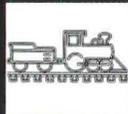


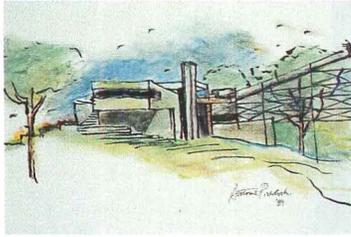




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Drawing by Antoine Predock shows how his house in Dallas fits into its wooded site.

Next month

Building Types Study 716

An essay on health-care-facility needs for the '90s is accompanied by innovative examples from Milwaukee, Hartford, Alexandria, Louisiana, and Ontario Province.

Building features include architecture by Smith-Miller+Hawkinson in Telluride, Colorado, Frank Gehry in Paris, Haines Lundberg Waehler in New Jersey, Kyu Sung Woo in Korea, and Venturi, Scott Brown and Associates in Florida.

Also in May

- Architects as urban designers.
- New glazing materials: glass and plastics.
- Software reviews
- Trend indicators
- Quarterly RECORD LIGHTING Supplement

Introduction 63

**Private Residence
Golden Beach, Florida 64**

*Carlos Zapata Design Studio and
Una Idea, Architects*

**Stringfellow Residence
Los Angeles, California 72**

Lubowicki/Lanier, Architects

**House on Turtle Creek
Dallas, Texas 76**

Antoine Predock, Architect

**Von Stein House
Sonoma County, California 84**

Fernau & Hartman, Architects

**T-House
Wilton, New York 90**

*Simon Ungers and Tom Kinslow,
Architects*

**Saito House
Houston, Texas 96**

*Carlos Jimenez Architectural Design
Studio, Architect*

**Private Residence
Stewart's Point, California 100**

Joan Hallberg, Architect

**Private Residence
Concord, Massachusetts 106**

*Machado and Silveti Associates,
Architect*

THE PROFESSION 25

Understanding Thermal Insulation's Transformation (Fundamentals). Doing Windows (Details). Will Amateur CAD Put Residential Architects Out of Business? (Software Reviews). Sinks, Basins, and Vanities (Products).

Editorial 9

Process versus Product: The Issue That Won't Die.

Letters/Calendar 4
Design News 11
Observations 22
Manufacturers' Sources 129

Product Literature 121
Classified Advertising 132
Advertising Index 140
Reader Service Card 141

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Wilton, New York
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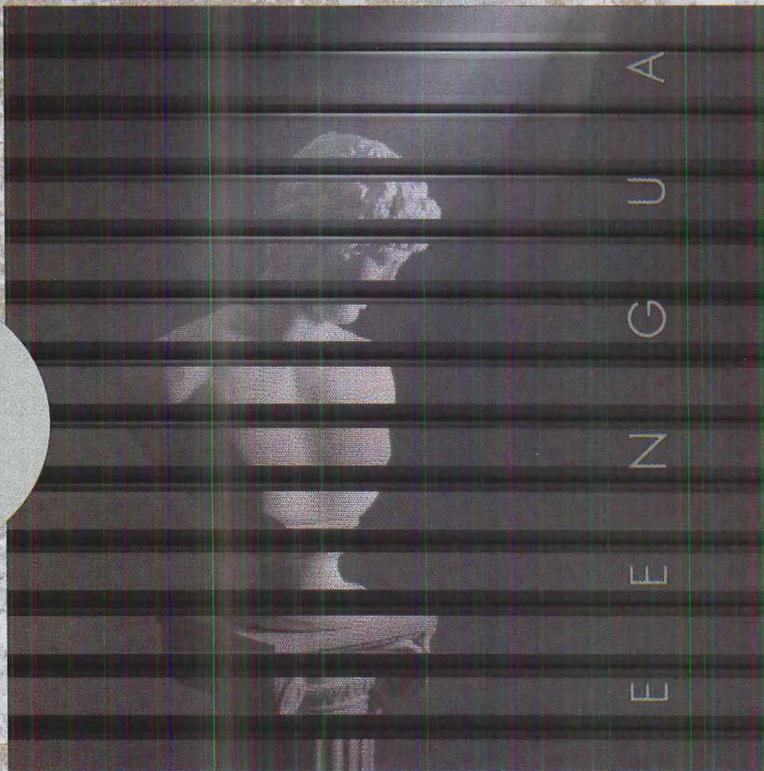
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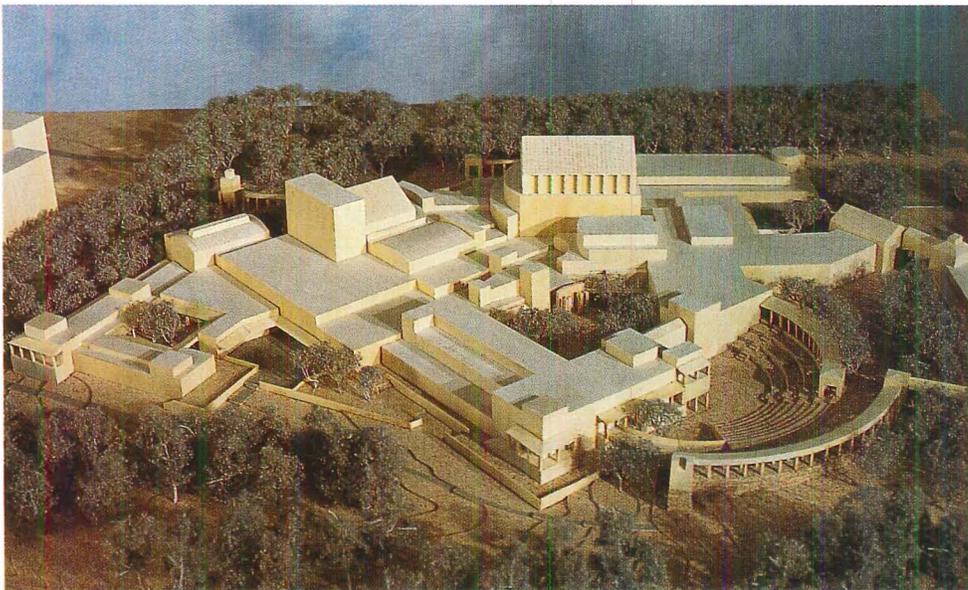
Maryland

Top Performers Chosen in University Performing-Arts Center Design Competition

Moore Ruble Yudell has won the competition for the \$80 million Maryland Center for the Performing Arts at the University of Maryland, College Park (1); Ayers/Saint/Gross is associate architect. The jury called the winning entry a human-scaled "academic village from which rise the landmark-scaled volumes of the primary performance spaces." The 295,000-sq-ft facility, primarily for music, theater, opera, and dance instruction, will hold 15 classrooms, 31 class laboratories, 46 teaching studios, 101 offices, a library, a 1,200-seat concert hall, a 350-seat recital hall,

a 650-seat proscenium theater, a 200-seat dance studio, a 200-seat experimental theater, and a 125-seat restaurant. The competition garnered international queries from 199 firms; 40 responded to requests for qualifications, 10 were short listed for interviews, and five were awarded \$50,000 each to prepare designs. Procurement regulations require the state Department of General Services to negotiate fees with the top winner, and, should talks fail, proceed through the ranks of the winners. Pei Cobb Freed (2) came in second, Antoine Predock

(3) third, Barton Myers fourth, and Cesar Pelli and RTKL fifth. Jurors were Ralph Johnson, Perkins & Will; Washington University School of Architecture dean Cynthia Weese; Steven Peterson, Peterson-Littenberg, architect; General Services assistant secretary Colleen Cullen. From the University of Maryland at College Park, architecture dean Steven Hurtt, arts and humanities dean Robert Griffith, and music professor Paul Traver; architecture professor Roger K. Lewis was competition adviser. Construction begins in 1996 for a 1999 opening. ■



1 2 3

Russia

Hillary Clinton Tours Hospital Adopted by U. S. Architects



Photo courtesy BHKR

Hillary Rodham Clinton recently toured Moscow's Savior Hospital, where Burt Hill Kosar Rittelman is engaged in volunteer design services for a \$14 million renovation to bring the facility up to Western standards. Over the past six months the Pittsburgh firm has also shipped hundreds of tons of building materials donated by manufacturers and renovators to complete the Savior project [RECORD, October 1993, page 26], but could still use paint, floor tile, and baseboards. ■

Briefs

The Chosen

- Dawn Clark Netsch, wife of retired SOM partner Walter Netsch, has won the Democratic nomination for governor of Illinois. "I shall try, as First Man, to bring in issues of affordable housing, homelessness, and contemporary technology," says Walter Netsch.
- Diane M. Breman of Perkins & Will, Chicago, has been installed as president of the Society of Architectural Administrators.
- The Atlanta Committee for the Olympic Games has chosen Turner Associates as the architectural component of a team that will create the conceptual image for the 1996 games. Paradigm Design Group of Washington, D. C., will review facility designs for ADA compliance.
- The Getty Grant Program has awarded \$75,000 to the Historic Landmarks Foundation of Indiana to document and preserve African-American landmarks.

The Inevitable

- Michael Graves has taken architect-designed consumer products one step further by opening The Graves Design Store in Princeton, N. J.
- Germany's Parliament will allow wrap-star Christo to cover the 1894 Reichstag in a million sq ft of aluminum-coated fabric for two weeks next year, just before renovations by Sir Norman Foster and Partners begin. Christo sees the project as symbolically wrapping up the past and unwrapping the future. The German government plans to move to the Berlin building by 1998.

Publications

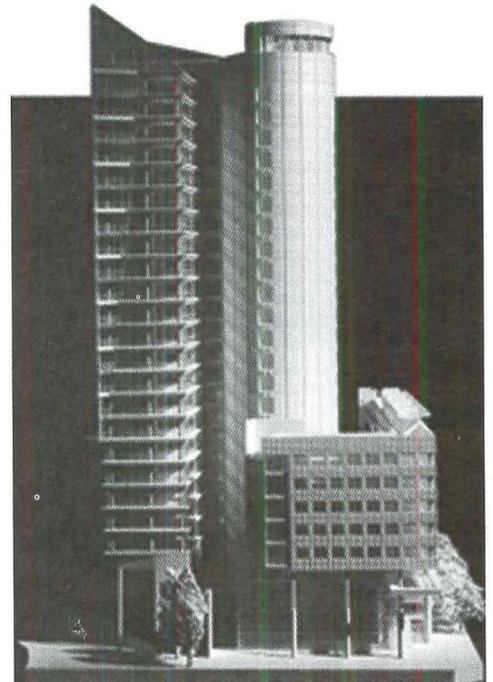
- *Architecture on Screen*, a guide to over 900 films, videos and videodisks on architecture, landscape architecture, preservation, and planning, has been published by G.K. Hall & Co., a Macmillan imprint. Call (800)257-5755.

Remembered

- Modernist architect Pietro Belluschi died in February at age 94. His 1947 glass and aluminum Equitable (now Commonwealth) Building in Portland, Oregon, is considered the first glass curtain-wall structure in the U. S. He was Dean of MIT's school of architecture and planning (1951 to 1965), and won the AIA Gold Medal in 1972.
- Artist Donald Judd, who considered himself a de facto architect and redesigned over a dozen buildings in Marfa, Texas, as an art and furniture museum [RECORD, January 1993, pages 82-91], died Feb. 12 at 65. ■

American Designs a Key to the City

Keating Mann Jernigan Rottet has won a competition to design a new office building in Frankfurt am Main, a city increasingly described as the future financial capital of Europe. Designed as a major portal along the road to the airport, the convex front curtain wall (not shown here) will be pewter-colored reflective glass, pierced by an almost building-height concave bay of dichroic-coated glass to create a transitory iridescence ranging from yellow to lavender depending on the angle of vision and the degree of sunlight. This curving glass-walled office block appears to hang off a poured-in-place concrete cylindrical service tower (right) whose detailing derives from the organization of the front windows. The only U. S. firm invited to compete, Keating Mann was chosen over four German designers. Construction should begin by the end of 1994. ■



London

Neo-Nouveau Gem for the Disabled Shoehorned into an Alley



Clive Bousnell

A National Housing Design Award—presented by the Royal Institute of British Architects, the Department of Environment, and the National House Building Council—has been won by an unusual residence for people with psychiatric and physical handicaps that CGHP Architects tucked into a 52-ft-wide alley called Castle Lane. The single-loaded townhouse structure, which clings to the back wall of a school and faces the back of a hostel, rises two stories from a ground-level garden with wheelchair-height planters, to a roof garden with lawns and

flowering plants. Serpentine balconies with Hector Guimard-esque glazed canopies perch on the facade; the ironwork, made up from four standard parts, and the glazing cost less than the intricate alarm systems the special population requires. A lightwell shoehorned between the school and the residence permits daylight to enter the rear of each of the efficiency apartments. The floor plans support both independence and mutual assistance through the sharing of bath and separate toilet, kitchen, or entrance. Despite its impressive detailing, the project came in only 36 percent over budget for special housing, and that mainly because of complicated foundation work at party walls, and a permanently bottlenecked alley entrance that kept delivery trucks out and led to double and triple handling of materials. Upon receiving the award, CGHP partner Jim Monahan told the British press, "It's ironic that the Department of the Environment's minister for housing should say it's just the type of housing we need. It's his government and his legislation that are making sure we won't be able to design to this kind of standard in the future." *Judith Davidsen*



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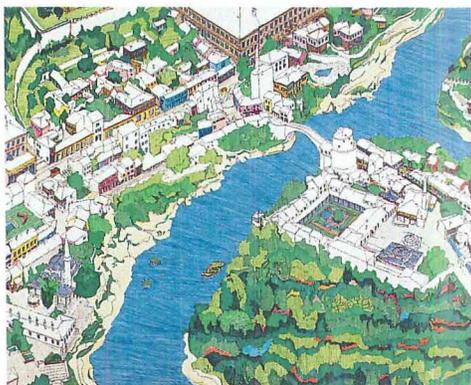
Bosnia

Restoration in Defiance of Hate

Architect-in-exile Amir Pasic, who won a 1986 Aga Khan prize for restoring medieval Mostar (photo below) is touring the U. S. with plans to rebuild the bombed-out city again. "Asked why I work for culture when people are dying, I say this is a war of culture," he claims. He says he does it to defy hate and create a prototype to rebuild all Bosnia. Ironically, the plan to restore mainly pre-enlightenment cultural objects champions the secular "modern project"—like most Bosnians and many Croats and Serbs, he does not consider the conflict a civil war but an attack on 500 years of pluralism and the objects that constitute an architectural DNA for a four-culture society.

Since April 1992, Croat and Serb bombs have destroyed mosques, synagogues, Catholic and Orthodox churches and monasteries, museums, libraries, and archives. In towns that did not resist "ethnic cleansing," monuments were dynamited, bulldozers sent in to remove debris and trucks to remove people; new officials claim the monuments never existed. An estimated 80 percent of the physical heritage, including Roman, Slavic, Ottoman, and Austro-Hungarian baroque, is gone. Serb architect and former Belgrade mayor Bogdan Bogdanovic calls the process "the ritual murder of the city."

Pasic's spring itinerary includes the University of Minnesota in mid-April, and MIT and the University of Pennsylvania at the end of the month. Plans are underway to focus on his work at a late-spring celebration in Washington D. C., of the 1954 Hague Convention for the wartime protection of cultural monuments. He is visiting scholar at the Aga Khan Program at MIT. *Judith Davidsen*



Maryland

Do You Know Where Your Money Is?



It may be no consolation in this cruelest of months, but the IRS is about to build itself a new 1.2 million-sq-ft headquarters designed by Kohn Pedersen Fox, HNTB Architects, and Settles Associates interior architects. Adjacent to the New Carrollton Metro/

Amtrak station in Prince George's County, the complex will comprise three buildings—seven, eight, and nine stories—for approximately 4,400 employees, and a parking garage. Construction on the design-build project is to begin by mid-year. ■

Connecticut

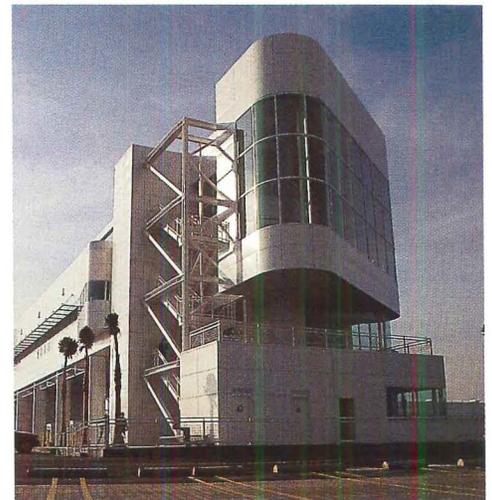
Planners or Morticians?

The Arts Council of Greater New Haven and Alliance for Architecture recently hosted a one-day think tank on—what else?—“The Future of the American City.” Anthony Downs of the Brookings Institution managed to deliver a hilarious keynote address pointing out that, even in a seriously declining city like New Haven, suburbs depend on the city and are being jeopardized by its decay. Poverty is institutionalized, he claimed, by poor education, work-force down-grading, and suburban control. With guest speaker HUD Secretary Henry Cisneros detained in Los Angeles, special assistant Marc Weiss worked his way through Clinton's urban initiatives, and was followed by planners, architects, economists, sociologists, attorneys, business people, and politicians who addressed economic and social factors, government and policy, and city life. The final session presented four New Haven case studies discussed by people active in the city's effort to survive. The consensus of panelists and participants seemed to be that our planners have been doing the work of morticians. *Felix Drury*

California

Shipspace Shore Facilities

The new Oakland headquarters of Trans Pacific Container Corporation, designed by Jordan Woodman Dobson, features a streamlined administration building/truck gate (below) of porcelain-coated metal panels on a steel structure. Adjoining maintenance, repair, and operations buildings use the same panel system on concrete tilt-up frames. ■

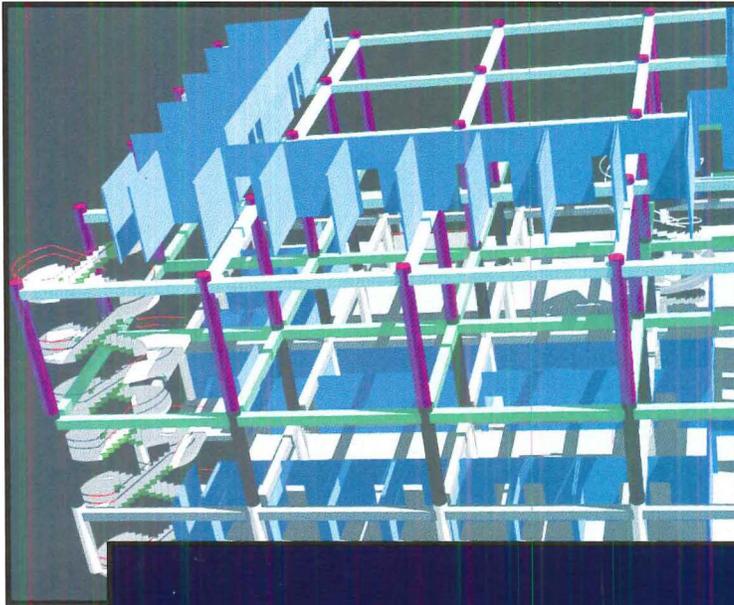


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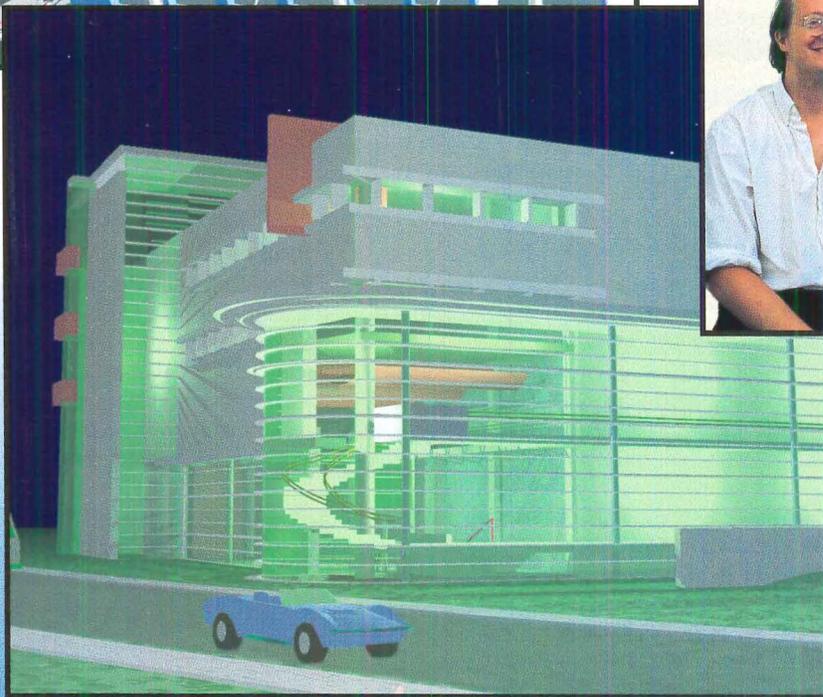
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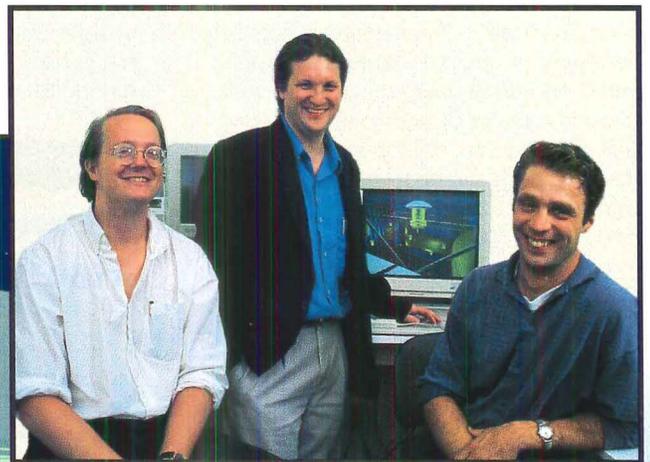


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Calendar *continued from page 4*

design and media; Cooper Union, New York City, 212/353-4195.

April 16-October 24

"Modern Metropolis: Vintage Prints of New York in the Early Twentieth Century," Museum of the City of New York, 212/534-1672.

May 4-6

Lightfair International exhibit and conference with specialized pavilions focusing on decorative and international lighting, and lighting components and accessories. Javits Convention Center, New York City; 404/220-2217.

May 5-7

Indoor Air Quality national conference and exposition, Tampa Convention Center; 202/628-5336.

May 9-13

International Confederation of Architectural Museums Congress, Alcalá de Henares, Madrid, Spain; 011/341-501-25-74.

May 13-August 18

Hamburg Architecture Summer with exhibitions, symposiums, and workshops. Oswald Mathias Ungers and Giovanni Battista Piranesi exhibits at Hamburger Kunsthalle and lecture by Jean Nouvel among the program highlights. 011/040-410-53-34; fax 040-410-82-72.

May 25

Sustainable Building Conference sponsored by Construction Specifications Institute Los Angeles chapter; Pasadena Conference and Convention Center; fax 213/651-3820.

May 29-June 2

Precast/Prestressed Concrete Congress and Exposition, Washington, D. C.; 312/786-0300.

June 15-July 15

"Design Legacies: A Tribute to Architects and Designers who have died of AIDS." Exhibition of their work at Gallery 91, SoHo, New York City; slide preview April 19. National Arts Club, Gramercy Park South; 212/969-8773.

Competitions

- "Floor of the Year" Contest, April 1 entry deadline. National Wood Flooring Association; 314/391-5161.
- Society of Environmental Graphic Design awards competition, April 8 entry deadline; 617/868-3381.
- Benedictus Awards for innovation in architectural use of laminated glass; April 22 entry deadline; 313/785-2324.
- Advanced Construction Technology Awards Program recognizes outstanding examples of design by architects and engineers. Due date: April 25; 800/628-0005 or 617/864-5658.
- Two-stage national design competition for a New Jersey Head Start facility. Competition

package available April 25 from Early Childhood Facilities Fund; 609/730-1070.

- "The End," an open competition for architects and artists to design a "Temple of Laughter." "The Laugh" competition offers a grand prize of \$5,000; second, \$2,000; third, \$1,000. Submissions due May 1. 213/296-6226.
- Proposals for articles on "Sustainable Design: Place, Knowledge, and Action" due May 15. Publication, fall 1994. Pratt Institute; 718/399-6090.
- A \$10,000 Ermanno Piano Scholarship for six months' work (October 1994 to March 1995) in Renzo Piano's Genoa, Italy, laborato-

ry. Newly graduated architects may apply by letter, including CV, short A4 dossier, examples of work, to Renzo Piano Building Workshop, Piazza San Matteo 15, 16123 Genova before May 31. Call 010/203-856 or fax 010/204-585.

- Summer Program for the Study of Classical Architecture application deadline is May 23. Courses are held at New York Academy of Art. Call 212/570-7374 for details.

- Cedar Architectural Awards entry deadline is July 1. Buildings using Western red cedar products are eligible. Call 604/687-0266. ■

#2

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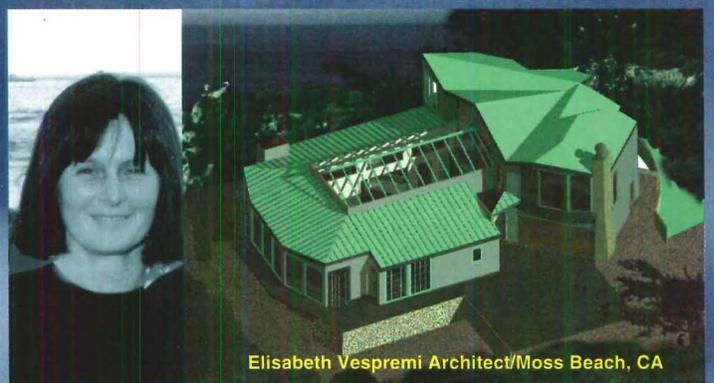
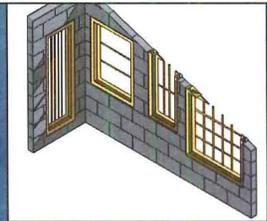
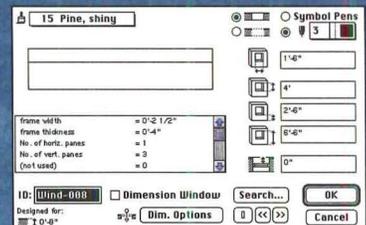
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GRAPHISOFT

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Housing From the '70s: What We Did Right, What We Did Wrong

© Steve Rosenthal



By Robert Campbell

The past, they say, is another country. If you visit there, you find that you walk among strange customs and half-forgotten beliefs.

From 1970 to 1975, my main task in life was getting 800 low-rent apartments designed and built in Yonkers, just north of New York City. I was an associate in the office of Sert, Jackson and Associates in Cambridge, Massachusetts. The firm is defunct now, but it was thriving then. In 1977 it would be the AIA's Firm of the Year. In 1981 its senior partner, Josep Luis Sert, would win the Gold Medal.

The client for those 800 apartments was equally distinguished. The New York State Urban Development Corporation today is best known for Roosevelt Island, much of it also designed by Sert, Jackson. Under Edward J. Logue, the UDC was probably the most successful public housing entity in the history of this country, as measured by the number and quality of dwelling units it created. The UDC cared about architecture. It hired the best architects it could find, and it backed their ideas.

In other words, our development in Yonkers—Riverview, it was called—was the work of the best and brightest of its time. It was published twice in *RECORD*, once while it was under construction using an innovative formwork system [*RECORD* October 1973, page 161], once as a finished piece of architecture [*RECORD* August 1976, page 108]. For all those reasons I thought it might be instructive to go back, almost a generation later, to take a second look: to try to figure out what we did right and where we goofed, to ask how things might be done differently today, to



measure the ways in which ideas about cities and housing have changed.

This past fall some of the people who shaped Riverview returned to the site, including Ed Logue, who is now a development consultant in Boston, and Ted Liebman, who was the UDC's chief architect and is now a partner in the Liebman Melting Partnership in New York. Also present were Professor Mohsen Mostafavi and his seminar from the Graduate School of Design at Harvard, which spent a semester studying the work of Sert, who was dean of the school from 1953 to 1969. And Cliff Pearson, an editor at *RECORD*.

Major impressions

We met with officers of the company that built and still manages much of Riverview, and with members of the Yonkers Planning Department. We toured several apartments and spoke with occupants.

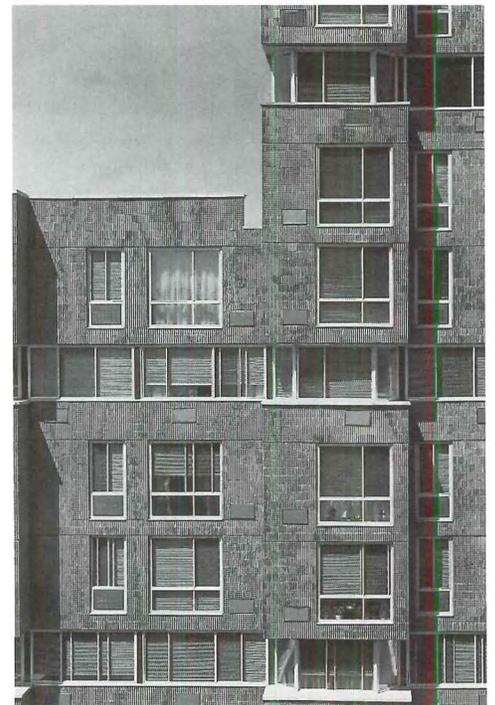
I came away with two separate impressions. One, Riverview has held up very well over the years and is far more ambitious and energetic than almost anything of the kind being built today. Two, there probably isn't a single thing you'd do quite the same way today. The world has changed that much.

The best way to describe Riverview is by focusing right away on the things you'd change. In most of what follows, I'll be describing what's now called Riverview North, the second phase of the development, a slightly evolved and improved version of the design concept.

After receiving the commission to design Riverview, Sert, Jackson and Associates was shown six blocks of downtown Yonkers, a somewhat blighted area but not a disaster. We architects and urban renewers wiped that slate clean and threw the six blocks together into one superblock. On it we built the apartments, in heights ranging from 5 to 19 stories; a street of shops; two parking garages; and a daycare center and various community rooms.

A dozen years later, I got to know Allan Jacobs, the San Francisco city planner and author of *Great Streets*, and heard him say the first rule of good city planning is never, never close a street. A light dawned: I think he's right. By ganging all those blocks, we made sure our development would never disappear naturally into the fabric of the city. It would always be something prominent and separate: a precinct. It wouldn't provide a

Robert Campbell revisits a public housing project he helped design 25 years ago as a young associate with Sert, Jackson and Associates and discusses some of the lessons it teaches architects today.



network of street intersections to create the sense of infinite choice that is the very essence of city life. It wouldn't offer enough street frontage to give most of the residents a Yonkers street address. They would be seen as, and would feel themselves to be, residents of Riverview—not citizens of Yonkers.

But we *wanted* a big, bold, visible building complex. Sert, whose mentor was Le Corbusier, believed in something he called "the new scale"—the bigger, faster, airier city of the future. It was a concept inseparable from Modernism.

Each building Sert designed was thought of as a pioneering chunk of this new kind of city. Superblocks were the proper unit of the future; as an architect, you needed them to give you the scope to do anything meaningful.

Designing for density

By omitting streets and building tall, we achieved a high density, more than 90 units per acre. I think that's good. High densities not only house more people, they support more neighborhood services. But a few years after Riverview, Liebman and his cohorts at UDC proved, in their landmark Low Rise High Density prototypes, that you could get

as many as 110 units without going above four stories, and provide a front door on a street or alley for every unit. You could give every tenant the pride of possessing a street address in the city. You could also get rid of all the interior public spaces—corridors, stairwells, elevators, lobbies—spaces that are always the problem areas in low-cost housing.

When I asked Marie Repicky, who runs Riverview North today, what she'd change in the building, she listed the abolition of interior public areas as her first choice. Repicky said, "Omit those 11 stairwells. The project is tremendously spread out. That means more hallways, more stairs, more standpipes. They're all costly to maintain and they can be a security problem."

Repicky's ideal would be to gather all the apartments into a single tower with a single policeable lobby. That wouldn't, in my opinion, be a good answer. You'd have too many small children on high upper floors, where parents couldn't supervise them when they went out to play. You wouldn't have buildings that could stretch out and bend to enclose courtyards and define streets. A low-rise high-density approach makes more sense, and I think it would have influenced us.

The reason Riverview has so many stair towers is that it has so many heights. It steps up, and at each step you get a dead-end corridor and, therefore, you need an exit stair. The many steps create many roofs—18 separate roofs in Riverview North, Repicky notes with irritation—and thus many parapets and drains and much flashing, all potential maintenance headaches. Why did we design the stepping roofs and stair towers? For visual reasons: we were creating architectural sculpture and breaking down the scale of a large project.

Another quirk of Riverview—one it shares with part of Roosevelt Island, which was being designed in the office at the same time—is its skipstop section, another Corbusier influence. Corridors occur only every third floor, and they're single-loaded. The apartment front doors open off the corridor, and in most cases, you go up or down one story on your own private stair to reach your apartment. The advantages to this scheme are, to an architect, quite significant. You get a corridor lined with windows (which are a maintenance headache, but worth it) instead of a tunnel buried in the dark interior. On the exterior facade, the change every third floor

Continued on page 24

Observations

Continued from page 23

gives a natural rhythm and scale. You get a majority of apartments that run all the way through the building, from one outside wall to the other, with views both ways, and with the possibility of through ventilation.

At Sert, Jackson, we loved the skipstop. We proudly built a full-scale, fully furnished model of a floor-through apartment. But not all prospective tenants were so enthusiastic. At Roosevelt Island there are skipstops for the subsidized apartments, but when it came to market-rate buildings we were told that people who could afford better weren't about to walk up or down stairs to their apartments!

Problems with a great idea

I still think skipstops are a great idea. But the Yonkers fire department, like those middle-class Roosevelt Island tenants, hated them. They vividly imagined what it would be like to fight their way down a stair into an apartment against rising smoke and flame. They made us sprinkler the buildings and add fire escapes for the downstairs units, an addition that somewhat spoiled the exterior. And Repicky complains that all those private

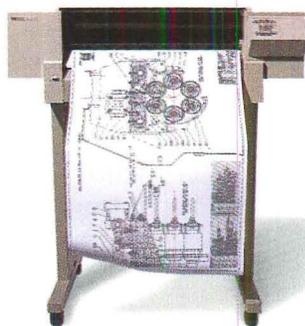
stairs—which are made of wood and sometimes take the form of winders—are wearing out and need to be rebuilt. In addition, tenants sometimes leave bicycles or baby carriages out in the corridor rather than drag them up or down the stairs. But good architecture and low maintenance, while doubtless related, are not synonymous.

We were young designers, for the most part, and inexperienced. Sert was the architect in charge, no doubt about that—we used to draw the office organization chart as a simple dot above a horizontal line. But he didn't know or care a lot about construction. We staffers cared, but knew little. Sert's main concern was to feel he'd done something innovative, pushed the envelope in some way. That was a Modernist's obligation. So we invented a new kind of brick for the exterior walls, 8 by 8 inches, and with a vertically ribbed surface. Sert didn't like normal bricks in large buildings, because their size and shape evoked the human hand and, therefore, an old-fashioned handcraft kind of construction. Given our naivete, I was surprised to find, on the site visit, that there haven't been that many problems. Roofs are failing—they're the upside-down kind—but that's not surprising after 20 years. Repointing is

needed too, not surprising either but not cheap thanks to the ribbed surface of the brick.

Something else has changed: nobody, then, consulted the future tenants. Sert belonged to the generation that produced both Fascists and Communists, and though he was neither (though very much a leftist), he shared the view of those groups that the world of the future would be populated by a kind of ideal generic human type. You didn't design housing for Hispanics or blacks or Irish-Americans. You certainly didn't study ethnic lifestyle patterns, or try to adapt your housing to them. You created, instead, perfect prototypical architecture. I guess the idea was that tenants would be inspired to a new and higher form of civilization. It sounds arrogant and it was. When the Yonkers fire department made us put in sprinklers, Sert insisted on leaving the copper tubing exposed, although the builder offered to box it in. Boxing it would have disturbed the pure rectangular volumes of the interior spaces. It's as if every tenant, in this low-cost housing in Yonkers, was going to be a Mondrian groupie. Today, I think most of us would feel that when you design housing for the needs and desires of any specific cultural

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group—it doesn't matter which one—you're more likely to achieve a building with a human scale and a sense of being local. Generic buildings, by contrast, give the impression they have been designed by impersonal and faraway forces.

Listening to the users

Perhaps I'm being too critical. It was only later that the UDC, or most architects, began to think much about the social side of architecture. Only later did the UDC implement its remarkable rule that its staff had to live for a week or two in the apartments they had created, before the real tenants moved in. Only later did anyone bother to involve the surrounding community or the future tenants in the process of design. Today, you have no choice but to do that; but back then there was more concern with achieving "permanent solutions." Architects enjoyed more prestige and more power.

That power led to some exceptional features at Riverview—features worth studying, even celebrating. On the skipstop facades, bedrooms and living rooms are clearly revealed in richly modeled architecture. What is expressed, therefore, is not a sense of central authority or overall order, but rather the indi-

viduality of room and family. The buildings ramble over the site, shaping a variety of well-scaled courtyards, outdoor rooms that never feel dangerous or isolated because they're always overlooked by upper tiers of apartments. There is respect for the perimeter streets; the major one is lined with a continuous band of storefronts, although these have been only moderately successful commercially (perhaps because they get no help from the bland towers-in-a-park development across the street). Apartments that touch the ground are entered from the ground, like private houses, not from interior courtyards. Each has its own front door and private yard.

Not so successful is the daycare center, no longer used for that or any other purpose, its deliberately low kid-sized ceilings looking rather silly. One of my shocks, when Riverview was completed and the daycare center was in operation, was the realization that adults looked like giants in it—not a happy situation for children.

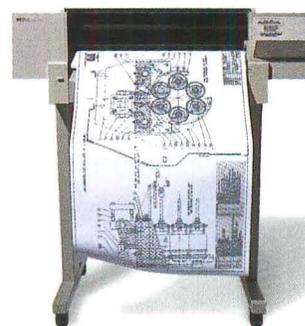
On the other hand, there are few problems with the tenants. In my own state of Massachusetts, there's an informal rule that no more than a third of the units in any state-

funded development can be subsidized. The idea is to scatter the poor among the rest of the world, rather than stigmatizing them in ghettos. Riverview, by contrast, is 100 per cent subsidized: a Section 236 federal write-down on the interest on the original mortgage, for starters, plus various other guarantees and subsidies. The danger in such projects is that you'll get a critical mass of people with problems in one place, resulting in social fission. But that hasn't happened at Riverview, because the aggressive management finds ways to get rid of trouble-makers. Management also understands the need to erase graffiti the instant it appears. "If you allow a building to deteriorate," says Marie Repicky, "it will attract more vandalism."

Obviously, a lot of assumptions about the architecture of housing have changed in 20-odd years. But what has changed most isn't an architectural fact but a political one. It's simply that we used to build affordable housing, and now we don't.

Whatever its faults, Riverview stands as an astonishing and shaming accomplishment by the standards of today. We deserve to learn from its failures only if we are willing to go out and do better. ■

To the people.



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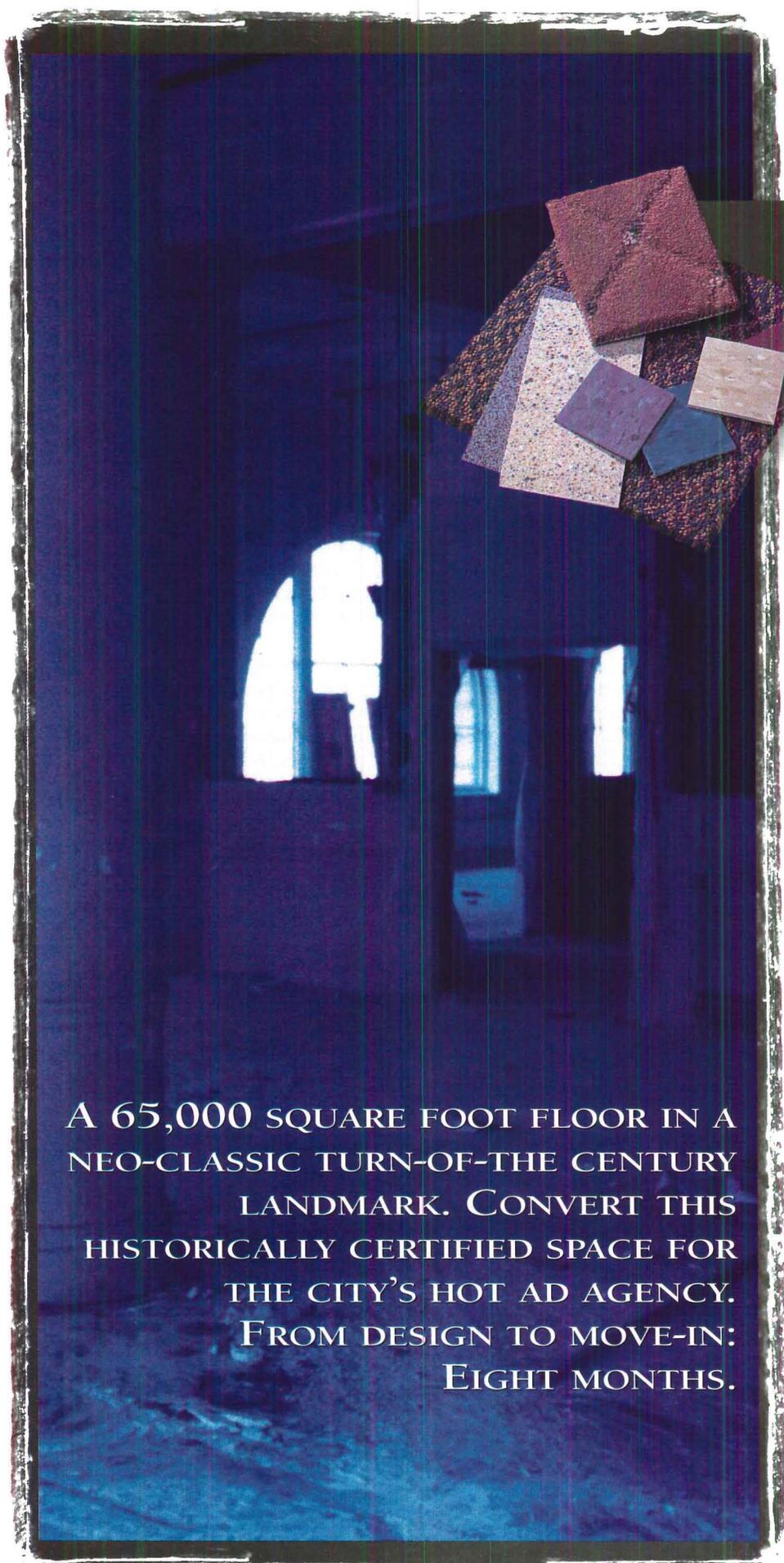
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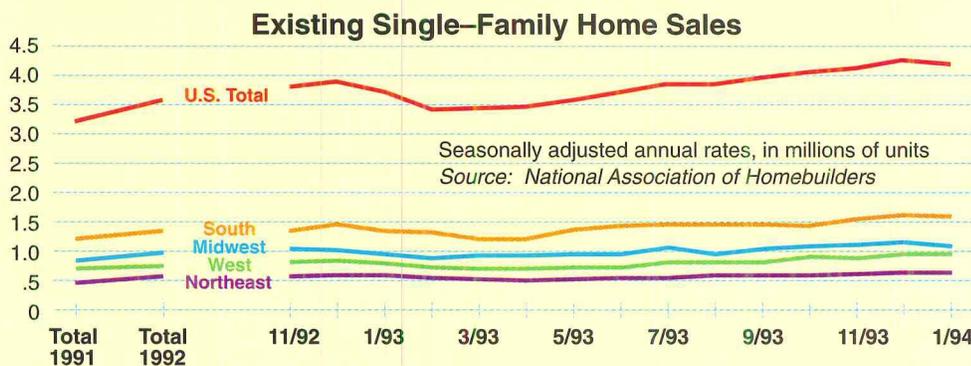
Housing starts point mostly upward

Driven by low interest rates and prices, new-home building has been the one bright spot in construction all year. Unusually poor winter weather accounted for the dip in January. Though interest rates were ticking upward at press time, expert consensus is that rates won't rise much. (Government figures show January 1994 rates were 7.07 percent for a 30-year fixed mortgage compared to 8.00 percent in January 1993.) Still, some analysts see the current high number of starts as unsustainable throughout 1994. ■



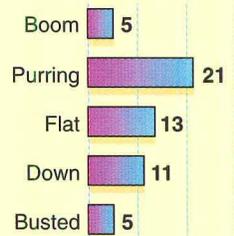
Good news in existing home sales, too

Improving existing-home sales signal better times for architects as many buyers remodel. January sales nationwide rose 12.3 percent over the year-earlier figure, an impressive showing considering the severe weather in much of the country. Also, strong sales indicate faith in the economy that spurs other kinds of building. The National Association of Realtors is predicting total existing homes sales of 3.99 million units in 1994, a 4.8 percent increase over 1993. This would approximately tie the record year of 1978. ■



Many regions "purring," says BSA

The Boston Society of Architects annually asks AIA chapters to assess their market. Compare to 1992 conditions: booming? zero; "purring along OK"? 15; "down" or "busted" (in BSA's colorful parlance)? 48. The outlook in California and large cities in the Midwest and Northeast improved slightly in 1993. Active areas were mostly non-urban, places "most architects don't want to go," one respondent commented. Even these had "more job inquiries than architects." No area was actively seeking move-ins. ■



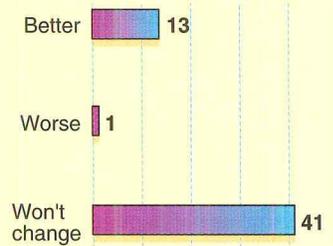
Source: Boston Society of Architects

AIA Chapter Survey

November 1993

Hottest Markets:

- Idaho
- Eastern Tenn.
- Austin, Texas
- Research Triangle, N.C.
- Oklahoma
- Tucson, Ariz.
- Sioux Falls, S.D.
- Branson, Mo.



The Profession This Month

- **Understanding Thermal Insulation's Transformation:** Since virtually every insulating material has undergone significant change in the last few years, the designer and specifier must re-evaluate even familiar products *Page 34*
- **Doing Windows:** Windows can serve prosaic functions—lighting, ventilating—or they can embody a design conception in elegant microcosm. *Page 28*
- **Will Amateur CAD Put Residential Architects Out of Business?** Applications available to the do-it-yourself designer or

builder prove to be surprisingly sophisticated. *Page 36*

- **Sinks, Basins, and Vanities:** Stylish sinks for kitchens and baths come in shapes, sizes, materials, and color choices that often allow a custom-design appearance at an off-the-shelf price. *Page 38*

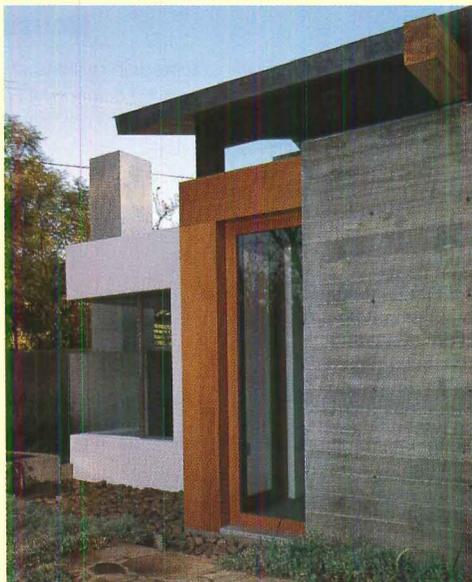
Doing Windows

Windows can serve prosaic functions—lighting, ventilating—or they can embody a design concept in elegant microcosm.

Why should anyone design special window details? Today's off-the-shelf products not only have thermal and sun-control performance thought unattainable a few years ago, they're easier than ever to maintain. Manufacturers offer custom shapes and patterns with short lead times and at reasonable prices. Architects, however, have always seen windows as something more than devices that let in light and air. And the single-family house—that most malleable of building types—has often been a kind of laboratory where architects stretch themselves. The examples on the following pages suggest how architects continue to reinterpret windows to resolve questions that are both esthetic and functional.

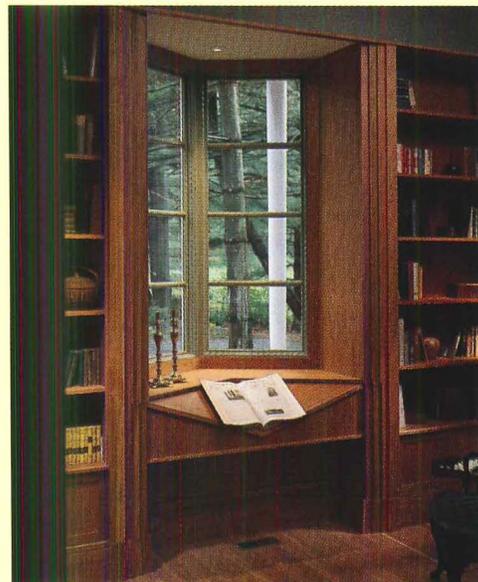
As designers move farther and farther from the conventional, history shows the risks of failure loom larger. Critics taunt architects by naming famous buildings hobbled by daring details that didn't work. The new attention being paid Frank Lloyd Wright through an impressive retrospective at the Museum of Modern Art, for example, inevitably reminds the public of Wright's spectacular but often unbuildable details. (One example is Wingspread—opposite—which is being fixed by the same team that is discreetly introducing new glazing and daylighting controls to the famous atrium of the nearby S. C. Johnson headquarters. They're restoring Wright's original conception, while maintaining building integrity and reducing unwanted glare.)

Criticism has not kept architects from attempting the bravura detail, as this year's RECORD Houses issue shows. Perhaps most spectacular is the guest pavilion designed by Carlos Zapata (5, right), in which a metal-clad hatch closes upon "jamb" of stainless-steel-wrapped glass and where stainless steel also frames a wall of alabaster (6). Antoine Predock uses huge sheets of curved, reflective glass (4) to blur the boundaries between inside and out. The approach of Lubowicki Lanier is more subtle and calibrated: they detailed windows of steel or fir depending on location (1). Machado and Silvetti Associates show that even conventional window (2) and porch details (3) can be reinvented to create a sense of place often absent in "traditional" houses. James S. Russell



1

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2

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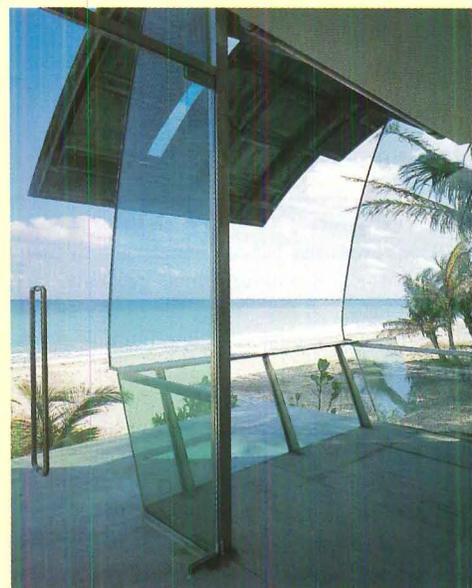


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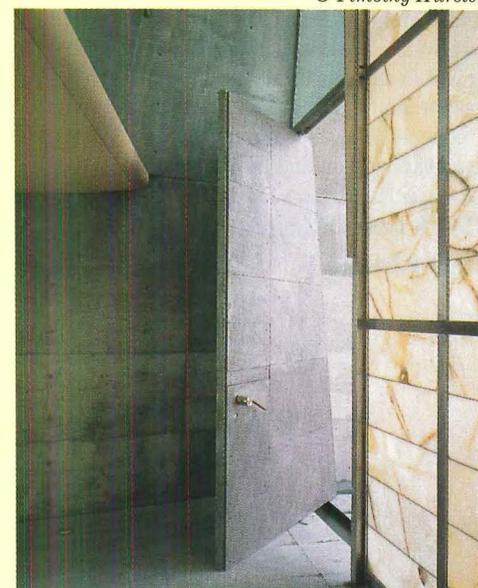


4

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5



6

In replacing the skylights, the architects recreated vertical cypress battens and the beveled glass-unit sill (photo below left). Clear laminated glass is used as the inner light; the outer light is annealed. The corner

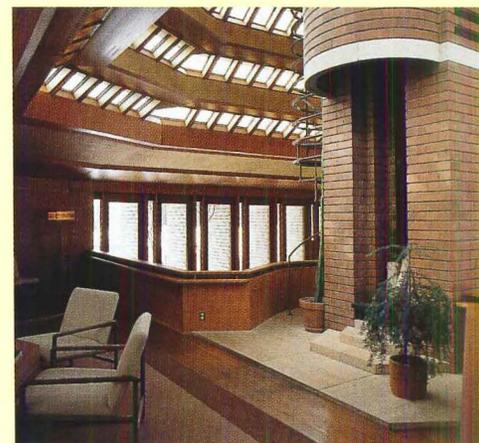
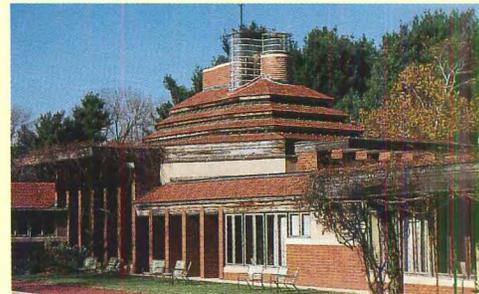
unit is a mullionless insulated unit of bent laminated glass (right photo). Wright appears to have desired guaranteed-to-fail butted flat panes sealed with mastic.

Wingspread Racine, Wisconsin

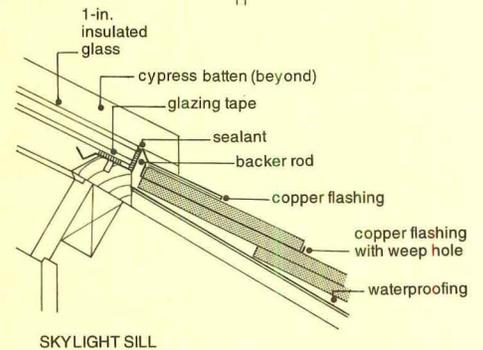
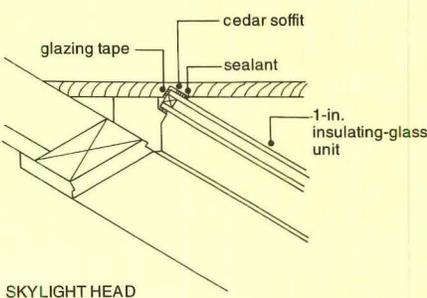
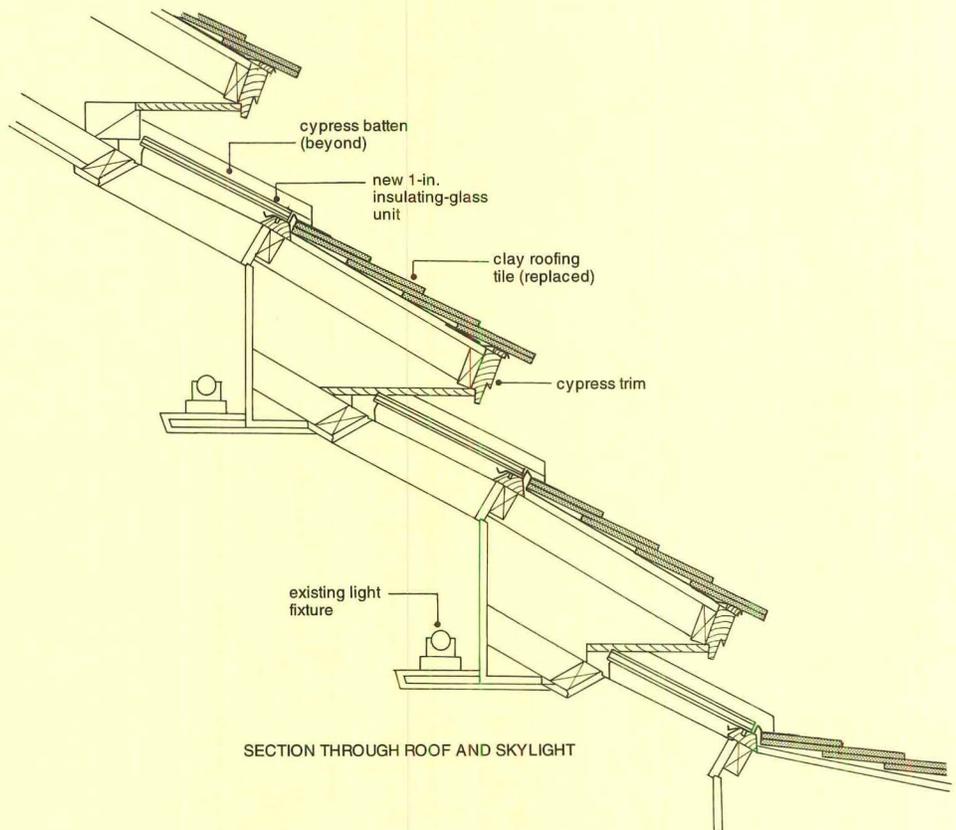
Commissioned by Herbert S. Johnson, this 1939 Frank Lloyd Wright design is now a conference center used by the Johnson Foundation. (The client also commissioned the beautifully maintained S. C. Johnson headquarters.) Fairfield, Iowa, based Prairie Architects has devised new details to replace chronically leaking skylights. It is only now, says firm principal Jonathan Lipman, that technology makes what Wright conceived possible. Skylights, which may have been early insulated glass set in a bed of mastic (later covered by yellowed plastic sheets), have been replaced with modern insulating units set in new flashing double-sealed with silicone. The details leave more room for movement at the head and under dividing battens. To avoid harming the tile roof, contractors installed flashing, then skylights, then tiles. Will a famous Wright anecdote now lose its punch? Johnson is said to have complained to Wright of the skylights leaking during a dinner party. Wright advised moving the table. *J. S. R.*



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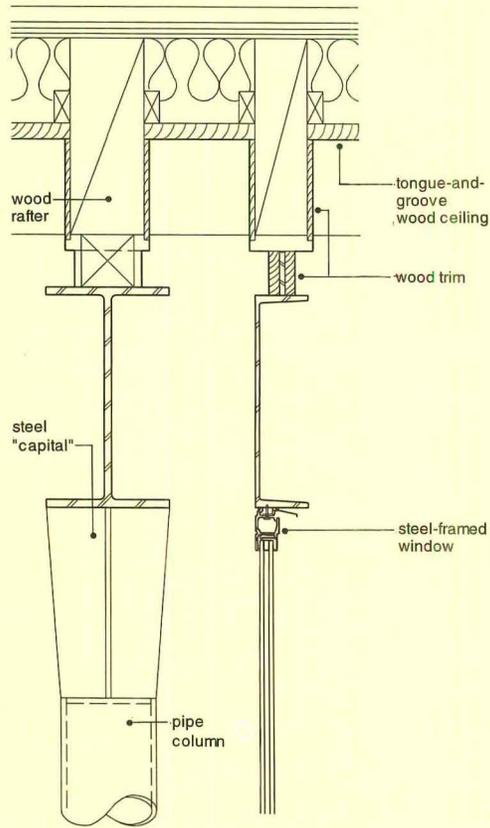


Wingspread's central living/dining area.

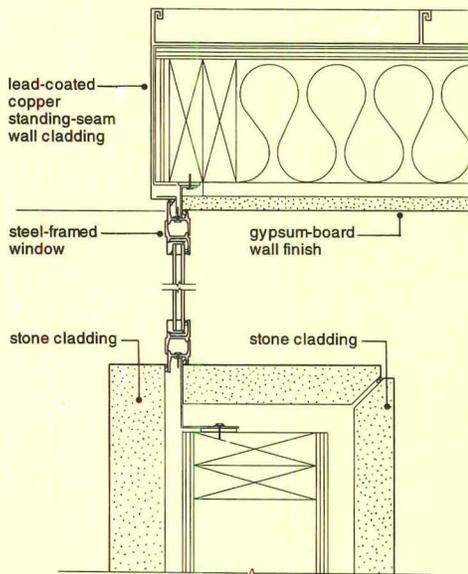


Kadivar Residence Palo Alto, California

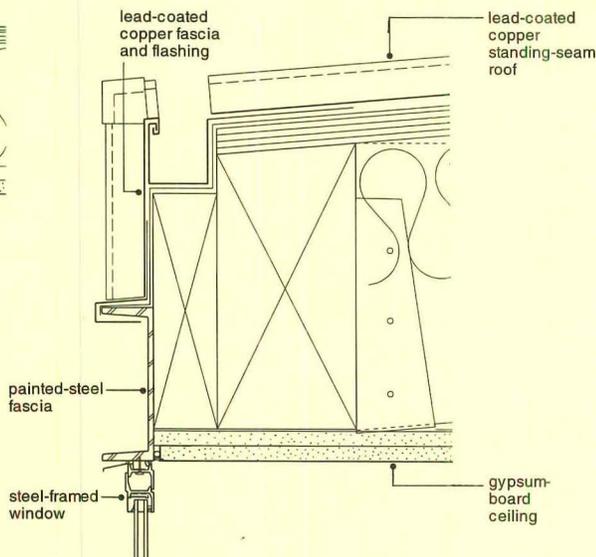
For a house on a small site bounded by fences and walls, architect Scott Williams developed an abstract enclosing system of thick volumes clad in limestone, sandstone, and stucco that blurs the transition between garden and house. Lightweight lead-coated-copper cladding and steel-framed window walls are detailed as membranes that appear to slip by each other. Williams visually disguises flashings at transitions between materials with reveal joints, which are bridged by sealant and non-adhesive backer rods. The climate at the site is mild; areas with freeze-thaw action or a wider temperature range would require more robust details. Williams typically places glass at the corners, drawing light and a garden view into the interior areas. The horizontally gridded window walls echo steel framing selectively exposed on interior and exterior (top drawing right). Inside, a similarly detailed, metal framed, translucent-glass partition divides one of the bathrooms from a corridor. *J. S. R.*



WINDOW WALL AND STEEL COLUMN

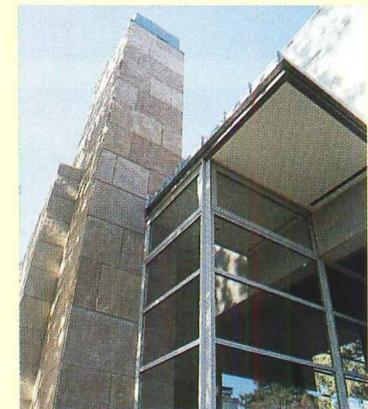
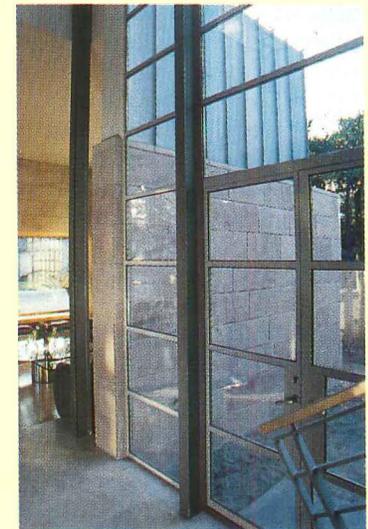
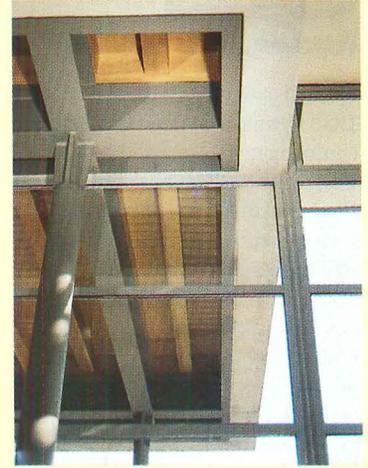


JAMB AT STONE AND METAL CLADDING



WINDOW HEAD AND METAL CLADDING

© Paul Verveniotis



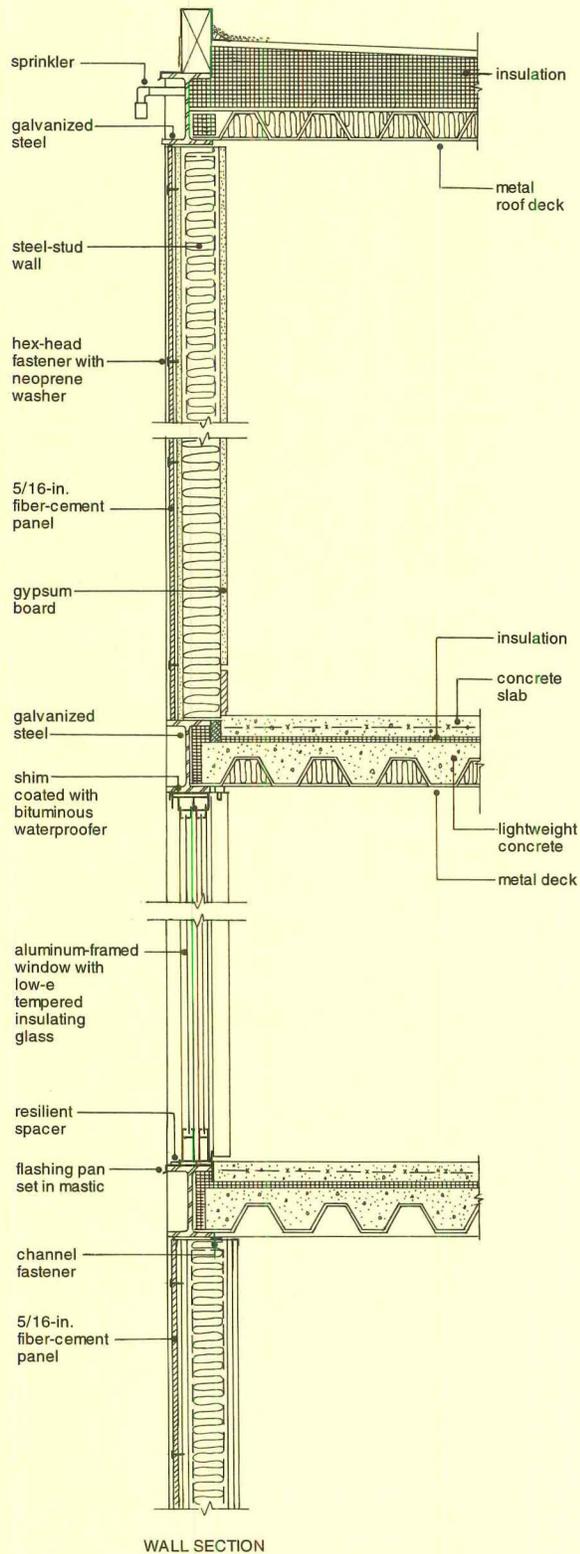
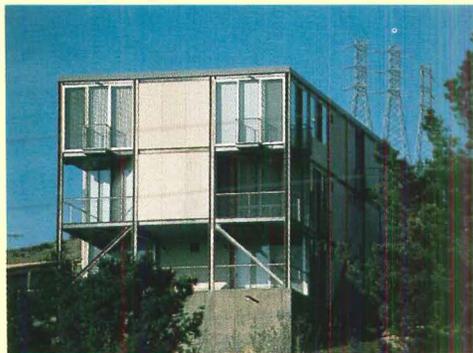
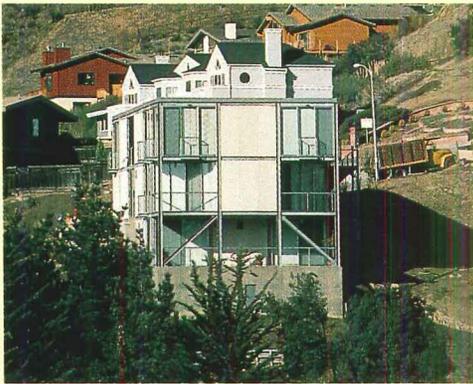
Similar details ease transitions between standard steel window walls and wood (top), metal (middle), and stone (bottom).

The window walls are glazed with insulating units of tempered glass with a low-e coating. Fire officials are increasingly recommending both tempered and insulated glass (which would otherwise not be strictly needed

in the mild coastal climate) as an additional factor of safety during California's explosive wildfires. For further protection, the architect called for exterior-wall sprinklers (section below).

Oakland Hills Residence Oakland, California

An owner whose house and possessions were destroyed in the catastrophic brush fire that swept through the hills east of Oakland in 1991 asked Jan Fillingier of Savidge Warren + Fillingier architects to design a replacement house that reflected his taste for Modern art and furniture and was as fire resistant as possible. The resulting pavilion-like structure is framed in galvanized steel for efficient earthquake resistance. Exterior walls are either cement-fiber board over gypsum board on metal studs (section right) or clear anodized-aluminum window walls. The tiny balconies (photos below) are cantilevered from the house's structural framing. To avoid galvanic action, aluminum and steel are separated where they abut. The floor system is a concrete slab (incorporating radiant-heating coils) poured over a perforated-metal deck (insulation-filled voids offer an acoustically improved ceiling). Landscaping includes ice plants and other fire-resistant species and a "river" of stones selected for their color and texture. *J. S. R.*



Residence at Mauna Kea Kohala Coast, Hawaii

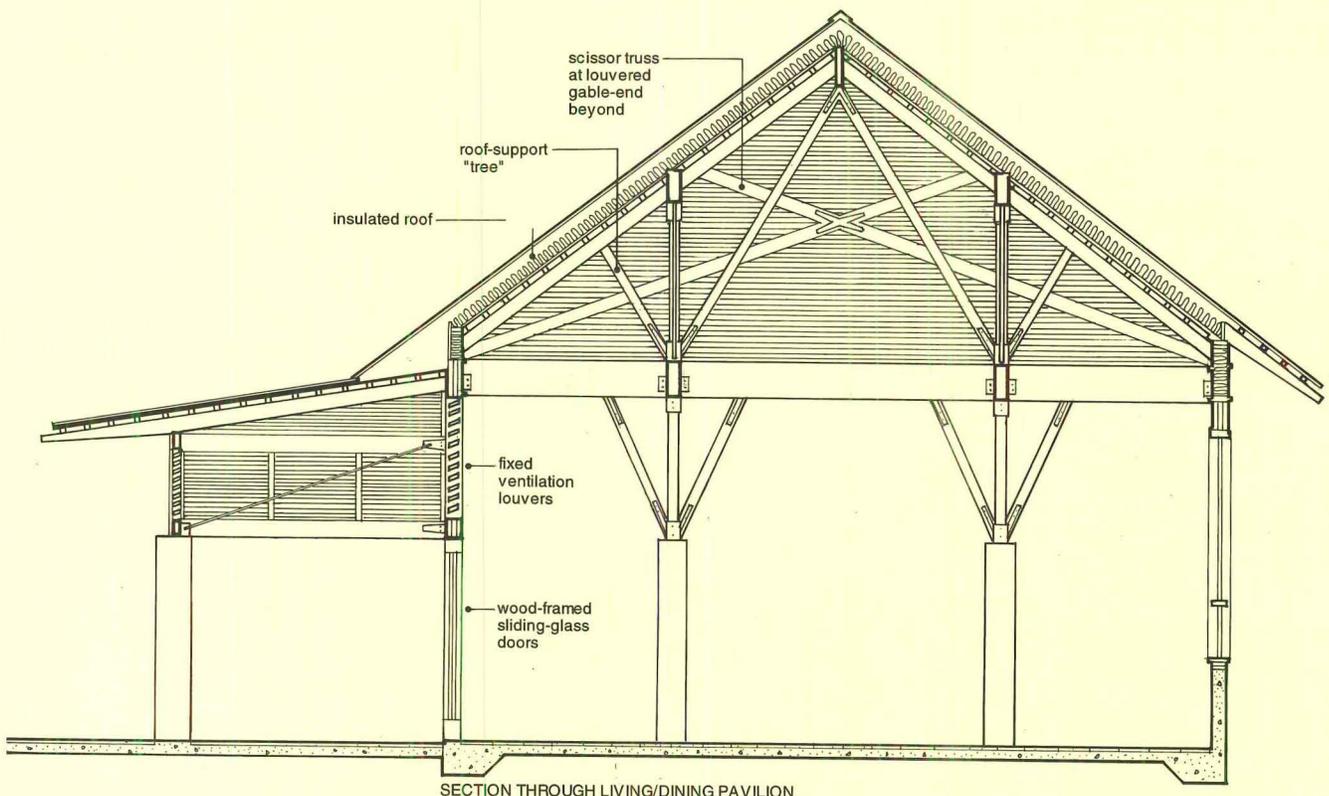
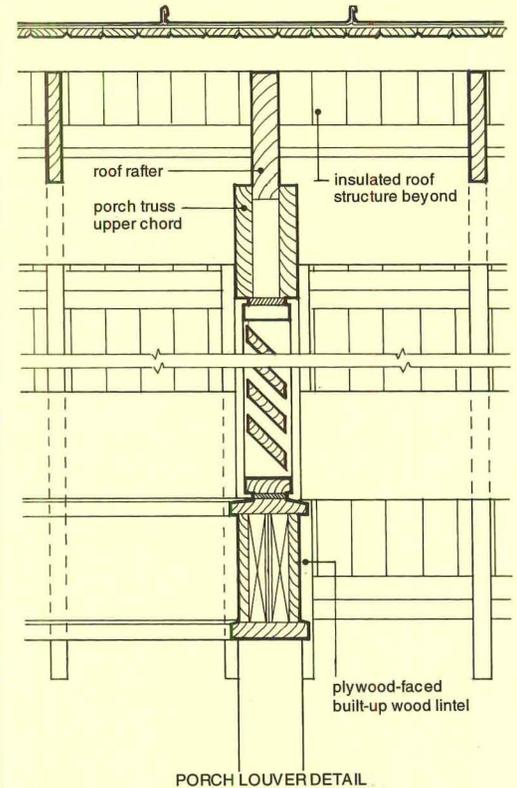
The western coast of the island of Hawaii offers an extraordinarily benign climate where neither heat nor air conditioning are required—if a house is sensibly designed. Seattle-based architect Rhoady Lee used a heavily insulated roof structure (below) combined with fixed louvers at gable ends and operable louvers at windows and transoms to assure year-round cross ventilation. The house's rooms open on at least two sides and are not connected by corridors (rainfall is low, too), so breezes can generally pass unobstructed. The mahogany louvers are standard products but are mounted within site-built fir framing. Ceilings are exposed tongue-and-groove cedar and doors are framed in teak. To unify the wood's appearance, Lee used an ultraviolet-protective stain on the exterior and catalyzed laquer inside. The section below shows the main living/dining pavilion. Bedrooms are in smaller, but similarly detailed pavilions. Only the living pavilion, however, is large enough to need the treelike support columns. *J. S. R.*

© Tom Graves



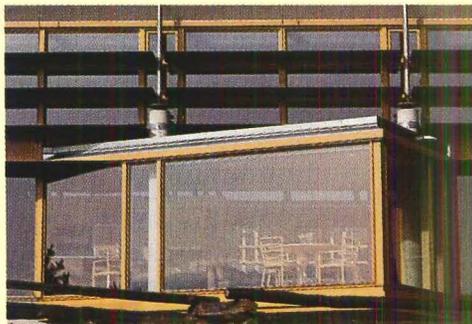
© James S. Russell

The living/dining pavilion (exterior; top photo) is ventilated by sliding doors and screens and operable-louver transoms (bottom photo). Detail below: A fixed louver at the porch of a bedroom pavilion.

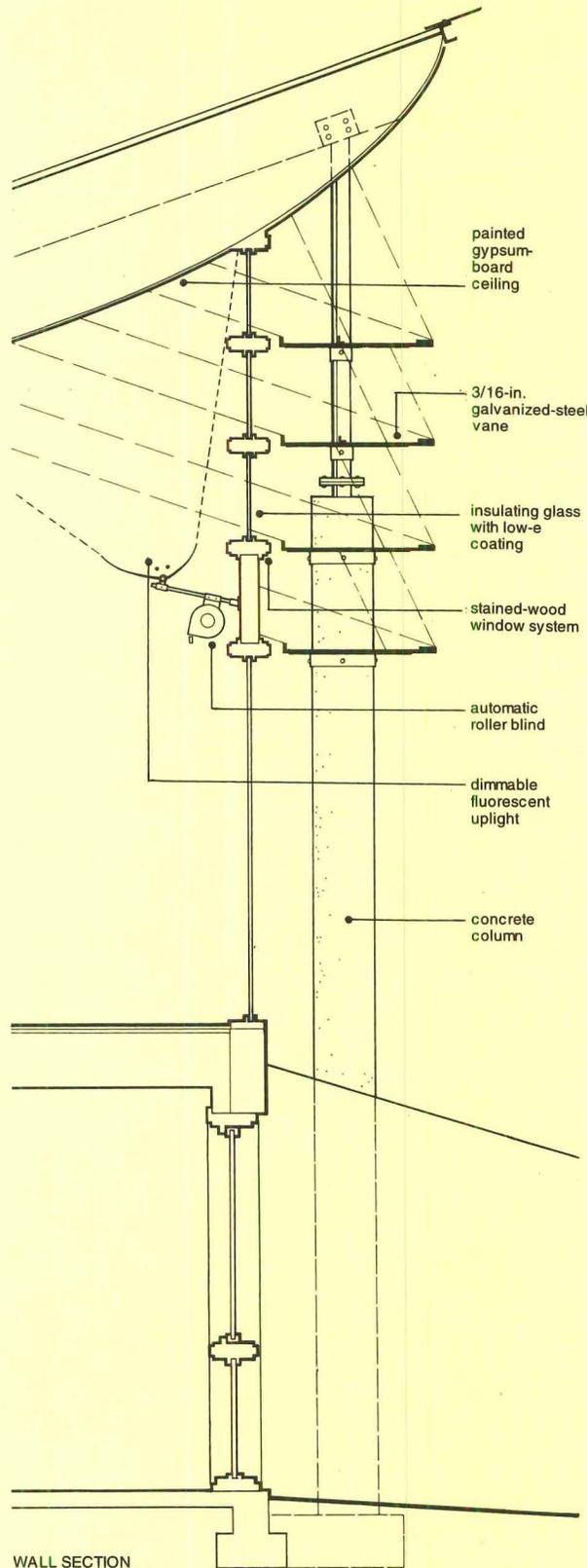


Meadow House King County, Washington

Architect Olson/Sundberg oriented the long dimension of this house to the south (below) not just to take advantage of sweeping lake and mountain views, but to scoop in as much light as possible during the Seattle area's many cloudy winter days. The winter sun is very low at this northern latitude, so the fixed horizontal fins permit direct entry of sunlight, which is reflected deep into the house by the convex curve of the ceiling. In summer, when the sun is high, the fins shade the broad glass facade and bounce light indirectly into the house (an effect duplicated at night by uplights). On the rare occasions when the direct winter sun is too intense, the architects have provided blinds. For ventilation, some of the transom windows are operable. The projecting dining area extends a central family room, which opens to the kitchen. Since these areas are where the family spends most of its time, they asked the architect to make these the most light-filled. The daylighting design was confirmed by lighting consultants Loveland/Millet. *J. S. R.*

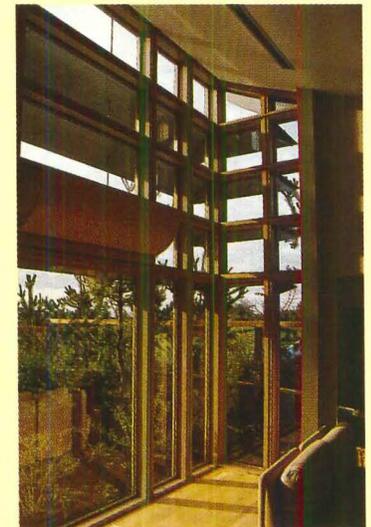
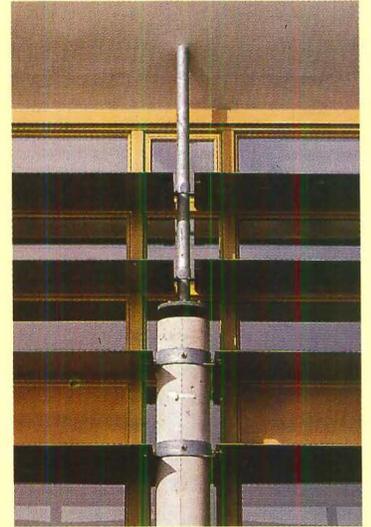


A family eating area projects out of the facade, providing the maximum amount of light to the busiest part of the house.



WALL SECTION

© Michael Ian Shopenn photos



Top: Detail of galvanized-steel fins that bounce summer light up while permitting direct passage of winter light. The orientation virtually keeps out direct sunlight in summer. The concrete column system is separated from the body of the house and is not structural. Bottom: corner of living room.

Understanding Thermal Insulation's Transformation

By Alex Wilson

For decades, technical advances in insulation materials were driven largely by energy performance and cost. While getting the most bang for the buck remains important, virtually every product has been reformulated, due to health and environmental concerns. Performance of some has changed significantly.

Fiber insulation materials

Long the standard for insulating wall and ceiling cavities, fiber insulation in rolled batts is lightweight, inexpensive, and easy to install. There have been claims in recent years that the fibers might be carcinogenic, their actions in the lungs likened to that of asbestos. Long-term lung damage has not been demonstrated (and the credibility of some critics has been undermined due to ties with competing cellulose). Efforts to ban the material in California have failed, but labels warning of possible cancer risk are now found on packaging. Owens Corning introduced plastic-wrapped batts last year to reduce any potential for skin irritation. Primarily for do-it-yourselfers, the covering keeps fibers out of the air, while small perforations permit the insulation to breathe.

Loose-fill fiberglass suffered a setback with the recent discovery that the R-value drops significantly at very low outside temperatures. With an 80F difference across the insulation, measured R-value drops by 50 percent, according to studies conducted at Oak Ridge National Laboratory. The problem is caused by convection currents in the low-density insulation, and it has given a boost to higher-density loose-fill cellulose insulation, which is less prone to convection.

Addressing the need for ventilation under roof sheathing in cathedral-type (no attic) residential ceilings, fiberglass manufacturers have introduced *higher-density batts* that provide a full R-30 at a thickness of only 8 in. (instead of 9 1/2 in.) and R-38 insulation at a thickness of 10 1/4 in. instead of 12 in. Higher-density wall-insulation batts have also been introduced: 3 1/2-in. batts at R-15, and 5-1/2-in. batts at R-21.

Alex Wilson is editor and publisher of *Environmental Building News*, a newsletter based in Brattleboro, Vt.

Mineral wool was the first commercialized insulation material, and is mostly used today for acoustic insulation, ceiling panels, and fire-safing. With the best fire resistance of any common insulation material, it may be making a comeback. Greenwood Cotton Insulation Products, Inc., a small Texas company, that makes a non-irritating *cotton-batt insulation*, is considering large-scale production. The product's base material is cotton and polyester textile scraps from clothing production. The insulation could compete with fiberglass in R-value and price, and will be available in batts as well as loose-fill material.

Cellulose

Cellulose insulation has gotten a big boost recently from the "green" building movement, since it is about 80 percent post-consumer recycled newspaper. (Most of the rest is fire-retardant chemicals—primarily borates and ammonium sulfate.) It has long been used as loose-fill attic insulation and as a retrofit dry-blown wall insulation.

In *wet-spray cellulose*, a sprayer mixes the material (sometimes using a water-activated acrylic binder) with water as it is applied to open wall cavities. The damp insulation adheres to the substrate, and does a good job of blocking air leakage by filling around wires and other obstructions. To avoid moisture problems in the walls, cavities should be thoroughly dry before enclosure. Also, the installed moisture content should be below 50 percent on a dry-weight basis. New *lower-density cellulose* (called fiberized cellulose by some manufacturers) permits installation with less water—as low as 28 percent, according to one manufacturer. Still, experienced users recommend moisture-permeable exterior sheathing with wet-spray cellulose.

Stabilized cellulose, for attics, is mixed with a very small amount of water and a binder to prevent settling (the bane of loose-fill cellulose insulation) as well as shifting at the eaves. Dense-pack cellulose is blown in at a relatively high density (about 3 lbs/cu ft), which prevents settling. One company has introduced a proprietary installation process, called Dry-pak, in which a reinforced polyethylene film is attached to the inside of wall studs to contain the cellulose, permitting inspection of the insulation job (other types

are installed in already-enclosed walls).

While increasing in popularity, not all problems with cellulose insulation have been resolved. Critics have questioned the permanency of the fire-retardant chemicals used, which are water-soluble. (Current test results are equivocal.) There is also some concern that either the fire-retardant chemicals or the printing inks from recycled newspaper pose a health hazard.

Rigid boardstock insulation

Though high in performance, most foam-plastic boardstock has been produced using chlorofluorocarbons (CFCs) as blowing agents to create the board's insulating cells. International treaties and industry commitments to reduce damage to the ozone layer have caused a transition to less-damaging Hydrochlorofluorocarbon (HCFC) blowing agents, which have affected performance (chart opposite).

Extruded polystyrene (XPS) has moved completely to HCFC-142b. *Expanded polystyrene* (EPS) has changed little. It is made using pentane, which contributes to localized smog but not to ozone depletion or global warming. One of the largest raw-material suppliers is now marketing a low-pentane EPS bead, and several EPS plants have installed equipment that captures and burns up to 95 percent of the pentane that would otherwise be released into the atmosphere. At higher densities (1.5 to 2.0 lb/cu ft instead of 1 lb/cu ft), EPS has thermal performance approaching that of XPS and higher compressive strength.

There was no ready substitute for the CFC-11 used to make *polyisocyanurate-foam* insulation (polyiso). Replacement chemicals had to undergo several years of toxicity testing before they were approved for use. In 1993 virtually all polyiso manufacturers switched to HCFC-141b. Of the HCFCs, this one, unfortunately, is the most damaging to ozone (about 11 percent as damaging as CFC-11), and it is slated for phase-out by 2003. Thus, the polyiso industry is busy creating third-generation blowing agents. Five years ago, *phenolic-foam* insulation manufactured by Schuller under the Manville Premier trade name was the highest R-value

Since virtually every thermal-insulation material has undergone significant change in the last few years, the designer and specifier must re-evaluate even familiar materials.

Summary of Environmental and Health Impacts of Insulation Material

Type of Insulation	Installation Method	R-value per inch	Raw material use	Pollution from manufacture	Indoor-Air quality impacts	Comments
Fiber insulation						
Cellulose	Loose fill, wet-spray, dense pack, stabilized	3.0 – 3.7	Newspaper, borates, ammonium sulfate	Negligible	Fibers & chemicals can be irritants; should be isolated from interior space	High recycled content, very low embodied energy
Fiberglass	Batts, loose fill, stabilized, rigid board	2.2 – 4.0	Silica, phenol formaldehyde (recycled glass)	Air pollution from energy use	Fibers & chemicals can be irritants; should be isolated from interior space	Recycled content varies by manufacturer
Mineral slag wool	Loose fill, batts	2.8 – 3.7	Steel slag (industrial waste)	Air pollution from energy use	Recent concern: sick bldg. syndrome	
Cotton	Batts	3.0 – 3.7	Cotton & polyester mill scraps	Negligible	Considered very safe	Plant to open in 1994
Perlite	Loose fill	2.5 – 3.3	Volcanic rock	Negligible	Some nuisance dust	Plant to open in 1994
Rigid boardstock insulation						
Expanded polystyrene	Rigid boards	3.6 – 4.4	Fossil fuels, pentane	Pentane emissions contribute to smog	Concern only for those with chemical sensitivities	The only non-HCFC foam board
Extruded polystyrene	Rigid boards	5.0	Fossil fuels, HCFCs	Ozone depletion, global warming, energy use	Concern only for those with chemical sensitivities	
Polyisocyanurate	Foil-faced rigid boards	5.6 – 7.7	Fossil fuels, HCFCs	Ozone depletion, global warming, energy use	Concern only for those with chemical sensitivities	
Phenolic	Foil-faced rigid boards	8.0	Fossil fuels, HCFCs	Ozone depletion, global warming, energy use	Concern only for those with chemical sensitivities	Not currently manufactured in U.S.
Spray foam insulation						
Polyurethane	Sprayed-in	5.8 – 6.8	Fossil fuels, HCFCs	Ozone depletion, global warming, energy use	Concern only for those with chemical sensitivities	
Icynene	Sprayed-in	4.3	Fossil fuels	Negligible	Unknown	Doesn't harden, good air sealing
Tri-polymer foam	Sprayed-in	4.6	Fossil fuels	No CFCs Other impacts unknown	Unknown	Very fire safe
Air-Krete	Sprayed-in	3.9	Magnesium silicate from sea water	Negligible	Considered very safe	Popular for chemically sensitive people

Blowing Agents in Rigid Foam and Polyurethane Insulation

Product	Brand name examples	Original blowing agent	Current blowing agent	Date of shift from CFCs	Planned HCFC phase-out	Comments
Extruded polystyrene (XPS)	Styrofoam Amafoam FoamulaR Diversifoam	CFC-12	HCFC-142b	Jan. 90 to Dec. 93	Prod. cap by 2010; Phase-out by 2020	One manufacturer uses recycled polystyrene
Polyisocyanurate	Thermax R-max ENRGy Tuff-R	CFC-11	HCFC-141b	1993	Jan. 2003	Rapid phase-out of HCFC-141b because of high ozone-depletion potential
Spray polyurethane	Not generally sold by brand	CFC-11	HCFC-141b (some use HCFC-22 or HFC-134a)	1993	Jan. 2003	Using HCFC-22 or HFC-134a requires shipping chemicals under pressure.
Phenolic foam boardstock	Manville (discontinued); Domtar; Fiberglas Canada	CFC-11	HCFC-141b and/or recycled CFCs	1992	Jan. 2003 (HCFC-141b)	No longer produced in U.S.; two Canadian manufacturers.
Expanded polystyrene (EPS)	AFM affiliates; Many small mfrs.	Pentane	Pentane	N.A.	N.A.	Several manufacturers now reclaim pentane and burn it to prevent emissions.
Rigid fiberglass	Fiberglas Canada-GlasClad	None	None	N.A.	N.A.	No products made for residential use in U.S., though several mfrs. produce commercial products.

Source: A. Wilson, "Insulation Materials: Environmental Comparisons," presented at the 1994 Energy Efficient Building Association conference, February 24-25, 1994, Dallas, TX.

building insulation available in the U. S. Schuller discontinued the product, however, due to low demand and the high cost of converting to non-CFC blowing agents. The only producers of phenolic-foam boardstock insulation in North America today are Domtar and Owens-Corning Canada. Both have switched from CFC-11 to HCFC-141b, which reduced the R-value of the product. (Domtar's Rx roof insulation went from R-9.4/in. to R-8.5/in.)

Other insulation materials

Spray polyurethane manufacturers have been faced with the same CFC dilemma as polyiso manufacturers. Most now use HCFC-141b. At least one manufacturer, Foam-Tech, Inc. of North Thetford, Vt., has bucked the industry trend, offering a product with zero ozone-depletion potential. Called Supergreen Foam, this product is made using HFC-134a. Resin Technology Co. of Ontario, Calif., plans to introduce a closed-cell water-blown polyurethane insulation in the fall of 1994.

Though similar to polyurethane, Icynene is blown with water to create an open-cell, spongy foam that seals very well around wires, pipes, and framing members. It is available in Canada and some parts of the U. S. Until recently, the material was available only for foaming into open cavities, but a different formulation that permits use in enclosed walls has just been introduced.

Manufactured by C. P. Chemical Company of White Plains, N. Y., Tri-polymer foam is a phenolic-based cavity-fill foam insulation material offered as a safer alternative to urea-formaldehyde foam insulation (UFFI), a material that—more than any other—sparked interest in healthy buildings because of formaldehyde emissions. The base material is foamed with compressed air instead of CFCs, insulates to approximately R-4.6/in., and has excellent fire-resistance properties. Its main drawback is shrinkage of 0.5 to 1.0 percent upon curing. An inorganic, foamed magnesium-oxide derived from sea water, Air Krete is unique. Since compressed air is the foaming agent, it has very low emissions of any kind, and is often preferred by clients with acute chemical sensitivities. Air Krete must be foamed into closed cavities; after curing it is easily damaged. ■

Will Amateur CAD Put Residential Architects Out of Business?

Because this issue is devoted to houses, it's worth looking at residential-design software aimed at consumers. Do these packages help owners define their needs before calling in a professional? Or can they replace the professional altogether? We expected to sort through some simple drawing programs and offer advice on how you might deal with weird scaling, strange file formats, and bad printouts. Wrong. We quickly discovered that less than \$100 will buy a rather sophisticated 2D drafting program these days, complete with sample plans and comprehensive symbol libraries. Unlike many low-end drawing programs (and some professional CAD software), they all can draw double lines to represent walls. Some offer parametric design tools (ones that apply formulas) to add studs to walls or fit kitchen cabinets to a given counter length. Many can import and export files in CAD formats—like DXF.

Client as architect

Your client, in fact, might be using better software than you are for such tasks as office layout, home floor plans, landscaping, and estimating.

With these tools, the dedicated amateur can readily draw kitchen-cabinet plans or lay out a deck (some programs will even calculate the framing plan and the number and dimension of steps to grade). They're not smart enough to tell you that the door swing is wrong or that the foot-and-a-half passage behind the couch in the living room isn't big enough—yet. There are plenty of intangible talents where such programs can't replace the architects' expertise. Still, you may soon be sitting in your client's living room with a laptop screen, sketching concepts and getting instantaneous cost estimates. Clients may soon demand CAD files in a form they can review—or even modify—on-screen. You laugh? Expert Software has sold some 300,000 copies of its amateur packages. *Steven S. Ross*

A precis of several house-design kits

We review Planix Home Designer Kit and Abracadata in detail; they give a sense of the spectrum, with Planix having many of the same features a professional might want. Abracadata appeals more to the do-it-yourselfer. Clients may also present you with

material from a number of other packages. Autodesk Retail's Home Series (about \$60 each), with DOS modules for houses, decks, kitchens, and landscaping, generates 2D plans. Though their engine is based on Generic CADD, they should not be confused with the full-blown version (now called GenCADD) that includes many more features and lists for close to \$1,000.

300 on Reader Service Card

Expert Software's Expert Home Design Gold Edition and Expert Landscape (both \$49.95) were developed from the ground up for amateurs.

301 on Reader Service Card

ComputerEasy International's \$79.95 Floorplan Plus is not based on an existing CAD engine either, but was designed with non-professionals in mind.

302 on Reader Service Card

Budapest, Hungary-based RAIR Computer offers myHouse at \$99.95. It's a DOS drawing program that can walk you through a room modeled in wireframe, shaded, or hidden line-wireframe 3D. It comes with over 200 furniture and appliance symbols and about 50 landscape symbols, all in 3D. Though it's based on RAIR's industrial-strength ARCAD, it includes high-end features like associative dimensioning, 256-color support, scalable fonts, and export to Autocad DWG as well as DXF.

303 on Reader Service Card

At about the same price, clients can consider Shapeware's Visio Home (\$98), based on Visio, a sophisticated Windows-based artist's drawing package. It can anticipate certain drawing moves, perfectly completing conventional shapes or finding a centerline. You can pull objects from a Template panel (they're like libraries), move them to the main drawing, and modify them. Visio is not a true CAD package; it does, however, import and export formats including Adobe Illustrator .EPS, DXF, CGM, Macintosh PICT and TIFF, Windows BMP and WMF, and PCX. Imported images can't be edited, but you can size, crop, and apply styles, and convert most objects to Visio's unique palette of shapes—which you can then manipulate.

304 on Reader Service Card ■

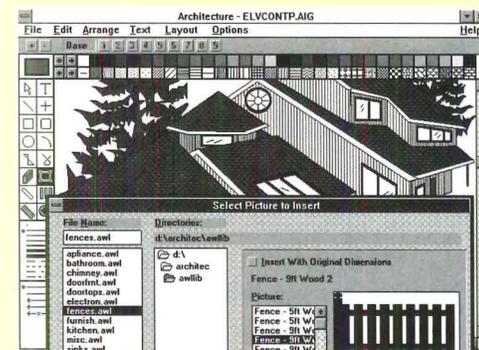
Design Your Own Home

Vendor: Abracadata, P.O. Box 2440, Eugene, OR 97402 (800/451-4871; fax: 503/683-1925).

Price: Architecture, Interiors, and Landscape modules are each \$59.95 for Windows, DOS, and Apple IIGS; \$99.95 for Macintosh. Design Estimator is \$59.95 in DOS only.

Equipment and system: For Windows versions, Windows 3.1 or later, 4MB RAM, hard disk; for DOS machines, version 3.0 or later, using any graphics card (even old CGA). We recommend a hard disk and mouse. For Apple Macintosh: any model with 1MB of RAM and a hard disk. (A new Macintosh version is due soon; it will require a more powerful machine.) Older versions will run on an Apple II or IIGS.

Design Your Own Home is basic. With the Architecture module, users can draw floor plans and elevations. Objects can be grouped for moving, copying, or other manipulations. There's a "stud repeater" tool that draws in studs, joists, or beams automatically. The Windows version allows up to nine layers. (We looked closely at the Architecture and Landscape modules. When we reviewed them early in 1994, the Windows versions were most advanced. Matching Macintosh versions were due in April.) You can set up separate layers for furniture layouts or hvac ductwork, electrical, and plumbing systems. It comes



The foreground window shows the process for picking a fence from Abracadata's Architecture module symbols library. The drawing in the background is 2D, rendered in perspective.

Applications available to the do-it-yourself designer or builder prove to be surprisingly sophisticated.

with numerous sample floor plans that users can modify. The modules all come with libraries of symbols. Remarkably, Landscape includes a library of trees and shrubs in which individual species can be "aged" to show their size at maturity. Users can add their own symbols to the libraries.

Files and library items can be moved back and forth among the modules and can exchange data with an estimating package. Each program can only keep one window open at a time, but you can open more than one copy of the software in memory if your computer is powerful enough. These packages are true CAD; unlike "paint" programs, they store files in a vector format, not as dot patterns (bitmaps). But they export files only to paint formats such as PCX and BMP, not to CAD formats like DXF.

Manual: An easy-to-get-through pamphlet.

Ease-of-use: The Windows versions offer essentially intuitive pull-down menus, standard dialog boxes, on-line help, and keyboard shortcuts. Materials lists can be sent to the Windows clipboard and then read on-screen to the Design Estimator module, or to a printer.

Error-trapping: There's undo and redo. There's little warning when overwriting one file with an updated version.

Planix Home Design Kit

Vendor: Foresight Resources Corp., 10725 Ambassador Dr., Kansas City, MO 64153 (816/891-1040; 800/231-8574).

Price: \$99. A sister product, Planix Office, is \$249.

Equipment and system: Computer capable of running Windows 3.1; we strongly recommend 4MB of RAM.

What does less than \$100 buy these days, CAD-wise? Would you believe full-blown 2D Windows CAD, 20 floor plans from The Home Planners Inc. books, two dozen pre-defined reports (everything from door and window schedules to furniture lists for insurance inventories), and over 800 symbols for stud-wall construction and office layout use? How about design aids for laying out kitchens, bathrooms, even home entertainment centers?

Believe it.

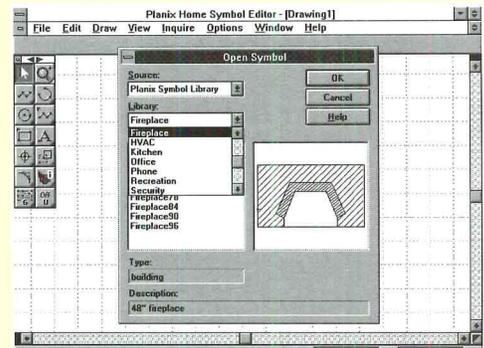
Designing without drawing

Users barely have to draw. You can choose to begin with one of the program's floor plans and modify it. Alternatively, you can start from scratch by defining the building's outer envelope. (You set measurements on the shape, and Planix draws it to scale.) The Draw Room tool creates to-scale spaces within the shell. You choose a roof type (gabled or hipped, for example), and Planix will draw it, even generating a roof plan that matches the floor plan.

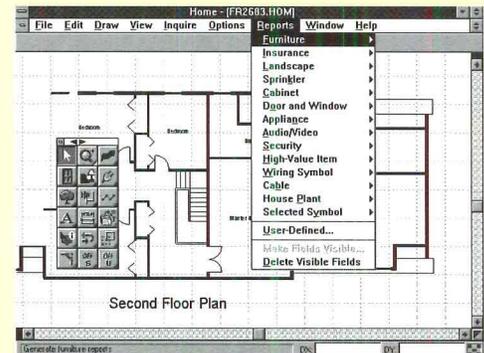
Approaching full-featured CAD

Planix's pedigree is quite different from that of Abacadata. The Abacadata programs are based on a drawing engine designed from the ground up for amateur use. Planix is based on Drafix, a powerful Windows-based CAD program. Planix comes with about 800 symbols. There's a separate editor for creating or modifying them. Another editor allows you to create your own reports. You can keep as many as four windows open at a time.

You can import or export DXF files and Drafix CAD files. You can export to Windows metafile (WMF). Professionals will be relieved to learn that Planix Home comes



The menu for editing a fireplace symbol shows the sophistication of Planix.



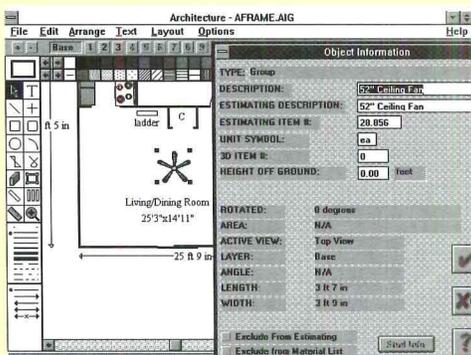
Planix is a full-blown CAD program with the ability to show multiple windows and to generate numerous reports and schedules. Note the floating palette.

with a file to compile inside AutoCAD, so that AutoCAD will recognize Planix markers inside DXF.

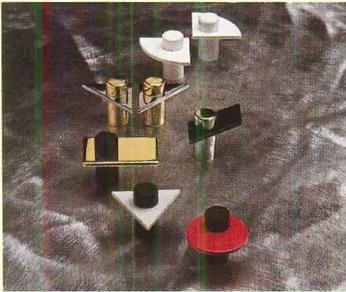
Manual: One 288-page paperback. We doubt casual users will read it all, but there's a nice tutorial and reference section.

Ease-of-use: Intuitive, for the most part. If you can't figure out what an icon is for, hold the mouse button down as you drag across it; an explanation shows up at the bottom of the screen.

Error-trapping: Good. There's an undo, and even an undo edit. An old version of Drafix running at the same time can confuse Planix. (Though it won't be confused by versions newer than 2.0.) But why would you run both? S. S. R.

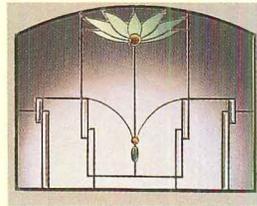


Plans and elevations in Abacadata are separate files. Object data in libraries can be very detailed.



316. Geometric pulls

Decorative cabinet hardware of anodized and painted metal and Delrin plastic comes as on- or off-center circles, equilateral or isosceles triangles, rectangles, and circle segments. Tooled by computer, then hand finished, knobs and pulls may be ordered in custom finishes. Green Street Details, Portland, Ore.



321. Stained-glass lights

Art Glass panels come in seven decorative patterns (Lotus is pictured) grounded in different architectural, regional, and historical styles. Designed to fasten to the interior face of Andersen windows, inserts are trimmed in maple that can be painted or stained to match the existing frame. Available in over 100 shape, size, and glass options. Andersen Windows, Inc., Bayport, Minn.



317. Bath storage cabinet

An asymmetrical arrangement of unframed mirrors conceals two separate storage compartments, including a full-clear-width space behind a fold-down lower mirror. The inside of the side-hinged door has a magnifying mirror; a friction-type positioner holds the door at the angle required. Cabinets are 24- and 30-in. wide by 30-in. high. Miami Carey, Cincinnati.



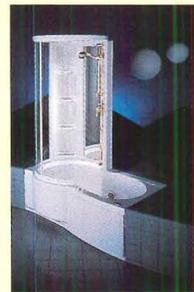
322. Terrazzo tile

An agglomerate of natural marble in a resin binder, Classic 600 Series mosaic tile combines the appearance and heavy-duty wear characteristics of a monolithic terrazzo floor with the standing comfort and fast installation of resilient flooring. The 3/16-in.-gauge tile comes in 26 colorations. A Class 1-rated material, tiles meet New York City fire standards. Fritztile Industries, Inc., Dallas.



318. Sleek kitchen appliances

German-made equipment configured for built-in installation may be ordered in new stainless-steel and dark-mirror finishes. Pictured is a dual mode (convection and conventional heating) wall oven in stainless steel; its radiant-heating elements are concealed to permit full use of the interior cooking space. Miele Appliances, Inc., Somerset, N.J.



323. Tub/shower/whirlpool

The J-Shower Tower combines a full-size Jacuzzi bath and a glass-enclosed, full-height shower in a single relatively compact unit. Available in two tub lengths (60- or 72-in.) by a 32-in. width, the fixture comes in a choice of colors and trims. The tempered-glass door slides fully open for easy use of the whirlpool tub. Jacuzzi, Inc., Walnut Creek, Calif.



319. Solid-hardwood entrance

Made to order of red oak, mahogany, cherry, maple, or poplar woods, the IWP door features mortise-and-tenon construction and hand-carved design elements. The finish is said to be a 12-step process incorporating stains, sealers, sunscreens, and coatings. There are many glazing, sidelight, transom, and custom-design options. International Wood Products, Seattle.



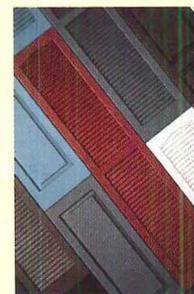
324. Wood-look resilient

Kentucky Manor is a 12-ft-wide sheet-vinyl floor embossed in a random plank pattern. Offered in three wood-grain colors—Cherry, Euro-Pine, and pickled Red Oak—the floor has a new, flexible backing construction that permits perimeter installation and adjusts for subfloor movements. Congoleum Corp., Mercerville, N.J.



320. Sealed-combustion hearth

The DS-41T gas fireplace uses only outside air, for energy efficiencies of up to 65 percent. A top-vent option permits runs of 40 feet vertically and 20 ft horizontally, with three 90 deg elbows. Unit has a realistic yellow-orange flame, and can be installed on interior walls of multistory buildings. Listed by Warnock Hersey for both U.S. and Canada. Superior Fireplace Co., Fullerton, Calif.



325. Zero-maintenance shutters

A new exterior accessory, the Savannah shutter is made of an impact-resistant, wood-grained polypropylene, finished with baked-on acrylic in seven colors. There are two designs: a traditional louver, with open slats that provide a realistic, functional appearance, and a Colonial-style raised-panel shutter. Georgia-Pacific Corp., Atlanta.

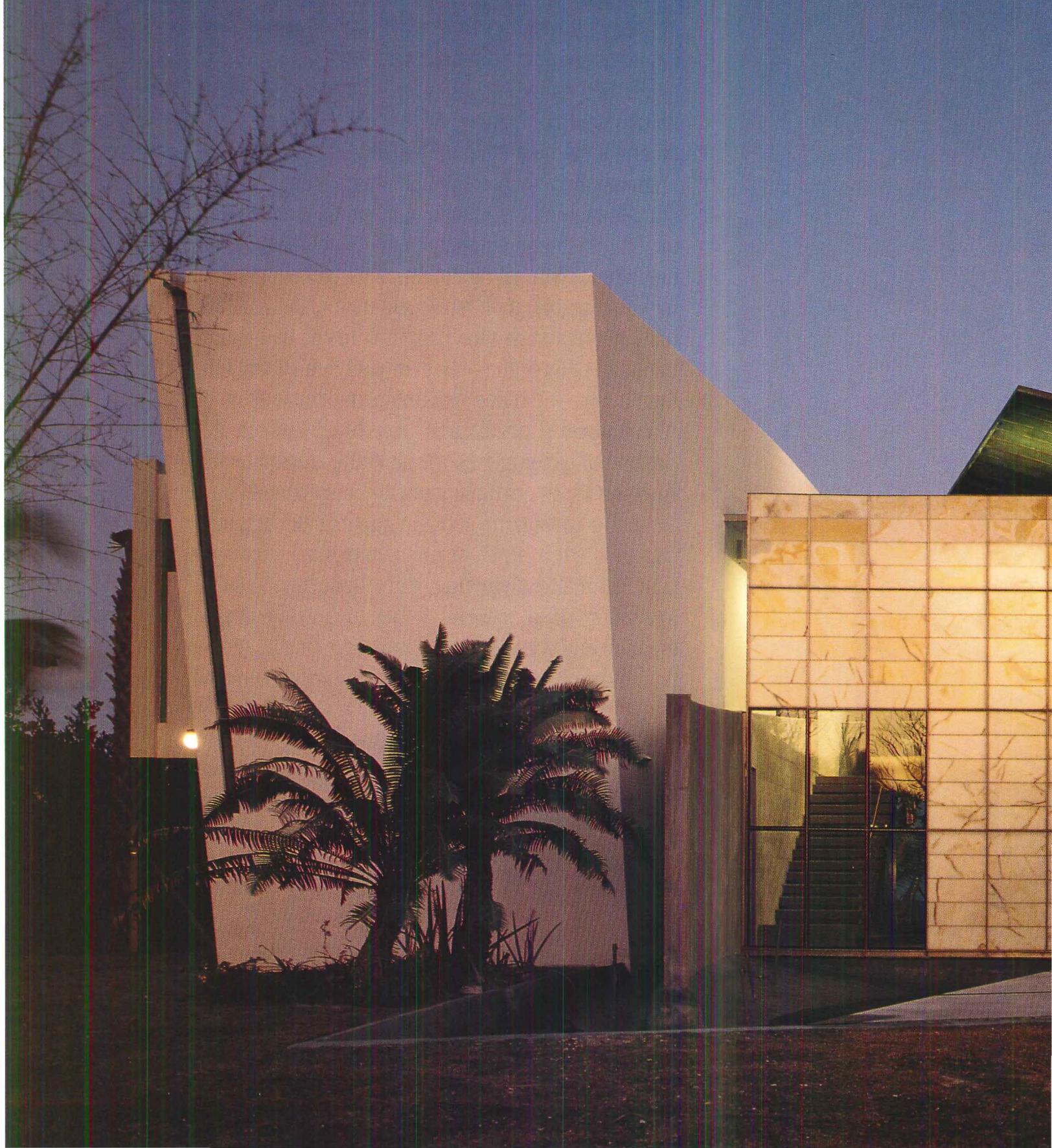
Building Types Study 715/Record Houses 1994

Record Houses should be subtitled “The houses we love (including some our readers love to hate.)” Each year the editors solicit and review several hundred submissions before selecting winners. Invariably, there’s dissent in the ranks as the process begins. But once we narrow the field to a group of some 20 finalists, a consensus begins to emerge. Although the eight projects shown here represent a wide range of clients, sites, programs, and budgets, all possess a unique quality of imagination that makes them stand out, along with the highest level of execution. Each of us has a favorite—the house we want (this year) as our own—and we defend our choices as if they expressed a profound personal vision. A previous editor of Record Houses once compared eccentric houses to eccentric people, commenting that they “can be uncommonly engaging or insufferable beyond measure. One’s response often depends on whether the singular phenomenon, human or architectural, seems spontaneously original or self-consciously bizarre.” Looking back, we’ve certainly published both, and our readers are among the first to point out which they think is which. We’ve come to savor the fact that over time some of the most hated houses have become the best loved; that intense reaction contains the power to provoke and teach.

Karen D. Stein

*Manufacturers’ Sources
listed on page 129*

A Harmony of Opposites



*Carlos Zapata's first house
pushes the limits in materials and
construction, and captures the
differing personalities of his clients.*

*Private Residence
Golden Beach, Florida
Carlos Zapata Design Studio
and Una Idea, Architects*



Throughout the first years of his career, Carlos Zapata dealt with ideas about rhythm and balance, composition and construction: in sum, cerebral and abstract propositions. In his first house, he faced an additional challenge: to make the design reflect the very distinct personalities of his husband-and-wife clients. The house needed to communicate the boundless energy of one and the quiet reserve of the other, and yet hold together as a single, focused work of architecture. Thus it has the controlled dynamic of a design that also “pushes” the limits in materials and construction. It is, says Zapata, “very experimental, not a conventional rigid structure, not a logical structure.” No two surfaces seem to meet, though they obviously do. The copper roof seems to float, a fin pointing skyward. A portion of facade that looks west, out to the often-busy coastal State Road A1A, is white onyx. Walls tilt and curve as they lead through the house.

Zapata left Ellerbe Becket Architects in 1991 to form his own firm, Carlos Zapata Design Studio with partner John West. The house in Golden Beach, Florida—an oceanfront town midway between Miami Beach and Fort Lauderdale—was the firm’s first major commission and the source of its move from New York City to Miami. It translates a more universal set of ideas and materials into a work of architecture more specific to time and place.

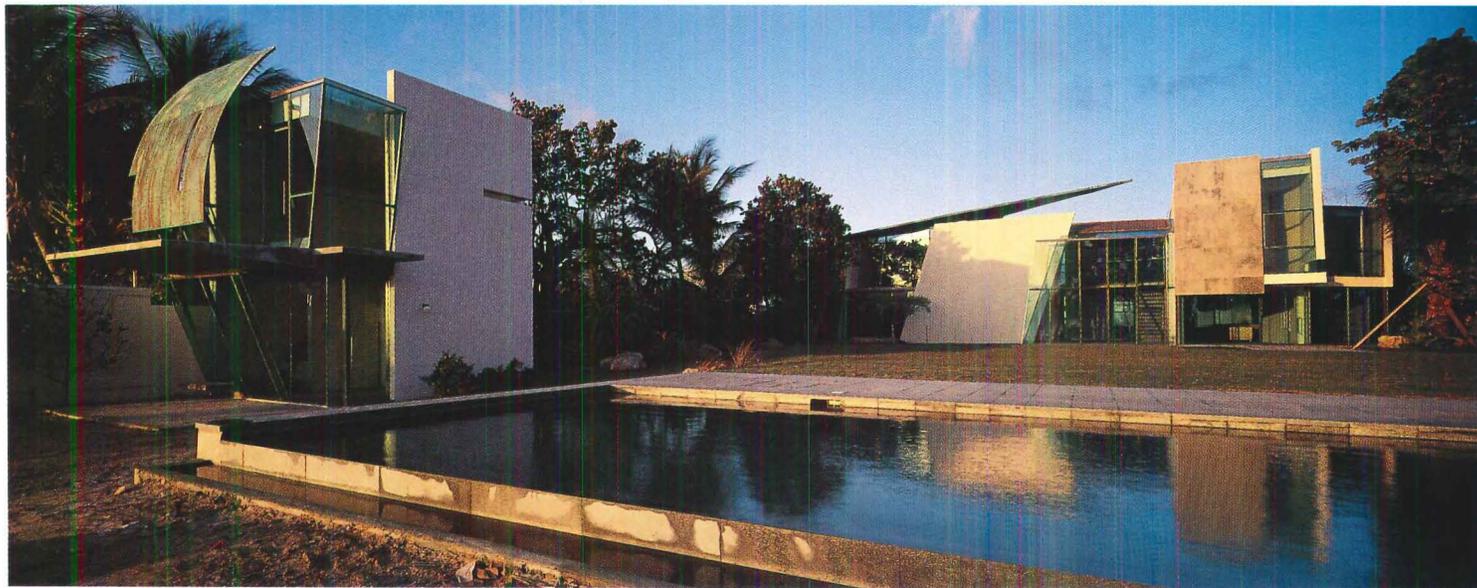
The house sits just behind the low dune line with an uninterrupted expanse of Atlantic Ocean, an utterly romantic location that brought with it a new set of considerations: regulations ranging from sea turtle protection (which meant green-tinted rather than clear glass) to the latest edition of Dade County’s hurricane codes (which stipulate that a structure will withstand 140 mile-per-hour winds). To see this house now, it would seem almost impossible that it sits firmly on the foundations of a 60-year-old predecessor. The original house on the site, Spanish-Mediterranean Revival in style, had been badly damaged in the course of six different renovations. Municipal codes

and federal regulations, however, dictate that any new structure that deviates more than 20 percent from the original foundation must then rise high above the the flood plain, a rule that has given rise to quite a bit of pretentious and overscaled architecture in the last decade, at least in Miami. Zapata stuck with the house’s original perimeter, which generated the two-wing configuration. Even the pool and the guest house follow the original outlines. Still, there is little more than that nod to memory; this house consciously reflects the materials and technology of the present. It is a skillful and artistic high-wire act, at once daring, but quite taut, a reflection of the divergent characters of its owners.

A second-floor family room is cantilevered over the living room, attached to the walls with only two one-inch rods. In the “casita,” the two-room guest house that sits next to the pool, a copper shield covers the east-facing glass facade but can be lifted or lowered hydraulically. Stainless steel is used in unexpected and unlikely way—as banisters, balustrades, countertops, walls and even as part of the roof. The palette is actually very pale: white Italian onyx, patinaed copper, and sea-colored glass.

Zapata chose to concentrate on flow of the house, letting it unfold in layers, a composition in which the pieces are very much separate and the puzzle is not so much fitting them together but allowing them to seem to stay apart. The purpose is at once pragmatic and poetic, to allow light to penetrate the house—through a vast curving skylight that sits under the copper fin, through larger panes of glass and small window slits, even in diffused form through the onyx.

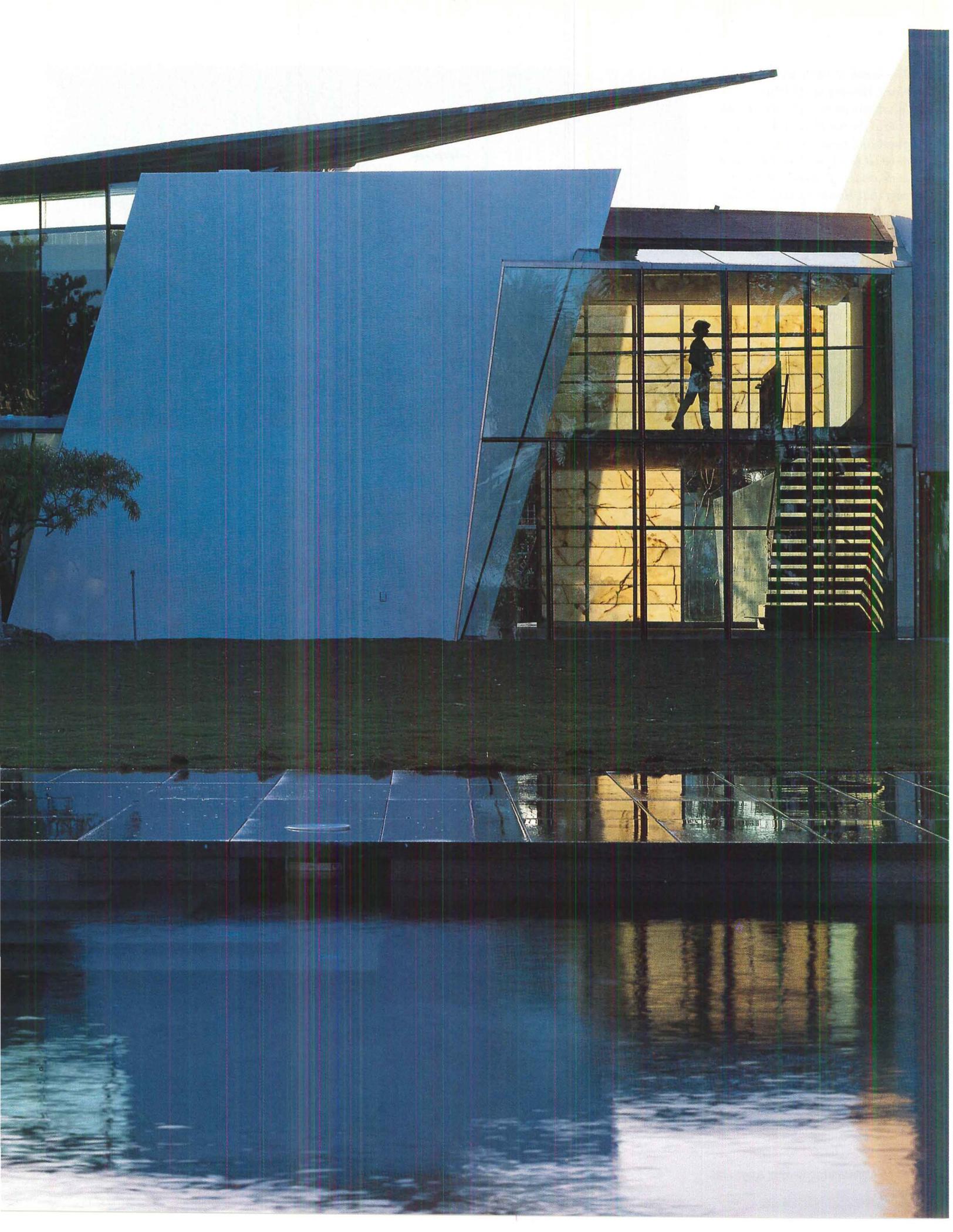
In Florida, light is a presence: bright and white, and then as dusk falls, a darker yellow. “Light is everything,” says Zapata. “Once you detach the roof, the wings, and the walls you get a penetration of light that gives it a sense of time and of volume. There are no dark corners.” *Beth Dunlop*



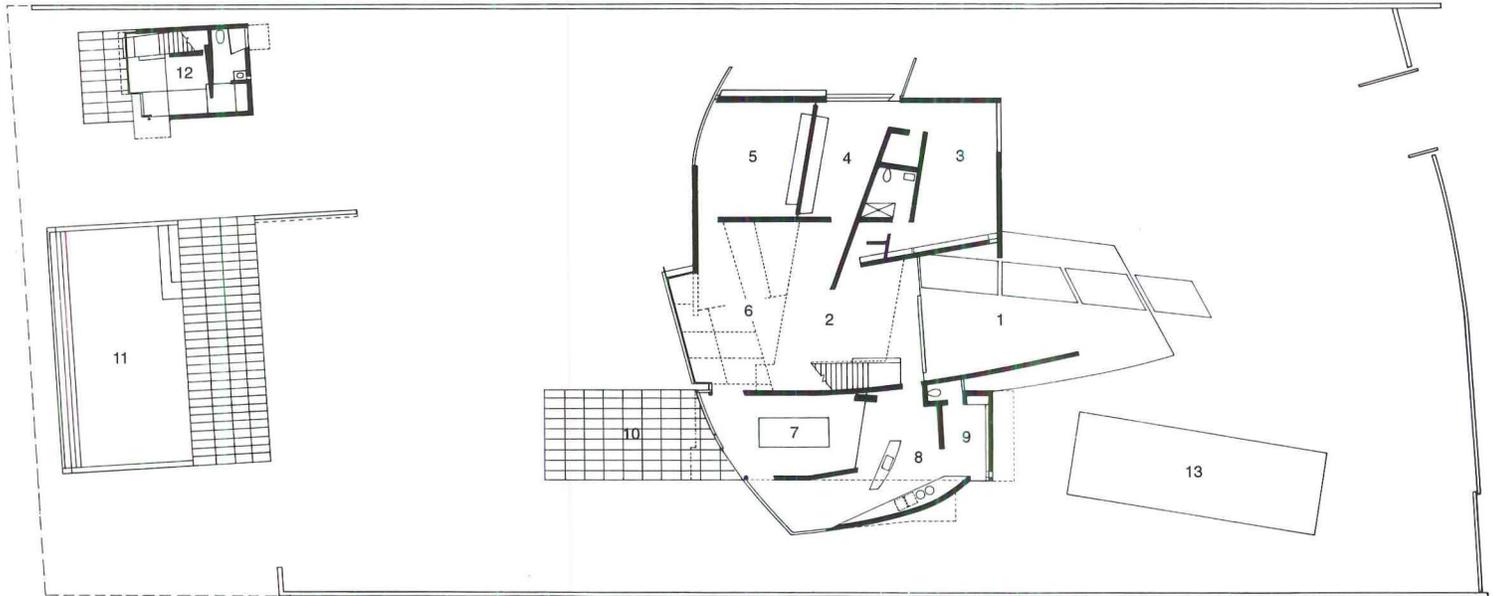
The long, slender swimming pool of this Golden Beach, Florida house sits right over the dune line. It is edged in sea-colored serpentine and a vinylized pool finish, tinted to simu-

late an ocean reef. The house itself is intended to be seen as an assemblage of separate pieces that lean, tilt, soar and, incredibly, fit together.

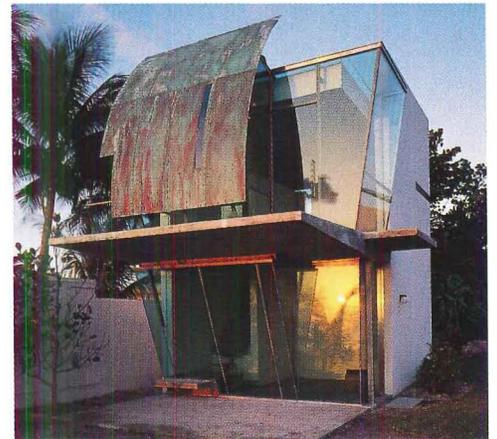
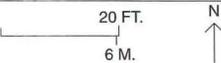
© Peter Aaron/Esto photos.



The beach front "casita," a two-story, two-room structure, functions as an interior design studio for the client and as a guest and beach house. Almost a cube (it is 15 feet long by 15 feet wide and 18 feet tall), it has a roof that slants up towards the sea. It is a concrete, steel, and glass structure with panoramic views looking northeast onto the Atlantic Ocean. The casita is protected from the full force of the sun by an innovative copper shield that can be raised and lowered with a key switch, similar to a light switch, tied into a hydraulic system. The side and back walls are unfenestrated stucco on concrete block to focus views toward the sea.

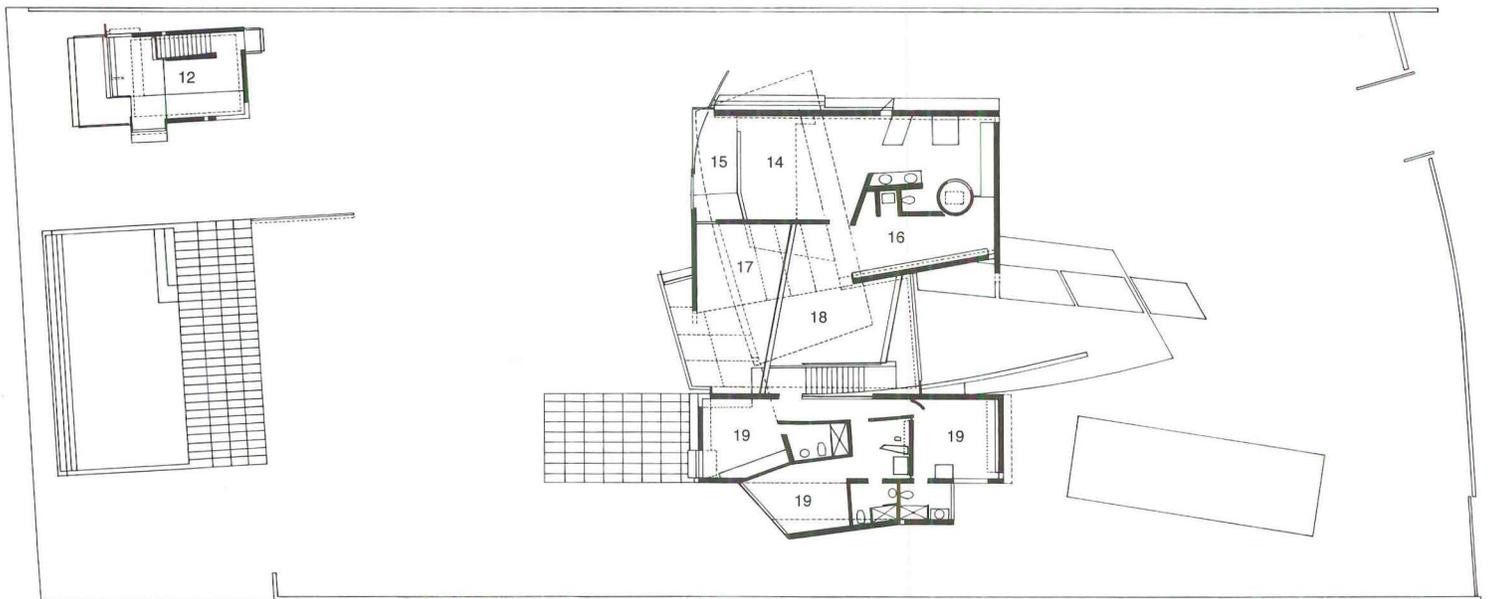


FIRST FLOOR





Zapata and West used stainless steel in three forms (wire, beaded and polished) throughout the house. Concrete stair treads were covered with beaded stainless; the railing is polished steel strung with wire cable. The door to the kitchen is also beaded stainless steel. In many cases, poured-in-place concrete walls were left untouched. In the foyer, the floor is the same blue-green serpentine used on the terrace and pool coping. Other floors are covered in mahogany, maple, and sisal.



SECOND FLOOR

- | | |
|--------------------|---------------------|
| 1. Lily pond | 11. Pool |
| 2. Foyer | 12. Guest house |
| 3. Den/guest room | 13. Proposed garage |
| 4. Garden room | 14. Master bedroom |
| 5. Study | 15. Terrace |
| 6. Living room | 16. Gym |
| 7. Dining room | 17. Open |
| 8. Kitchen | 18. Family room |
| 9. Laundry | 19. Bedroom |
| 10. Outdoor dining | |



The house relies on a diaphragm structural system, a steel frame that allows walls to be virtually suspended from it and enables the roof to be—at least in part—a curve of glass shielded from direct sun by the copper fin. Another structural feat allowed the family room to be cantilevered over the living room with the help of just two one-inch steel rods. The family room floor is designed so that those standing on the first floor looking up will perceive it as if it were the belly of a boat: it is clad in maple with a wood bullnose edge.

The family room and the stairway leading up to it are the keys to the house's circulation pattern. On the main floor, one wing leads to the kitchen and dining areas. The north wing has three children's bedrooms and the south is the master bedroom suite, which includes a gym.

Credits

*Private Residence
Golden Beach, Florida*

Architect: *Carlos Zapata
Design Studio with Una Idea—
Carlos Zapata, John West,
Catalina Landes, design team;
Eduardo Calama, Maria
Wilthew, designers; Marie-Anne
Khoury, Maria Hernandez, Vera
Parlac, Berj Malikian, José
Rodriguez, Frank Gonzalez,
design contribution*

Engineers: *Leslie Robertson
Associates (structural); Lauredo
Engineers Co. (mechanical/
electrical)*





Garden rooms

Paul Lubowicki and Susan Lanier add a Modern wing to a Spanish Colonial Revival.



*Stringfellow Residence
Los Angeles, California
Lubowicki/Lanier Architects*

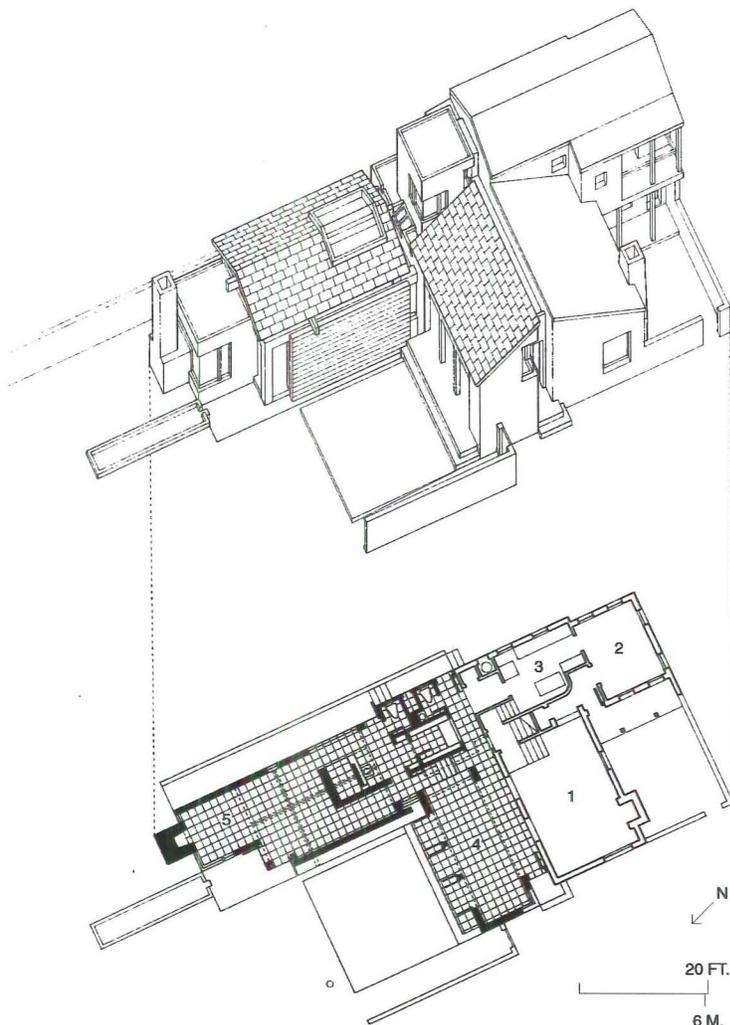


They are like relatives," says Susan Lanier of the 1920s Spanish Colonial style house and its recent addition in west Los Angeles. "But of different generations," adds partner Paul Lubowicki. While old and new have a family likeness—thick white-painted plaster walls and a clear distinction between materials—each has its own identity. "I didn't want any period associations," explains owner Susan Stringfellow of the careful blending of parts into an eclectic yet seamless whole. In fact, the mix of existing structure and new construction emphasizes not any historical era, but the dual nature of the house: public rooms facing the street and private areas oriented toward a lush garden and reflecting pond in the back. In a twist on convention, the architects have made the most "private" room, the master-bedroom-suite, the largest and most open room in the house.

Lubowicki and Lanier's 1,100-square-foot L-shaped addition nearly doubles the size of the house, pushing the structure 55 feet into the backyard. The architects reduced the effect of the new volume by lowering it one foot into the ground. Working with landscape architect Nancy Powers, they surrounded the bedroom with large gravel, creating a rock garden. The new gallery/dining room is separated from the patio by two steps—a deliberately prolonged transition between inside and outside that Lubowicki calls "the period of doubt." Its lead-coated copper roof makes the old shed roof into a gable (drawing right).

The master bedroom is itself an amalgam of parts carefully arranged to control views in and out. In the center of the composition is the shower, left open on the south to the side yard and topped by a skylight. A gently-sloped gable floats overhead, projecting beyond exterior walls. Sleeping and sitting areas are punctured by a massive 5-foot 3-inch cube fireplace of sandblasted concrete, which terminates the loft-like space like a giant exclamation point (previous pages). "It amplifies your experience of outdoors," explains Lubowicki of this exhibitionistic use of glass. Stringfellow sleeps at times in the renovated "old" bedroom, calling the cramped quarters "cozy," but considers herself "transformed" by her spacious garden wing that occupies the "magical land" carefully landscaped into overgrown flower beds and meandering pathways by Powers.

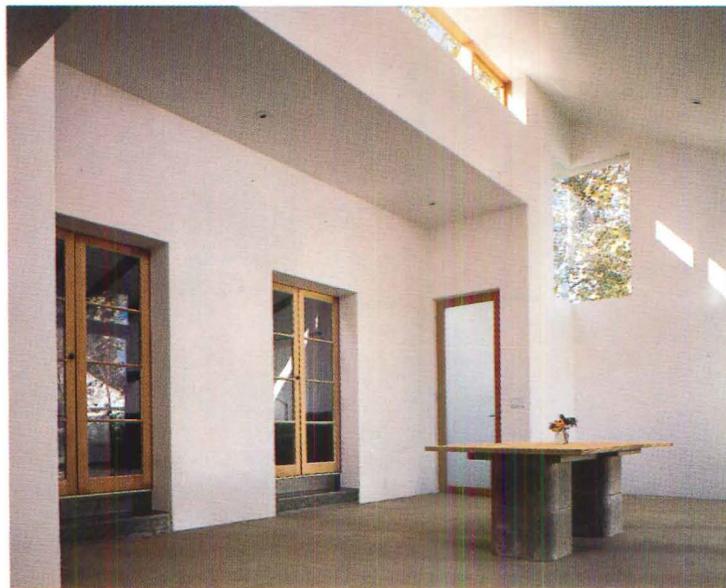
This house is Lubowicki and Lanier's first finished project since forming their own practice in 1988. While five years between design and completion seems long, it allowed the architects to continuously refine their scheme. "It's as bottom-line as you can get," says Lubowicki of the material connections. "There's nothing extraneous; each part is clear." "The barrier is reduced," explains Lanier of the previous separation between house and garden, and she says of the addition, "it doesn't impose itself on you." *Karen D. Stein*



1. Living room
2. Study
3. Kitchen
4. Dining room
5. Bedroom



© Tom Bonner photos



Two sets of French doors mark the transition from old house to new (top left and bottom left). During a delay between design and construction, Susan Lanier and Paul Lubowicki refined the parts and material connections of their structure. The steel frame of the bedroom is clearly delineated from a poured-in-

place concrete wall that has the grain-like pattern and striations from the 2-inch by 8-inch planks of its wood formwork. Laminated wood beams are separated from steel beams by custom-made brackets and burst through glass to the outside (top right and bottom right). Floors are French limestone.

Credits

Stringfellow Residence
Los Angeles, California
Owner: Susan Stringfellow
Architect: Lubowicki/Lanier Architects—Susan Lanier, partner-in-charge; Feliciano Reyes, Jr., project architect; David Spinelli, Ben Ball, project team

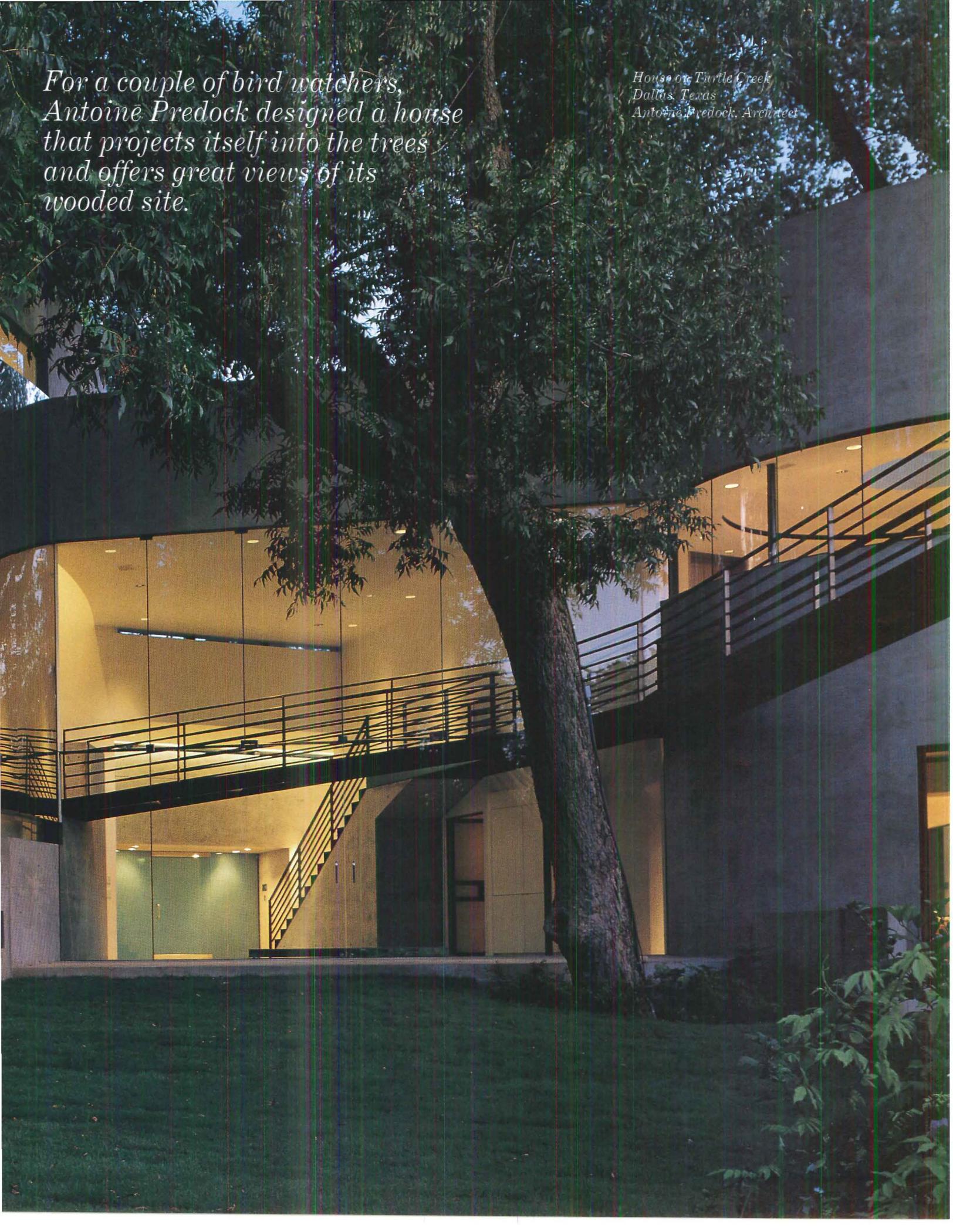
Engineers: Gordon Polon (structural); Bill Comeau (mechanical)
Consultant: Nancy Powers & Associates (landscape)
General Contractor: Alexander Construction

For the Birds



*For a couple of bird watchers,
Antoine Predock designed a house
that projects itself into the trees
and offers great views of its
wooded site.*

*House on Turtle Creek
Dallas, Texas
Antoine Predock, Architect*



The clients wanted a place with a sense of mystery, a house that wouldn't reveal itself immediately," says architect Antoine Predock of the 10,000-square-foot residence he designed in a wealthy neighborhood near downtown Dallas. Predock achieved the desired effect by creating a west (front) facade that is almost totally opaque with only touches of glass. Limestone terraces planted with native vegetation step up from the street to a house that seems to be mostly concrete and gray stucco. The architect saw the building's front as a dam with only narrow strips of clerestory windows and a deeply recessed glass door as breaks or "fissures" in the solid massing. "I wanted to heighten expectations of what lay beyond," explains Predock.

With that kind of set-up, the house nearly explodes with light and energy once you make it inside. While the west facade protects itself from the strong afternoon sun, the east side of the house is open to idyllic views of a ravine and Turtle Creek below. Walls of butt-joined glass, some 20 feet high, provide only an ephemeral suggestion of separation between indoors and out. The clients, a couple with grown children, are avid bird-watchers and wanted to indulge in their hobby throughout the house. As a result, every room has access to an outdoor space and enough glass to keep the residents intimate with their winged neighbors.

"The house is a journey," says Predock. Once inside the double-height entrance hall, visitors can choose either an enclosed stair hall, or "art moat," that leads down to the secondary bedrooms or an exposed metal stair that shoots straight through the house to a dramatic metal "skyramp" projecting over the ravine. Or they can wander over to the kitchen or find their way up to the living room half a level up. A black metal bridge spans the entry hall along its glassy east wall, reinforcing the image of this house as a place in motion.

While the limestone and concrete front of the house "engages the ground," according to Predock, the transparent side "dances above it." Inside the house, elements seem to dance as well. Wherever different materials are used together—whether concrete and drywall or glass and metal—the architect rarely lets them touch, usually separating them by narrow gaps of three to six inches. As a result, glass banisters float between white-painted gypsum board and metal stairs soar just in front of glass walls. One of the most dramatic uses of this device is the large section of drywall on the east side of the living room, which is separated from the ceiling and floor by narrow bands of glass. The only major interruption in the transparent east edge of the house, this huge wall helps give definition to the sprawling living spaces inside and is expressed on the outside as a polished stainless-steel rectangle surrounded by clear glass.

The house is a hybrid structure with poured-in-place concrete retaining walls and concrete floors on the lower two levels, and steel and wood-frame pavilions built above. Lighter materials rise to the top to enclose spaces, such as the master bedroom suite and a circular dining room; these have their own outdoor spaces with views through the treetops. A central mechanical system tucked on the lowest level provides forced-air heating and cooling; the house is zoned so the entire building doesn't have to be heated or cooled. Because the house is nestled into its sloping site and both the south and west facades have limited glazing, energy consumption is reduced.

While working on the design, Predock imagined himself in each part of the house—looking outside and experiencing each room. Pulling the design together then became a matter of "linking all these vantage points together," says the architect. *Clifford A. Pearson*

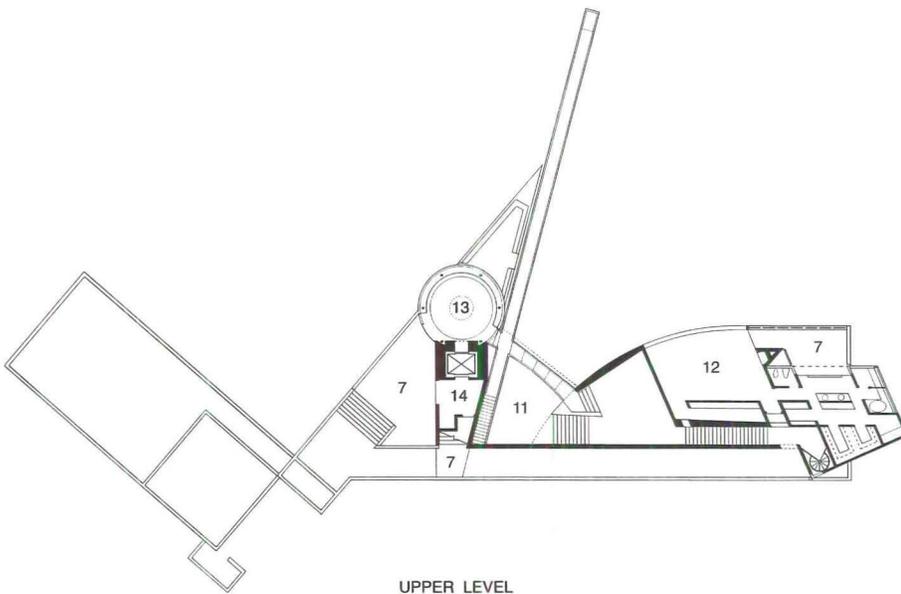


Located at the end of a cul-de-sac, the house presents a mostly solid face to neighboring houses (top and above). Stepped ledges are made of limestone, the same material found in the Austin Chalk Formation, which forms the basic geology in this part of Texas. The rear of the house (previous pages) is mostly transparent so the owners can admire the wooded site and the birds outside. A convex polished stainless-steel rectangle reflects the images of trees and the circular dining tower and seems to float within the clear-glass west facade (opposite).

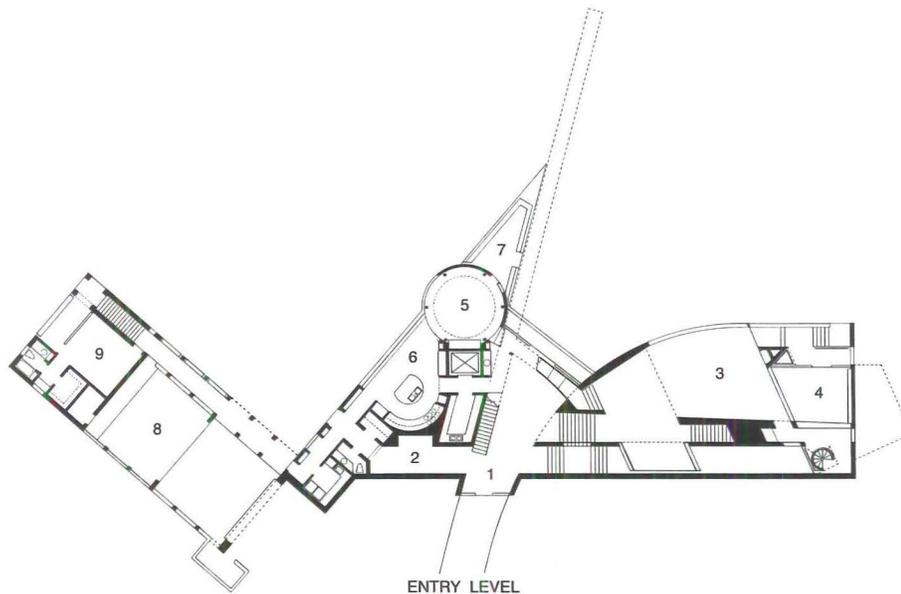
The clients—a married couple with grown children—selected Predock to design the house after an unusually thorough search process that began by hiring Lawrence Speck, dean of the school of architecture at the University of Texas, to work as their search consultant. Based on the clients' stated preferences, Speck drew up a list of architects, whom the clients then interviewed. What attracted them to Predock was his sensitivity to the individual characteristics of each site he worked at, says one of the clients.

© Timothy Hursley photos

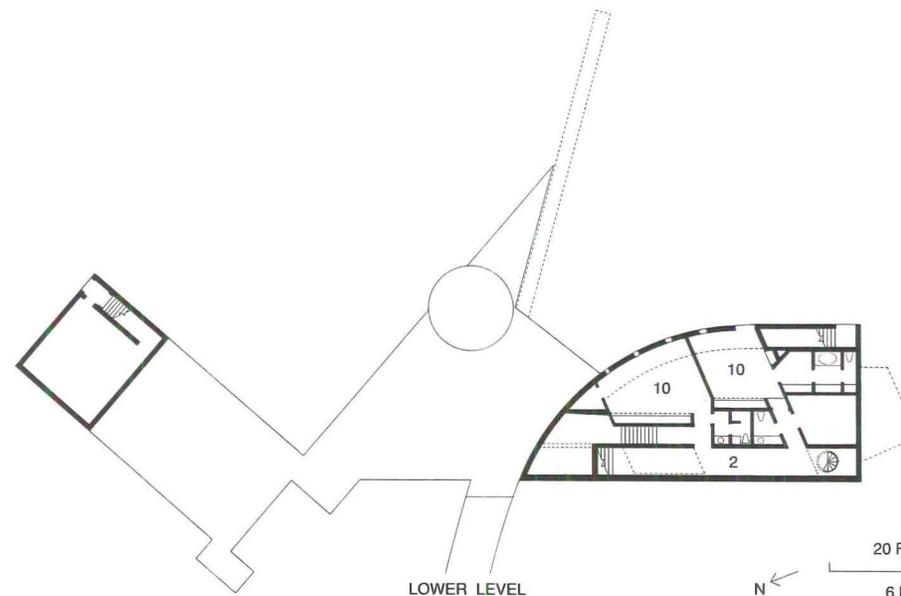




UPPER LEVEL



ENTRY LEVEL



LOWER LEVEL

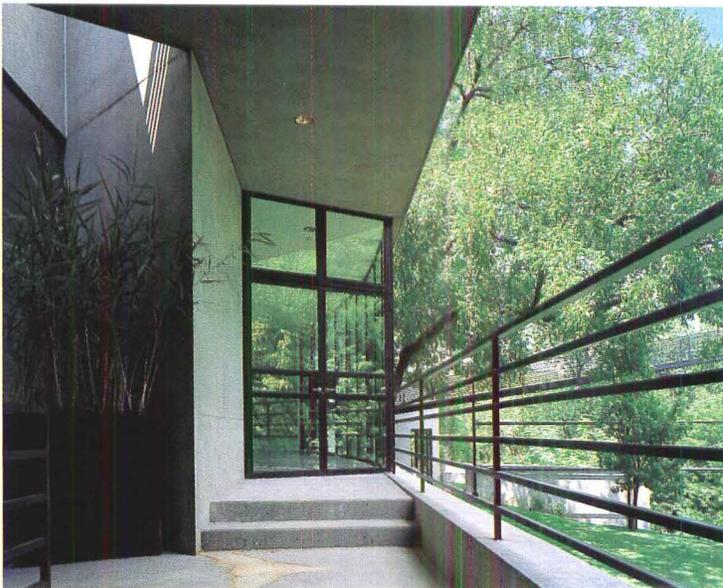
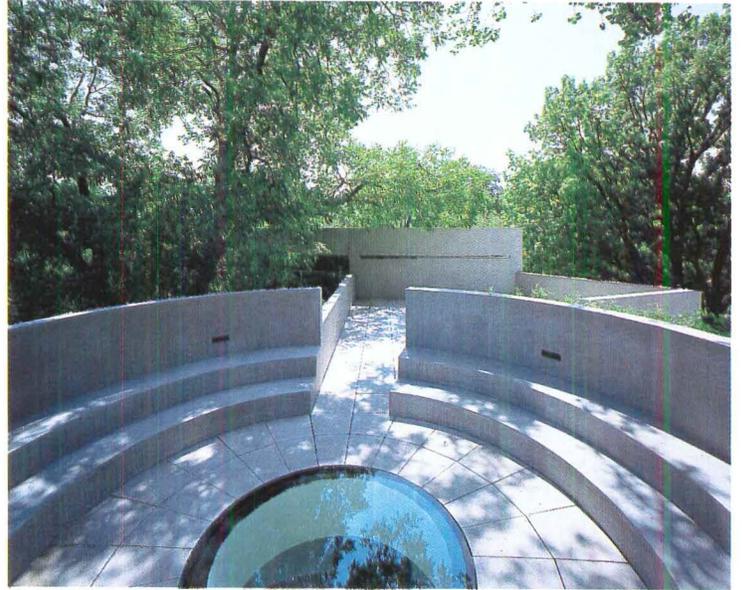
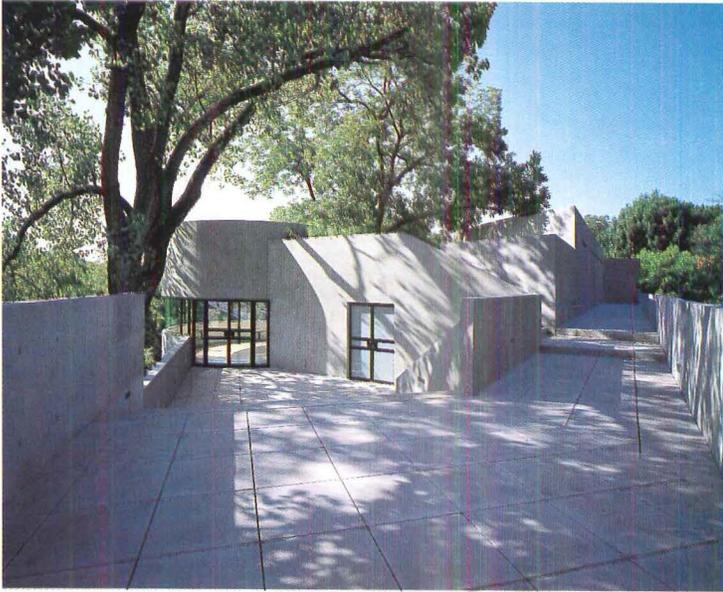
1. Entry
2. Art hall
3. Living
4. Library
5. Den
6. Kitchen
7. Deck/terrace
8. Garage
9. Grandmother's suite
10. Bedroom
11. Open
12. Master bedroom
13. Dining
14. Catering station



To take full advantage of the site overlooking a picturesque ravine, Predock designed the house to enhance casual encounters with the outdoors. To this end he provided access to outdoor spaces from almost every room in the house and turned the roof into an adult playground for dining, entertaining, and birdwatching. On the third level, the circular dining room leads directly out to a dining terrace with a built-in catering station (opposite top left). Wrap-around windows and a circular skylight give occupants of the dining room a sense of floating in the trees (opposite middle right). Directly above the dining room, visitors can lounge outside or even walk across the skylight (opposite top right).

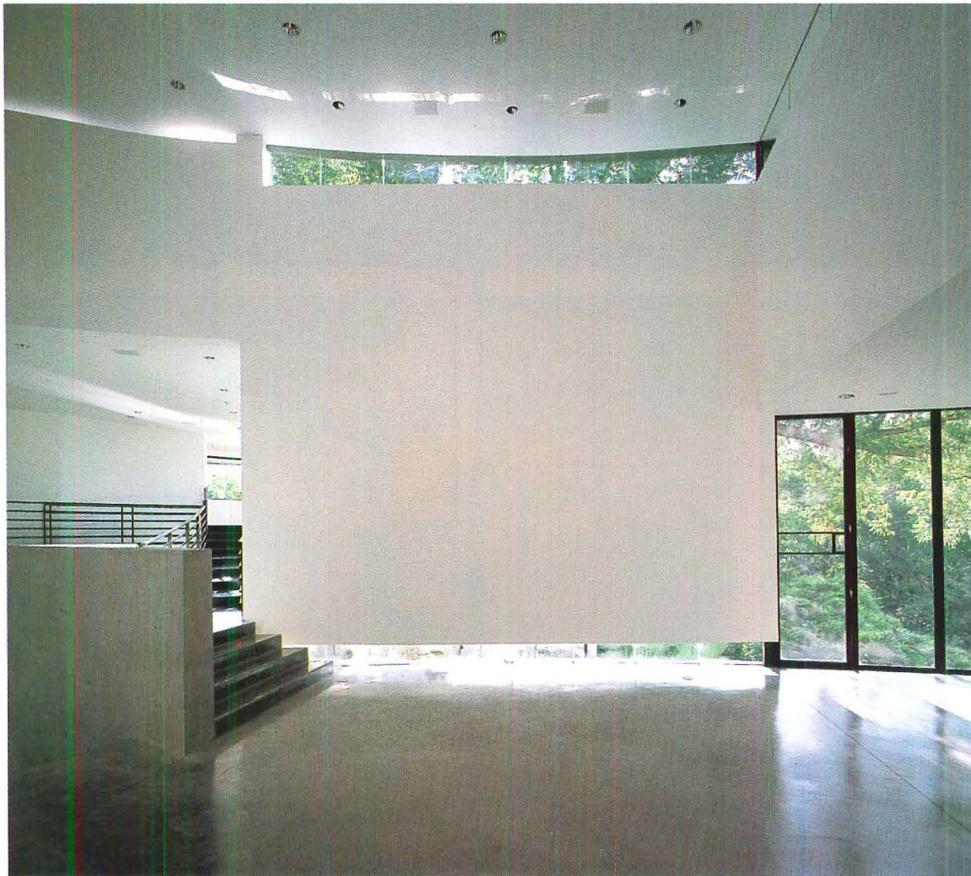
An indoor bridge stretches along the house's glazed east wall and links the living room to the dining room (opposite middle left). A terrace lets residents circulate around the outside of the house (opposite bottom left). One of the most dramatic features of the house is its metal-framed, cable-stabilized skyramp that juts over the sloped ravine to offer spectacular views (opposite bottom right).

Floor plans show the three major levels (left). However, a number of spaces in the house—both indoors and out—fall on intermediate levels, adding an organizational complexity found in many Predock buildings.





Predock created an interior that works as a great performance and entertaining space with a variety of ways to move through it. One example of this is the main hall (left), which is crossed by an indoor bridge along its east side and intersected by a broad set of stairs to the living room and a set of metal stairs leading to the outdoor skyramp. A large, sweeping space, the living room (above) offers excellent views to the wooded site. A large wall at one end of the living room seems to float between bands of glass (left bottom). Continuing this approach, Predock often pulled different materials a few inches apart. For example, instead of letting glass and drywall touch, the architect kept a glass banister three inches away from a living room wall (opposite).



Credits

*House on Turtle Creek
Dallas, Texas*

Architect: *Antoine Predock, Architect—Antoine Predock, principal-in-charge; Geoffrey Beebe, associate-in-charge; David Nelson, John Brittingham, project architects; Paul Gonzales, Jorge Burbano, project team*

Engineers: *James F. Smith (structural); MEP Systems Design & Engineering (mechanical/electrical/plumbing)*

Consultants: *Tully Weiss Lighting Design (lighting); Emily Summers & Mil Bodron (interior furnishings); Rosa Finsley (landscape)*

General Contractor: *Tos S. Byrne*



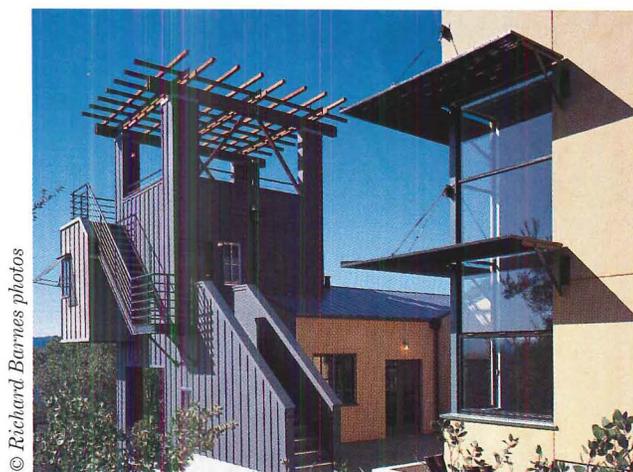
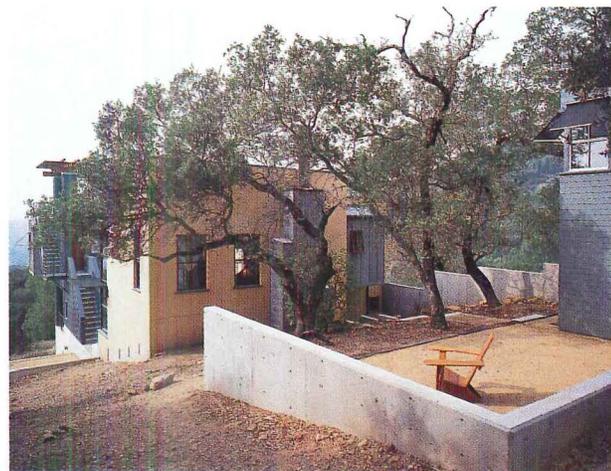
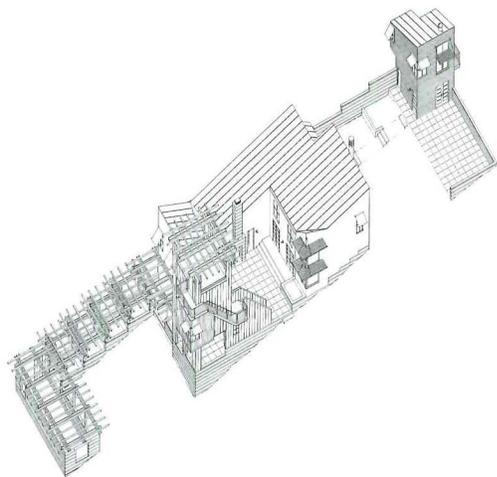
Although just 2,400 square feet, the von Stein House works as an entire village—with a series of structures climbing a hillside site and a rich variety of indoor and outdoor spaces. As in some European villages, movement through the house is often circuitous but never confusing. Winding your way around, under, and through the small buildings, you discover the architecture in pieces and realize that the spaces between are as important as the buildings themselves.

Designed for a married couple who split their time between Germany and California, the house combines the clients' love of Modernism with their desire to build in keeping with the architectural traditions of northern California. "This house is more abstract than some of our earlier work," explains architect Laura Hartman. "Instead of using vernacular forms, we followed vernacular strategies." In plan the house appears to be essentially Modern, with a trio of rectangular courtyards emanating from a linear spine. But in elevation the picturesque forms of vernacular architecture are more apparent: towers of different heights, trellises, and pitched roofs. In selecting materials, the architects also blended Modern with traditional—combining concrete block and metal sun shades with clapboard and wooden battens.

From the driveway and carport located at the bottom of the site, one walks under redwood trellises and up a series of steps that leads around the front court, under the main tower, and into the central courtyard. Although this tiled inner court doesn't have the outdoor fireplace originally envisioned for it (see axonometric below), it does offer dramatic views of the Valley of the Moon to the southeast, and serves as an important "room" at the heart of the house. At the rear of the site is what Richard Fernau calls "the philosopher's garden," a gravel court that provides pacing room or sunning space for those staying in the adjacent guest tower.

Underscoring the idea of the house as a set of buildings pieced together to form a community, fragments of some buildings emerge on the inside of others. For example, the corner of the main tower—complete with exterior wood siding—pushes its way inside the kitchen, and the master bedroom suite sits above the living room as if it were a freestanding structure built inside the house.

A wood-frame structure built on a poured-concrete foundation and within concrete retaining walls, the von Stein House grows out of its hillside site. And with its courtyards and gardens and towertops offering sun and views to the valley below, the house is fully engaged with its surroundings. *Clifford A. Pearson*



At the bottom of the hill, concrete stairs and a redwood trellis define the spine of the house and also establish the pattern of outdoor rooms alternating with indoor ones (top). At the top of the site, gravel and a low wall give the "philosopher's garden" a different character from other outdoor spaces (middle). Sun shades on the southeast side of the house are made from standard metal grating (above). The inner court is the heart of the house (opposite).





Thanks to steel-and-acrylic screens on two sides, the master-bedroom suite (bottom right) can open onto the living room below (top left). A butterfly roof and large windows at the southeast corner of the house ensure that the bedroom loft has views to the valley beyond (top right). To show how the various parts of the house come together, the architects brought a piece of the main tower into one corner of the kitchen (bottom left). From the dining room, the house steps up the site and out a pair of French doors to the guest tower and philosopher's garden (opposite).

Credits

Von Stein House

Sonoma County, California

Owners: *Werner and Sigrid von Stein*

Architect: *Fernau & Hartman Architects—Richard Fernau, Laura Hartman, Tim Gray, Anni Tilt, design team; Beth Piatniza, Kimberly Moses, Emily Stussi, Susan Stoltz, Geoff Gainer, Sarah DeVito, Turk Kauffman, project team*

Engineers: *Larry Fowler (structural); Lefler Engineers & Joseph Gossins (mechanical); O'Mahoney & Myer (electrical)*

General Contractor: *Fine Carpentry*





Suit to a T

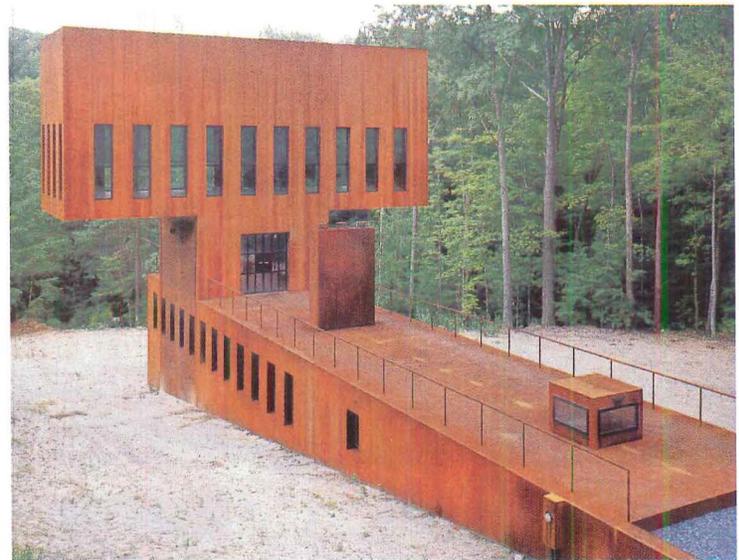
*T-House
Wilton, New York
Simon Ungers and Tom Kinslow,
Architects*



A house says a lot about who you are," claims Lawrence Marcelle. Although the T-House, named for the way it configures living space and library into two rectangular blocks stacked perpendicularly atop one another, might not fully represent its owner, an aspiring writer, it presents an idealized image of how he would like to live. "I hope I can organize the various aspects of my life as well as the house does," he says of its clear separation of functions. Marcelle does, however, see analogies between his present self and his upstate New York retreat, nestled among trees on a 40-acre site. For example, his "overdeveloped intellect" is expressed through the reading room Simon Ungers made for him and his 10,000 books—a double-height space cantilevered 14 feet over both sides of the kitchen to, in Marcelle's words, "deliberately overwhelm the rest of the house." Ungers's translation of Marcelle's personal vision and residential program into a straight-forward plan is remarkable considering that architect and client didn't meet until after a preliminary design was done. "It is unusual," concedes Ungers of the chain of events, "but I met his mother and she described him pretty well."



At first glance the T-House looks more like a giant sculpture by Richard Serra than a place to live, yet it incorporates many homey ideals. Its monumentality and rigid adherence to a system of proportion also give an overall effect of permanence, stability, and reassurance—characteristics of more traditional images of home. Taking advantage of the site, Ungers incorporated the topography of a former sand excavation pit, stepping the volumes down the hillside to exploit distant views of the Berkshire Mountains.



The design's determined repetition and precision—all exposed vertical surfaces are punctured by rows of 8-foot-high by 2-foot-wide windows, which, on the interior, alternate with 8-foot-high and 2-foot-wide wood panels fastened at 2-foot intervals—served the architect in construction, a painstaking process in this case since the exterior shell was pre-assembled in six parts and transported by flatbed to the site (below), where it had to be fitted to concrete foundations. Final welding and grinding of the weathering steel plate was done on site, and there are no expansion joints to disrupt the overall monolithic effect. Unlike the seamless exterior, interior joints are revealed: mahogany panels are separated by 1/4 inch to show their frame, and cork is used below the baseboards to allow for expansion and emphasize the edges where walls meet floors.

The 1/4-inch-thick steel exterior shell was prefabricated in six parts and then transported to the site, where it was assembled on top of concrete foundations (photo below left). The steel's nickel and chromium finish has oxidized to a vibrant rust color.

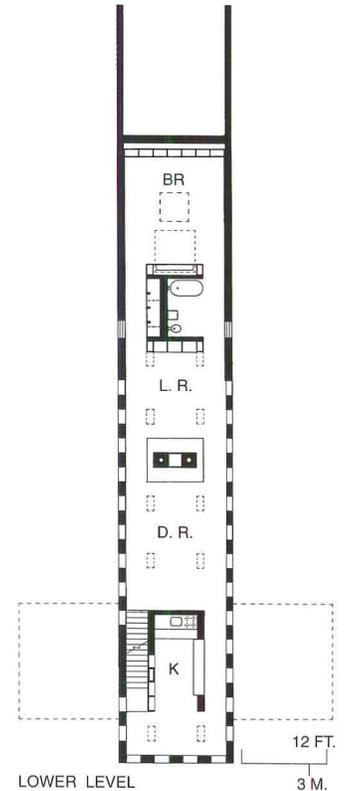
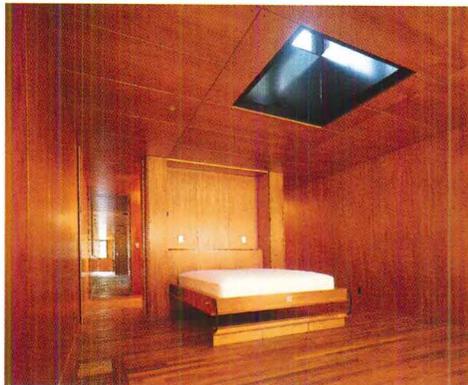
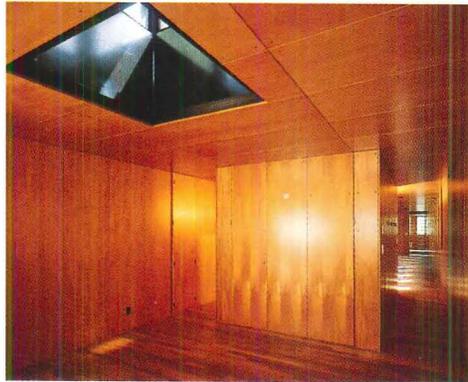
Even though the T-House is barely visible from the road, Ungers had to obtain a variance in order to build up to its 42-foot height. The unusual design raised objections from the local zoning board, but after delay of almost a year, approval for the project was granted. "The house you build is like the clothes you wear," say Marcelle of the public design-review process. "Your decisions should be private, but they get judged in public." *Karen D. Stein*

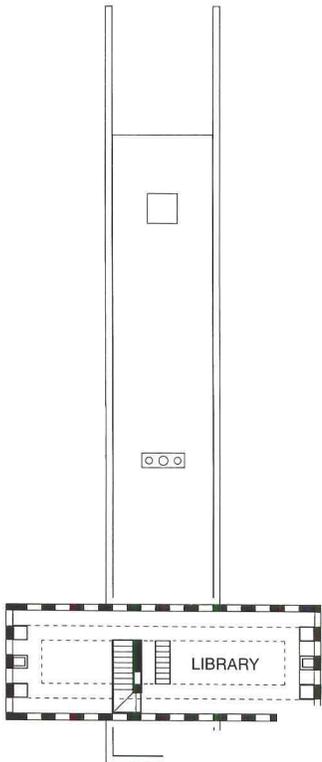


© Lydia Gould

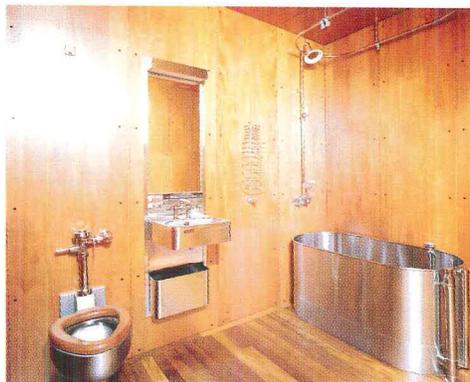
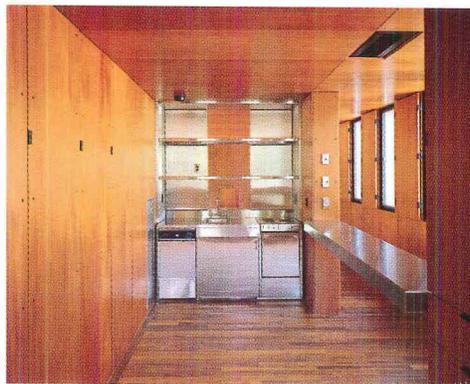


The lower level of the house is 84 feet long from kitchen to bedroom (plans right and opposite). In the center of the 14-foot-wide loft-like space is a steel chimney (above). To accommodate the different expansion rates of steel and wood, interior walls comprise an independent structural frame. Two-foot-wide panels veneered with plantation-grown mahogany are fastened by black painted screws at two-foot intervals to a kiln-dried poplar frame. The bedroom has an Ungers-designed Murphy bed shown closed (top) and open (bottom).

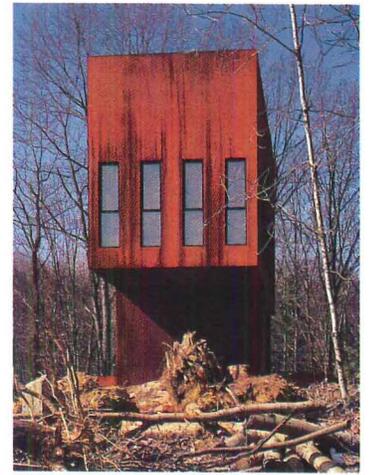
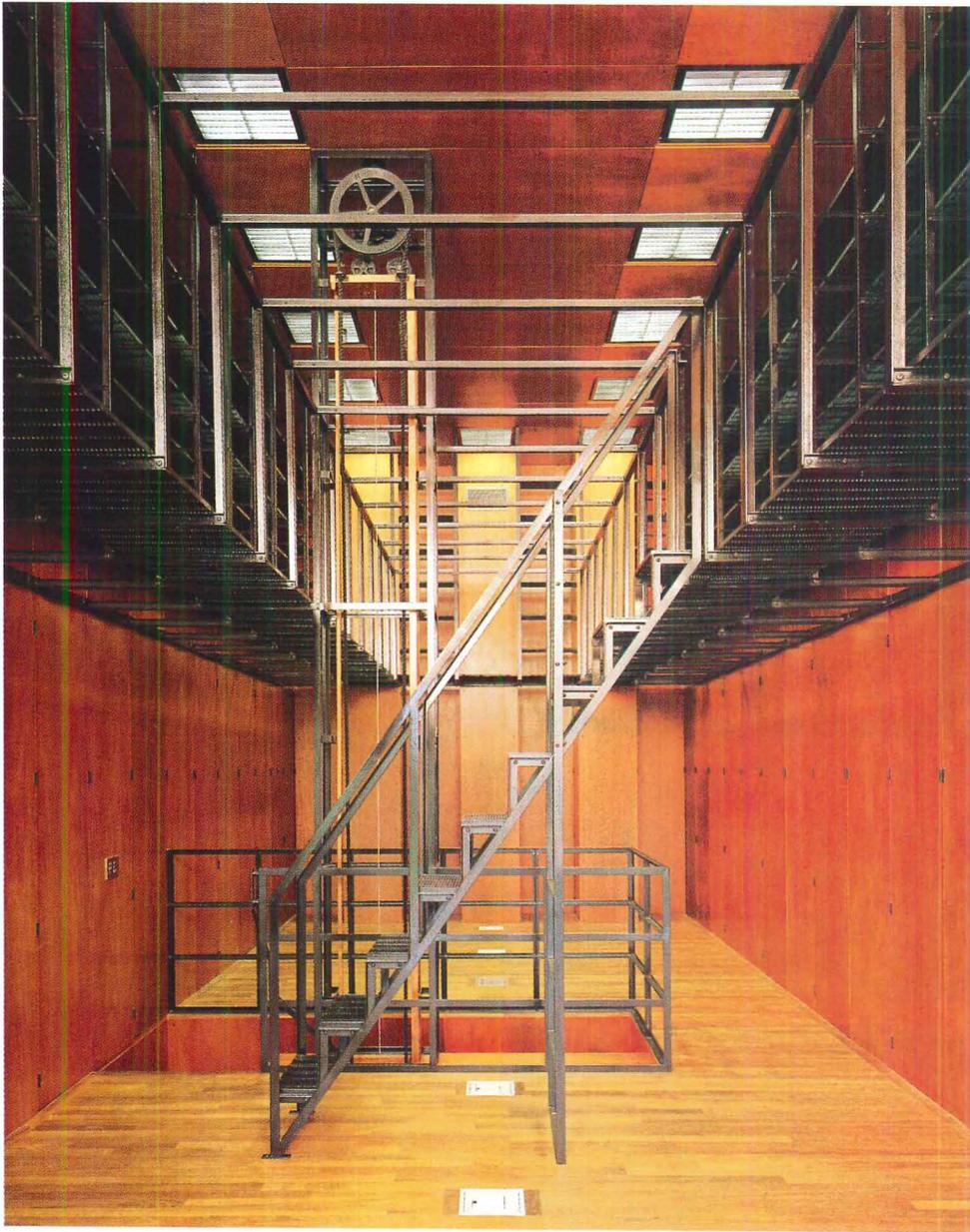




UPPER LEVEL



Entry to the house (photo above) is between the living level below and double-height library above (plans left and opposite). The kitchen (top left) has stainless-steel shelves; the stainless-steel bathroom fixtures (bottom left) come from prison-supply manufacturers. Floors are made of teak salvaged from rivers in Burma.



The library is 44 feet long, 14 feet wide, and 16 feet high. When the shutters are closed, a continuous surface is created (photo left). Steel shelving and catwalks are suspended from the ceiling and cantilevered from side walls. A dumbwaiter transports books between floors (opposite). The library's east face peers over the hill like a telescope (above).

Credits

T-House

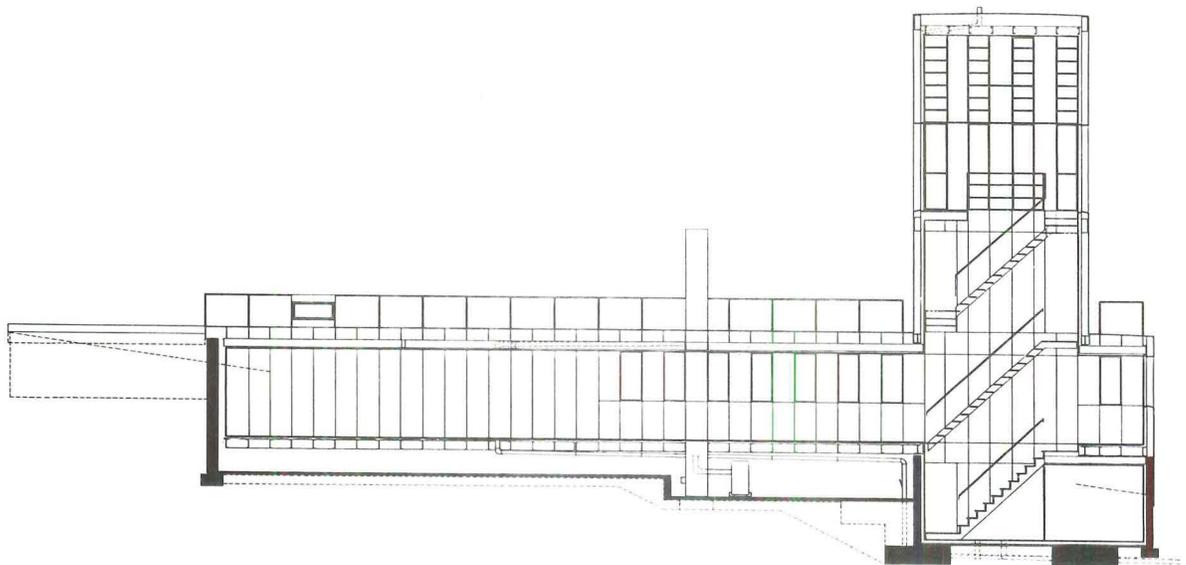
Wilton, New York

Owner: Lawrence Marcelle

Architects: Simon Ungers and Tom Kinslow with Tom Ogorzalek, Mary Langan, and Matt Altwickier; project team

Engineer: Ryan & Biggs Associates (structural)

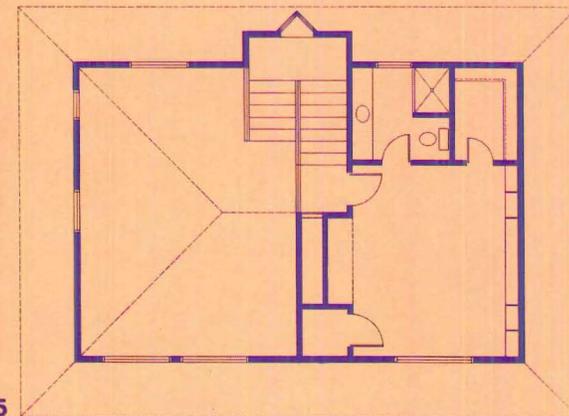
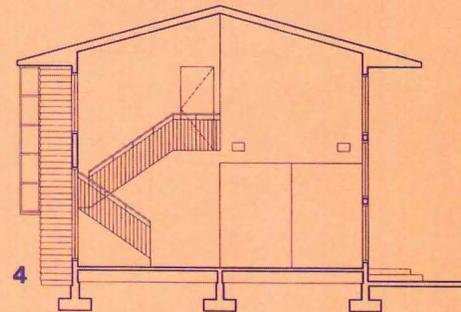
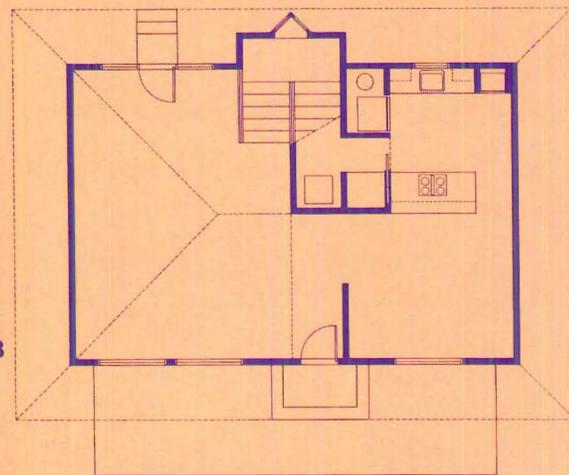
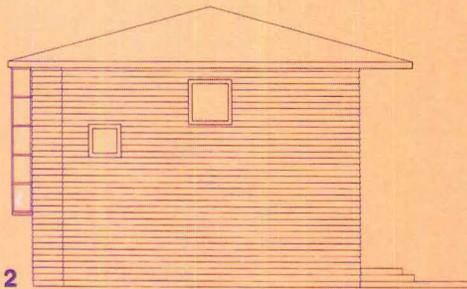
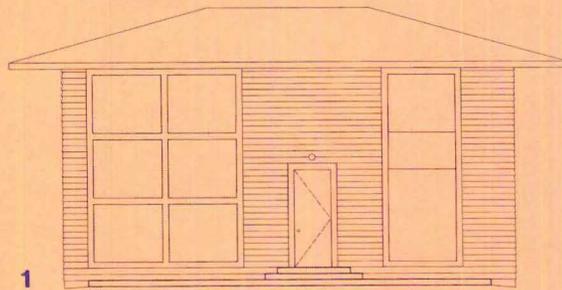
Contractors: STS, Inc. (exterior); Regenerative Building Construction (interior)



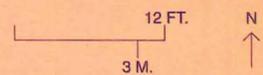


Urbane Modesty

Saito House
Houston, Texas
Carlos Jimenez
Architectural Design Studio



- 1. South elevation
- 2. West elevation
- 3. First floor
- 4. Cross-section
- 5. Second floor



At first glance, this modest white house in Houston's Museum District is deceptively simple, but the low-hipped roof and horizontal wood siding of this tautly detailed volume conceal an intensely studied composition in plan and section.

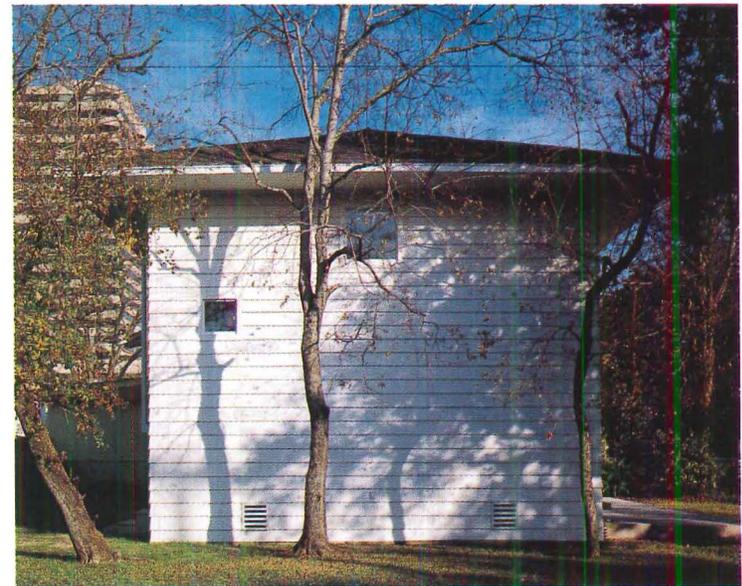
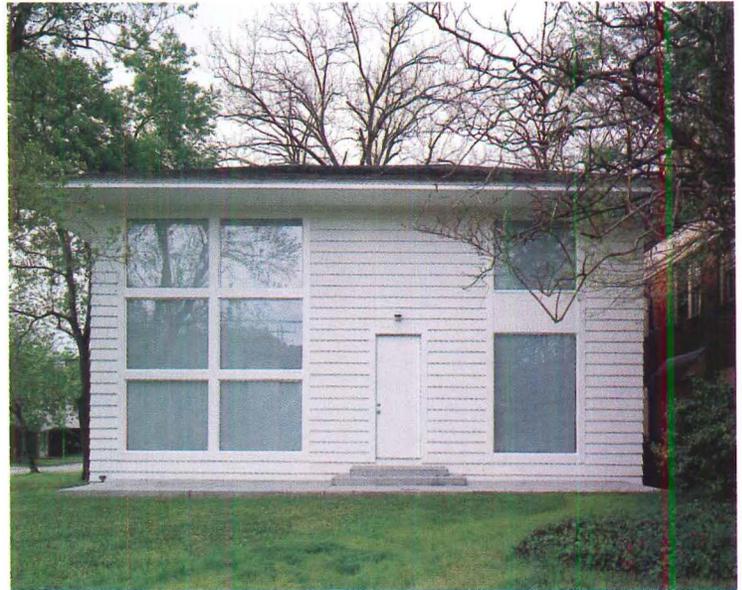
Carlos Jimenez, a rising star in Houston's still-moribund design community, built this 1,400-square-foot residence for a repeat client in a 1930s inner-city area, retaining subtle references to the bungalows, cottages, and duplexes that make up the neighborhood. A compact five-bedroom house originally occupied the site and, in order to avoid newer setback requirements, the foundation was kept and reused. Thus the general size and proportion of the house conforms to its neighbors. The project shown here is actually a work-in-progress. A tall enclosing fence and garage/studio will be added soon, significantly altering the stark clarity of the white pavilion as it now stands.

The plan recalls the central hall layout of the old house and is composed as a spiraling sequence of diminishing rectangles. A wall shears the plan and volume in half and splits the stair. To the west, the large two-story living room takes up half the area of the building. To the east, the dining area, kitchen, and storage progress in ever-decreasing size. The second-floor bedroom, closet, and bath follow a similar order.

Numerous contrasts and shifts in scale reveal a classic Modernist technique of reductionism used to reinterpret the traditional house. The same size as the original house of many small, contained rooms, the new house has a few large, flowing spaces. The huge Venturi-like picture window boosts the scale of the facade while creating a tension that nearly decomposes the tight volume. A vertical window strip wants to deny the existence of a second floor. These two big windows squeeze the insignificant front door into a very unwelcoming point of entry. The glaring whiteness is barely relieved by the linear texture of the board siding. On the interior, a few touches of rich material (wood handrails, granite countertops, quality hardware) contrast with the neutral white surfaces and luminous volumes; the openness of the living areas contrast with the enclosed bedroom.

With everything else reduced to a minimum, the one luxury of the house is its volume and openness. The simple stair becomes a processional route, with a landing that projects into the backyard as an observation point to both the inside and the outside. Surrounded by neutrality, a few exquisite Japanese chests are modest hints at the personality of the client, a Japanese woman who owns an art publishing company. And the minimalism itself is an enviable luxury in a culture overburdened with consumables. *Gerald Moorhead*

© Paul Hester photos



Floating on its green lawn like a white temple, the balloon-framed structure both accommodates the contextual scale of its neighborhood and contrasts with the typical clutter of foundation planting and over-landscaped lots. The large window on the south elevation (top) explains the two-story volume within. Minimal openings on the west side (below) reduce the heat and glare of the Gulf Coast sun.



The volume of the house is divided in half by a central wall (opposite) separating the two-story living room (bottom left) from the dining/kitchen area (top and middle left). The wall, however, is not perceived as a planar element.

Credits

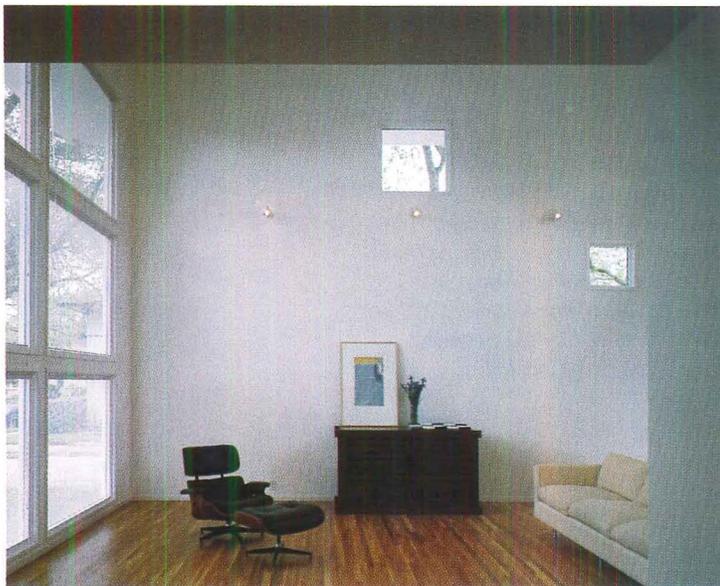
Saito House

Houston, Texas

Owner: *Yoko Saito*

Architect: *Carlos Jimenez Architectural Design Studio—Carlos Jimenez, designer; Dominique Brousseau, Kendall Hamman, Eric Batte, project team*

Engineer: *Structural Consulting Company (structural)*





Castle Cloud

On a vast sweeping Pacific Coast site, Joan Hallberg gives fresh meaning to the notion that one's home is one's castle.



*Private Residence
Stewart's Point, California
Joan Hallberg, Architect*



Perched high above the wild craggy Pacific Coast south of Sea Ranch, California, this expansive house is a tribute to an architect's commitment to her concept. What Joan Hallberg had in mind was a castle: a commanding structure filled with grand spaces, open and accessible, but enclosed and secure as well. She felt the idea suited the 220-acre site with its rugged outcroppings. And it most certainly fit her client. "He's very big," she says, referring to both his physical presence and outgoing nature.

"He wanted a series of pods," she recalls—stretched out parallel to the spectacular views, and isolated from each other to express different functions and allow house guests to escape the noise and clatter of up to 40 other visitors who might drop in on a typical weekend, or the 300 who might show up for special parties. But a series of discrete units would be lost against such a sweeping backdrop. "It was too overwhelming," Hallberg says of the site she and the client had agreed on after exploring many possibilities. To satisfy two concepts seemingly at odds, she looked at the fog that often hovers over the ocean in long horizontal bands of clouds. "Rock forms lay below the clouds. Some engaged them, and others popped through." This would be the way that 6,200 feet of living space, anchored solidly to the ground, would be united under one protective cover.

Hallberg has indeed produced a castle, very much of this time, but timeless nonetheless. Its spartan, straightforward detailing in all-natural materials, and intricacies of scale—ever changing with the vantage point of the viewer, from intimate to massive—all spell out her intentions. In some places, the viewer is able to reach up and touch the roof trusses that range from flexibly bolted steel for the floating roof, to rigidly welded steel, to heavy timber, depending on their lateral-bracing and loading functions. In other places, the

trusses are 16 feet overhead. Hallberg tied steel-pipe supports for her floating-roof trusses through the wood structure, down to the top plate of the first floor. Open iron-grid catwalks slope between steel C-section stringers so that the visitor is at normal height to the railing at one end but well below it at the other. "You feel it's your scale changing," she notes of such design manipulations. "I did as much work on sections as plans," she explains of her working method. With the catwalks, Hallberg had her greatest opportunity to introduce a primeval effect: one is vulnerable to the natural forces of wind and waves—all modulated by open and closed sections of roof above.

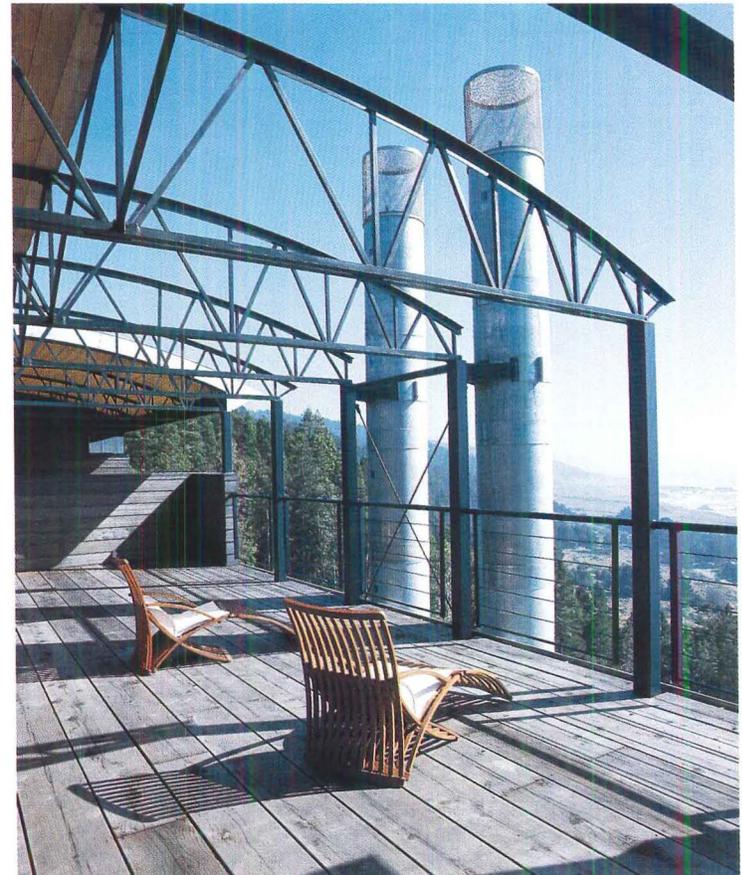
Hallberg created these poetic effects with much problem-solving. First came the difficulty of meeting strict state energy-code requirements. Under this code, the warm East Bay area and Stewart's Point, located 130 miles to the north, were included in the same climatological zone. Requirements mainly intended to limit the cooling loads of the East Bay put restrictions on the glass-to-floor-area ratio—a particular problem for a site with great views—even though this location is naturally cool. She solved the problem using low-emissivity glass, which allowed her to increase the glass to 52 percent of the floor area.

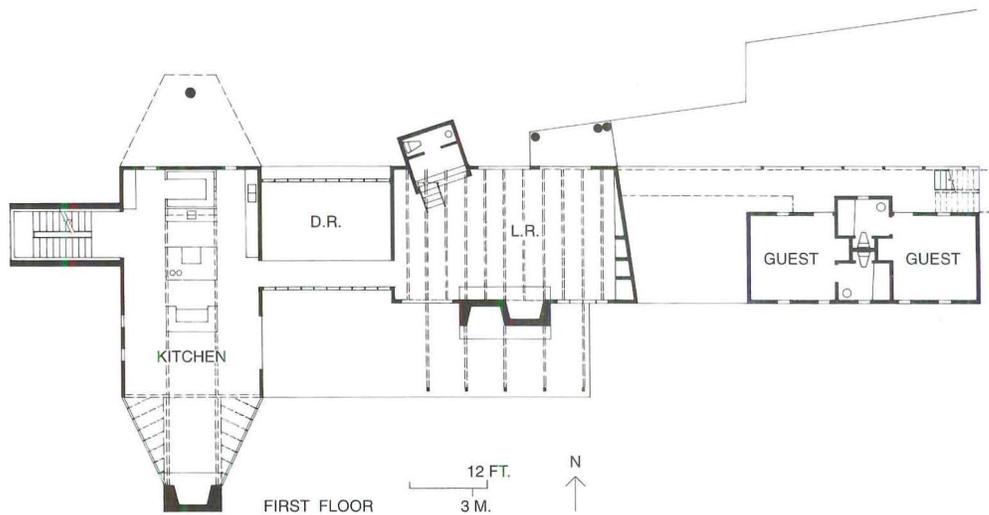
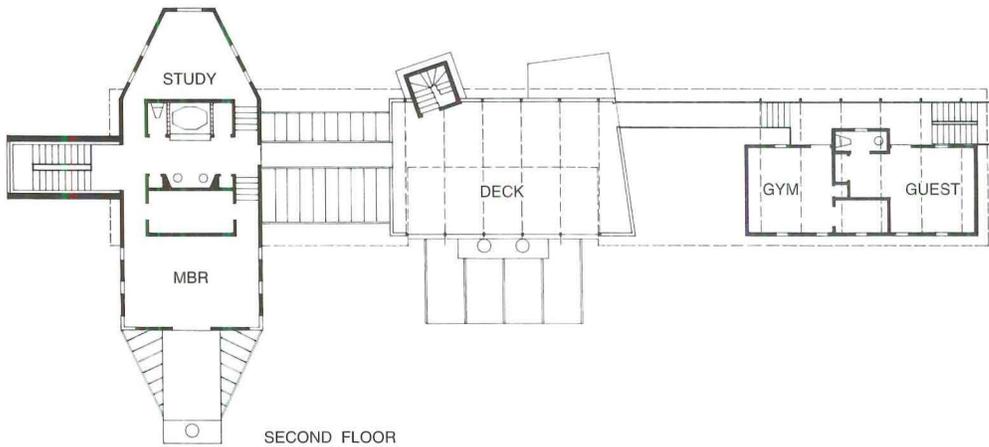
Tying the building elements together structurally presented other difficulties, but was accomplished using enormous cross-braced drag-beam foundations. "It was the largest concrete pour on the coast at that time," she recalls. A builder framed the structure and closed it in, the trusses were fabricated under separate contract, and finally the owner took over as general contractor and employed numerous local craftspeople to finish the building partly as a gesture of good will to the community. At first she was dubious about his approach. "It was all very labor intensive," she recalls. "But the house came out beautifully," she admits. *Charles K. Hoyt*



Heavy winds, the weight of up to 300 guests, and brush fires were among the design problems. An extra-heavy structure and a galvanized-steel roof over rigid insulation were the solutions.

The only painted surfaces are the exterior steel. Inside, steel is exposed, protected by a light zinc-dip coating, which takes on a blue-gray color.





This castle comes complete with a kitchen and great hall in one. The kitchen (above right and opposite) is an enormous room used for weekend entertaining where guests can pitch in and help with the cooking. The owner's suite, as in a traditional castle, is a story above. The prow-like plan allows views in three directions so that all approaches are in sight, including the drive up from the Pacific Coast Highway 300 feet below. This projecting space also allows the occupants an advantage found in few houses—they have a place indoors to stand and look back at the house's exterior: "It shouldn't just be for others to admire," says Hallberg.

Credits

*Private Residence
Stewart's Point, California
Architect: Joan Hallberg,
Architect; Stuart Hills, intern
Engineers: MKM & Associates
(structural); Ed Taylor
(electrical); George Rail
(geotechnical); Sol-Data
(energy compliance)
Contractor: Fredrickson
Construction*



New House on the Block

*Private Residence
Concord, Massachusetts
Machado and Silveti Associates,
Architect*



If we were going to build a house, we didn't want it to look like anything already available," says an owner of this house outside of Boston. Indeed, the 11,800-foot-structure by Machado and Silvetti Associates eludes stylistic classification. "It consists of heterogeneous pieces that are simple and familiar on their own, but grouped together they create something unique," offers Jorge Silvetti. While many people who commission houses temper their design wish-list with an eye toward resale potential, this couple indulged their spatial fantasies. Having already worked with architects to design their previous house in Minneapolis, they knew how to have their personal habits and preferences translated into plan and section and were able to offer firm direction. For their move back to the east coast, they interviewed a list of Boston-area architects, selecting Silvetti and partner Rodolfo Machado for work they deemed "interesting and elegant."

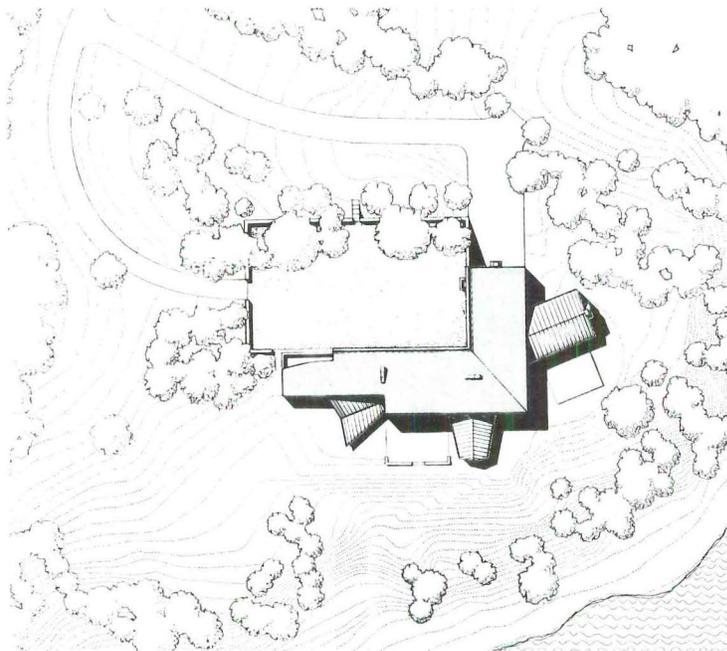
The architects, both professors at Harvard University, have a relatively slim portfolio of built work, but their practice is known for its deft integration of theory and form, an approach honed over a series of mostly unbuilt urban-design proposals, a parking garage, and small-scale residential renovations. They brought to their first built house an interest in urbanism along with a refined sense of craft.

Easement and wetland restrictions on the 13-acre Concord site limited possible locations of the structure. The architects chose a plateau near a private pond at the southern edge of the property, laying out the principal rooms so as to make the most of the views. Citing Tuscan villas as inspiration, Silvetti points to a semi-enclosed paved courtyard in the front of the house, the first of a carefully choreographed sequence of spaces that proceeds from outside to inside to outside, elongating and foreshortening views like a shifting camera lens. The architects' interest in perspective gives their work a theatrical presence—the living room, for example, intersects the main L-shaped volume of the house obliquely, projecting its coffered ceiling into the grand 20-foot-high entrance foyer (plans page 109 and photo right page 110). Their play with depth perception and shifting "edge" conditions is made real by their use of materials and unusual detailing. The courtyard facades flare 4-inches inward at the roof line to conceal gutters, subtly intensifying the effect of a proscenium (photo page 108 and wall section page 109). The use of red-cedar shingles and three colors of slate stacked without visible mortar joints in a 6-inch-deep wall cavity combines New England-vernacular references with Silvetti and Machado's habit of unusual juxtapositions (to keep costs down, slate was culled from quarry leftovers). The rich texture of the front contrasts with the more austere white-painted clapboard rear elevation (opposite and right), punctured by the forms of the living room, kitchen, and screened porch which nestle like garden follies against this neutral backdrop.

Inside, the effect of a hybrid building type recurs. The foyer is lined with cherry paneling like fancy exterior siding, suggesting a town square complete with overlooking "balconies" (actually openings to the second-floor hallway that wraps around the double-height space). But grand gestures are offset by unexpected twists: a monumental stone fireplace in the living room is topped by two wing-like panels of glass mounted at angles to reflect and distort the room and views outside.

Machado calls the overall effect "a building not dominated by a totalizing esthetic." His client says, more simply, "it doesn't look like any of the other houses in the neighborhood, but it fits right in."

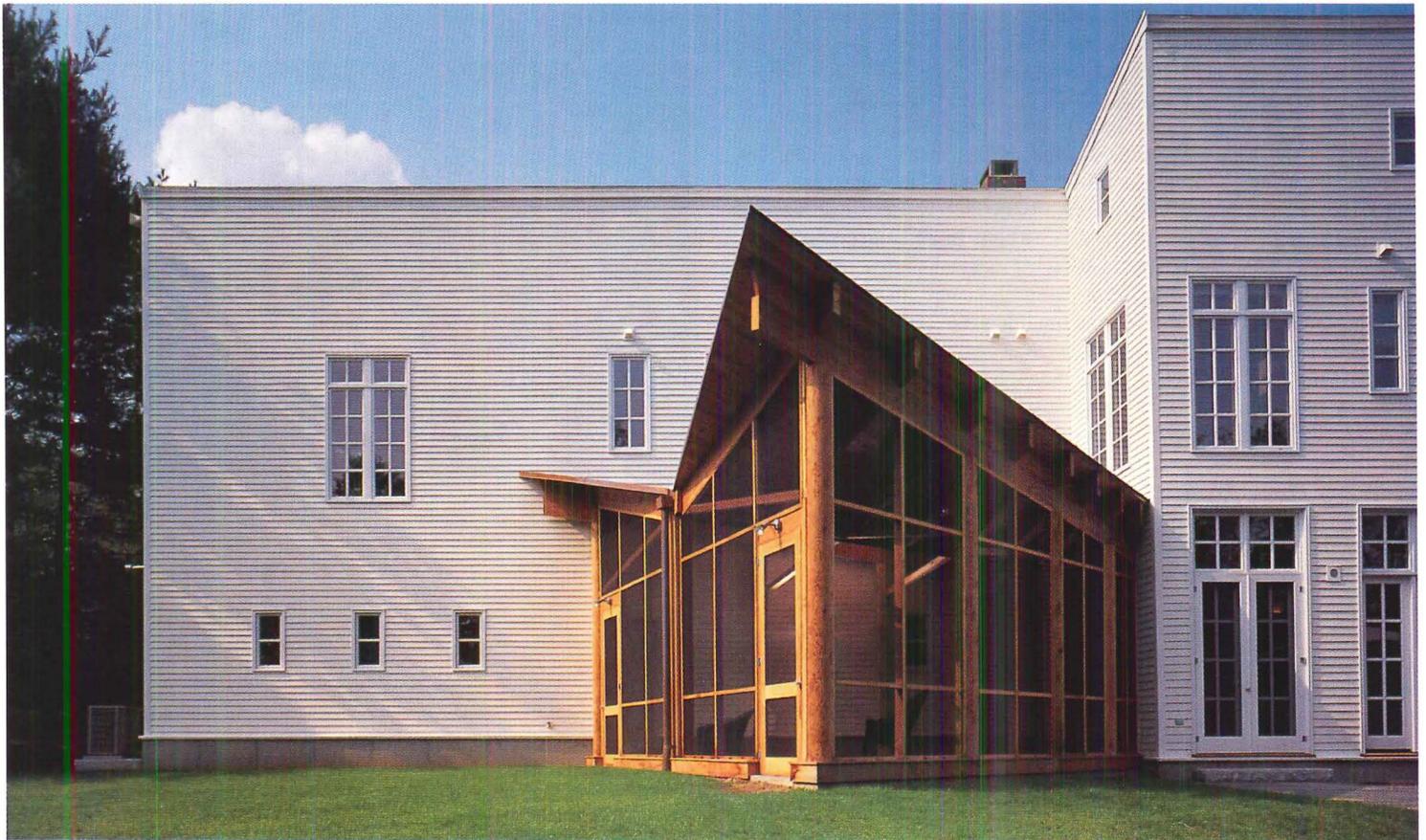
Karen D. Stein

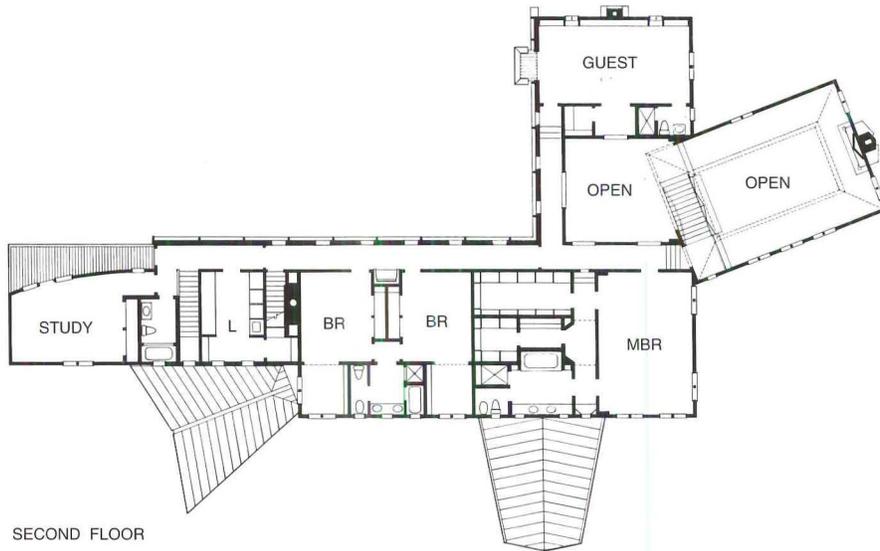


The architects located the house on a berm overlooking a pond adjacent to the 13-acre site. Living room, eat-in kitchen, and screen porch were pulled apart from the main L-shaped volume to exploit views. The three spaces are further distinguished from the central mass by wing-shaped roofs of copper.

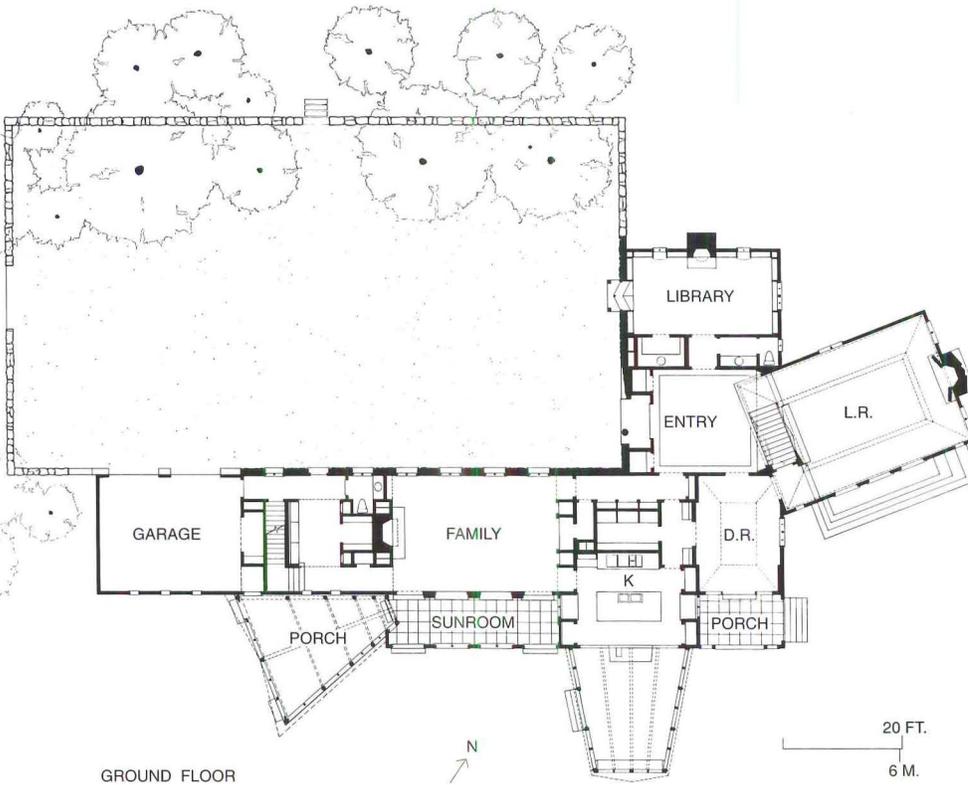


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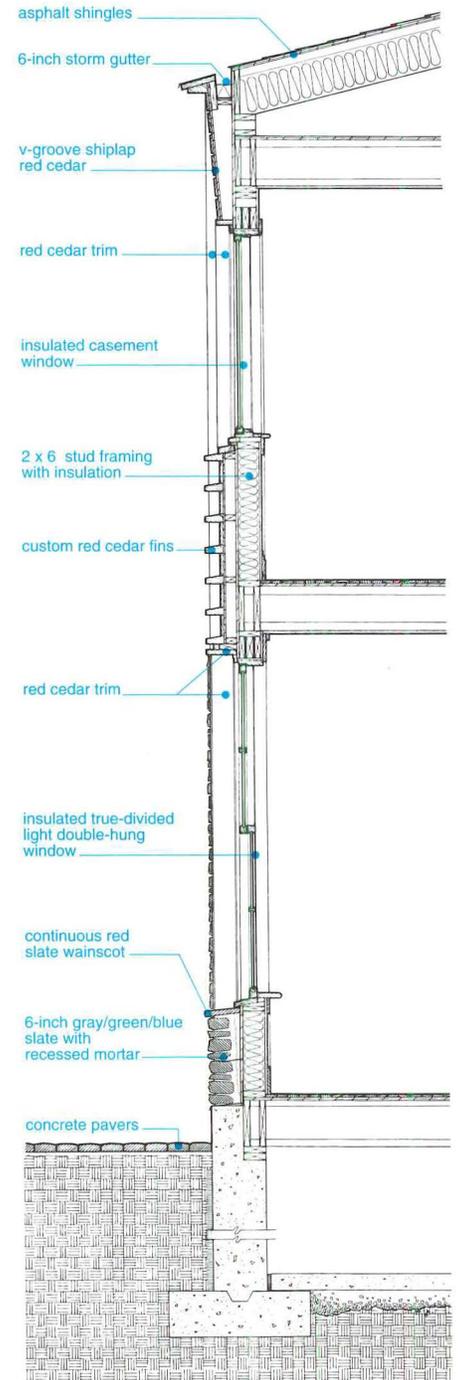
SECOND FLOOR



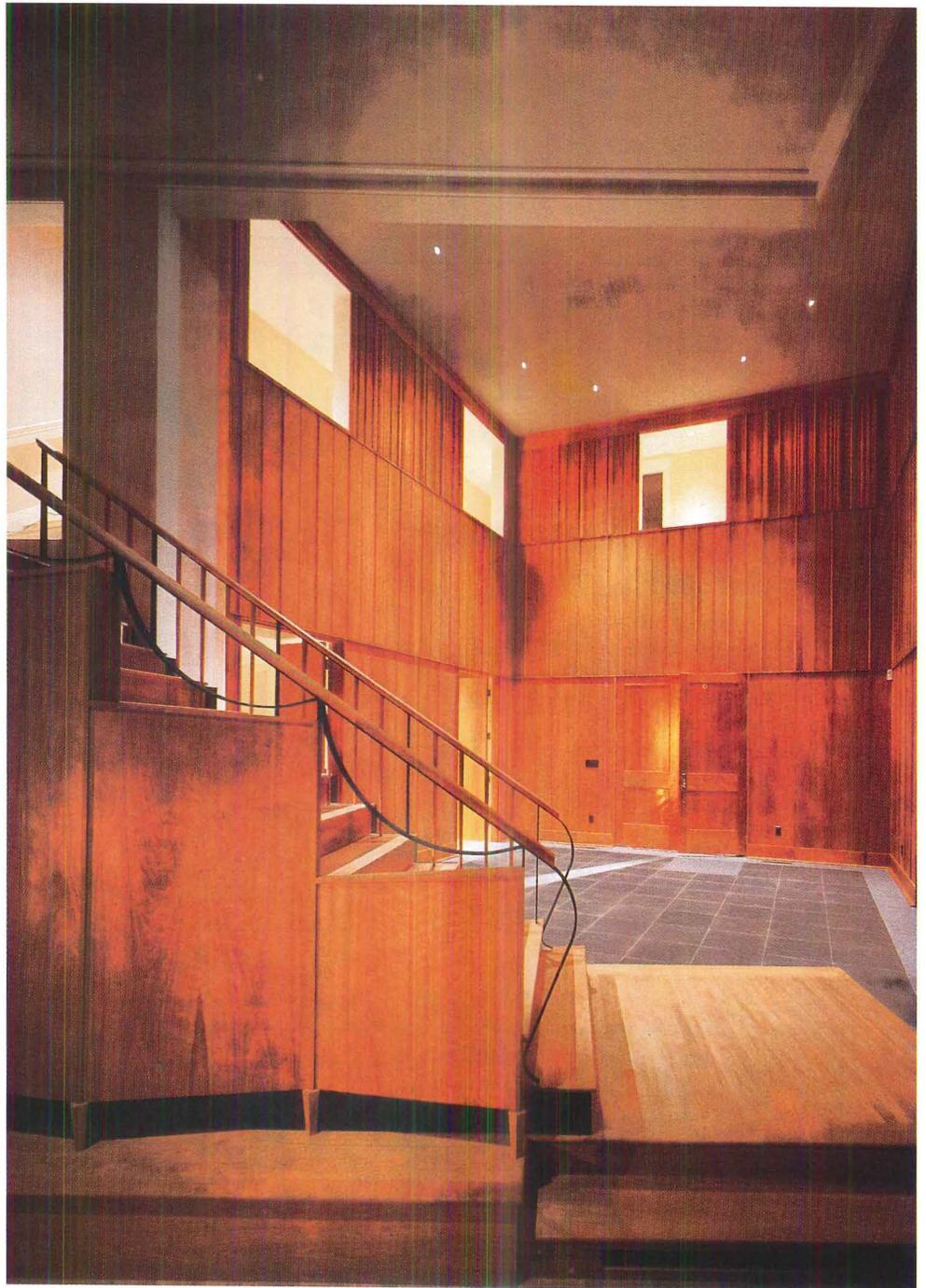
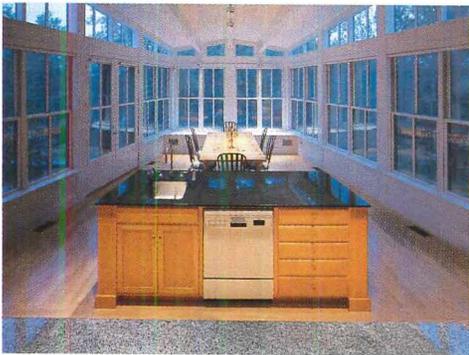
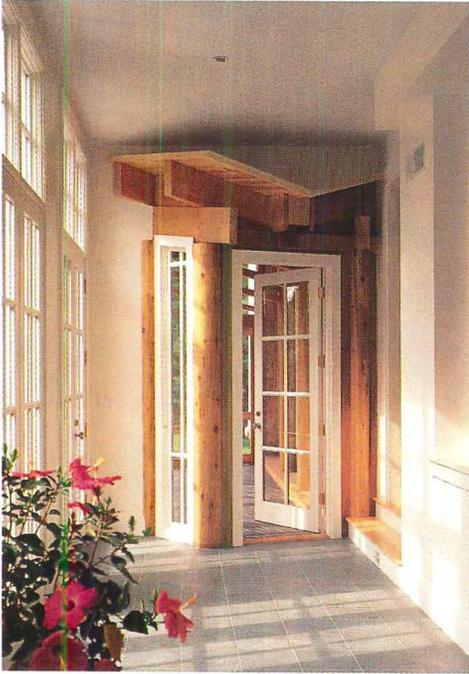
GROUND FLOOR

By arranging the plan in an L shape, the architects created separate entertaining, family-living, and child zones, while maintaining comfortable adjacencies among them. Although the second-floor hallway is 85 feet long (plans above), staircases at both ends ease circulation up and down. Children's rooms are stacked above the family room and kitchen—the main

gathering space—and the master-bedroom suite is clustered near the library and more formal living room. The paved courtyard framed by slate and cedar walls (opposite top) contrasts with the grassy hillside and its less formal white-painted wood face (opposite bottom).



COURTYARD WALL SECTION



The foyer walls are clad in cherry (above right and opposite). The main staircase shows how the architects used wood like fabric: a cherry "runner" appears to drape over black lacquer wood treads and risers. Their interest in perspective appears throughout, including a foreshortened screen porch (top left) and elongated breakfast room (bottom left). A column marks the overlap of porch and main house (middle left).

Credits

*Private Residence
Concord, Massachusetts*
Architect: Machado and Silvetti Associates—Rodolfo Machado, Jorge Silvetti, principals-in-charge; Peter Lofgren, project architect; Douglas Dolezal, design coordinator; Elizabeth Gibb, Mark Schatz, project team
Contractor: Kistler and Knapp Builders



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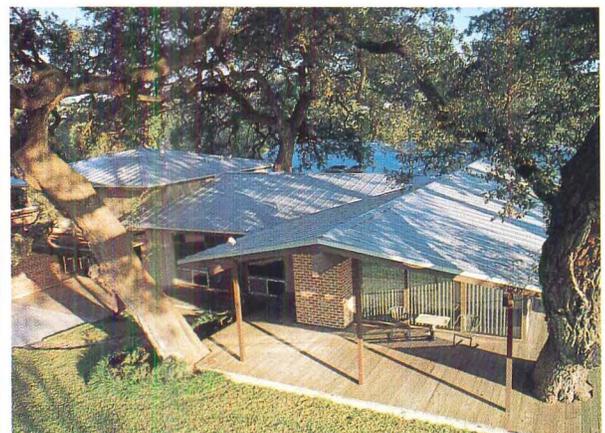
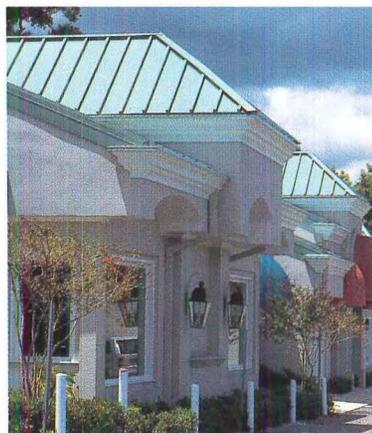
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