our internet site at [www.palco.com](http://www.palco.com). If you have any questions, write to us; we would like to answer them.



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# WOOD WORKS

WOOD PRODUCTS FOR Today's Applications

## Responsible Choices

It used to be, you never thought twice about how your building material choices affect the environment. You selected materials based primarily on economics, performance and quality. But now, in light of a growing population, limited energy supplies and concern for the air, water and land that surrounds us, we have been forced to consider something else. Sustainability.

With this come important new questions like, how is this particular building material made? How much of it do we have? How will it tax our environment? If we consider the answers, we can make wise choices and begin to own responsibility for the environmental impact of our decisions. We can begin to see how choices to specify wood or steel framing systems, vinyl or wood windows, concrete slab or wood-frame floor systems, affect the whole earth, not just our corner of it.

### Energy Conservation

In choosing building materials from an environmental perspective, we need to consider environmental impacts throughout product life cycles. One of the most important factors is energy consumption, including the energy it takes to extract, manufacture, deliver, use and dispose of the product, as well as the effect product selection has on the energy efficiency of the building. While it's true that producing any building material requires energy, some make bigger demands than others. Considering the alternatives (steel, aluminum, plastic and concrete), wood uses less energy and puts less strain on declining energy resources.

The bulk of wood's structural properties come naturally, while the tree is growing. That makes the manufacturing process a relatively simple one of reshaping the material for more efficient use. Compared to other building



**For low-rise structures, up to five stories, wood works as a quality building material that is energy conservative, recyclable and biodegradable, and sustainable in perpetuity.**

products little energy goes into breaking down the raw material so that it can be recomposed into a usable product.

Another advantage of wood is that residuals from the manufacturing process are used to offset a portion of the energy consumed. At some facilities this electrical co-generation process can recoup 100% or more of the energy required to run the plant. No other material can make this claim.

The choice of building materials also significantly affects energy requirements for heating and cooling. Wood framing is a much better thermal insulator than steel. Steel framing members are highly conductive and act as thermal bridges, carrying heat around or through cavity insulation. According to *Environmental Building News*, a steel framed wall with R-13 fiberglass batts has an overall R-value of only R-

6 or R-7. The same wall framed in wood achieves an R-10 performance rating (Table 2).

### Pollution and Solid Waste

Choosing building products that cause less overall pollution and waste is one way we can all contribute to a safer environment. However, no building product can claim a totally clean record when it comes to air and water emissions.

Yet, wood does what the others cannot. It grows. And as it grows, wood works to freshen the air by taking in carbon dioxide and releasing oxygen. In this process, carbon is "fixed" into the wood fiber, where it remains even after the tree is processed into a usable product. According to the American Forest & Paper Association, for every pound of wood produced in managed forests, 1.47 pounds of

# WOOD WORKS



**Wood building materials offer architects design flexibility combined with warmth and environmental integrity.**

carbon dioxide is consumed. In the process, oxygen is released into the atmosphere, helping to offset the greenhouse effect and other pollution-related problems. When those trees are harvested, new trees are planted, continuing the cycle.

With wood, very little is wasted. Branches, needles and other parts that can't be made into products are left in the forest to naturally biodegrade, enriching the soil. The log is used to make lumber, plywood, and other primary wood products. Residuals from the manufacturing processes, including sawdust and scraps, are used for products such as particleboard, medium density fiberboard and hardboard. Whatever cannot economically be used

for a product becomes hog fuel to generate power which, in turn, helps offset the energy needed to run the manufacturing plants.

Changes in society's expectations, coupled with changing economics, have made the recycling of metals, plastics and paper a way of life in North America. A similar transition is beginning for waste wood products. In several areas, waste wood is recovered and used to manufacture particleboard, medium density fiberboard and other wood-based composite panels. This trend will accelerate as the value of discarded wood fiber increases.

### **Renewable or Nonrenewable**

We cannot use what we do not have. We cannot replace oil or gas or coal, bauxite or iron ore—all nonrenewable natural ingredients that go into making building materials. But we can replace trees. As a matter of fact, trees are the only renewable source for any of the primary building materials used today. Every year in the U.S. and Canada, we grow more trees than we harvest. According to the U.S. Forest Service, an average of six million trees are planted every day in North America. Thanks to these efforts, the total wood volume in the U.S. and Canada has actually increased some 25% since the 1950s. In the U.S., net growth in our forests exceeds harvest by more than 30% every year. Better still, America's standing,

## Wood and Steel Framing: A Comparison

The following charts compare the environmental costs associated with the extraction, manufacturing and construction phases of two 10-foot by 100-foot walls. One wall is constructed of wood, and the other from steel.

### **Material Usage**


As indicated, the wood wall used 25% less raw material by weight than the steel alternative (Table 1).

### **Energy Use**

The steel wall required three times as much energy as its wood counterpart to extract, manufacture, transport and construct (Figure 1). Half the energy used in the manufacture of the wood assembly is derived from wood fiber waste, reducing demand on the world's fossil fuel reserves.

### **CO2 Emissions**

Carbon dioxide emissions are three times higher in producing the steel wall than for the com-



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**TABLE 1 - COMPARATIVE RESOURCE REQUIREMENTS (KG)**

RAW MATERIAL REQUIRED	WOOD WALL	STEEL WALL
Roundwood	597	
Limestone	2	77
Iron Ore	12	509
Coal	6	252
Zinc		2
<b>TOTAL</b>	<b>617</b>	<b>840</b>

**TABLE 2 - IMPACT OF FRAMING ON WALL R-VALUES**

FRAMING MEMBER AND SPACING	NOMINAL CAVITY INSULATION	COMBINED CAVITY & FRAMING R-VALUE (W/O SHEATHING OR AIR DAMS)	
		WOOD-FRAMED	STEEL-FRAMED
2x4 16" o.c. <sup>1</sup>	R-11	R-9.0	R-5.5
	R-13	R-10.1	R-6.0
	R-15	R-11.2	R-6.4
2x4 24" o.c. <sup>2</sup>	R-11	R-9.4	R-6.6
	R-13	R-10.7	R-7.2
	R-15	R-11.9	R-7.8
2x6 16" o.c.	R-19	R-15.1	R-7.1
	R-21	R-16.2	R-7.4
2x6 24" o.c.	R-19	R-16.0	R-8.6
	R-21	R-17.2	R-9.0
2x8 16" o.c.	R-25	R-20.1	R-7.8
	R-25	R-21.2	R-9.6

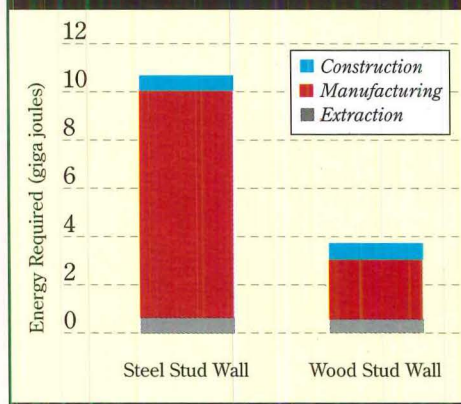
Applies to C-Channel metal studs of 16 gauge or thinner. 1. 16" on center spacing assumes 11.9% of wall area is framing. 2. 24" on center spacing assumes 8.9% of wall area is framing. Source: Values for steel from ASHRAE Standard 90.1, values for wood calculated using parallel path method. Source: Environmental Building News

comparable wood assembly (Figure 2). The high energy requirements for steel manufacturing accounted for a large portion of the carbon dioxide emission difference. Air pollution emissions - such as sulfur dioxide, nitrous oxides, methane, particulate and volatile organic compounds - were also significantly higher for the steel wall assembly.

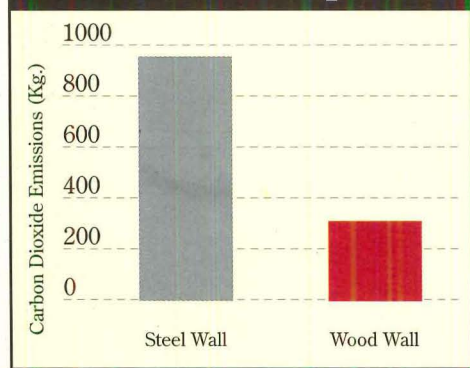
**Energy Requirements for Heating and Cooling**

Wood framing performs well thermally relative to steel framing. For example, a steel framed wall with R-13 fiberglass batts has an overall R-value of only R-6 or R-7. The same wall framed in wood achieves an R-10 performance rating. Steel framing is only 50% to 60% as thermally efficient as wood framing over similar stud spacings and wall thicknesses (Table 2).

**FIGURE 1 - COMPARATIVE ENERGY USE**



**FIGURE 2 - COMPARATIVE CO<sub>2</sub> EMISSIONS**



Source: The Canadian Research Alliance

It's the perfect relationship: as builders continue creating new beautiful homes, our forests keep supplying everything for solid sawn lumber, plywood and engineered wood floor systems that make building possible. And with an average of over six million seedlings being planted each day in

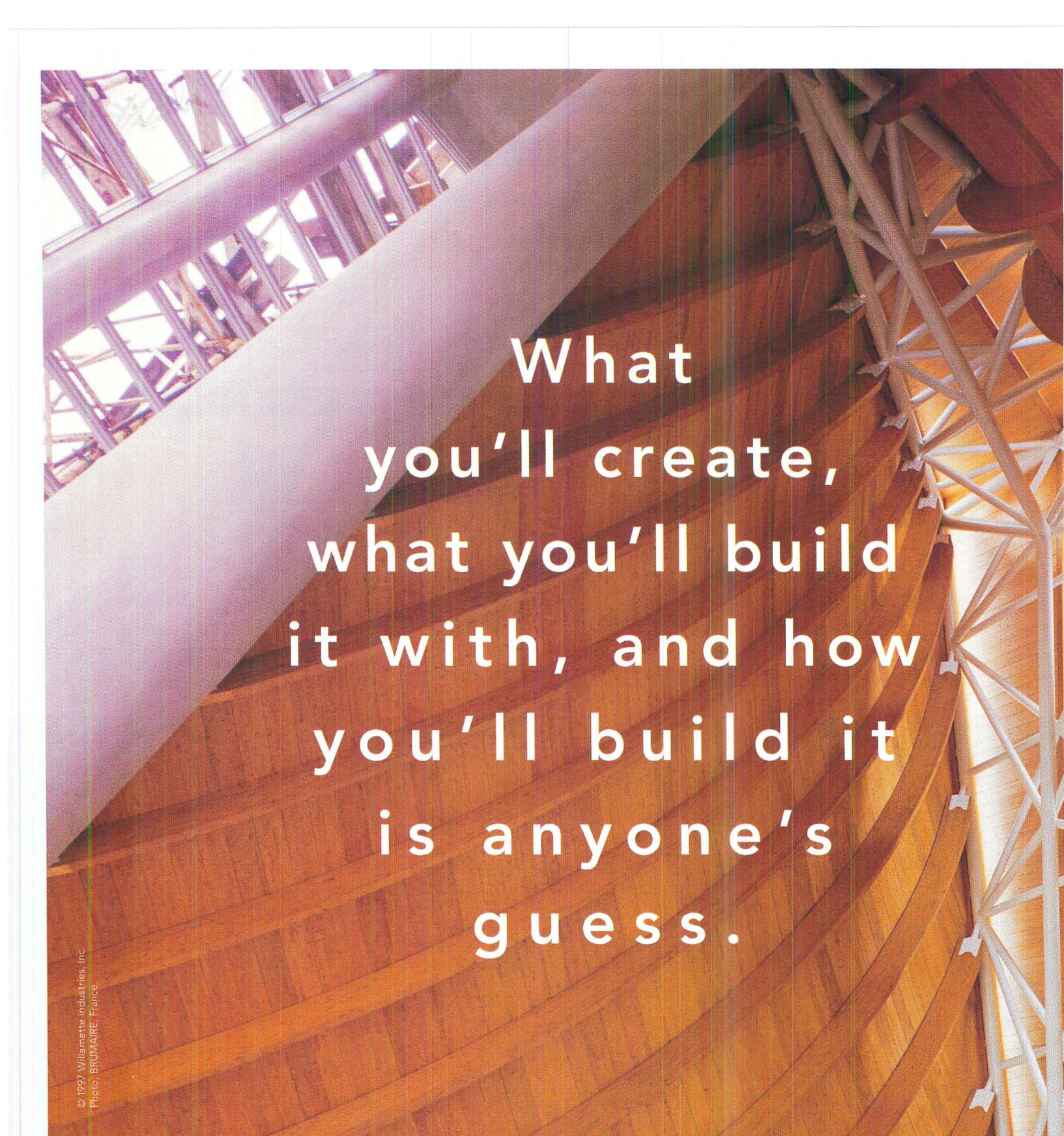
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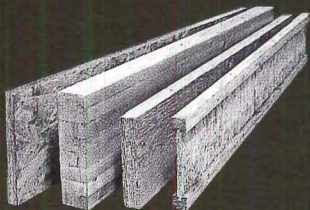
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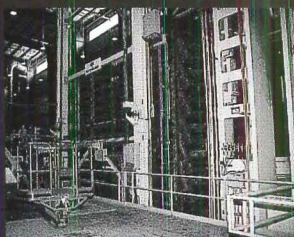
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# WOOD WORKS

merchable timber volume is projected to be greater in 2040 than it is now — even with increasing uses for housing, furniture and similar needs. That makes wood the only building material increasing its reserves each year.

On the other hand nonrenewable resources cannot be replaced. Eventually we will deplete them—in 50 years or 250 years. In 200 years the forest products industry will have grown four new generations of trees from which to manufacture lumber, plywood and other building products.

But no product is completely environmentally neutral. To have wood products, trees are harvested. Forest ecosystems are affected.

Natural systems are temporarily disrupted. However with forest land management these impacts can be minimal. In comparison to the conversion of other resources into other building materials, wood products have very little impact on the environment overall. And, working with environmental groups and government agencies, the North American wood products industry has imposed upon itself the toughest forest management regulations in the world.

It comes back again to choices. If we are to sustain this planet for coming generations, we must decrease our reliance on irreplaceable resources. This means we must measure

our choices between one building product and another not only by cost, performance and quality, but also by whether the product is derived from a renewable resource. When it comes right down to it, in low-rise structures, up to five stories, wood works. Wood is a quality building material that is energy-conservative, recyclable and biodegradable, and sustainable in perpetuity.

As a product specifier, your decisions have great impact. Because these days when you select material, you and your clients aren't the only ones who live with it. We all do. Choosing wood is a choice for a sustainable future.

## A Closer Look at Forestry

**F**ly into Portland, Oregon, on a clear day and you can look out the window at a line of majestic snow-capped mountain peaks, the Cascades. As you pass by Mount Hood, it may appear as though the extensive forest surrounding the mountain is being removed, piece by piece. To the untrained eye from 20,000 feet in the air, it might not be a pretty sight.

A closer, more educated look reveals a forested patchwork in varying stages of growth, evidence of a remarkable cycle of renewal. The process of growing, harvesting and replanting trees is, for the wood products industry, not just a means of securing raw material. It's their future. And they take it seriously.

Foresters see their jobs as part art, part science and a lot of learning from nature. "It's a matter of objectives," says Duane McDougall, Executive Vice President in charge of the Building Materials Group at Willamette Industries. "To do a good job managing forests, you need to decide what you want your end-result to be, how long you'll take to achieve it, then go about managing with that objective in mind."

For industrial landowners and many private woodlot owners, the objective is to grow timber for products in a manner compatible with sustaining other resources as well. Says McDougall, "We want to stay in business, so it makes sense that we manage our resources in a manner that ensures we'll have them available forever."

More than a million homes are built in the U.S. each year and each one uses some 14,000 board feet of lumber (not to mention plywood, oriented strand board, particleboard and other engineered wood products). Meeting such demand for forest products requires an ongoing commitment to reforestation. Trees used today to make building materials take anywhere from 30 to 60 years to grow; the trees planted this year will be used to build houses sometime around the middle of the next century.

Well over two billion trees are planted each year in the U.S. and Canada, an average of



**Well over two billion trees are planted each year in the U.S. and Canada, an average of more than six million each day.**

more than six million each day. But there's a lot more to reforestation than just planting trees. The process begins three or four years before a timber harvest is planned. That's when a forester collects seed for the new seedlings that will be planted after the harvest occurs.

And it's not just a matter of growing the same species in areas where they grow best. Lovell Lack, manager of the IFA Forest Nursery in Canby, Oregon, explains, "Oregon's forests are biologically diverse with disparate growing regions providing ideal conditions for different tree species. Annual rainfall in forested areas varies from 200 inches to less than 12. The state is divided into nearly 100 different seed zones according to soil type, rainfall, elevation, and climate. Seeds from the best trees in each zone are collected and used to grow seedlings."

The seedlings grow in a nursery for one to three years before they're planted in the forest. At the nursery, a series of quality control checks measure caliper, root-to-shoot ratio, and other traits to help ensure survival. "The result," Lack says, "is the trees we grow today are genetically stronger, contain more wood, and grow straighter and taller than natural regeneration would allow." For the end user, that means a steady supply of consistent quality product.

Laws in Canada, Oregon and other

Western states require harvested areas to be reforested within two growing seasons. But the forest industry doesn't wait that long if it can help it. "It does us no good to wait around," says Willamette's McDougall. "It's in our best interest to get trees in the ground and growing right after harvest, so we do everything we can to see that it happens." Typical of forest land owners, Willamette plants about 400 trees per acre on its Western lands and anywhere from 400 to 650 per acre in the Southeast. "And we're not satisfied with anything less than a 90% survival rate," McDougall says.

### Nature dictates

Virtually all aspects of forest management, from harvest to regeneration, are heavily influenced by nature. Many species of trees require direct sunlight to grow. "The forests up and down the West Coast evolved through thousands of years of stand replacement events such as forest fires, landslides and volcanic eruptions," McDougall explains. "These events cleared large areas of forest which were subsequently reseeded from the surrounding trees or a few lone survivors, resulting in essentially even-aged stands, dominated by a single species."

"Our harvest methods and subsequent management try to mimic and accelerate that cycle while yielding a substantial supply of wood."

In 10 years, under good growing conditions, Douglas fir will grow as tall as 30 feet or more. Southern pine, a generally smaller tree to begin with, might reach 25 feet in a decade. At that point it's time to thin the forest (as many as 60% of the trees might be removed), providing room for the remaining trees to add girth and height. From there, the stand might be fertilized and thinned again 10 to 20 years later (or, as is often the case in the Southeast, it may be time to harvest and begin the cycle anew).

Plantation forests, not unlike the cotton plantations they replaced, dominate the Southeastern U.S. Systematic tree farming is common, with stands of trees grown, harvest-

ed, and replanted in ongoing cycles of 30-50 years. Harvest systems and other management techniques find their roots as much in convenience and economics as in the rules of nature. "Our foresters work the land in much the same way as any other farmer would," McDougall explains, "The biggest difference between a tree farmer and a soybean farmer is that with trees, it takes 40 years or so before the crop is ready for harvest."

In drier climates, such as the inland West, significantly fewer trees grow per acre. Here the forests are dominated in higher elevations by mixed conifer species and in low areas by open, park-like stands of Ponderosa pine. Left to nature, fires occur much more frequently and tend to be less catastrophic than in the thick forests of fir, hemlock and spruce found near the coast. Again, forest management mimics nature. Selective harvests are common and reforestation occurs largely through natural regeneration.

#### Seeing the forest and the trees

Regardless of where the forests happen to be, foresters recognize the need to protect other resources as well. "Clearly, our objective is to grow timber, but we can't do that in a vacuum" says McDougall. "We know our forest practices can affect other resources."

That's why forest land owners leave buffers along streams and invest in habitat



#### Forestry is part art, part science and a lot of learning from nature.

improvement projects for salmon and other fish. Forest management programs include measures to enhance wildlife habitat for game species such as deer and wild turkey, as well as non-game species such as small mammals and song birds. Additional steps are taken to protect sensitive species such as spotted owls and red cockaded woodpeckers. Even rare plants receive special protection.

"We're proud of the balance we've been able to achieve between providing timber for products and protecting the forest resources from which those products originate," McDougall says, "but we know we can get better at it, so we'll never stop learning."

## Wood Products for Today's Applications

Lumber and plywood continue to be mainstays of wood frame construction. But as wood resources have shifted from old growth to managed forests, and as technology has improved, the array of product choices available to architects has grown. A few of the products available today to complement traditional wood building products are described below. Innovations such as these have helped the wood products industry achieve better than 95% utilization of every log processed.

#### Structural glued lumber

Structural glued lumber is accepted for use under all model building codes and is interchangeable with solid-sawn dimension lumber of the same size, grade and species. These products may be edge-glued, face-glued or end-jointed, wherein "fingers" are cut into the pieces before they are joined. Finger-jointing is the most common method. This product makes efficient use of available wood resources and can be manufactured to long lengths.

This technology is also prevalent in secondary wood product manufacturing. Many of the wood components used for windows, doors, cabinetry, mouldings, trim and siding products are actually finger-jointed, edge-glued

and face-glued pieces. In some cases a veneer is applied to composite cores to give the appearance of solid wood, while further extending available resources.

#### Machine Stress-Rated lumber (MSR)

MSR lumber is dimension lumber that, in addition to visual grading, has been evaluated by mechanical stress-rating equipment to measure stiffness, modulus of elasticity (E) and, in some cases, its specific gravity. MSR lumber is accepted by regulatory agencies and all major building codes. Specifying MSR is simple because it generally is marketed by strength and stiffness values, Fb and E. Its most common use is in truss manufacturing.

#### Glued Laminated Timber (Glulam)

Glued laminated timber, or glulam, is an engineered stress-rated product created by face-bonding individual pieces of solid-sawn or finger-jointed lumber. The flexibility of individual laminations allows glulam members to be made straight or in a variety of curved shapes. They are used in many applications including concealed or exposed beams, headers and columns in residential and commercial projects, warehouse roof beams, church arches, girders and deck panels for timber bridges.



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Lunchtime learning is the new rage at more and more architect and engineering offices, where the staff enjoys a free deli or brown bag repast while listening to a lively briefing on the innovative uses of Southern Pine lumber.

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On the menu for the 45-minute briefing are new design values for dimension lumber, engineered wood systems, lumber seasoning and grading, pressure-treated wood, code conformance, timber supply and environmental stewardship, and case studies of residential and commercial construction using Southern Pine.

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Glulam is manufactured from kiln-dried lumber, minimizing shrinkage and warping and ensuring dimensional stability. The use of dry lumber also gives glulam superior design values and excellent fastener-holding capability. In floor applications, this translates into a firm subfloor with minimal nail popping or squeaks. Glulam makes efficient use of second growth timber resources, decreasing dependence on old growth timber.

### Oriented Strand Board (OSB)

OSB is a structural panel consisting of wood strands bonded with adhesives. Like the veneer in plywood, these strands are layered and cross-oriented for maximum strength, stiffness and stability. OSB is widely used as construction sheathing, web material for wood I-joists, structural membranes of structural insulated panels (SIPs) and in a growing number of other residential and nonresidential applications. OSB can be manufactured from a variety of fast-maturing tree species, as well as species not valued for lumber production. The process utilizes 85-90% of the log. The remainder, a volume of bark, saw trim and saw dust, is typically converted into energy or pulp chips.

### Laminated Veneer Lumber (LVL)

Primarily a structural material, LVL is produced by bonding thin wood veneers so that the grain of all veneers is parallel to the length of the member. Manufactured in sizes approximating those of solid lumber, some of the product's many uses are as headers and beams, hip and valley rafters, scaffold planking, and the flange material for prefabricated wood I-joists. Like many engineered wood products, LVL helps minimize wood fiber use while maximizing fiber recovery.

### Parallel Strand Lumber (PSL)

PSL consists of long veneer strands laid in parallel formation and bonded together with an adhesive to form the finished structural section. It is used for load bearing columns and, like LVL and glulam, for beam and header applications where high bending strength is needed.

### Prefabricated Wood I-joists

Also referred to as I-beams, wood I-joists are structural members of the glued engineered wood products family growing fastest in popularity. I-joists combine high bending strength and stiffness characteristics with a low weight. Because I-joists can be manufactured to virtually any length, they offer clear span capabilities which cannot be achieved with traditional framing materials. The flange material for I-joists is typically dimension lumber or LVL; the web material is OSB or plywood. I-joists are used in both residential and nonresidential floor and roof construction in much the same manner as solid sawn lumber, with the largest use being in residential floor construction.

### Particleboard and Medium Density Fiberboard (MDF)

Particleboard panels are manufactured from wood particles combined with a synthetic resin or other suitable binder and bonded together under heat and pressure in a hot press. Particleboard provides a smooth, stable and strong substrate for veneers, laminates and coatings. It is used extensively in furniture, cabinetry, countertops, veneer panel core, floor underlayment, doors, shelving, signs, games and sporting goods.

MDF, a similar product made from highly refined wood fiber, offers extremely smooth surfaces and homogeneous edges, which allow for intricate and precise machining. In addition to furniture and cabinetry, MDF is used in millwork and case goods. Because of its unique properties, MDF can be precisely machined (edge shaping, profile molding and three-dimensional finishing operations) and is a superb substrate for painting and laminating, as well as applications such as moulding and millwork.

The basic raw materials for particleboard and MDF are residuals (such as planer shavings and plywood trim) from other wood product manufacturing and to a lesser extent, round wood. Recycled wood, including urban wood waste, supplements raw material supplies for some manufacturers.

### Product Information:

Detailed product information is available from the following wood industry trade associations:

- APA-The Engineered Wood Association:  
206-565-6600
- Composite Panel Association:  
301-670-0604
- National Wood Window and Door Association:  
847-299-5200
- Southern Forest Products Association:  
504-443-4464
- West Coast Lumber Inspection Bureau:  
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- Western Wood Products Association:  
503-224-3930
- Canadian Wood Council:  
613-747-5544

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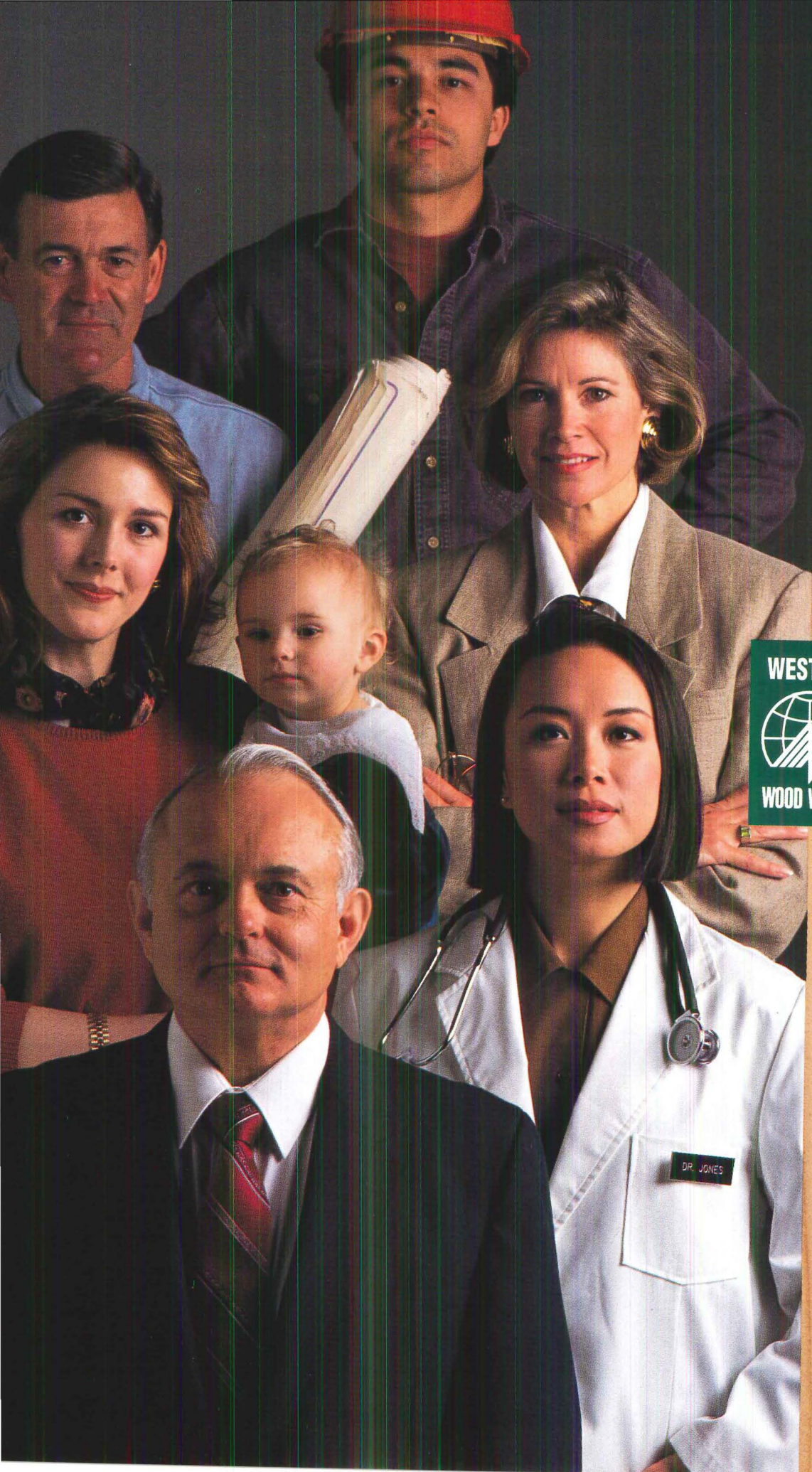
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- Fort Hill Lumber Co.
- Fremont Sawmill Co.
- Georgia-Pacific Corp.
- Guy Bennett Lumber Co.
- Idaho Forest Industries, Inc.
- Layman Lumber Co., Inc.
- Longview Fibre Co., Leavenworth Wood Products
- Malheur Lumber Co.
- Mescalero Forest Products
- Ochoco Lumber Co.
- Olympic Forest Products
- Omak Wood Products, Inc.
- Pleasant Logging & Mill, Inc.
- Pope & Talbot, Inc.
- Potlatch Corp.
- Reed Mill & Lumber Co., Inc.
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- RSG Forest Products, Inc.
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- Spalding and Son, Inc.
- Springdale Lumber Co., Inc.
- Stimson Lumber Co.
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- Trumark Industries, Inc.
- Vaagen Bros. Lumber, Inc.
- Warm Springs Forest Products Industries
- Willamette Industries, Inc.
- Willamina Lumber Co.
- Zosel Lumber Co.



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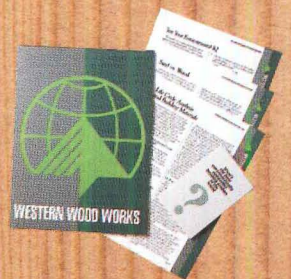
Wood works because it is renewable. Unlike the non-renewable resources used for making steel, plastic, aluminum and concrete, wood is actually increasing in supply. In the U.S., more than 1.5 billion trees are planted each year. And net growth in our forests exceeds harvest by over 30%.

Wood works because it is energy-efficient. Pound for pound, it takes less energy to manufacture lumber than building products of steel, plastic, aluminum or concrete. That puts less strain on energy resources and reduces global warming.

Wood also works because it is biodegradable. It can be returned to the soil - safely and cleanly, a claim steel, plastic, concrete and aluminum just can't make.

When you know the facts, the right choice is easy to spot.

For more information that can help you and your customers make the wise, environmental choice, contact the Western Wood Products Association.



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*Last day to register: June 2, 1997*

*Entries Due: June 9, 1997*

*Jury: June 18, 1997*

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# NEW PRODUCTS

## CERAMIC TILES FROM ITALY SET A HIGH STANDARD OF DESIGN

Italy has led the world in ceramic-tile production for decades, and has steadily increased tile exports as well, from 13 percent of total sales in 1965 to over 66 percent of sales in 1995. Where does Italy send all those tiles? First, to Germany, then France. The U.S. is a distant number three. However, concurrent exports of tile-manufacturing equipment and technology helped create major industries in other countries as well. Brazil, for example, now produces an enormous amount of ceramic tile, but almost all of it is absorbed by the Brazilian domestic market.

The Italian Tile Association (Assopiastrelle) is a well-organized industry promotion group, supported by the Italian Trade Commission in foreign countries. Assopiastrelle assists the architect and designer with research and technical publications, online sourcing of tile products, and installation guidance.

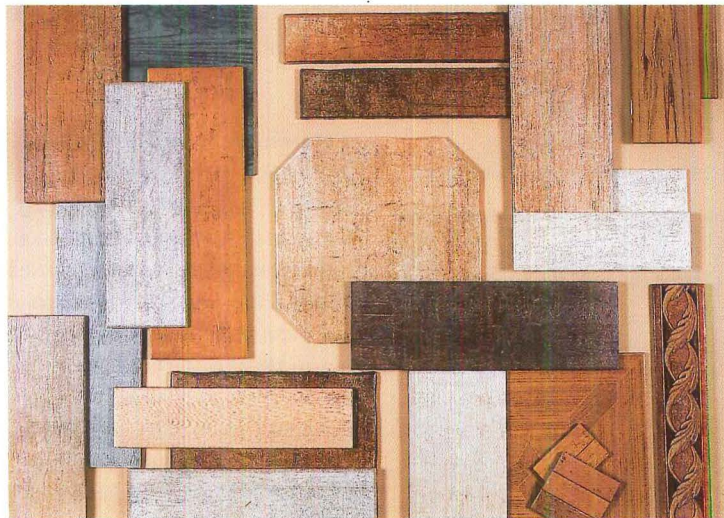
### What's new?

In the '80s, ceramic engineers learned how to recreate random, natural-appearing stone-veining patterns in ceramic, producing a tile with the appearance of natural

granite or marble and the impact-resistance and exact dimensions of a manufactured product. This porcelain stoneware has been very successful in the A/D marketplace. Even newer are products introduced last fall at Cersaie (the Italian Tile exposition). A sampling gives a design-trend snapshot of the next wave of imports: rustic-stone looks; wood-like patterns; warm colors, especially blue and yellow. And tiles are getting larger, with 12-in. and even 16-in. squares growing increasingly popular, as they minimize grout lines and make even small walls or floors seem spacious.

A number of new wood-grained patterns in both warm browns and lighter, whitewashed or pickled pastels (right) capture the impression of natural-wood planks and parquet without being line-for-line replicas. When used by themselves, the wood-looks become almost a non-tile tile floor, giving a warm, natural feel to rooms where real wood might be less practical, such as baths or kitchen-entry mud rooms. Other design trends in new Italian tiles are shown below (clockwise, from top left):

April features ceramic tile from both Italy (this page) and sources closer-to-home (overleaf). A very durable architectural material, tile is in the midst of a boom, as high-tech manufacturing processes create an impervious surface for almost any requirement. And, perhaps inspired by visions of Umbrian farmhouses or cozy Arts-and-Crafts hearths, homeowners are letting ceramics escape from the bath or kitchen to become a surface option throughout the house. The Briefs page covers residential products; the Literature section includes an informative universal-design video. —Joan Blatterman, *New Products Editor*

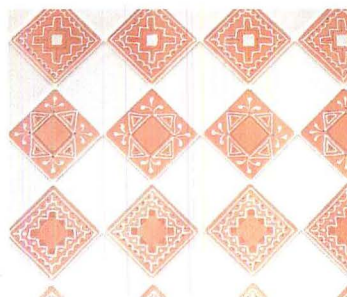
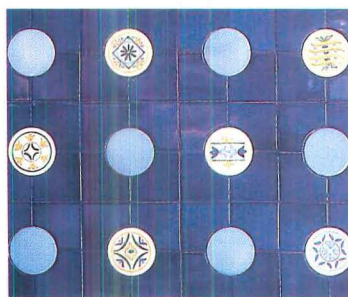
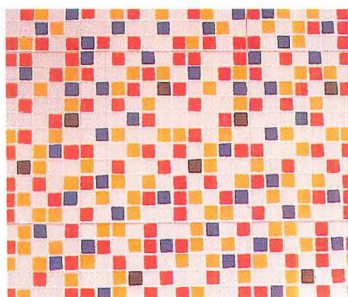
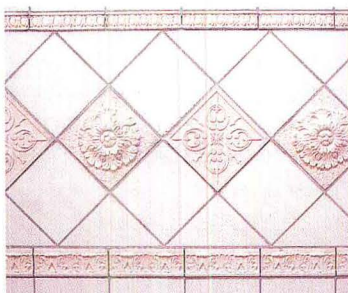


Inspired by the erratic surface and natural, sun-catching sparkle of black lava, Vulcanio from Floor Gres is a single-fired, white-body tile with "crystalline" inclusions that reflect light randomly. Imola's Atrium wall tile uses raised-relief, rustic florals to provide visual interest, shown here set in a diagonal pattern of matching field tiles.

"Time-worn" continues to be a "new" look, creating floors that might look at home in a 14th-century villa. Settecento's contrasting squares seem lifted from an interior painted by Raphael, and Provenza's Chroma is a similar, antique look on a terra-cotta tile. Decorated tiles are particularly appropriate in kitchens or baths, adding an easy-to-maintain touch of color. Blues and yellows are currently popular for these residential tiles; Art Color's circle-and-square tiles combine two trends, with Renaissance floral designs made up in 1997 colorways. Ready-made mosaics incorporate random placement of tiny 1-in. tiles pre-mounted on mesh for hand-done effect within a floor made up of easy-to-install, large-format squares. Mosaic shown: Della Robbia's DKS Flamingo.

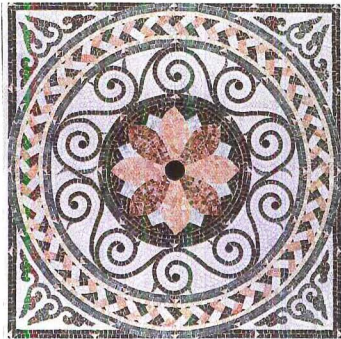
North American source information for these and other Italian ceramics is available from The Italian Tile Center, New York City. 212/980-1500 (phone) newyork@italtrade.com (e-mail).

CIRCLE 200



## TILES GO TO DISNEY WORLD

For 10 years, the premier tile event in the U. S. has been the International Tile & Stone Exposition, held in Florida each spring. It is sponsored by the National Tile Contractors Association, The Tile Council of America (representing tile manufacturers), and the Ceramic Tile Distributors Association, as well as the tile-marketing groups of both Spain and Italy. Now called *Coverings*, the show goes on in Orlando April 23-26. Call 800/881-9400 for continuing-education information.

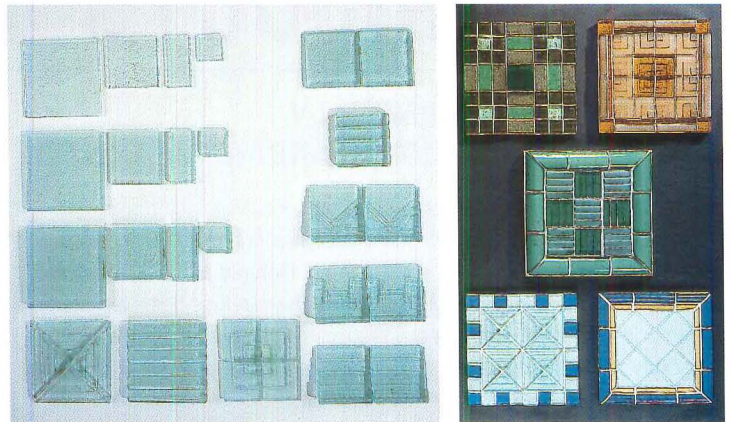


### ▲ Pre-mounted floor mosaics

Swirling Gate Medallion, pictured, is a large-scale (48-in. by 48-in.) tile mosaic assembled and back-mounted in China. The design is made of five irregularly shaped pieces, which interlock when laid on site to create a seamless floor motif. Mosaics and matching decorative borders work with standard tile dimensions; square medallions can be converted into circles by trimming the corners. Folder illustrates standard patterns and gives prices. 201/482-9000. Cosa Marble Co., Harrison, N.J. **CIRCLE 201**

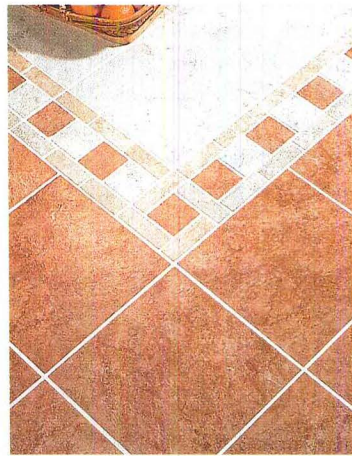
### ► Architectural glass tile

Handcrafted in either a glossy "river wash" finish or sandblasted for a weathered effect, Glashaus decorative elements—tile, bullnose, and cove—are made of frost-proof glass in nine colorways. For vertical use indoors and out, units work well with stone and cast concrete (as window trim, for example). Installation note: tiles edges must not touch each other. 503/281-7751. Ann Sacks Tile & Stone, Portland, Ore. **CIRCLE 202**



### ▼ Florentine from Florence

An Alabama take on the "early Renaissance" look, Salerno flooring has a weathered-stone appearance with surface irregularities and eased edges. The line comes in four colorways and coordinating decorative trim: a 13- by 6-in. listello and a corner unit. Field tile comes in a distinctive, 13- by 13-in. size. Rated Class 4+, Salerno is suitable for all residential and most commercial uses. 205/764-6181. Monarch Tile, Inc., Florence, Ala. **CIRCLE 203**

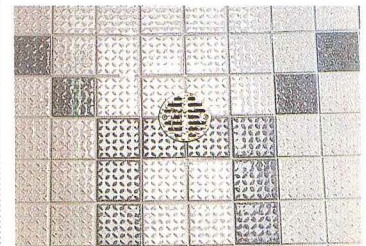


### ▲ Realistic marble appearance

Florida Tile is quite proud of the natural, non-directional veining of its Caspian "rustic marble" tile. Offered in three light, off-white shades, as well as deeper Verde, Nero, and Jasper colors, the tile has been designed to work with Florida's Tumblestones II abraded accent pieces. (Photo shows Pearl and Nero tiles in squares and rectangular units set with tumbled-tile decorative inserts.) Available in sizes up to 16- by 16-in. 800/789-TILE. Florida Tile Industries, Inc., Lakeland, Fla. **CIRCLE 204**

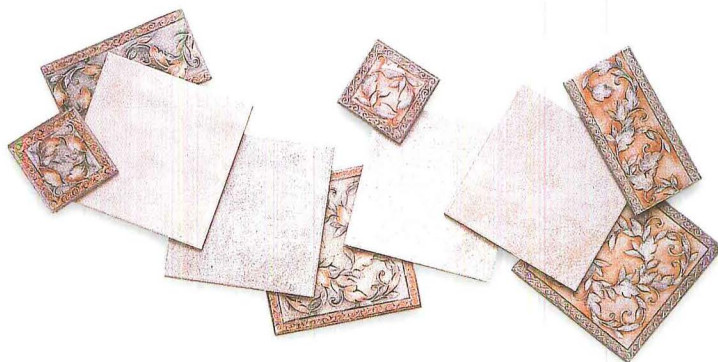
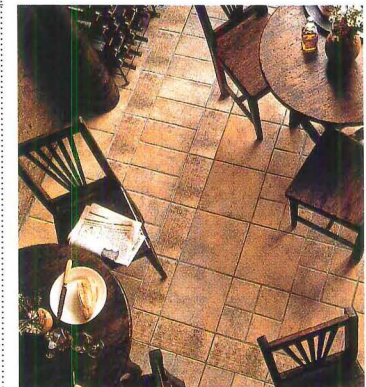
### ▼ Slip-resist mosaics

Shown used as a shower floor, new Cross-Tread tiles have a raised, diamond-grid pattern said to provide a higher coefficient of friction that won't wear away. Mosaics are part of Crossville's Cross-Colors line, an unusual 3-in. size that minimizes grout lines while letting joints line up with wall tile. Floors can be specified in pre-mounted, custom-colored patterns. 615/484-2110. Crossville Ceramics, Crossville, Tenn. **CIRCLE 206**



### ▼ Antiqued large-format tile

A distressed-surface floor, Provence comes in four Mediterranean colors (Maize is shown) with coordinating decos. Field tiles come in sizes up to 16- by 16 in. Meets ADA accessible-route criteria. 800/933-TILE. Daltile Corp., Dallas. **CIRCLE 207** ■



### ◀ Egyptian influence

Desertstone II flooring is said to combine the rustic effect of time-worn pavers with a Class-4, heavy-traffic performance. The 12-in. tiles are available in surface-shaded colors of white, mauve, beige, and light green; decorative patterns in three sizes coordinate with tile colorways. 214/226-0110. American Marazzi Tile, Sunnyvale, Tex. **CIRCLE 205**

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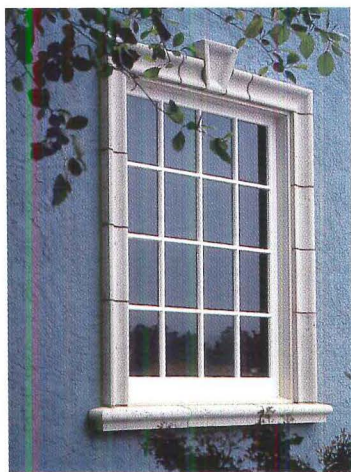
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## PRODUCT BRIEFS

▼ **Manufactured-stone trims**

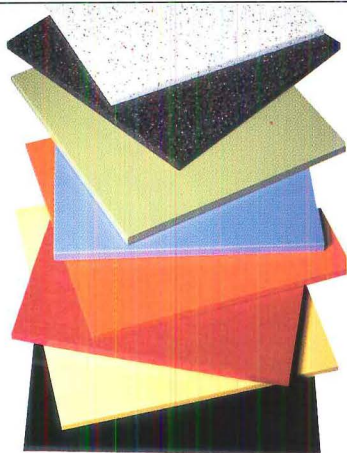
A weather-proof, cementitious product cast to resemble natural, full-thickness stone, Cultured Stone is made into decorative architectural elements, including Chateau window trim (pictured), door molding, keystones, quoins, watertables and sills, and fireplace surrounds. The four standard colors were chosen to coordinate with roofing and other siding materials, particularly brick and stucco. Installed as an adhered veneer with Type N mortar. 800/255-1727. Stone Products Corp., Napa, Calif. **CIRCLE 208**

► **Kitchen-to-go**

A versatile German-made system, Modula cabinetry is built on a birch frame that can be fitted with shelves, cooktops, sinks, and bins as desired. Free-standing base units (shown) can be 4- to 10-ft long. A 10-ft unit with stove, sink, dishwasher, vent hood, and three cabinets might cost \$12,000. 800/765-5266. SieMatic Corp., Bensalem, Pa. **CIRCLE 209**

◀ **Power to the home office**

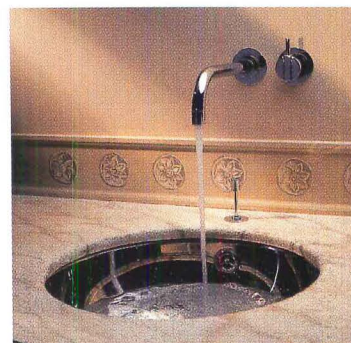
The Access 5000 raceway organizes the different wires needed for computer modems, fax machines, electric power, and phones, and conceals them all behind an attractive, baseboard-style molding, surface-mounted where needed. Shown here in a paintable white plastic, the raceway can also be specified finished in a stainable wood veneer. UL- and CSA-approved for household use. 800/621-0049. The Wiremold Co., Bristol, Conn. **CIRCLE 211**

▲ **Punchy solid surface**

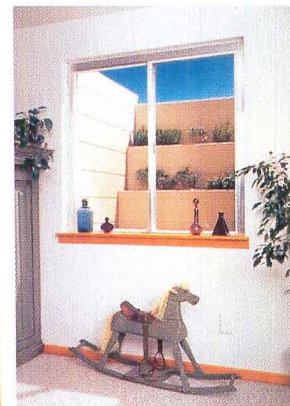
Quite a departure from Corian's existing palette, the new Design Portfolio line offers (from top) Festival, Mardi Gras, Kiwi, Lilac, Mandarin, Hot, Sun, and a matte-black Nocturne. Based on color trends identified in the range of custom colors requested by architects and designers, the new collection is suitable for use in retail fixtures and to convey design intent in environments such as movie theaters. A Class 1 material, Corian can be used horizontally and vertically, indoors and out. 800/4-CORIAN. DuPont, Wilmington, Del. **CIRCLE 210**

► **Stainless-steel basins**

A new line that works well with Kroin's classic, Arne Jacobsen-designed wall-mount faucet, basins of hand-polished stainless-steel come in four distinctive shapes for either drop-in or undercounter mounting (pictured). Sinks can be ordered in brass as well as various stainless-steel surfaces, finished on one or both sides. 800/OK-KROIN. Kroin Inc., Cambridge, Mass. **CIRCLE 212**

▲ **Basement egress windows**

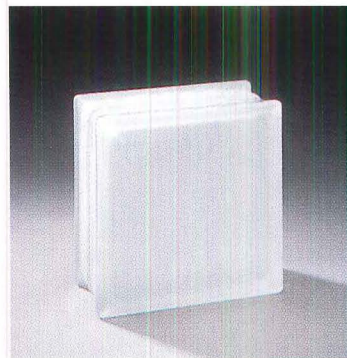
The Scapewel is an easier, less-expensive way to create an excavated, terraced window well that meets Section 310.4 of the UBC as an alternative means of emergency egress. Projecting 49-in. from the foundation, the well allows additional sunlight into basement



spaces, making them more livable. The unit is made of blow-molded HDPE sections, reinforced with a structural foam core, that interlock to create set-back steps that can be planted. Side panels attach to the window buck or directly to the foundation. 800/854-9724. The Bilco Co., New Haven, Conn. **CIRCLE 213**

▼ **Sandblasted glass block**

One of several block-pattern and surface options introduced in 1996, Premiere Series Frosted offers privacy with a moderate level of light transmission. The non-reflective treatment can be specified on 8-in. Vue block. Properly detailed, GlassBlock panels can meet UBC seismic criteria. 800/992-5769. Pittsburgh Corning Corp., Pittsburgh. **CIRCLE 214**

▲ **Three-blade ceiling fan**

The San Francisco fan is intended to work better in architectural and contemporary interior spaces than more nostalgic designs do. A sculptural shape of polished and brushed aluminum with birdseye-maple blades, it was designed by Mark Gajewski. Suggested retail: \$690; trade price list available. Canopy options include sloped and flat ceilings; four-speed, reversible motor with wall-mount controls. 313/769-4535. G Squared, Ann Arbor, Mich. **CIRCLE 215** ■





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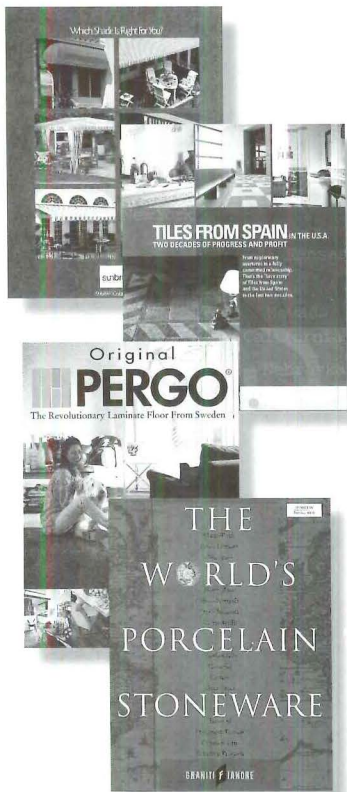
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CIRCLE 72 ON INQUIRY CARD

## PRODUCT LITERATURE

### Awnings and canopies

All weather-resistant Sunbrella acrylic fabric patterns are displayed in a 16-page catalog. A solution-dyed textile, Sunbrella comes in solid colors, stripes, and patterns for commercial, resort, and residential shading applications, including those requiring a fire-rated material. Many patterns offer a matching upholstery. 910/227-6211. Glen Raven Mills, Inc., Glen Raven, N.C. **CIRCLE 217**



### Spanish ceramic tiles

Well-illustrated brochures highlight the designs and performance characteristics of tile made in Spain, the major source of American tile imports. Products include glazed wall and floor tile, unglazed pavers and terra cotta, porcelain stoneware, and large-format tiles for floors and exterior claddings. Spanish manufacturers make tile in a range of colorways, trim shapes, and dimensions specifically for the U.S. marketplace. 305/446-4387. Trade Commission of Spain, Coral Gables, Fla. **CIRCLE 218**

### Melamine-laminate floor

Developed in Sweden and now made in a North Carolina factory, Pergo laminate

flooring comes in individual planks 47-in. long, 8-in. wide, and 1/4-in. thick. Available with moldings and wallbase to transition between surfaces, the material comes in 34 patterns and colors; a 50-page catalog shows them all in room settings. Pergo is said to be particularly suitable for underfloor heating applications. 800-33-PERGO. Perstorp Flooring, Inc., Raleigh, N.C. **CIRCLE 219**

### Ultra-hard tile

A new Graniti Fiandre catalog collates both American and European test data for frostproof, extremely abrasion-resistant porcelain stoneware. All current colors and patterns are illustrated, in applications ranging from luxury homes and cultural centers to factories and subway stations. info@granitifandre.dsnet.it (web page). TransCeramica, Itasca, Ill. **CIRCLE 220**

### Residential cabinetry

Color brochure illustrates standard Arts-and-Crafts style cabinet units in custom configurations in this year's *New American Home*. Clever applications include hobby and gift-wrap centers, and a mud-room locker setup. Timberlake Cabinet Co., Winchester, Va. **CIRCLE 221**

### Solid-surface sinks

A 14-page catalog gives dimensions and mounting possibilities for all Avonite sink styles. There are oval, square, and rectangular shapes for kitchen, bar, bath, and powder room. 800/428-6648. Avonite, Inc., Belen, N.M. **CIRCLE 222**

### Kitchen-design video

A new design-idea tool from Sub-Zero, manufacturers of built-in refrigeration, a video tour demonstrates how Integrated 700 units can add food and beverage service to any room in the house—if you know where to look. Also new: a design guide for architects and kitchen specialists. 608/271-2233. Sub-Zero Freezer Co., Inc., Madison, Wis. **CIRCLE 223**

### Rain-screen EIFS

Technical data sheets describe Sto exterior systems designed to meet the specific requirements of areas that experience frequent wind-driven rain. Intended to remove incidental water that might get behind the EIFS cladding, the

installations offer a code-approved secondary moisture barrier, drainage paths and weeps, and a choice of mechanical or adhesive fastening. 404/346-3666. Sto Corp., Finish Systems Div., Atlanta. **CIRCLE 224**

### Residential insulations

A 20-page catalog describes all of this maker's thermal and acoustical fiber glass insulation products. Prepared for the home-construction professional, literature covers blown-in and batt types, including flame-resistant foil-faced materials, sill sealers, and retrofit products. 800/523-7844. CertainTeed Corp., Valley Forge, Pa. **CIRCLE 225**

### Mahogany entrances

Produced using wood certified as being obtained from managed, sustained-yield forests, the Royal Mahogany door makes a dramatic entrance. Several construction features are said to insure long-lasting, warp-free performance: door panels can "float" between fixed ends; stile and rail components are a multi-ply configuration; assembly uses mortise and tenon joints. Decoratively glazed vision lights, transoms, and side lights are insulating units. A 12-page catalog illustrates glazing options, construction details, and sizes. 770/729-1600. Royal Mahogany Products, Atlanta. **CIRCLE 226**

### Kitchen-design software

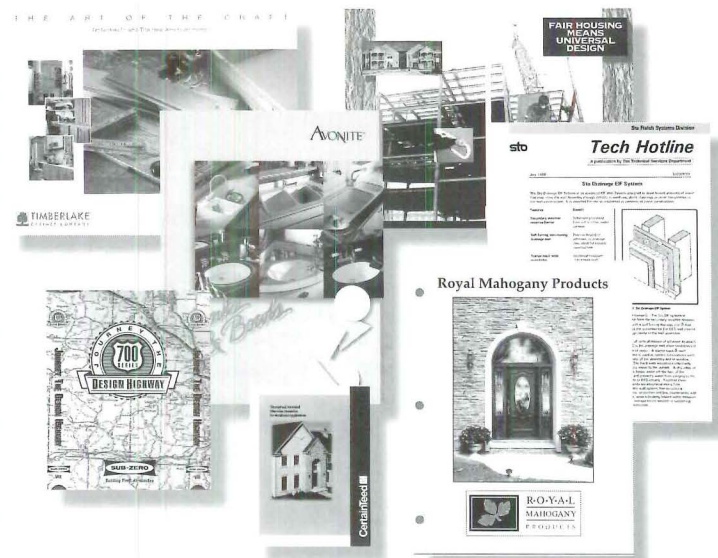
For \$49, a new freestanding program from Autodesk, *Picture This Home!*



*Kitchen* helps the homeowner/client really communicate preferred kitchen appliance locations, counter choices, color schemes, and room layouts. The multimedia tool uses magazine-quality photographic images instead of animations, and lets the user mix and match thousands of brand-name appliances, cabinets, countertops, fixtures, wall and floor coverings, windows, and furnishings at a mouse-click. Features include a comparative-cost estimator. Requires a Pentium PC; Microsoft Windows; and a 4x CD-ROM drive. 800/215-9742. Autodesk, Inc., San Rafael, Calif. **CIRCLE 227**

### Design for Fair Housing

Produced by the Center for Inclusive Design & Environmental Access of the School of Architecture and Planning at the University at Buffalo, *Fair Housing Means Universal Design* video helps architects apply the requirements of the Fair Housing Law to homes they design, illustrating how small adjustments in design can go a long way to improve access for all users. \$35 charge for video. arch.buffalo.edu/~idea (web page). IDEA, Buffalo. **CIRCLE 228** ■





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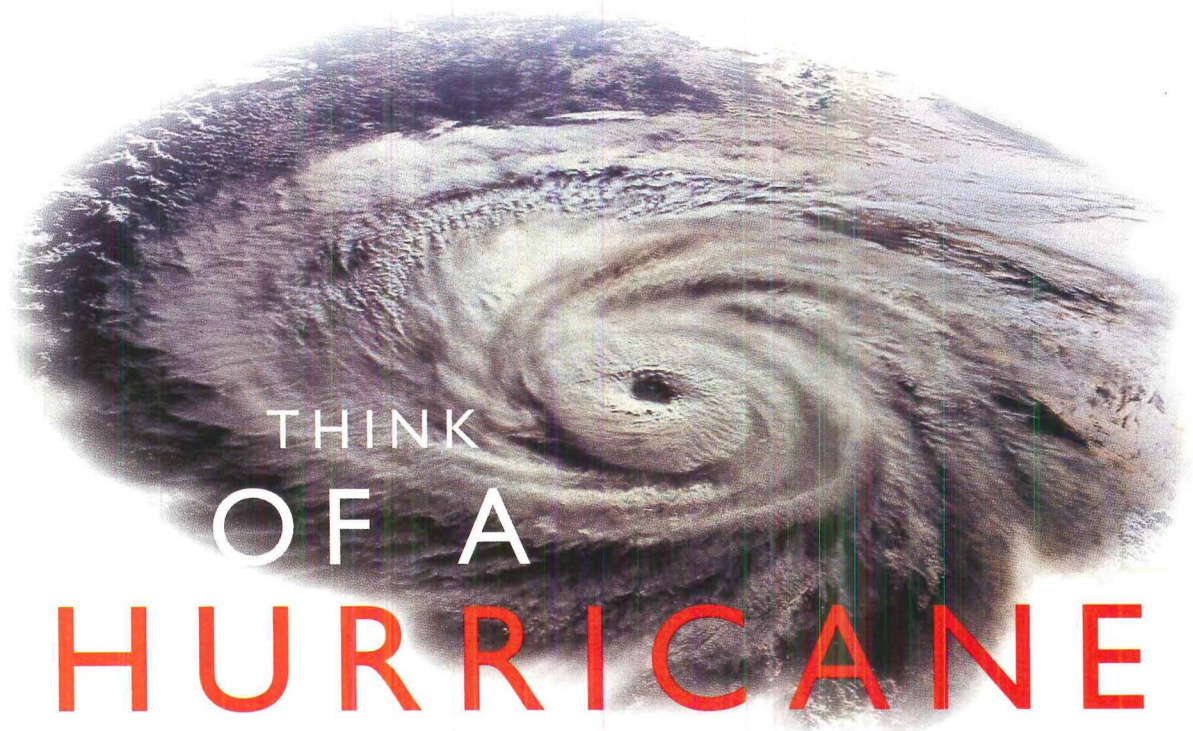
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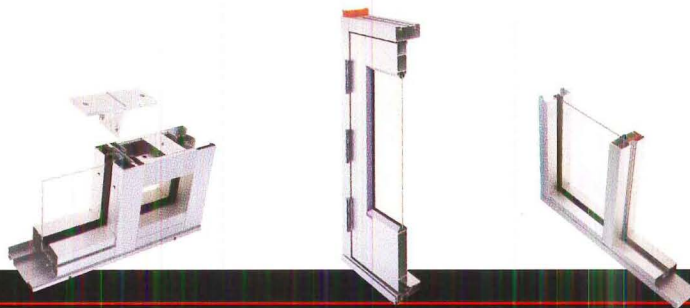
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# DATES EVENTS BOOKS

## Calendar

April 10–12

### San Francisco

*On the Edge*, a traveling conference of tours and lectures, will bring together people from a wide range of creative fields to explore the latest in environmental graphic technology, materials and techniques, and professional practice—as well as space-planning principles. Call 202/638-5555 or fax 202/638-0891.

April 16–17

### New York Coliseum, New York City

Sponsored by the Associated Builders and Owners of Greater New York, a conference and exposition, *Buildings NY*, will update participants on the latest trends and issues in the area, and display a wide range of new products and services, including a session on effective use of the Internet. Call 203/840-5608.

April 17 and May 1

### University of Virginia Charlottesville, Virginia

Michael Graves, the recipient of this year's Thomas Jefferson professorship, will lecture on the foundation and endurance of architecture in contemporary culture. Call 804/924-7116 or fax 804/924-0938.

April 18–20

### Cobb Galleria Centre Atlanta

Billed as the largest exhibition and conference in its field, *Restoration Atlanta* offers 36 seminars, workshops, and technical training sessions on dealing with historical building projects, as well as a large show of available products used in the process. AIA CEU credits are available. Call 508/664-8066 or fax 508/664-5822.

Through April 21

### Washington University St. Louis, Missouri

A series of Monday-night lectures will conclude with Fumihiko Maki speaking on *Image, Figure, and Materiality*. Contact Ann Nicholson at 314/935-5251.

April 23–25

### The University of Kansas, Lawrence

Commonly used planning for warehouses, factories, and other industrial facilities will be the subject of a three-day course offered by the con-

tinuing education department. The cost is \$995. Call Mary Heberling at 913/864-3969 or register by fax at 913/864-5074.

April 23–30

### Renaissance Hotel Washington, D. C.

The Solar Energy Forum offers the latest information on the viability, sustainability, and prosperity of solar energy technologies. Participants include the AIA, ASME, and the U.S. Department of Energy. AIA president Raj Barr-Kumar is a speaker. Call 303/443-3130.

April 26

### Rhode Island School of Design Providence, Rhode Island

Presentation of six finalists' designs in the World War II Memorial Competition. Call 401/454-6100 or fax 401/454-6647.

Through April 30

### Pacific Design Center Los Angeles

Light fixtures by eight internationally known designers will be on display in the Metamorfosi exhibition space. Call 310/837-0179.

April 29–May 1

### Jacob Javits Convention Center New York City

Lightfair International offers exhibits, four workshops with CEU accreditation, and over 30 seminars on lighting design and applications. Call 800/856-0327.

May 1–3

### The Sands Expo and Conference Center Las Vegas, Nevada

An exposition and conference, Hospitality Design 97, will focus on topics ranging from lighting techniques to renovating landmarks. The sponsors are Hospitality Design magazine and the Network of Executive Women in hospitality. Call 800/765-7616.

Through May 4

### The National Building Museum Washington, D. C.

"Building for the People of the United States of America" exhibits winners of the GSA's biannual competition to award the most locally responsive designs sponsored by the federal government. This year's winners feature courthouses. Call 202/272-2448.

Through May 4

### The Art Institute of Chicago

"The Travel Sketches by Louis I. Kahn" reveals the master's progress from artist to architect starting in 1928. Call 312/443-3600.

Through May 4

### The Octagon, Washington, D. C.

An exhibition, "Monumental Miniatures," shows souvenir model buildings popular with tourists in the 19th century and collected by architects today. Call 202/638-3221.

May 8–November 14

### Houston, Cincinnati, Denver, New York City, West Palm Beach, San Diego

Two-day *Project Managers' Bootcamps* will be held in the above cities by PSMJ/Resources. Topics will include ways to recover from being behind schedule or over price during the course of design, ways to combat other architects' lower fees, and proven ways to increase the success of proposals. Call 617/965-0055, fax 617/965-5152, or e-mail psmj@tiac.net for costs, times, dates, and locations in each city.

Through May 11

### Los Angeles County Museum of Art Los Angeles

An exhibition presented by the Society of Architectural Historians, "Exiles and Emigres in Los Angeles Modernist Architecture," will feature houses designed by Paul Laszlo, R. M. Schindler, Richard Neutra, J. R. Davidson, and Jock Detlof Peters. Tours of the houses will be offered on May 3 and 10. Contact Alison Cotter at the Society, 213/202-2236.

May 15

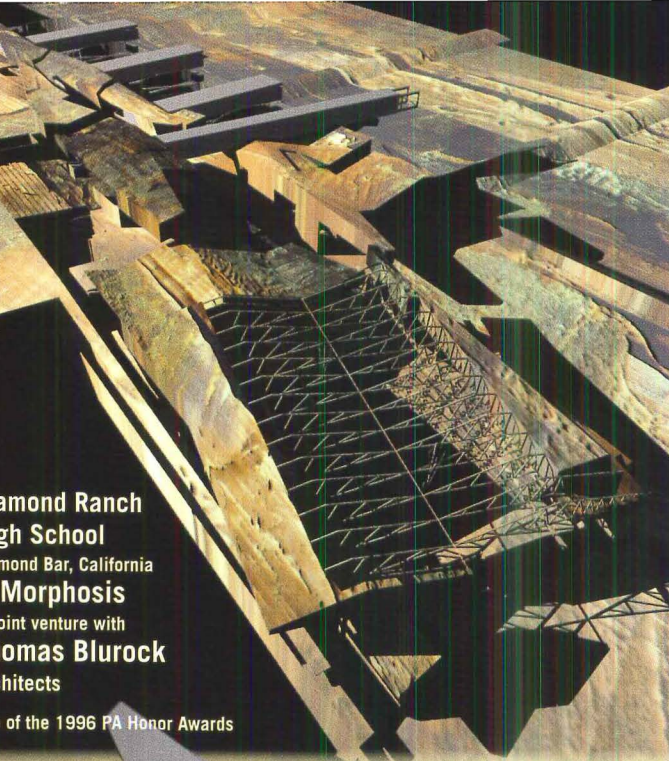
### Oak Park, Illinois

The Frank Lloyd Wright Home and Studio Foundation sponsors its annual walking tour. This year's program includes eight private residences and three national historic landmarks. Tickets are \$40. Call 708/848-9518.

May 16–18

### Ernest N. Morial Convention Center New Orleans, Louisiana

The annual AIA National Convention and Expo is expected to draw over 10,000 architects, and allied design and construction professionals to seminars, business sessions, and exhibits. More than 400 companies will offer the latest in products. This year's theme is "Practice and Prosperity: Serving Client and Community." Architects may earn up to 36 AIA Learning  
(continued on page 208)



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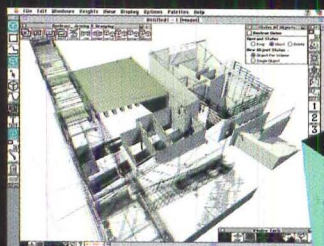
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(continued from page 206)

Units. Winners of the DuPont Benedictus Awards for "Innovation in Architectural Laminated Glass" will be announced during the program. For information or to register, call 617/859-4475.

May 17-20

**Jacob Javits Convention Center  
New York City**

The International Contemporary Furniture Fair will attract more than 400 exhibitors in a comprehensive showing. Designers, manufacturers and representatives of contemporary furniture, lighting, floor coverings, wall coverings, and textiles to be present. Telephone 800/272-SHOW.

May 20-July 8

**College of Engineering  
University of Wisconsin, Madison**

The university offers a course in intermediate lighting design from 8:00 to 10:00 a.m. on Tuesdays via WisView, the University's computer-based audiographics teleconferencing system. Participants completing the course should be prepared to take the Technical Knowledge

Exam of the Illuminating Engineering Society of North America. Contact Katie Peterson by phone at 800/462-0876 or e-mail at [custserv@epd.engr.wisc.edu](mailto:custserv@epd.engr.wisc.edu).

Through May 25

**Canadian Centre for Architecture  
Vancouver, B. C.**

An exhibition, "The New Spirit: Modern Architecture in Vancouver," covers the role of architects in developing the city's culture between 1938 and 1963. Call 514/939-7000.

May 29-June 1

**University of Toronto, Ontario**

The Congress for New Urbanism will hold its fifth annual conference, entitled "Access and Community." Open to members of the CNU, Urban Villages Forum, and Urban Design Group. Registration deadline: May 15. Contact the Congress at 415/291-9804.

June 1-3

**Lingotto Conference Centre  
Turin, Italy**

The International Facility Management Association will hold its annual meeting. The keynote address will be given by Renzo Piano.

Topics will include building systems, the environment, global business strategies, technology, and health, safety, and risk management. The association is currently seeking speaking proposals for its Asian Conference to be held in Hong Kong in November. For information, contact Gina van Dijk, IFMA European Bureau, Brussels, 32-2-743-1542, fax 32-2-743-1550 or e-mail [100332.670@compuserve.com](mailto:100332.670@compuserve.com).

June 5-8

**Downtown DoubleTree Hotel  
Tulsa, Oklahoma**

The AIA Committee on Design will meet to explore the effects of heavy private support for good design in this city, including that of F. L. Wright and Bruce Goff. Call 800/242-3837.

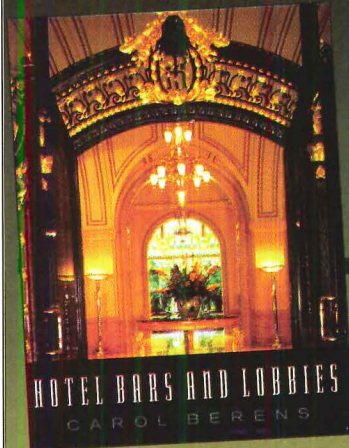
June 9-11

**Merchandise Mart, Chicago**

NeoCon 97, the annual contract-furnishings showcase. This year's event will also include an emphasis on products and furnishings for hospitality applications. Registration and seminar information: 800/677-6278.

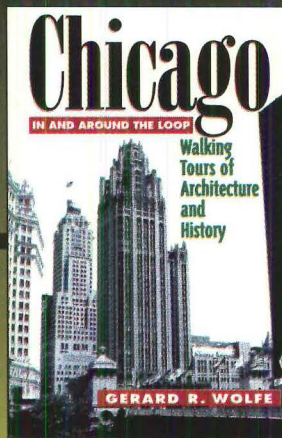
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# For Architectural World Travelers...



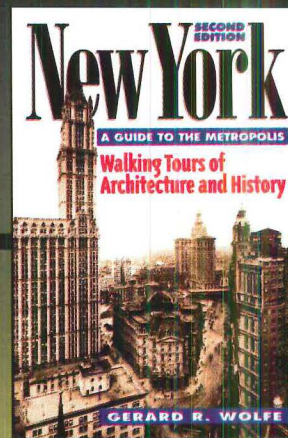
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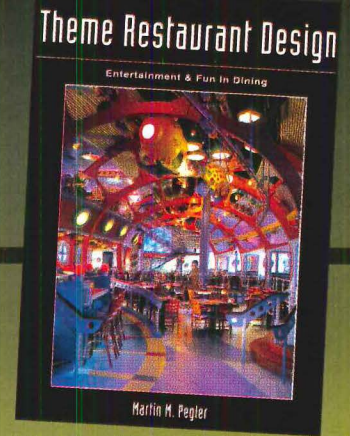


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(continued from page 208)

June 13-13

### **Renaissance Washington Hotel Washington, D.C.**

The Universal Accessibility Conference, sponsored by the AIA and the U.S. Architectural and Transportation Barriers Compliance Board, will discuss the requirements of access laws in existing as well as new buildings. Description of panel topics and registration information: 301/694-5243.

June 16-19

### **Pennsylvania Convention Center Philadelphia**

A/E/C Systems 97, billed as the largest computer show and conference for the design and construction profession, will feature the latest in development and application. Included is a program by the International Code Council, which will review changes to the code due for implementation in the year 2000. Call 508/790-4751.

June 17-September 28

### **Canadian Centre for Architecture Montreal, Quebec**

The CCA will explore the myths underlying a cultural phenomenon with "The Architecture of Reassurance: Designing the Disney Theme Parks." Information 514/939-7000.

June 26-29

### **Orange County Convention Center Orlando, Fla.**

41st annual Convention and Exhibit of The Construction Specifications Institute. Extended exhibit hours; registration and exhibitor information: 800/689-2900.

Through July 6

### **The Art Institute of Chicago**

Architects from around the world give their impressions of Chicago in an exhibition "Travel Sketches by Contemporary Architects." Call 312/443-3600 or fax 312/443-0849.

Through July 6

### **The Museum of Contemporary Art Los Angeles**

"Uncommon Sense," an exhibition of six artists' work, will explore social interactions outside the traditional art world. Call 213/626-6222 or visit the MOCA website at [www.MOCA-LA.org](http://www.MOCA-LA.org).

July 16-September 21

### **The Bard Graduate Center of Design New York City**

A two-part exhibition, "Masterworks of Italian

Design, 1960-1994," highlights contrasts between Modernism and Post-Modern design during the period. Call 212/501-3000.

August 7-8

### **Chicago**

#### **(Location to be announced)**

BOCA'S *Public Officials Symposium* will bring together local officials, code-enforcement officers, and building-design professionals to exchange information on the latest in hazard-mitigation strategies and problem-solving techniques. Fees are \$159 for members and \$259 for nonmembers. Call 708/799-2300, ext. 329.

August 8-10

### **AIA Chapter Headquarters Seattle, Washington**

The Fourth Annual Diversity Conference will unite architects, designers, students, teachers, AIA leaders, and allied professionals in exercises to expand mutual understanding between diverse cultures in practice and education. Call 800/242-3837.

Through September 14

### **The Museum of the City of New York**

Exhibition, "We Dig New York: The Professional Archaeologist of New York City," will show the wealth of historic material to be found even under heavily built cities. Call 212/534-1672.

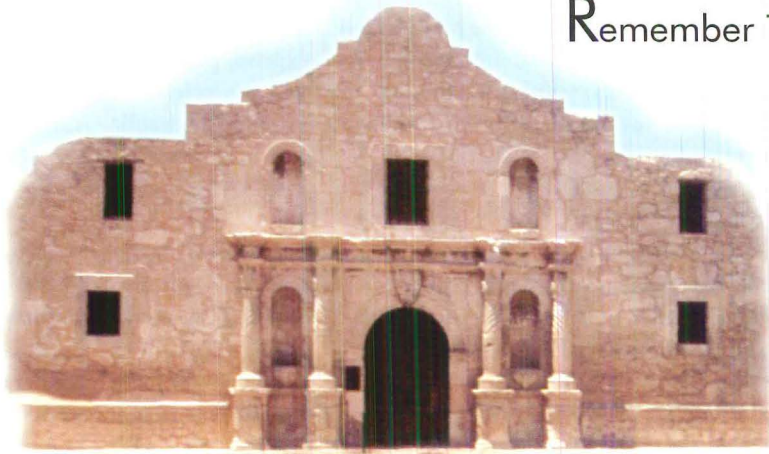
## Competitions

First annual **Business Week/Architectural Record Awards**, sponsored by the AIA, will recognize achievement in creative management practices and design solutions. The deadline for entries is April 18. Categories include design that supports alternative work practices and increased productivity; design that boosts a new corporate image or changing corporate culture; and design that supports corporate or institutional innovation, industrial practices, and new work tools. Winners will be featured in both publications. *Business Week* is read by some six million people, many of whom are potential clients. To enter, call 888/242-4240 or visit the Web site at [www.aia.org](http://www.aia.org). Entries will be received at the AIA in Washington, D. C.

The Young Architects Committee, AIA Chicago invites entries in a furniture-design competition, sponsored by Knoll International, for creative work-related furniture. Prizes of up to \$1,000 and exhibition of winning projects are offered. Call 312/670-7770.

(continued on page 214)

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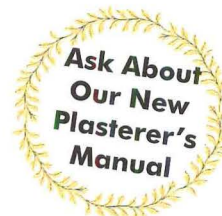
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CIRCLE 83 ON INQUIRY CARD

(continued from page 212)

The Van Allen Institute calls for entries in a Competition Linking Design, Technology, and the Public Realm. It is open to recent or prospective graduates of U. S. schools offering degrees in architecture or related fields. The deadline is May 1. The prize is a two-month fellowship at the American Academy in Rome. Call 212/924-7000, fax 212/366-5836, or e-mail vanalen @designsys.com site: <http://www.vanalen.org>.

The Association of Collegiate Schools of Architecture and the American Wood Council invite entries in the **1997 Carl E. Darrow Student Design Competition** by May 15. The award will be for significant uses of wood in a mixed-use neighborhood transit center. Write Thomas Gelsanliter, ACSA, 1735 New York Ave. NW, Washington, D. C., or call 202/785-2324.

Entries in the 17th annual **Builder's Choice Design and Planning Awards** are due June 3.


The event is jointly sponsored by *Builder* and the AIA Housing Committee. Categories are custom housing, production housing, community planning, remodeling and rehabilitation, light commercial buildings, and design details. Entry forms and fees (\$195 per project and \$95 per special focus category) are due May 13. Call 800/726-8220 for additional information or fax form and credit card information to 202/785-1974, to the attention of Rebecca DePietropaolo.

The Cincinnati Forum for Architecture and Urbanism is inviting entries to an exhibition **Unbuilt Cincinnati** to be held in April 1998. Drawings, models, or other forms of presentation should show projects planned for downtown Cincinnati or immediately across the Ohio River in Newport and Covington, Kentucky. Phone David Scheer at 513/381-8831, fax 513/381-8841, or submit materials directly to his attention at 116 West Sixth Street, Cincinnati, Ohio, 45202

An international design competition for architects, designers and students to design furniture or objects that predominately use desk-top linoleum is being sponsored by **Forbo Industries**. Winning designs will be exhibited at the Arbitare Il Tempo Furniture Show in Verona, Italy, and the designers will receive an expense-paid round trip. The first-prize winner will also receive ECU 5,000 or approximately \$6,000. The deadline is April 15. Entry packets and information can be obtained by calling 800/233-0475.

Portland has issued a call for entries in its awards program, **Architecture + Energy: Building Excellence in the Northwest**. Recognition will be given for design excellence in buildings that integrate energy-efficient technology. The program is open to nonresidential buildings in Idaho, Montana, Oregon, and Washington State. Sponsors are Portland General Electric and the Bonneville Power Administration. The deadline is May 30. To request an entry packet, contact AIA/Portland, 315 S.W. Fourth Avenue, Portland, Oregon 97204 or call 503/223-8757.

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The Village of Plainfield, Illinois, together with Plainfield Partners Commercial, Ltd., and the township Park District are holding a one-stage competition for the design of a new 300-acre **Plainfield Town Center** to be located directly across the DuPage River from the historic downtown. Entries are due May 1. Prizes are \$10,000, first; \$5,000, second; and \$2,500, third. To register, contact the Plainfield Design Competition, Village of Plainfield, 32145 West Lincoln Highway, Plainfield, Illinois 60544. For information, call 815/436-7093.

The **Shinkenchiku Residential Design Competition** 1997, an annual competition sponsored by *The Japan Architect*, will be judged this year by Swiss architect Jacques Herzog, of Herzog & deMeuron. Theme: House of Collaboration. Entrants are asked to work in collaboration with an artist or art student to draw, on two sheets of paper (no electronic media, please) an exhibition space for contemporary art, on any site. No entry fee. Fax Tomoko Ochiai, Editor, The Japan Architect, for further entry requirements: 03.3811.0243. Entries must be received in Tokyo by September 10, 1997.

(continued on page 216)

CIRCLE 84 ON INQUIRY CARD

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CIRCLE 85 ON INQUIRY CARD

**Gio Ponti**, edited by Ugo La Pietra, with essays by Enzo Frateili, Agnoldomenico Pica, and Vittoriano Viganò. New York: Rizzoli, 1997, 448 pages, \$75.

by Clifford Pearson

Architect, interior designer, furniture designer, painter, founding editor of Domus magazine, critic, and bon vivant, Gio Ponti was all over the map—both literally and figuratively—during his long career. It was Ponti's roving curiosity and eclectic designs, though, that make him hard to pin down. As Ugo La Pietra says of Ponti in his introduction, "It is also true that he was, and still is, an inconvenient figure to classify."

This heavily illustrated volume covers Ponti's entire career—starting with his Classically inspired work for the Italian porcelain company Richard Ginori in the 1920's, and including his Moderne offices at the Montecatini Building in Milan in 1936, interiors for luxury liners such as the Andrea Doria and Oceania in the 1950's,

the Pirelli Tower in Milan in 1956, chairs for Cassina and others, bathroom fixtures for American Standard, and the Denver Art Museum in 1972. The book's essays place Ponti in his historical context and explain some of his strengths and recurring themes.

**Tadao Ando: The Colours of Light**, by Richard Pare. London: Phaidon, 1996, 264 pages, \$95.

The heaviest 264-page book this reviewer has ever lifted, this collection of photographs by Richard Pare is printed on special-stock paper with six-color reproductions. Pare, a former curator at the Canadian Centre for Architecture, photographed Ando's work from 1985 to 1996 using only daylighting. The book, which includes quite a few gatefolds, covers 27 projects including the Church on Mt. Rokko, the Forest of Tombs Museum, the Rokko Housing II development, the Church on the Water, and the Nariwa Museum. Pare's images don't try to document each project, but rather

to capture its essence. An introduction by Tom Henegan, a British architect who works and teaches in Japan, examines some of the key issues in Ando's architecture and Pare's approach to it.

**Robert A.M. Stern Buildings**, by Robert A.M. Stern. New York: Monacelli, 1996, 496 pages, \$75.

A straightforward monograph that focuses attention on the buildings, not the banter, this book organizes Stern's work into four categories: workplaces, "goodtime places" (such as hotels, stores, and Disney projects), public places, and "places of learning and worship." Other than some cutesy category names on the contents page, the book has fewer affectations than many other recent monographs. Lots of big, full-spread photographs and short project descriptions make it fun for the eye and easy on the mind. Even the architect's introduction is an easy read, touching on his view of history and narrative without getting too deep. But the emphasis on pictures rather than words may have gone too far with the elimination of legends from the floor plans and drawings.

**Raimund Abraham: [Un]Built**, edited by Brigitte Groihofer. Vienna: Springer-Verlag, 1996, 316 pages, \$95.

Austrian architect Raimund Abraham is best known for his writings and theoretical works on paper, many of which are included in this book. But Abraham, who has lived and taught in the United States since 1964, began to garner attention outside academic circles a couple of years ago when he was selected to design the New Austrian Cultural Institute in New York City. That project, which Abraham designed as a steeply sloped metal-and-glass sliver, was postponed for a while, but is said to be close to construction.

#### Omissions and Corrections

The prime-contract electrical engineers for Northern Telecom [RECORD, December, 1996, pages 40–44] were Norton Electric. Alfa Tech Bouillion was a subcontractor.

The architect-of-record for Manville Apartments for the University of California, Berkeley, [RECORD, January, pages 42] is Crosby Helmich Architects.

The Big Wood River, site of a home designed by Chase/Diengott [RECORD, March, page 129] is in Idaho, not California. ■

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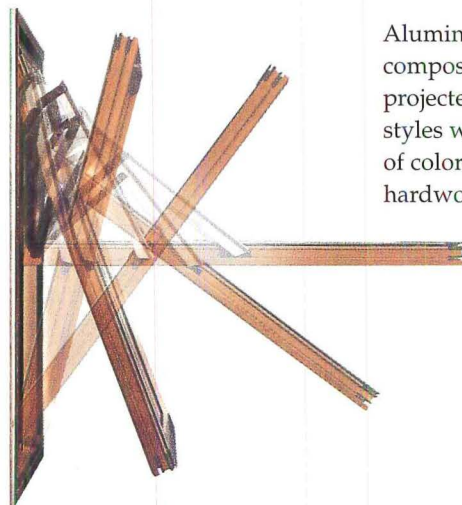
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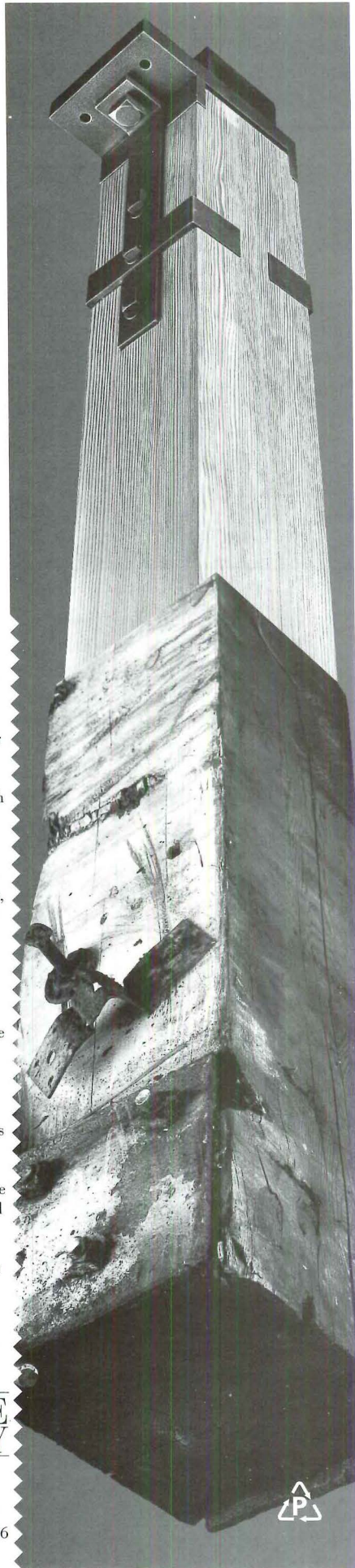
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**Cabrini-Green in focus**

As a participant and member of the team of designers placing third in the Cabrini-Green Design Competition sponsored by the *Chicago Tribune* four years ago, I read with interest Blair Kamin's recent article, which posed the question, "Can Public Housing Be Reinvented?" [RECORD, February, 1997, pages 84-89]. I would suggest that the answer is a definite yes, although, as Kamin tactfully alludes in his article, it is not likely to be as simple an answer as those currently involved might hope.

and reason for optimism. The lead editorial seems to indicate a solid conceptual basis for RECORD's enhanced importance. The letter from the AIA president reinforces this potential. The featured building projects were also mostly positive.

There were some editorial errors (e.g., the ratios of Phoenix size to population; the assumption that settlement patterns must/should have definite "edges"; the statement that mountains are visible from tightly enclosed courtyards; the assumption that a central beam on the long axis enhances an exhibition space). But tendencies toward uncritical enthusiasms were mostly restrained.

For all the benefits that our free-enterprise system brings to our way of life, "the market," if left to its own, will not improve or correct fundamental social problems of the type and magnitude that have contributed to the evolution of the current crisis in public housing.

It is hoped that such restraint will also permit more rigorous assessments by the magazine's "independent voice." The tendency to find and to express delight in most of the work you publish is both natural and commendable; but there is also a need to be more forthright in many instances. Many of the current projects being done by the so-called "New Urbanists" should be subjected to such really critical evaluation and reportage.

Nor will the latest intellectual abstraction of the planning and design community, the "New Urbanism," result in any real change in the lives of current public-housing residents, unless it reaches for solutions that go beyond its current formula—an approach that reflects a rather idealized, bucolic, upper-middle-class way of life. That is, after all, just the sort of well-intentioned, myopic intellectual abstraction that brought us the physical reality that is public housing today.

William A. Stewart  
Marble Falls, Texas

If the goal, as professed by those involved, is to improve not only the physical environment of public housing (without rampant gentrification), but also the lives of those who live there, it can be done. However, it cannot be done for them, to them, in spite of them, or any other way, but with them.

**New Urbanists in Miami**

You will be interested to know that the Hometown Plan article [RECORD, January, 1997, pages 136-137] was inspiring to the locals; the [Miami] vice mayor held it up during the cable broadcast of a City Commission meeting, beaming. Congratulations on the redesigned RECORD. The magazine has a fresh new look now. (And perhaps that also signals an editorial "thaw"?)

The residents must have a real and substantial role in the process, because it is the process that will ultimately determine success or failure, not merely what gets built.

Victor Dover  
Dover, Kohl & Partners  
Miami, Fla.

Architects, planners, developers, politicians all come to the process with either something to prove, to gain, or both. Not until those with the money, the influence, and the power to (continued on page 218)



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help are willing to sublimate their self-interests and work at evolving solutions that fundamentally involve, and thereby change, the life experiences of those who live in public housing will a meaningful change be possible, regardless of what physical form results.

Physical change is easy; all it takes is money. Social change requires not only money but commitment, understanding, patience, creativity, trust, selflessness, and sacrifice by all parties involved. I would hope that those who have the ability and power to work for real change look beyond the latest planning "ism," toward their own personal experience, the work done, and the ideas raised in the *Tribune's* competition.

Ronald Reed, AIA  
Arlington Heights, Ill.

**EIFS defended**

I am writing to express my concern and to provide some needed balance to the article "Detailing That

Weathers Better" in your November, 1996, issue [pages 42-44]. If I were an architect or owner, after reading your article, I would be questioning any future decisions to use EIFS on my building. Your article seems to suggest that EIFS is a relatively new product, whose reliability is still in question. EIFS has been as integral part of the construction industry for almost 30 years. Hundreds of thousands of successful projects testify to the reliability and durability of EIFS. The recent Drucker report, issued in September, 1996, shows EIFS as the most widely used exterior cladding in the nonresidential market with 175 million sq.-ft installed in 1995.

In the commercial marketplace, architects do a fine job of designing and detailing with EIFS. They assist in coordinating the different trades and check conformance to construction documents. In areas of doubt, we recommend architects be retained for on-site supervision. This would hold true for

the residential market as well. EIFS has been used in single-family houses for over 20 years. The product has grown in popularity within the last 10 years as homeowners and homebuilders have become more familiar with its features and benefits. Upwards of 25,000 homes a year are built with exterior insulation and finish systems. The residential construction problems mentioned in your article were the result of poor workmanship (by many trades), inattention to detail, and disregard for building-code requirements.

EIFS manufacturers agree that better communication and education are necessary to insure quality construction. The Dryvit Company meets with builders and contractors around the country to facilitate good-construction practices and proper applications. *A Builder's Reference Guide* has been published by Dryvit and is being used successfully by thousands of contractors. Other manufacturers have

also published documents to assist builders and contractors.

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Steven J. Collins  
Vice president, marketing  
Dryvit Systems, Inc.  
West Warwick, R.I.

**Library of Congress card files**

I have to take issue with a "fact" stated in the article on the Library of Congress [RECORD, February, 1997, pages 106-111]. As an intern at the National Building Museum, I visit the Library of Congress often in my

**NEWS FROM THE EDGE**

**FRONTIERS OF DESIGN IN OKLAHOMA June 5 through 8**

Oklahoma symbolizes the shift from frontier to modernism. It is a place of myth and legend, but more importantly, a place where innovation and invention are the basis of individual achievement, a place which embraced the architecture of the twentieth century with a series of remarkable experiments in design.

The great buildings of Tulsa and Bartlesville reflect the social structure and the individualism of their clients. Each layer of thinking can be seen almost intact: beginning with Tulsa's art deco downtown and extending through the work of Wright, Goff and more recent expressionistic architects.

The focus of the Tulsa Program is to examine the tradition of design in Oklahoma, its origins and intentions, by touring office buildings and seldom seen private homes and discussing the remarkable partnerships that developed between client and architect.

For information call (202) 626.7482 or visit [www.aia.org/pia/cod/home.htm](http://www.aia.org/pia/cod/home.htm)

**TULSA 1997**

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search for exhibitions. Please note that card catalogue has *not* been replaced with computers, but has been accompanied by computers—and thank goodness.

I am high-tech; I run web pages. But destroying the card catalogues before all information has been transferred to computers would be a big mistake.

Quickly, the Library of Congress has not done this yet, though I've heard it's tried.

I hope a warning is sounded, from libraries to museums, before precious information is lost in a high-tech frenzy.

Architects can do their part, whether renovating old libraries or designing new ones. I think an old-technology holding room would be appropriate, as there will always be old technology and time needed to upgrade.

*Ra Day Kozak  
Purwyn Heights, Md.*

**Best managed firms**

I want to congratulate you on the first issue of our new magazine. I like the new format, the pages devoted to News, and the number of projects featured.

My favorite, however, is the article "Lessons from America's Best Managed Firms." While photos and descriptions of well-designed projects are inspiring, I find the helpful tips on how to run a competitive business to be equally inspiring. Keep up the good work.

The magazine is a symbol of how the AIA is on the cutting edge of the profession and is doing a great job of presenting this to the profession and the public. I'm looking forward to future issues.

*William Wiedower, AIA  
Little Rock, Ark.*

**The last word on Peru?**

I have been following the *Letters* section of your magazine and the ongoing "Bad Will" comments resulting from the current [United States] embassy guidelines and their built products. I was very sad to corroborate that what is true here is also true for other countries. Our new Caracas American embassy that opened two years ago is an

unhappy urban and architectural mistake—a move backward.

Buildings such as the one in Peru [RECORD, October, 1996, pages 78-85] criticized by Cynthia Richardson [RECORD, December 1996, page 145] and Rudy Schwarz [RECORD, January, 1997, page 16], as well as Gunnar Birkerts's suburban fortress we now have here in Caracas, are the worst kind of ambassadors produced by any United States administration.

Although mine have been the only public comments, the community of Caracas is tacitly mad along the same lines as Schwarz's comment on "non-contextual monoliths" and Richardson's "King Kong ugly boxes."

*Hannia Gsmez  
Benacerraf & Gsmez Arquitectura  
Caracas, Venezuela*

**The end of the Boldness Gap?**

I saw your *Dialogue* in the February issue on American architecture losing its boldness ["The Boldness Gap," RECORD, November, 1996, pages 76-

79]. And then I saw the Disney Concert Hall [February, 1997, page 28], Las Vegas's New York-New York [March, 1997, pages 76-79], Kuala Lumpur's Linear City [February, 1997, page 30], the Samitaur Building [February, pages 52-63], and Wagner Park [February, 1997, pages 64-69].

Did I miss something?  
*J. Almont Pierce, AIA  
Pierce Architecture  
Bailey's Crossroads, Va.*

RECORD may edit letters for grammar, style, and space availability, taking care not to change the author's meaning. ■

*For those of you who don't want to wait 25 years for patina.*



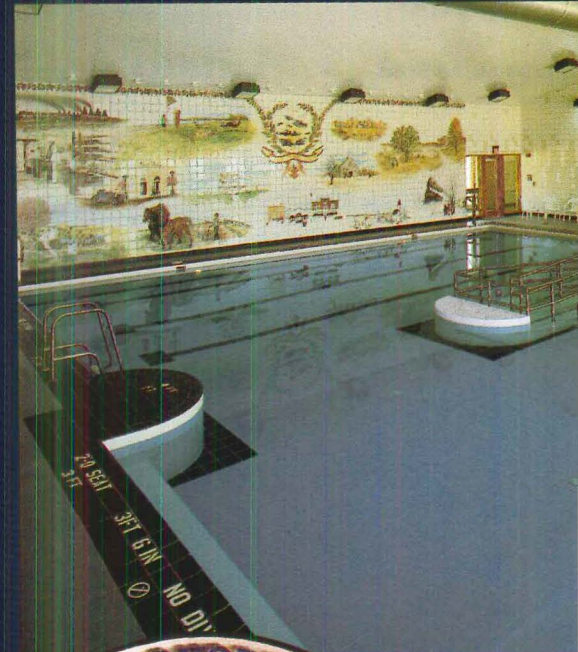
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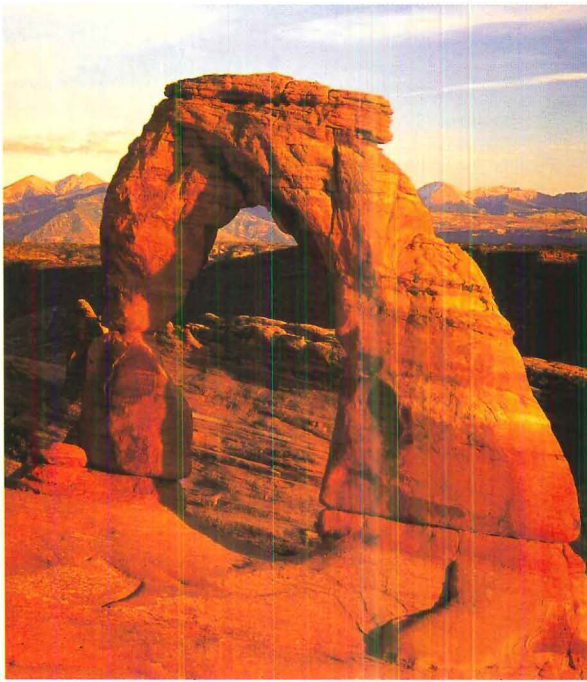
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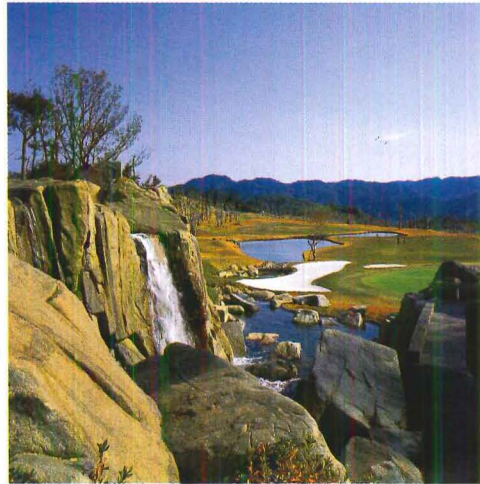


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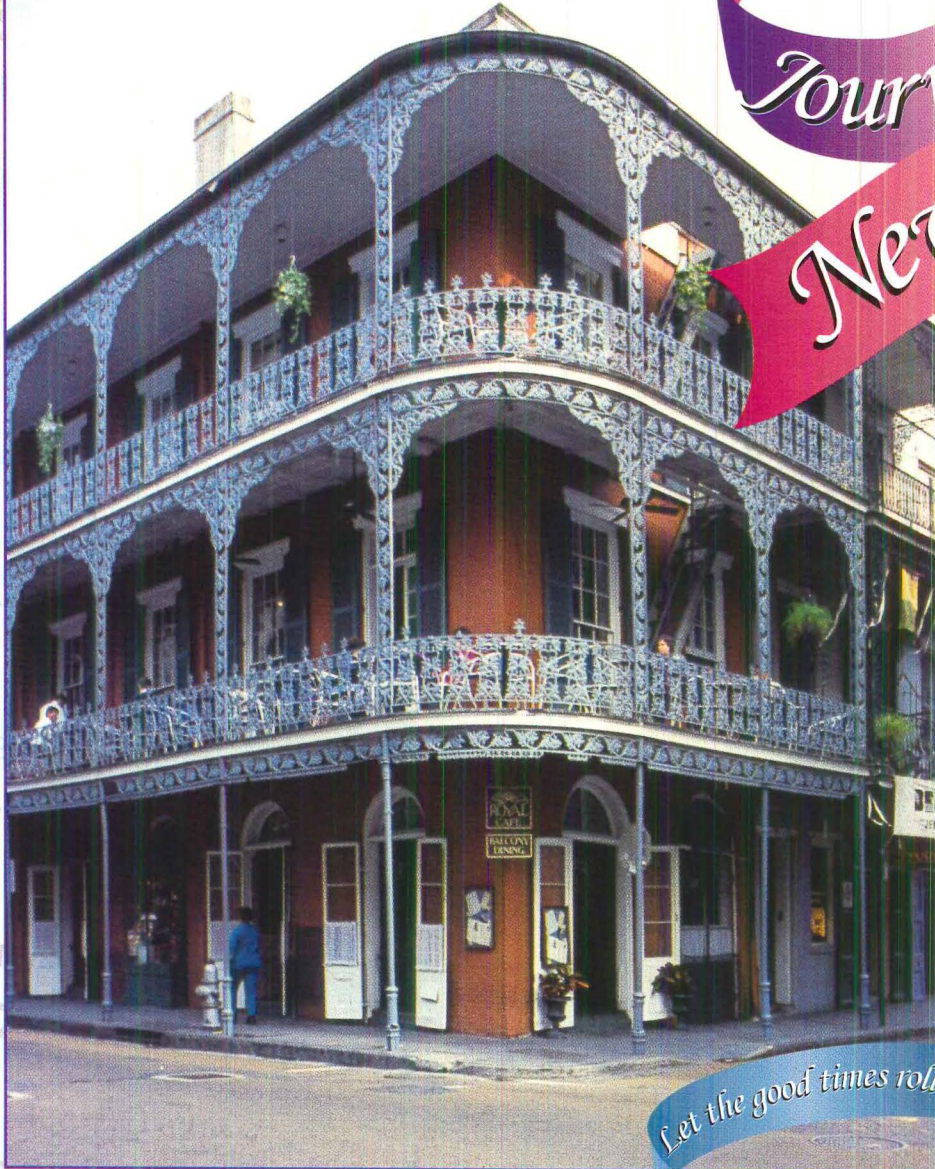
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*Sponsoring editor: KAREN D. STEIN*

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*Sponsoring editor: CLIFFORD A. PEARSON*

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- *Work previously published in other U.S. design magazines is disqualified.*
- *Work must have been completed after January 1, 1996.*

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- *Drawings that help to explain the project, such as floor and site plans.*
- *Photography in the form of transparencies, slides, or prints.*
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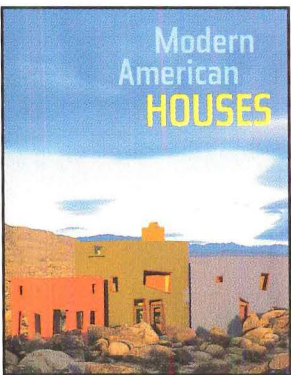
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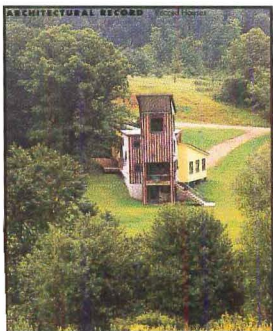
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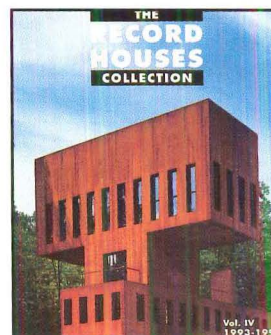
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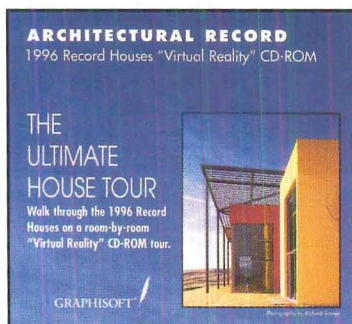
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**INSTRUCTIONS:**

These questions refer to the continuing-education story, "Designing houses: how skillful firms succeed in a tricky business" (page 133-136). See page 236 for answers and self-report form.

—Mark Scher, AIA Director of Continuing Education Programs and Products

**Questions:**

**1.** What is the key to making residential design profitable?

**Answer**

**2.** List four tips for working with residential design clients.

**Answer 2a.**

- b.
- c.
- d.

**3.** What are two organizational approaches that can minimize overhead expenses?

**Answer 3a.**

- b.
- c.

**4.** Cite three project-delivery methods that are current in the marketplace today.

**Answer 4a.**

- b.
- c.

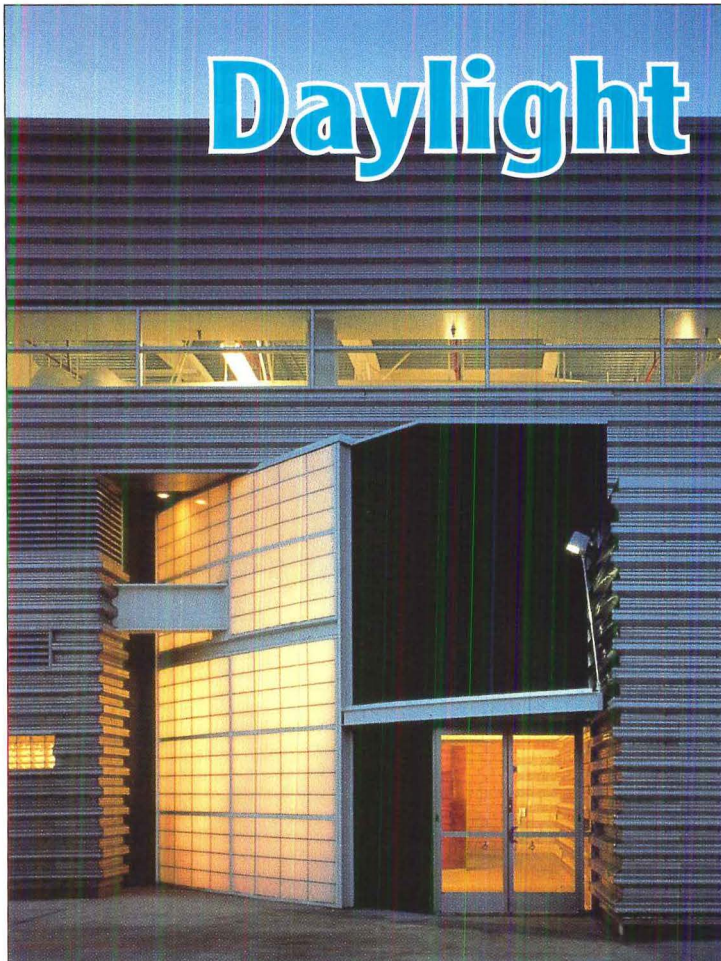
**5.** What are the pros and cons of working with contractors on a negotiated-fee basis, and how might the architect respond to the chief criticism of this practice?

**Answer 5.**

**6.** What are five work-process techniques for ensuring that clients get the project they want at the budget they can afford?

**Answer 6a.**

- b.
- c.
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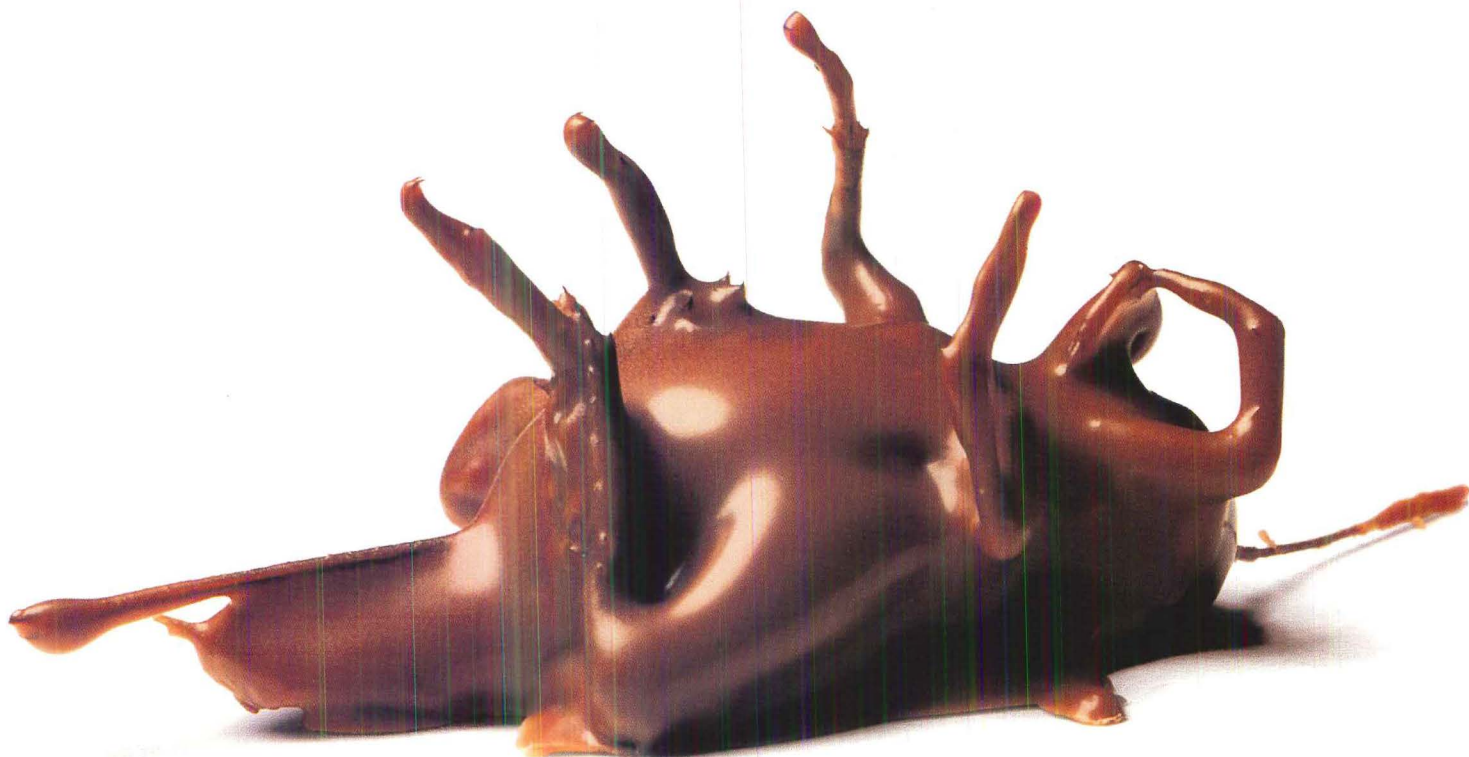
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## AIA/ARCHITECTURAL RECORD CONTINUING EDUCATION

### ANSWERS:

◆ Answers refer to the article, "Designing Houses: How skillful firms succeed in a tricky business" (pages 133-136).

See page 234 for questions.

◆ To receive CES credits, fill in the Self-Report Form below.

**1.** Successful residential design firms advise separating the fee for preliminary design into an hourly arrangement or a fixed fee for a defined scope.

**2a.** If the client is a couple, draw out the quieter partner. **b.** Encourage couples to work out their disagreements before meeting with you. **c.** Get sign-offs from the client at appropriate phases in the design. **d.** Have confidence in and respect your client and the intelligence they bring to the project.

**3a.** Even if yours is a large firm, organize the project so that it feels like a small office to the client. The partner-in-charge should be committed to a high level of personal involvement and frequent client contact.

**b.** Another approach is to encourage entrepreneurial project architects within the firm, and keep the team to the minimum number of staff demanded by the project phase.

**4a.** Use the traditional design-bid-build method. **b.** Team with a contractor, while maintaining separate corporate identities. **c.** Use design/build project delivery.

**5.** Projects where the contractor builds for a negotiated fee may be more costly than bidding-out the project, but involving the client in decisions about materials choice and project scope can lower construction costs. Advantages in working directly with a builder are that many offer better technical solutions, more suitable product specifications, better cost estimating, and a smoother and higher quality construction process.

**6a.** Hold at least two programming meetings to explore the client's daily activities and the specific rooms and activities desired. **b.** Show the client two to five alternatives, including images, to determine preferences for room shape, size, and placement. **c.** Consider presenting modest chip-board models that can be readily altered during meetings. **d.** Where budgets won't permit a high level of custom details, limit drawings to the most necessary elements. **e.** Get an accurate idea of cost early in the project. This may mean obtaining preliminary estimates that include price breakdowns across trades and for possible alternatives. ■



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"Designing Houses: How skillful firms succeed in a tricky business," (pages 133-136).

Completion date (M/D/Y): \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

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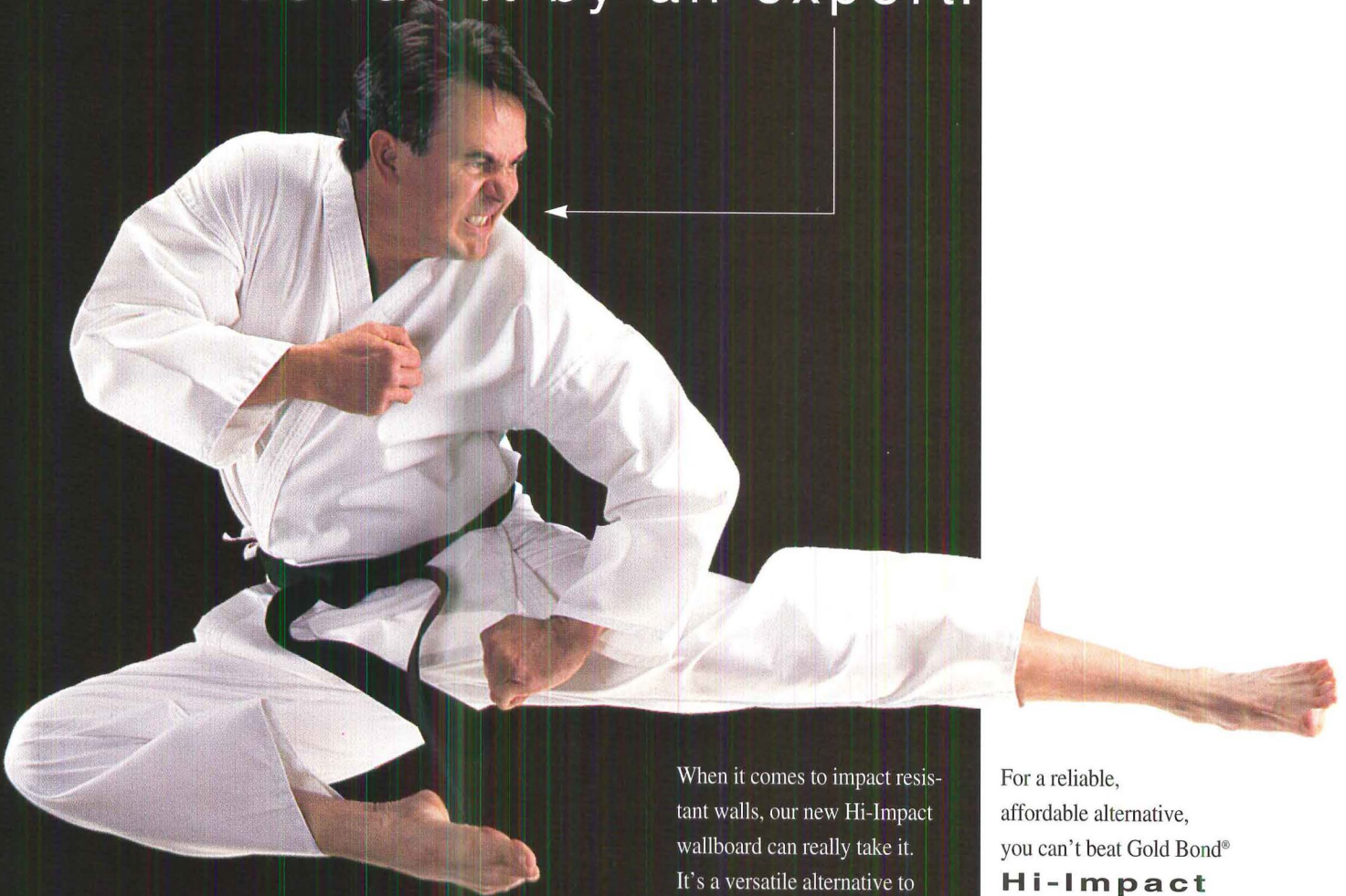
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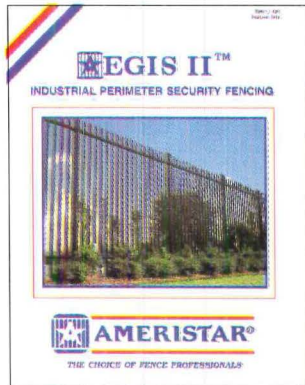


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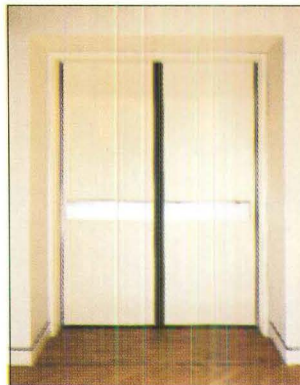


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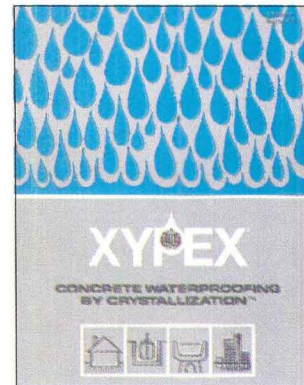


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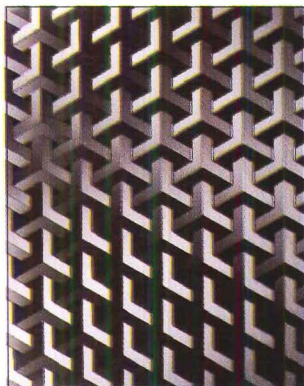


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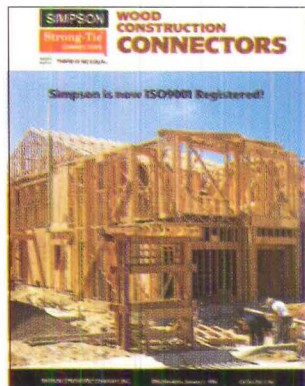


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12 new products are introduced in Strong-Tie's '97 catalog, Wood Construction Connectors. A necessary reference for structural engineers, building officials, and architects, it includes updated specs, load charts, application drawings, & building code acceptance - plus info on holdown anchorage design, & available custom hanger options. ISO9001 Reg. For 1997 catalog (C-97), write POB 10789, Pleasanton, CA 94588

**Simpson Strong-Tie**

CIRCLE 140 ON INQUIRY CARD

**Accessible Lavatory  
Insulation**



A full color catalog will explain the different Handy-Shield safety covers offered for the new or retrofit projects that need to comply with the American Disabilities Act. The specific use sample, sample specifications, drawings and color choice are all summarized in this easy to understand catalog. 800-475-8629.

**Plumberex**

CIRCLE 141 ON INQUIRY CARD

**New Fireplace Tested as a  
Wall Furnace**

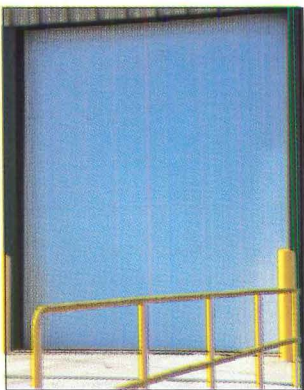


Our Products have taken direct-vent technology & incorporated it into a new high performance fireplace. Model 6000 Supreme is a high efficiency fireplace (thermal efficiency up to 74%) & has an AFUE (Annual Fuel Utilization Efficiency) rating of 63%. The 6000 Supreme is standard with a variable regulator to adjust the flame & BTU input with the turn of a dial. Heat-N-Glo, 6665 West Hwy 13, Savage, MN 55378, 1-800-669-HEAT.

**Heat-N-Glo**

CIRCLE 142 ON INQUIRY CARD

**Clipay® Energy Efficiency Sectional Doors**

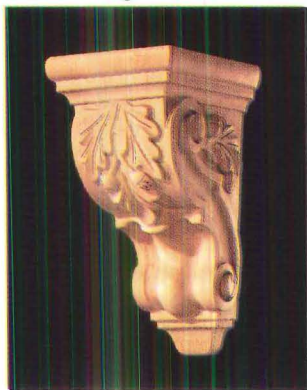


Clipay® thermal upward-acting sectional doors offer maximum energy efficiency in an insulated door system. These 2" thick doors consist of a sandwich construction of heavy duty 24 gauge galvanized, textured stucco embossed exterior, pressure bonded to an expanded polystyrene core. Clipay doors are engineered for various code & wind-load reqs. 1-800-225-6729; SweetSource or website: <http://www.clipay.com>

**Clipay Building Products**

CIRCLE 143 ON INQUIRY CARD

**Raymond Enkeboll Designs © 1996**

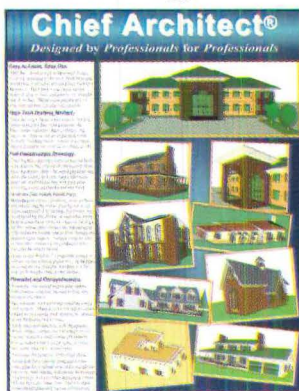


Crafts an extensive array of Architectural Elements carved in solid woods. 104 pg. catalog shows a selection of capitals, corbels, moldings, onlays, panels, etc. Stocked in Maple and Red Oak, available for immediate delivery. Spiral Bound catalog \$20.00, Special binder version \$30.00. Visa & MC welcome. Brochure Avail. Raymond Enkeboll Designs, 16506 Avalon Blvd. AR47, Carson, CA 90746. T: (310) 532-1400 F: (310) 532-2042.

**Raymond Enkeboll**

CIRCLE 144 ON INQUIRY CARD

**Advanced Relational Technology, Inc.**



Proves that top quality architectural software can be easy to learn. Straight out of the box, Chief simplifies the process of creating full working drawings. Over 300,000 people worldwide prefer ART's architectural software with its full 3-D capabilities. Advanced Relational Technology, Inc. 3731 N. Ramsey Rd, Suite 150, Coeur d'Alene, ID 83814. Phone: (800) 482-4433, Fax (208) 664-1316 E-mail: [artchief@chiefarch.com](mailto:artchief@chiefarch.com) -WWW: [www.chiefarch.com](http://www.chiefarch.com)

**ART**

CIRCLE 145 ON INQUIRY CARD

**PG Bell Porcelain Meets Your Budget**

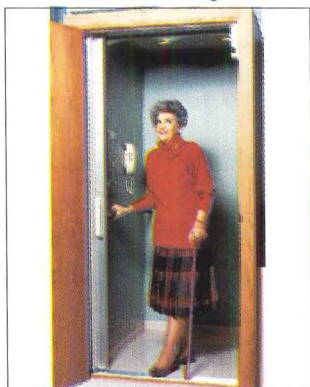


Competitive pricing is only one benefit of cladding with porcelain enamel. Complete color and gloss retention contribute to the unsurpassed longevity that porcelain provides. With the ability to hold the tightest curves, complex forms are only limited by your imagination. Call Jennifer for your free CAD details on disk. PG Bell Architectural Porcelain 800-663-8543.

**PG Bell**

CIRCLE 146 ON INQUIRY CARD

**Building Home Remodeling**



Waupaca Elevator has the answer to your Up/Down needs. In business for almost 50 years we have perfected the comfort, convenience, mobility, and safety necessary for the modern home elevator. Look to the 20th Century in home design by installing a Waupaca Elevator in your home today. For further information contact: 138S, Oborn St., Box 246, Waupaca, WI 54981.

**Waupaca Elevator**

CIRCLE 147 ON INQUIRY CARD

**Security Mesh**



Security Mesh sheets are steel mesh panels used as a penetration resistance shield behind drywall finishes. Sheets are to be attached to metal studs & track or wood supports designed for use in walls. Uses: Prisons, gov't offices, strip malls, storage rooms, computer rooms, courthouses, apartments, condos, pharmacies, mail rooms, airport security, banks, hospitals, police stations & office security.

**Amico**

CIRCLE 148 ON INQUIRY CARD

**Buckingham-Virginia Slate**



has been sheltering America for over two centuries. As a roofing material, it is prized for its high mica content, natural cleft and texture, as well as its non-fading and distinctive handmade quality. Because of its permanence and natural beauty, it was specified by Thomas Jefferson in the 1800's and remains today the roofing choice of eminent architects. P.O. Box 8, Arvonica, VA 23004. Tel: 1-800-235-8921.

**Buckingham-VA Slate**

CIRCLE 149 ON INQUIRY CARD

**Mortar Net Green**

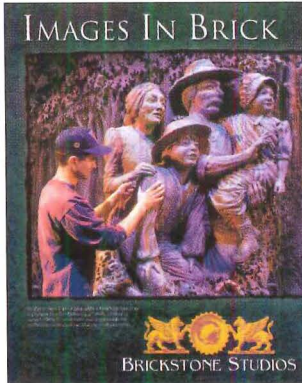


is placed on top of the flashing inside the cavity, where it catches & permanently suspends mortar droppings above the level of the weep holes. Its patented dovetail shape prevents mortar from forming a dam, its shape with its 90% open weave allows water & air to easily move through the net & out the weeps. It's 100% recycled non-degradable polyester & is avail. in a 2-inch width. For a CAD disk, call (800) 664-6638.

**Mortar Net**

CIRCLE 150 ON INQUIRY CARD

**Award Winning  
Brick Sculpture**

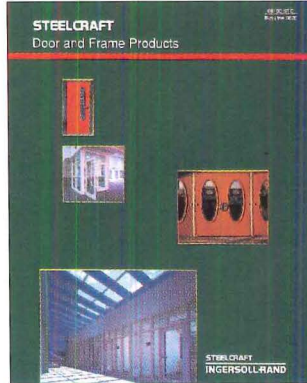


For maximum impact and appeal, crown your work with a signature art piece from Brickstone Studios. Applications of brick or cast stone sculpture are unlimited - exterior and interior murals designed to bring architectural focus to entrances, foyers, facades and imagework. Quality craftsmanship and design are distinguishing services our company guarantees. 800-449-6599.

**Brickstone Studios**

CIRCLE 151 ON INQUIRY CARD

**SteelCraft Product  
Guide #613**



The Steelcraft Product Guide is designed with the architect, & design community in mind. Product specifiers can find basic door & frame specs in a special chart. We have included a "Relative Cost Chart" that shows the cost comparison between various Steelcraft products. We include Steelcraft product specs; fire label charts; door & frame selection charts; handing charts; & info service list.

**Steelcraft**

CIRCLE 152 ON INQUIRY CARD

**Intumescent Life Safety  
Door Product**

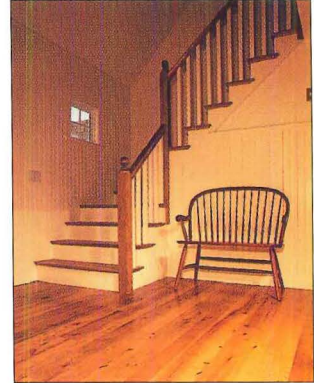


Pemko introduces HSS2000, HotSmokeSeal™, an amazing new product which helps prevent the spread of life-threatening fire and smoke. HSS2000 is a thin graphite strip with adhesive backing for easy installation around the perimeter of a door opening. At elevated temperatures, HSS2000 begins a multi-directional expansion and swells up to 40 times its original size, filling the gap between a door and frame.

**Pemko**

CIRCLE 153 ON INQUIRY CARD

**Reclaimed, Remilled.  
Remarkable**



Vintage Lumber Co., Inc. has been manufacturing exceptional antique T&G plank flooring since 1973. Our extensive selection, consistent quality, on time delivery, and technical expertise is unequalled in the industry. For more info call 800-499-7859 or fax 301-845-6475. P.O. Box 104, Woods-boro, MD 21798.

**Vintage Lumber**

CIRCLE 154 ON INQUIRY CARD

**TSAO+CLS**

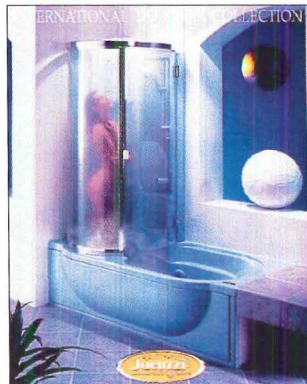


This collection of ADA compliant wall sconces is intended for applications in hospitality, library, and health care facilities, where classic designs need to meet energy conserving standards. Reeded brass stems support an off white linen shade. Fixtures are equipped for (1) PL 13 quad or incandescent bulbs. TSAO+CLS, New Canaan CT. Tel. 203/966-9559, Fax. 203/966-2335.

**TSAO+CLS**

CIRCLE 155 ON INQUIRY CARD

**Jacuzzi Whirlpool Bath**



Jacuzzi Whirlpool Bath - presents The 1997 International Designer Collection of whirlpool baths, faucetry and The J-Dream™ Family of shower systems. This full-color catalog features beautifully styled products, integrating the most innovative luxury features. For more information please call 1-800-678-6889. Catalog free of charge.

**Jacuzzi**

CIRCLE 156 ON INQUIRY CARD

**Grass Paving at the  
Orange Bowl**



The Orange Bowl Stadium in Miami has an improved parking lot of grass with Grasspave2. 100% grass finished parking bays are compatible with asphalt aisles. 92% root area is best for grass health, maximum porosity and improved water quality. New 100 m2 rolls (1076 sf) make installation fast and easy. Landscape Architects assist with design, call 1-800-233-1510, fax 303-373-1223.

**Invisible Structures, Inc.**

CIRCLE 157 ON INQUIRY CARD

**Waterproofing Under  
Thin-set Tile**



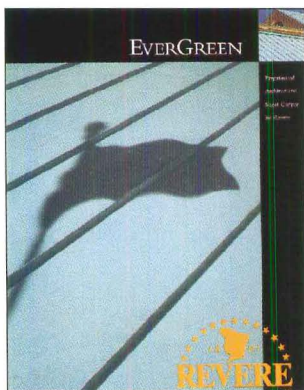
Use 40 mil Compositel Gold 4-ply membrane to protect floors on, above or below grade from water damage. Ideal for handicap shower and dressing areas, kitchens and hospital floors; over concrete, backerboard or protected plywood substrates. Meets ANSI A118.10 standards. Available nationwide through major tile distributors. 800/221-1056.

**Compite Corp.**

CIRCLE 158 ON INQUIRY CARD



**EverGreen Brochure**



New Revere EverGreen™ pre-patinated architectural copper lets you specify the rich, warm look of patina, without waiting decades to fulfill your vision. Completely matures after 4 to 6 rainfalls. Adds striking beauty & character to any roof or accent. Call for new EverGreen brochure. Revere Copper Products, Inc. P.O. Box 300, Rome, NY 13442-0300, 800/950-1776; F: 315/338-2105; <http://www.reverecopper.com>.

**Revere Copper, Inc.**

CIRCLE 159 ON INQUIRY CARD

**Wood Windows and Doors**



For 75 years, Zeluck has served both architects & custom builders with architectural wood windows & doors unparalleled for flexibility, quality & service. Zeluck offers a wide selection of glass & hardware, & timber from responsibly managed forests. We offer triple hungs, European casements, tilt & turns, copper clad, bent units, bi-folding doors, lift-sliding doors & French doors. 800-233-0101 • 718-251-8060

**Zeluck**

CIRCLE 160 ON INQUIRY CARD

**Over One Million Locks in Use Worldwide!**

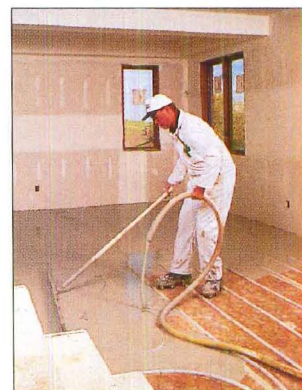


We pioneered mechanical pushbutton access controls & cont. to be the world leader. Our locks help secure The Pentagon, U.S. & Canadian embassies, McDonalds plus major universities, banks & airports. Must anything secure by a key can have the security & convenience of a pushbutton lock. Unican. Simplex Access 2941 Indiana Ave., Winston Salem, NC 27105 T. 910-725-1331 F. 910-725-3269

**Simplex Access**

CIRCLE 161 ON INQUIRY CARD

**The Ideal Underlayment for Radiant Floor Heat**



For pure comfort and efficiency, nothing maximizes radiant floor heating like Therma-Floor®. It's the specially formulated underlayment that pours 1 1/4" to 1 1/2" thick over hydronic tubes or electric heating cables. Provides UL listed fire resistance. Quieter living, too, due to the mass added to the floor/ceiling system. 1-800-356-7887, fax 612/478-2431 for free Guide.

**Maxxon™ Corporation**

CIRCLE 162 ON INQUIRY CARD

**Ancor Granite Tile**

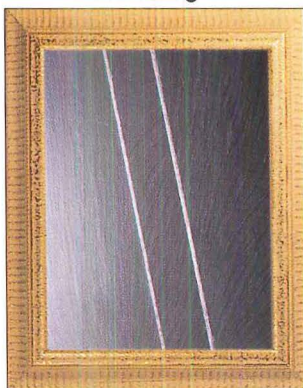


Ancor produces over fifty No. American and Imported granites in a full range of colors and finishes for residential, commercial and institutional use. Standard format is 12 x 12 x 3/8"; other sizes up to 18 x 18 x 1/2" available. Honed finish tile is particularly suitable for high traffic commercial areas, 435 Port Royal West, Montreal, Quebec, H3L2C3, Canada. Ph# (514) 385-9366, Fax# (514) 382-3533.

**Ancor Granite**

CIRCLE 163 ON INQUIRY CARD

**North Country® Unfading Black Roofing Slate**

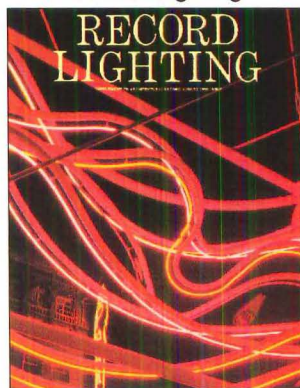


Picture the finest black roofing slate ever produced in North America. Then picture this... North Country® Unfading Black natural slate. For texture, durability, beauty & quality, our natural slate is compared favorably with the best roofing slate...ever. Used by discerning specifiers for projects where only the best is good enough, quarried from solid rock & worked by the skilled hands of North American craftsmen, it is the choice for the roof that matters. 1-800-975-2835

**North Country® Slate Co.**

CIRCLE 164 ON INQUIRY CARD

**Back Issues of Record Lighting**



Add to your files by ordering back issues of Record Lighting, the exciting color supplement to Architectural Record. The price per issue is only \$3.50 each (includes postage and handling). Send check or money order to Architectural Record, 1221 Ave. of the Americas, New York, NY 10020. Attn: Back Issues.

**Record Lighting**

CIRCLE 165 ON INQUIRY CARD

**Real Glass Block Installs in Minutes!**



Elite Prefabricated Glass Block Window & Wall Panels™. Real Glass Block installs in minutes! Totally prefabricated Elite Panels™ have perfect uniform grout or silicone joints around every glass block. Structurally engineered aluminum grid matrix framework provides superior strength, durability and security. Elite Panels™ can be load bearing, exceed coastal windloads, choice of nailing fin to install like any window, spline to create shapes, weathertight, warranted.

**Circle Redmont, Inc.**

CIRCLE 166 ON INQUIRY CARD

**Smith & Hawken**  
New Profiles - New Materials

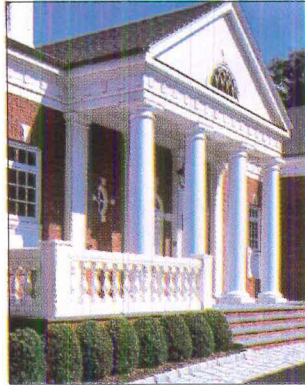


While we staked our reputation on heirloom teak furniture, in our new catalog you'll find new materials and new profiles that will help expand design options in both residential and high traffic commercial settings. Please call for our free catalog of fine teak and metal furniture. (415) 389-8300. Code: lamag97.

**Smith & Hawken**

CIRCLE 167 ON INQUIRY CARD

**Melton Classics, Inc.**



Melton proudly introduces maintenance-free Marble-Tex™ synthetic stone balustrades and columns with integral color that require no painting. Other Melton column products include: Classic Redwood™, Hardwood Classic™ Stain Grade, Dura Classic™ Poly/Marble, FRP Classic™ Fiberglass. Call 800-963-3060 or Fax 770/962-6988.

**Melton Classics, Inc.**

CIRCLE 168 ON INQUIRY CARD

**Met-Tile Roofing**

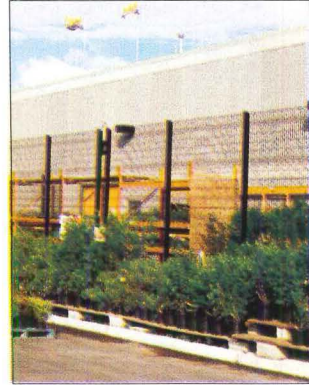


Roofing features an exclusive, environmentally friendly coating for high performance & long life. Tile-look metal panels provide beautiful appearance plus protection against hurricanes (230+ mph wind rating), fires, earthquakes, pest infestation & rot. Weight: 125 lb. per square. Eight designer colors. Phone (800)899-0311, fax.(909) 947-1510.

**Met-Tile Roofing**

CIRCLE 169 ON INQUIRY CARD

**Fence Systems**

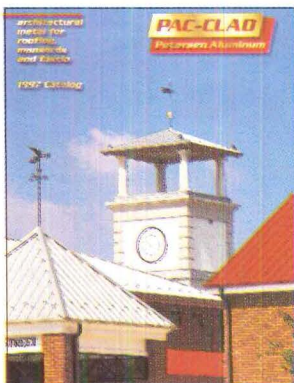


This new aesthetically appealing Euro-design fence system combines see-thru good looks with strength and durability of 6-gauge galvanized steel mesh. Powder-coated in a large variety of colors to suit any design & enhance the appearance & security of any property it surrounds, this fence system is virtually unclimbable, rugged maintenance-free and easy to install. 1-800-836-6342. www.maniac.com/omega.html

**Omega Fence Systems**

CIRCLE 170 ON INQUIRY CARD

**Petersen Aluminum Corporation**



Petersen Aluminum's new 1997 catalog includes their complete line of quality metal roofing products, featuring its SNAP-CLAD™ Metal Roofing Panel, TITE-LOC™ Coping System, & new 26 gauge PAC-CLAD Steel. PAC-CLAD®, a full Kynar 500®/Hylar 5000® paint system, backed by a 20 year non-prorated warranty, is available from stock in 25 colors. Three production facilities. 1-800-PAC-CLAD, website: <http://www.pac-clad.com>

**Petersen Aluminum Corp.**

CIRCLE 171 ON INQUIRY CARD

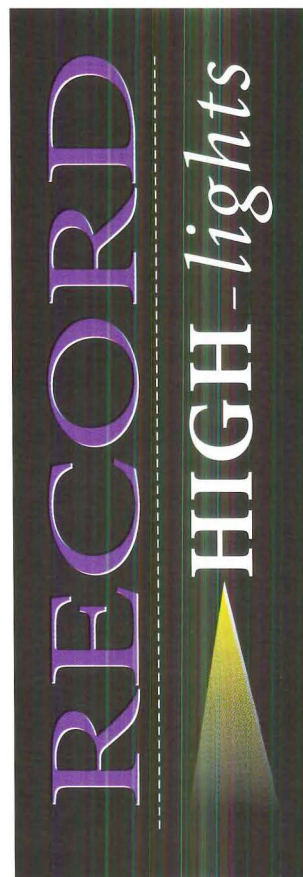
**Decorative, Thin-Film Intumescent Fireproofing**



Certified for beams & columns for ratings up to 2 hrs.! A/D Firefilm permits the designer to use the appearance of exposed steel with the steel fully protected from fire. Applied as a thin-film coating 0.4 to 3 mm (0.02 to 0.12 in.) thick. During a fire it expands to form a meringue-like layer up to 100 mm thick. The topcoat is avail. in a wide choice of colours. 416-292-2361. 1-800-263-4087

**A/D Fire Protection**

CIRCLE 172 ON INQUIRY CARD



**Hanover Lantern Commercial Lighting**

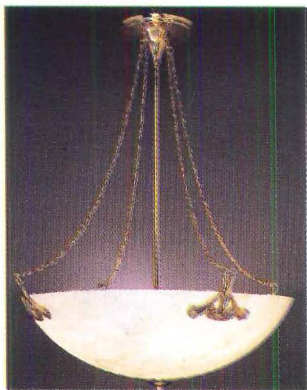


Hanover Lantern designs & manufactures high quality heavy duty cast titanium/aluminum commercial grade decorative lighting fixtures, poles & accessories. A selection of design styles, light source options, light distribution systems, mounting options, computer generated photometric data plus a custom design service are available to the architect or engineer. 470 High St., Hanover PA 17331. Phone 717/632-6464, fax 717/632-5039

**Hanover Lantern**

CIRCLE 173 ON INQUIRY CARD

**The Original Cast Lighting**



Classic Art Nouveau detail combined with today's energy efficient lamps provides the ultimate in design and enhanced illumination. Available in a variety of finishes, diffuser materials and lamping, this series offers versatility for a wide variety of applications. Shown here is the #NVO-38VB-8BQ1. Original Cast Lighting, 6120 Delmar Blvd., St. Louis, MO 63112 T. 314/863-1895 F. 314/863-3278

**The L.C. Doane Company**

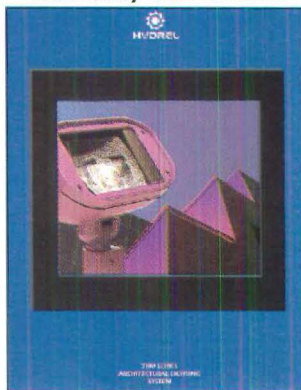


We Wrote the Book on Toughness. Our lighting has withstood the worst of environments and toughest abuse onboard U.S. naval vessels. In fact, we set the standards for today's naval ship lighting. Now we're making lights for demanding industrial, correctional and institutional use. Our products go through rigorous testing for shock, vibration, closure, noise, etc. The L.C. Doane Company, P.O. Box 975, Essex, CT 06426, Tel: 1-800-447-5006, Fax: 1-860-767-1397

**The L.C. Doane Company**

CIRCLE 175 ON INQUIRY CARD

**High Performance with Uniformity and Control**

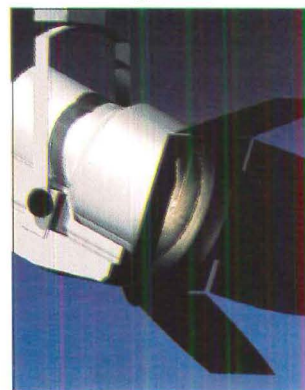


Hydrel's 7100 Series Architectural Lighting System provides high performance with maximum uniformity and control. Eight standard light distributions. Standard internal glare control. Multiple mounting capabilities. Contemporary styling to complement any architectural statement. Up to 175 watts HID.

**Hydrel**

CIRCLE 176 ON INQUIRY CARD

**Inlite's "Comet" Hid Light Fixture**



Great color rendition (4100K). Superior light output (up to 28,000 candlepower). Multiple accessories (barn doors, color filters, louvers). Two wattages to choose from 35PAR30 and 70PAR38. Energy efficient with many rebate opportunities. All kinds of mounting possibilities track, canopy, 1 1/2" - 3/4" - 1" truss or beams, and C-Clamp. Custom colors available. For more information call 1-800-346-5932, Fax 510/849-3230.

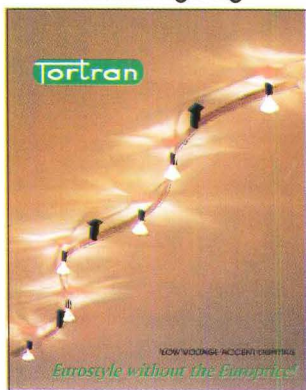
**Inlite Corp.**

CIRCLE 177 ON INQUIRY CARD

**The Original Cast Lighting**

CIRCLE 174 ON INQUIRY CARD

**Low Voltage Accent Lighting**

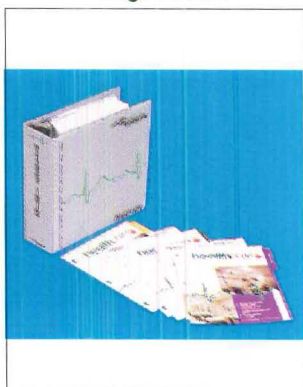


Tortran, Inc. presents the EXOTRACK™ low voltage halogen lighting system. Straight, rolled into circles, or shaped into undulating forms, the Exotrack provides accent and illumination for miniature chandeliers, exciting free-form sculptures, and can even be suspended in space. For more information call 203/367-5188. Lightfair Booth # 962.

**Tortran, Inc.**

CIRCLE 178 ON INQUIRY CARD

**Healthcare Lighting Design Binder**



Thomas introduces a comprehensive manual where healthcare lighting solutions have been detailed for the first time. The binder moves in sequence through a hospital, clinic or long-term care facility. The reader is taken on a tour of patient rooms, laboratories, sterile core & many more, outlining illumination requirements for each area. Each Thomas fixture selected for this healthcare binder addresses a specific need.

**Thomas Lighting**

CIRCLE 179 ON INQUIRY CARD

**"Solutions" Consolidated Catalog**

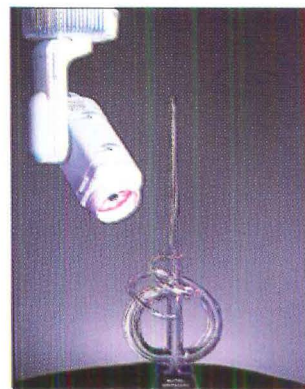


This 400-page book delivers solutions for any type of project: commercial, industrial or residential. All Thomas brands - Capri, Day-Brite, Emco, Gardco, McPhilben, Matrix, Omega and Thomas are represented. New products are flagged. Each product page provides a photo, features summary, dimensions and ordering information. This is one reference book you must have!

**Thomas Lighting**

CIRCLE 180 ON INQUIRY CARD

**The AR5™ Interior Luminaire by IRIDEON**



Irideon's AR5™ Interior Wash Luminaire awarded Best New Product of the Year at Lightfair Int. 1996. It features a computer-controlled, dichroic color-changing assembly, robotic 360° pan & 270° tilt capabilities, & diffuser/douser option. Control is achieved w/ Irideon Compose™ Control System allows system config. & programming from a PC. Irideon, Inc. 201 Regal Row, Dallas, TX 75247. P(214)819-3208, F(214)630-5867. www.irideon.com

**Irideon**

CIRCLE 181 ON INQUIRY CARD

**Lexington Standard Corporation**

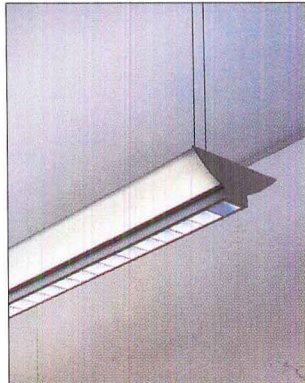


Cost-effective, durable, attractive and strong describe Lexington's aluminum lighting standards. Models include round tapered, square straight, hinged, embedded. Architects, contractors, distributors, owners appreciate the wide range of available finishes, ease of installation, economical prices and a maintenance-free product.

**Lexington Standard Corp.**

CIRCLE 182 ON INQUIRY CARD

**Neo-Ray's Europa 16 DIP**



Introducing Neo-Ray's latest pendant mounted, direct/indirect 3 lamp T8 fluorescent luminaire... "The Europa". This fixture features perforated metal side panels to facilitate a soft "glow", a parabolic louver to control the independent downlight component, & an articulated cable/ stem hanger system to provide for an elegant arrangement of luminaires. Designed to provide 3 distinct lighting distributions.

**Neo-Ray Lighting**

CIRCLE 183 ON INQUIRY CARD

**Cast Aluminum Lighting**

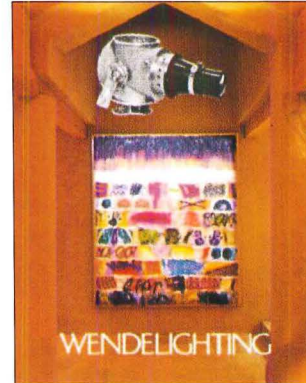


Sun Valley Lighting manufactures an extensive line of Standard & Custom cast aluminum lighting poles & fixtures in all period styles. Our 50 years of design & manufacturing experience provides you with unexcelled product quality. Our staff of designers, engineers, and tool makers are here to assist you. Our in-house foundry assures quality and prompt delivery at competitive costs.

**Sun Valley Lighting**

CIRCLE 184 ON INQUIRY CARD

**Optical Projector for large Spread Range & Brightness**

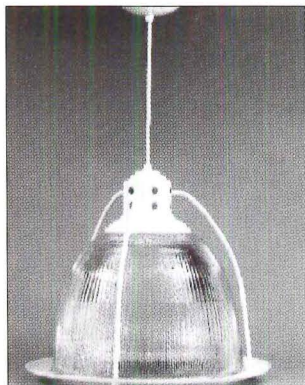


When your lighting requires wide spreads or long throws, specify Model 2346-50, Optical Contour Framing Projector. Perfect for paintings, focal points & landscaping, it can light the exact contour of objects. This UL model utilizes a bright 400 watt halogen light & a precision, five-lens system. Its gobo is made with an internal photographic imaging process. Recessed or track models make it versatile for all uses.

**Wendelighting**

CIRCLE 185 ON INQUIRY CARD

**Complete Light Distribution**



The efficient, decorative fixture offers complete light distribution and can be ordered with an open or closed bottom. The metal finish is available in all colors and three sizes-12", 16", and 22" in diameter-can be specified. Light sources include incandescent, high pressure sodium, metal halide and compact fluorescent.

**Primelite Manufacturing**

CIRCLE 186 ON INQUIRY CARD

**Sign Lights**

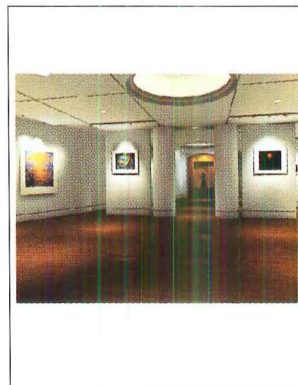


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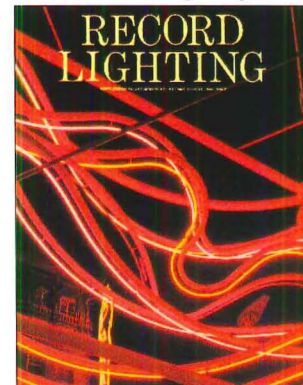


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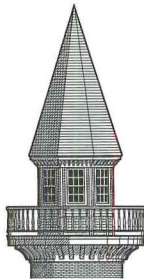
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# THE FUTURE: Engineers extrapolate the home of the near future based on today's technology.

BY JOAN BLATTERMAN

*By 2010, will the average house be smaller and thriftier with water than households are today? Will electric-utility deregulation and consolidation boost the price of a kilowatt-hour to the point where solar is a cost-effective power source? Will residential materials technology respond to the environmental hazards described by the emerging debate on global warming, or will it still be business as usual?*

A consortium of engineering associations, representing electrical, chemical, mechanical, civil, and hvac professionals and major engineering-oriented firms such as Fluor and Bechtel, marked National Engineers Week (February 16-22) by asking its members: "How will the application of current technology

make the home of the future more environmentally friendly?"

According to the engineers, a hypothetical villa (perhaps built for a WOOPIE—well-off older person), might look like this:

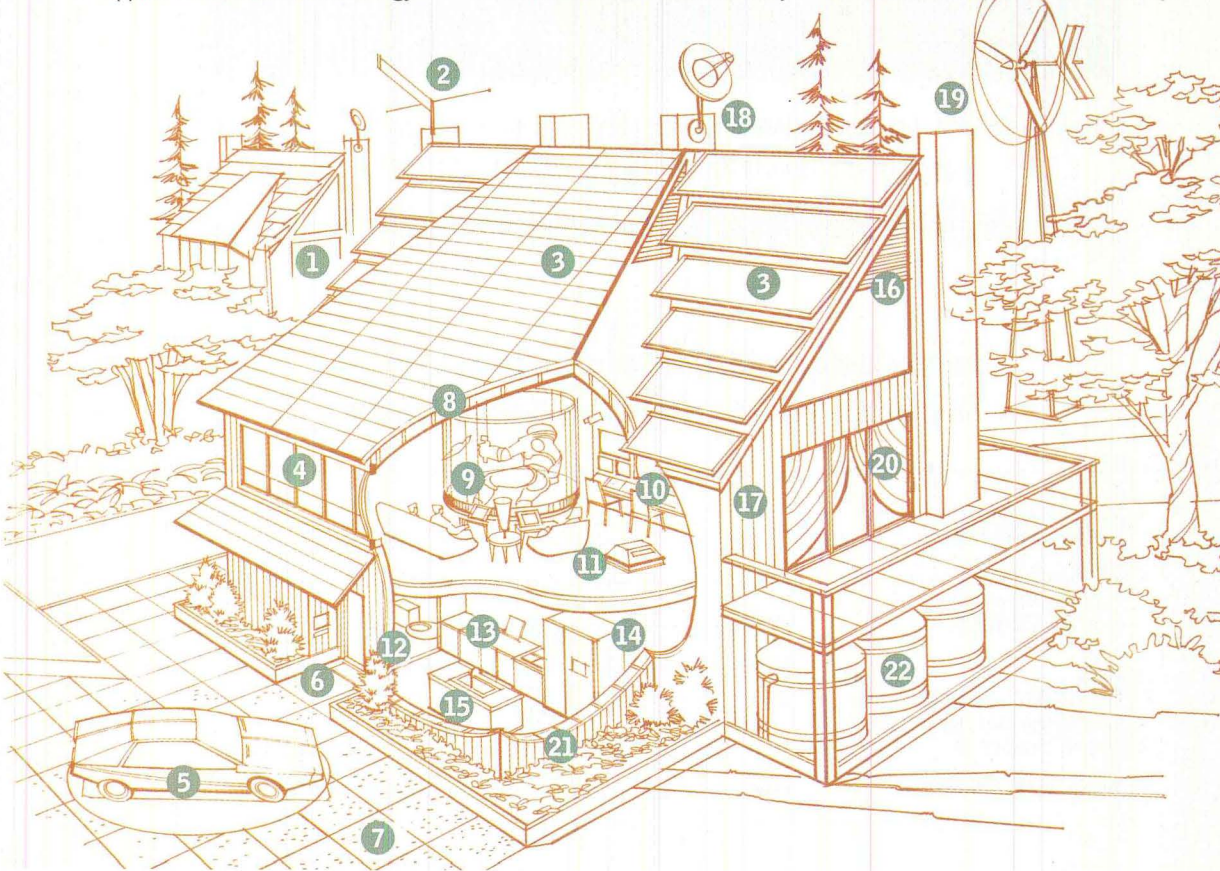
Homes are smaller, and definitely are built closer together (1). While there are more people, the amount of available land has stayed the same. Since the exterior envelope is much more thermally efficient (see 8 and 21), you might need a weather station (2) to tell you how to dress for outdoors. And the weather station can turn on under-pavement heating coils (6) to keep drives and walks clear of ice and snow if winter storms are predicted. Roof panels (3) double as hot-water heaters and electricity

generators, with thin-film photovoltaics or polycrystalline cells and inverters producing 120-volt current. Where local wind conditions permit, a windmill (19) helps out. Another energy saver: photosensitive glazing (4) that adjusts its shading coefficient in response to sunlight levels, going from clear to opaque. And ambient-light sensors lower electric-light levels to further save kilowatts.

After a rocky start in the late '90s, the electric car is widely used. An in-home charging port (5) now replaces the corner gasoline station. Drives and sidewalks (7) are paved with a permeable surface that prevents damaging rainwater run-off and recharges ground-water levels. Thanks to improved insulation sys-

tems, building-envelope components such as the roof (8) and exterior walls (21) are a very energy-efficient R-40 plus. In-home electronic entertainment now includes a holographic-imaging set (9). And "The Smart House" is finally here: computers (10) control hvac, security devices, and even adjust the filters of whole-house air cleaners (16) to respond to high air-pollution or pollen levels. "Fuzzy logic"-controlled robotic cleaners (11), first used in healthcare facilities in 1998, are common in homes to dust and vacuum.

Clean water is treated as a valuable resource, and toilets (12) use vacuum pressure to flush. Some homes even have ultra-sound clothes "washers" (13). Other water-saving devices that might be found in our future home include holding tanks (22) that pre-treat sewage and store gray water to flush toilets and irrigate plants. Temperature-control faucets (15) deliver water without waste. Some of the surveyed engineers cited futuristic appliances, such as a refrigerator (14) capable of sensing chemical breakdown of foods, and flashing a time-to-toss-out alarm. The fridge can also read bar codes, and automatically e-mail a restock grocery order. Many parts of the year 2010 home are made in factories, including pre-painted exteriors (17). All furnishings, paints, wallcoverings, and drapes (20), are made of non-toxic materials that won't off-gas. And, all outside communication—telephone, computer modem, fax, 1,000-channel television—is completely wireless, delivered to a single telecommunications port (18) for distribution throughout the house. ■







# BEST ARCHITECTURAL CAD



ARRIS computer image by A.J. Diamond, Donald Schmitt and Co., Architects and Planners  
Modeled and rendered by David Hileman

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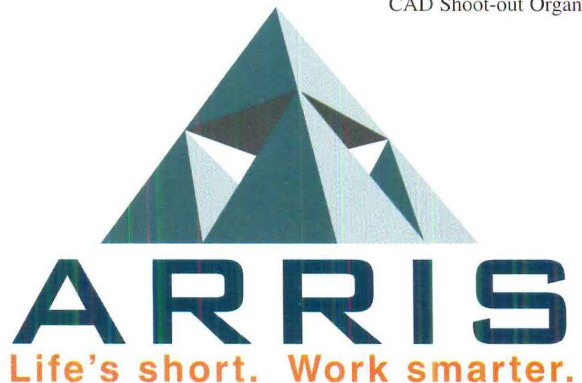
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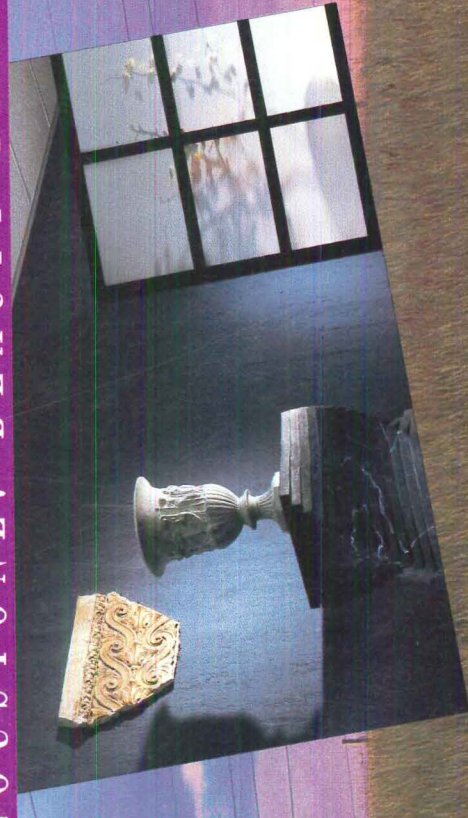
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