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Here the land always makes promises of aching beauty—and the people always fail the land,” observed essayist Charles Bowden, the Southwest’s most poetic fatalist. But no, not everyone, not always. There are successes, and the common thread is that their creators understood, by intellect or instinct, the unique mood, texture, and demands of the land.

the arizona school

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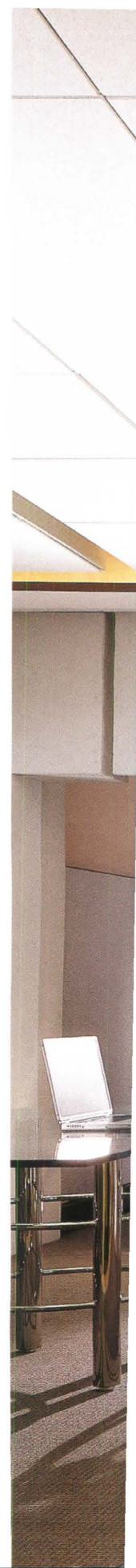
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BY REED KROLOFF

SWEET HOME ARIZONA

This issue has been a long time in coming.

I am a third-generation Arizonan, part of a family that settled in the state while it was still a territory. When my grandfather left Bisbee for Phoenix in 1923, it was a dusty little outpost; he once met Geronimo sitting outside the general store. Today, Phoenix is the nation's sixth-largest city, and its metropolitan region comprises 25 separate municipalities (including Scottsdale, Tempe, and Mesa) with some 3.25 million residents.

Arizona is a place of extremes: You can drive a convertible in Scottsdale on Christmas, but the asphalt streets often literally melt there in the summer. The desert is beautiful—a fantastic landscape of pink volcanic mountains, leafless ledger-green trees, and vast cerulean skies. But it is not benign: People hang their shoes on pegs at night to keep scorpions from nesting in them. As a kid, I never dreamed about what it would be like to live on Mars. I didn't need to.

The state's otherworldliness has always attracted visionaries, crackpots, and fugitives—messianic types for whom the

apocalyptic landscape especially resonates. Early Mormons settled in Arizona. So did Frank Lloyd Wright. In the 1930s he built Taliesin West, his winter compound, hard against a mountain 25 miles northeast of Phoenix. (Over time, he built 10 other buildings in the city as well.)

The old man rarely ventured into town, but when he did, he was chauffeured around in a gigantic sedan, railing at the government for despoiling his view with power lines, and stiffing creditors on everything from clothes to food. Paolo Soleri came later and started the ant-farm-on-steroids known as Arcosanti, on a dusty mesa 50 miles north of the city. He and his diminished band of followers are still up there, selling wind chimes and wondering why so few people heeded the call.

Perhaps more should have. Phoenix today is a mess, the place strip malls go when they die. Adrift in a sea of stucco and red roofing tiles, it's the kind of soulless, corporate city architects and planners love to hate. Critics too: When I wrote about architecture for the *Arizona Republic* (the state's major newspaper) I spent much of my time complaining. But there were reasons for hope as well.

Like Will Bruder. Intense and determined, he has lobbed the most amazing buildings at the city from his own remote hideaway, 20 miles from civilization. With his cranky sheds and organic squiggles, Bruder has captured the desert's essence like no one since Wright (coincidentally, both hail from Wisconsin), and he is equally insistent that his is the one true path.

Of course, no one path ever is. But the amazing thing about contemporary architecture in Arizona—and the reason for this issue—is how closely its best practitioners travel. Starting with Wright, and continuing through Soleri and Bruder to a new generation of designers, Arizona has a remarkably coherent body of modern architecture. Not that Rick Joy's work looks like Marwan Al-Sayed's or Wendell Burnette's. They may all be modernists, but this movement is not primarily about style. Rather, the members of what we've called the Arizona School share a sensibility, a vision for how to build in a particular, difficult place.

It's a desert sensibility, of course, and probably the most convincing validation to date of Kenneth Frampton's theory of critical regionalism. But beyond its thoughtful site strategies, intelligent updates of local building traditions, and often strikingly beautiful buildings, the Arizona School is also compelling in its mining of our overlapping mythic conceptions of architecture and the American West. These designers—independent, feisty, and self-confident—make real architecture in a physical and social climate bent on resisting it. They're the last cowboys, and descendants of Howard Roark as well, stubbornly defending a vision of life and practice that many of us feared was gone forever. ■

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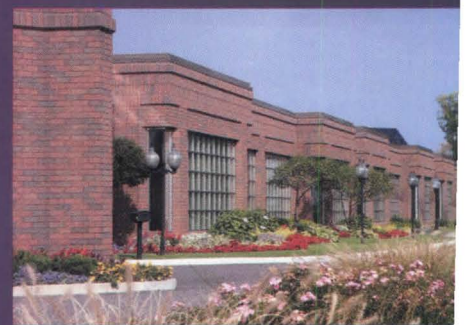
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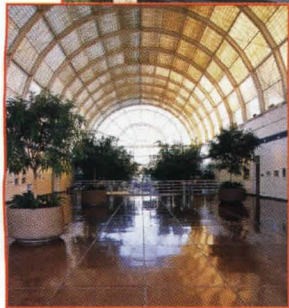
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> letters



I doubt that anyone that wants to get away to the country from D.C. would suggest a trip to Tysons Corner. Tysons Corner is a suburb. As in the suburbs of all of our sprawling cities, its office workers like to drive, park, go inside, stay inside, and return home. No architect will, by the force of design, bring suburban workers out of their comfortable offices and into an artificial countryside, because the workers know the countryside is not real.
Jim Adams
via e-mail

SHOW US THE PANTS

In the article on Drewes + Strenge's house/warehouse in Herzebrock, Germany, one firm's response to a code issue resulted in selecting a site based solely on zoning (March 2002, page 80). While this may not have been the best tactic, it seems to have allowed for a thoughtful design.

For a minimalist fashion designer, the home seems suitable, and "style" seems to be the driving force. It would be useful to see a comparison of both designers' works. Not only should the architecture inspire the fashion design, but the fashion design should inform the architecture. Having no conception of the designer's work I would expect the fashion designer to emerge from this house tall and tapered, wearing straight black pants, a button-down shirt, accented with just a touch of silver in the rims of his thin glasses.

Sharon V. Dwyer
via e-mail

COKE IS WRIT

The article about Ralph Appelbaum credits Raymond Loewy for creating the Coca-Cola bottle (February 2002, page 62).

The famous contour bottle was designed in 1915 by a team of industrial designers and production engineers at the Root Glass Company in Terre Haute, Indiana, in response to a national competition for Coca-Cola. Specifically, credit for the design goes to Chapman J. Root, T. Clyde Edwards, Earl R. Dean, and Alexander Samuelson.

Raymond Loewy is often associated with the design of the Coca-Cola bottle because of his involvement in other designs for Coca-Cola...and because he spoke of the contour bottle as the greatest package design of all time, and, perhaps, joked that he only wished he had designed it.

Peter Zweig, Marketing Programs Manager—Archives, the Coca-Cola Company, Atlanta

FAKING IT

Your praise for the new headquarters of Gannett/USA Today is effusive (March 2002, page 68). However, it is a forced and tired argument that this design presents yet another "new way" of integrating suburban office space with its natural environment. I work in the city of Boston. When I visit the office parks considered to best integrate indoors with outdoors, I am always struck by the utter absence of anyone walking, jogging, eating, or reflecting on or near any of the outdoor features.

CORRECTION:

Parex was the manufacturer of Hollywood & Highland complex's EIFS cladding (March 2002, page 88).

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Murcutt Wins Pritzker Prize

> LAURELS After favoring flashy international practices the last two years—Rem Koolhaas in 2000 and Herzog & de Meuron last year—the Hyatt Foundation announced on April 15 that Australian Glenn Murcutt will receive the 2002 Pritzker Architecture Prize. The unassuming 65-year-old Sydney architect, born in London and raised in Papua New Guinea until age five, practices alone and draws all his documents by hand. He has never designed a high-profile museum or penned a theo-

retical manifesto. Most of his built work consists of modest, naturally ventilated houses made of simple materials; none of it is outside Australia. “I’ve been operating below the radar for 33 years,” says Murcutt. “I’ve never sought publicity; I just keep on doing my work.” Pritzker juror Ada Louise Huxtable calls Murcutt a “living legend.”

Despite his solitude and his geographic isolation from the axis of architectural discourse, Murcutt has earned a devoted following outside Australia, as well as international honors like the Alvar Aalto Medal (1992) and the Thomas Jefferson Medal (2001). He also has a five-year waiting list for new clients. While Murcutt has not built

abroad, he has lectured around the world and taught in Australia, Scandinavia, and throughout the United States.

The title of a book of conversations between Murcutt and author Philip Drew borrows a phrase from the Aboriginal Australian dictum for building reverently in the landscape: “Touch this earth lightly.” Murcutt’s buildings indeed intrude lightly on the land, often rising above the earth and deferring to views and vegetation, as in the Ball-Eastaway House and Studio (1983), the Simpson-Lee House (1994), and the Marika-Alderton House (1994), built for an Aboriginal artist. His climatically responsive buildings, rendered in gossamer

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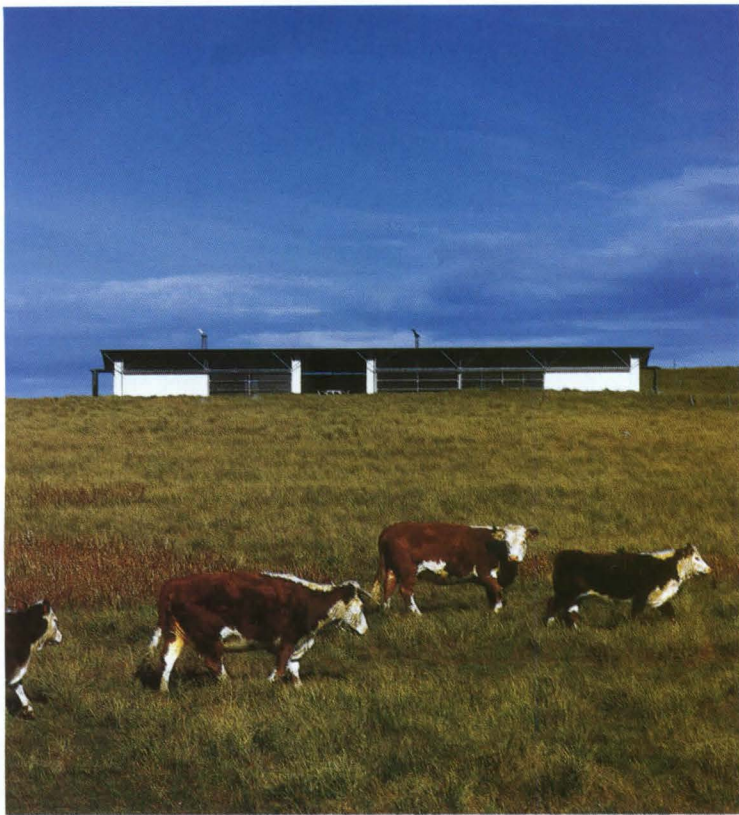
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While environmental sensitivity is central to Murcutt's work, it does not dominate it. He cites Alvar Aalto and Luis Barragán, among other humanist architects, as important influences. "If I were a young architect today looking at supposed eco-architecture, I wouldn't want to do it; it's a one-liner," he says. "When ecology becomes the major issue, you're left with a scientific box that does nothing for the spirit. I cannot separate the idea of the poetic and the rational. If there's not a junction, we've got merchandise, not architecture."

Murcutt will receive his \$100,000 prize at a ceremony at the Campidoglio in Rome, on May 29.

RAUL A. BARRENECHE

Murcutt's 1984 Magney House (left), in Bingie Bingie, Sydney, recycles rainwater collected from the sloping roof.

ASCE Releases Report on WTC Collapse

> CODE On September 12, 2001, a diverse group of engineers convened for a grim autopsy. Their report, "Rebuilding the World Trade Center," published this month by the Construction Institute of the American Society of Civil Engineers and the Federal Emergency Management Authority (and available online at www.asce.org), yields few surprises about the disaster, but plenty of wisdom for engineers, architects, and planners of the 21st century. In two dozen brief chapters, the report examines the recent disaster from

every angle: from economic and environmental devastation around Ground Zero to repercussions on suburban development, corporate flight, and transportation infrastructure.

While the underlying premise of the report—that the towers would be rebuilt—was never seriously considered by the Lower Manhattan Development Authority, responsible for the site's future, the study has raised serious questions about the future of skyscraper design. In the future, "buildings will have to be evacuated completely and all at once," says Robert F. Borg, the report's chief author and the founder and chairman of the Construction Institute's Committee on Social and Environmental Concerns. Buildings have always been sub-

ject to diminishing economic returns as they grow taller, but additional requirements for more and wider fire stairs—and less rentable space—could make the very tall building economically untenable.

The NFPA studied the evacuation plan at the World Trade Center after the 1993 bombing and then recommended changes that certainly saved lives on September 11. Current fire codes, according to Arthur E. Cote, senior vice-president and chief engineer at the National Fire Protection Association, simply don't anticipate what happened in the 2001 attack. "We just don't design for the worst case scenario, whether it's hurricane, earthquake, flood, or terrorism," he says.

ANDREW COCKE

BUZZ

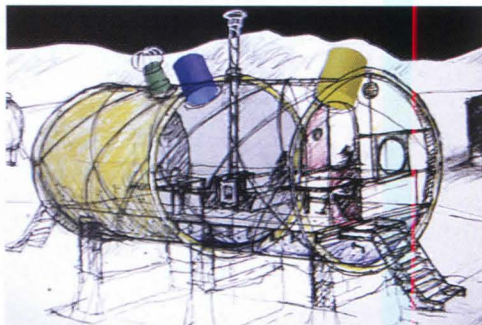
The Architectural League of New York has announced the winners of its 2002 Young Architects competition: **Degre Zero Architecture** (New York City); **Della Valle + Bernheimer Design** (New York City); **Iwamoto Scott Architecture** (Berkeley); **L.E.F.T.** (New York City); **Eric Liftin/MESH Architectures** (New York City); and **J. Meejin Yoon** (Boston).

Stan Allen has been named the new dean of Princeton's School of Architecture.

Myths associated with **Mahabalipuram**, in south-eastern India, written down by 18th-century British traveller J. Goldingham, tell of a large city so beautiful that jealous gods destroyed it with floods. Divers off Mahabalipuram's coast may have proved this to be true, having recently found what they believe to be a vast, **ancient underwater city**. The team, from the Indian National Institute of Oceanography and the British-based Scientific Exploration Society, came across several square miles of what they believe are man-made structures. A more extensive expedition is scheduled to begin the beginning of next year.

Zaha Hadid Architects will design a 130,000-square-foot building for BMW's new plant in Leipzig, Germany. To be completed in 2004, the building will house both administration and production, with conveyor belts carrying cars in mid-fabrication past employees' desks.

The **Los Angeles County Natural History Museum's** board of trustees has chosen the finalists for the museum's



Humanizing Architecture

> **DESIGN** Architecture for Humanity's 28-year-old founder has two jobs: Cameron Sinclair is an architect who, by day, works for Gensler, and by night organizes international

Morris Sato Studio's proposed transitional housing for Kosovo refugees (left), from Architecture for Humanity's first competition.

humanitarian design competitions. Sinclair has recruited the likes of Frank Gehry and Shigeru Ban as board members for his organization. He has received supportive calls from famous architects like Nicholas Grimshaw, various UN groups, and even U2's Bono.

In its effort to alleviate global problems through design, Architecture for Humanity is sponsoring a new competition to design a multi-functional mobile HIV/AIDS clinic. Sinclair was inspired by a trip he took to sub-Saharan Africa, where four doctors told him they were overseeing the treatment of 200,000 HIV-infected patients—a disparity Sinclair wants to lessen with a mobile clinic. The unit should be able to house and transport a team of two to five medical professionals. Preferably, it would be made of sustainable materials, yet would be durable

enough for the diversity of African climes. "You've got to be able to take it about," says Sinclair. "It might not even be a vehicle. It might be a tent. Who knows—it might even have parachutes."

The jury, which will make its decision on December 1, World AIDS Day, consists of architects Shigeru Ban, Rick Joy, and Reuben Mutiso of Kenya, as well as doctors Kate Bourne of the International AIDS Vaccine Initiative, and Peter Lamprey, president of the AIDS Institute of Family Health.

The organization's previous competition, in 1999, was for transitional housing for Kosovo's returning refugees. Two winning entries have since been built as prototypes, one by LDA (England) and the other by Technocraft (Japan); all proceeds from the competition went to an international children's charity.

"We're a profession that designs for the rich," Sinclair says, "but I think we also have a social responsibility." **LAUREN WOLFE**

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> **DEVELOPMENT** At an April 8 press conference, President George W. Bush urged the Senate to pass a stalled measure to federalize terrorism insurance, saying "the pace of new construction is dropping dramatically" as insurance companies eliminate terrorism coverage from their policies. In introducing the president, Edward Sullivan of the AFL-CIO Building and Construction Trades Department said, "as long as terrorism is a threat, new job-creating projects are being delayed or cancelled."

Before September 11, reinsurance companies (which insure

insurance companies) were primarily responsible for providing coverage against acts of terrorism. In the wake of the disaster, many of those companies "chose not to provide any [future] coverage at all, because the likelihood of another event was uncertain," says Richard Hillman, director of financial markets and community investment for the U.S. General Accounting Office.

The reinsurance bailout "left a lot of the risk borne by primary insurers, which weren't interested in providing terrorism insurance for high-risk properties," says Hillman. Many have since excluded terrorism from their coverage.

With property owners now footing the bill or going without terrorism insurance altogether, lenders

are looking less favorably at making construction loans. David Creamer, CEO of GMAC Commercial Mortgage, says, "The current construction boom could grind to a halt in the big cities and malls."

In February, nonresidential construction spending was down 17 percent from February 2001. According to the U.S. GAO's Hillman, it is not known to what extent the downturn can be attributed to the lack of terrorism insurance.

In November, the House passed a measure that permits insurers to borrow federal funds to pay off terrorism claims. In the Senate's still-pending version of the bill, the government would pay 90 percent of all terrorism claims after the first \$10 billion in damages. **DAVID SOKOL**

BUZZ

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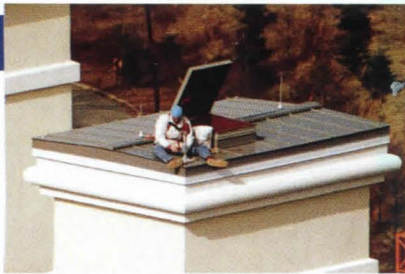
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Neutra's Maslon House Destroyed

> **PRESERVATION** Fans of Richard Neutra's work are in for a nasty shock: The Maslon House, one of only three built by the architect in the Palm Springs, California, area, has been demolished by its new owners, Mr. and Mrs. Richard J. Rotenberg, several weeks after they purchased it from Sotheby's International Real Estate for \$2.45 million. The house, built in 1963 by the late Samuel and Luella Maslon, contained a formidable contemporary art collection that will be on auction at Sotheby's early this month.

The permit for the building's destruction was given without a public review; the city of Rancho Mirage, which has no historic preservation ordinance, doesn't require it. Members of the Palm Springs Modern Committee (including owners of the other two Neutra houses in the area), are outraged. "You would think that in 2002," says Peter Moruzzi, the committee's chairman, "no one would demolish a Neutra home."

While Moruzzi is considering expanding the committee's focus to include the greater Palm Springs area, Rancho Mirage city officials say they have learned from the controversy. Robert Brockman, the

Richard Neutra (at right) with the Maslons outside their Rancho Mirage home in 1963.

city's director of community development, was unaware of the house's architectural significance until after its destruction. "I probably would be receptive to the idea of a historic preservation ordinance in the city," says Brockman, "so that these kinds of things won't happen again."

The Los Angeles director of public relations for Sotheby's happens to be Laura Maslon, daughter-in-law of the house's late owners. According to Maslon, the new owners claimed they would be making only minor renovations to the building, which was not in need of structural repairs. "It was in pristine condition," says Maslon. "My mother-in-law never changed a thing."

The Rotenbergs did not return phone calls; the motivation behind their actions remains a mystery. For Maslon, who made sure to tell the Rotenbergs that they had purchased a piece of architectural history, ignorance is no excuse. Preservationists argue that the Maslon House sat on a mere 1.3 acres; the land alone is not worth the price the house commanded. Adele Cygelman, author of *Palm Springs Modern*, asks, "Why would you spend two and a half million dollars, if all you are going to do is tear it down?" **SARA MOSS**



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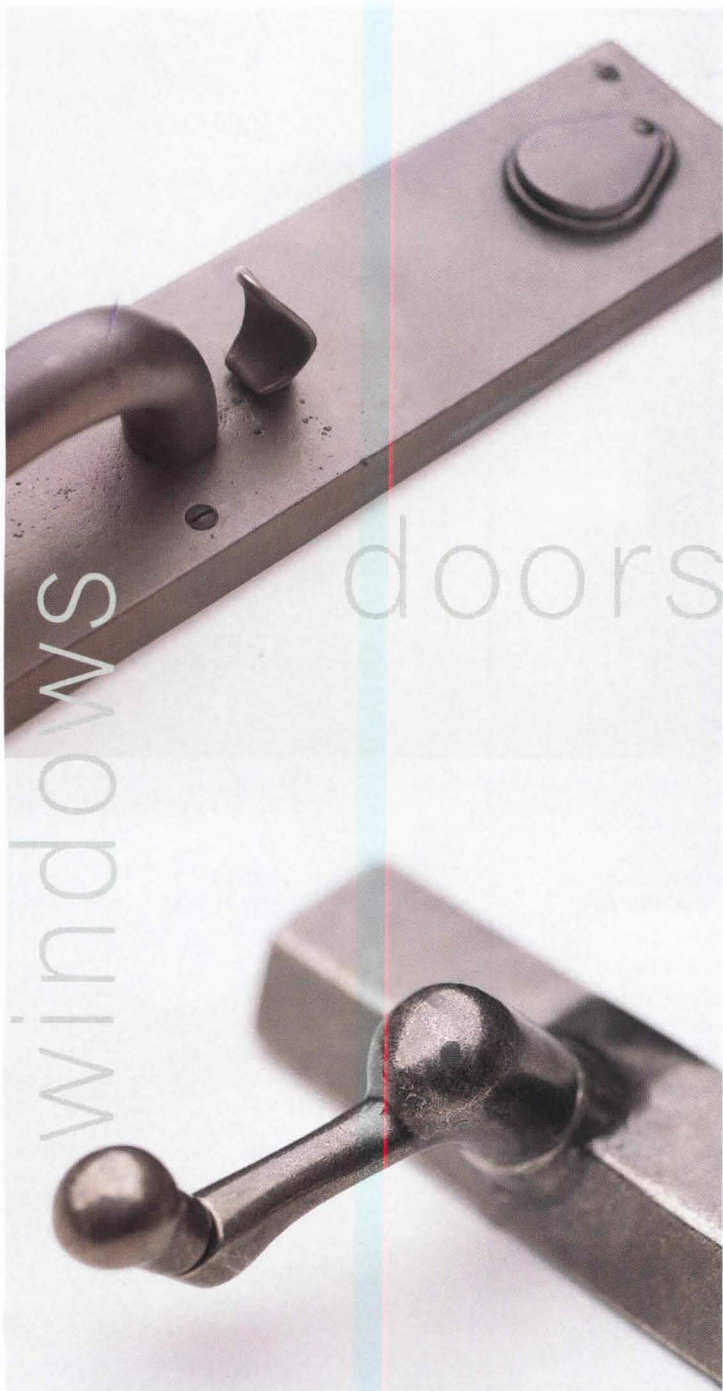


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> news

Firms Tightening Belts...Sort Of

> **BUSINESS** Spending within American architecture and design firms has undergone enormous shifts in the last two years, and since the recession last March, firms have trimmed expenditures in nearly all areas. But the architects lowest on the ladder, and not the principals, have suffered the most, according to a report recently released by management consultancy ZweigWhite.

The research shows that since 1998 almost all AEC firms have cut operating expenses—from 401(K) plans to information technology. The only segments to see an increase have been marketing and business development, which rose from a median of 4.0 percent of net revenue expenditure in 2000 to 4.6 percent in 2001.

Meanwhile, raises will likely be trimmed this year. Median firm-wide salary raises have remained flat—at a median 5.0

percent per employee per year—the past four years. This year, that number is expected to decrease, to 4.0 percent, the lowest since 1997. At the same time, only 5 percent of design firms surveyed reported that any principals at their firms had to take a pay cut in 2001, a finding that surprised researchers, considering the financial setbacks so many firms have experienced as the economy darkened.

“Cutting principal pay should, of course, occur before reducing the pay and benefits of other staff,” says Kathryn Sprankle, senior vice president at ZweigWhite. “I don’t know which is worse for a firm: losing disenfranchised staff resentful of bearing the burden of needed cost-cutting, or having to let them go as work slows and the firm can’t afford to keep them.”

JACOB WARD



Oscar Come Home

> **ENTERTAINMENT** Fickle is the A-list. Los Angeles’s Shrine Auditorium (above) has hosted Oscar night since 1986. But the 1926 theater, designed by John C. Austin and G. A. Lansburgh, officially became a has-been last year

when the Academy of Motion Picture Arts and Sciences moved Tinseltown’s biggest party to David Rockwell’s new Kodak Theatre (March 2002, page 88).

To lure back the Academy, *The Los Angeles Times* reports that the Al Malaikah Shriners, the theater’s owners, have hired Takata Associates for a \$3 million renovation. Oscar, however, has an agreement with TrizecHahn to lease the Kodak for 20 years. Academy spokeswoman Leslie Unger says, “it is our intent to have the show at the Kodak on a long-term basis.” **DS**

Sydney Opera Revisited



Jørn Utzon's Sydney Opera House (above), was under construction for close to 15 years; seven of them after the architect walked off the job.

> **DESIGN** One of the most infamous fallings-out in architecture has been resolved. Jørn Utzon, architect of the iconic Sydney Opera House, has been reunited with his famed work after 36 years; he left the project (and Australia) mid-construction over a cataclysmic clash with his client over the seemingly unbuildable design and the builders' skyrocketing budget. The Danish architect, reinstated as a design consultant by the Australian government, is back at work on renovations and a set of long-term design principles for the Opera House.

The document outlining the design principles, which will both prescribe and reinstate the original vision of the building, is meant to "record for posterity the voice of the original creator," says Joseph Skrzynski, chairman of the Sydney Opera House Trust. Utzon will be heavily involved in shaping this document, as well as ensuring that the renovations adhere to the building's original design. "When we approached him," says Skrzynski, "he understood how important it was to preserve the original vision of the building for future generations."

Working in collaboration with his son, Jan Utzon, and with Richard Johnson of Melbourne-based Denton Corker Marshall, Utzon will advise the design process and the production of plans for a \$13 million renovation. The project will improve the building's interiors (which Utzon did not design), by enlarging the orchestra pit and upgrading the acoustics of the hall.

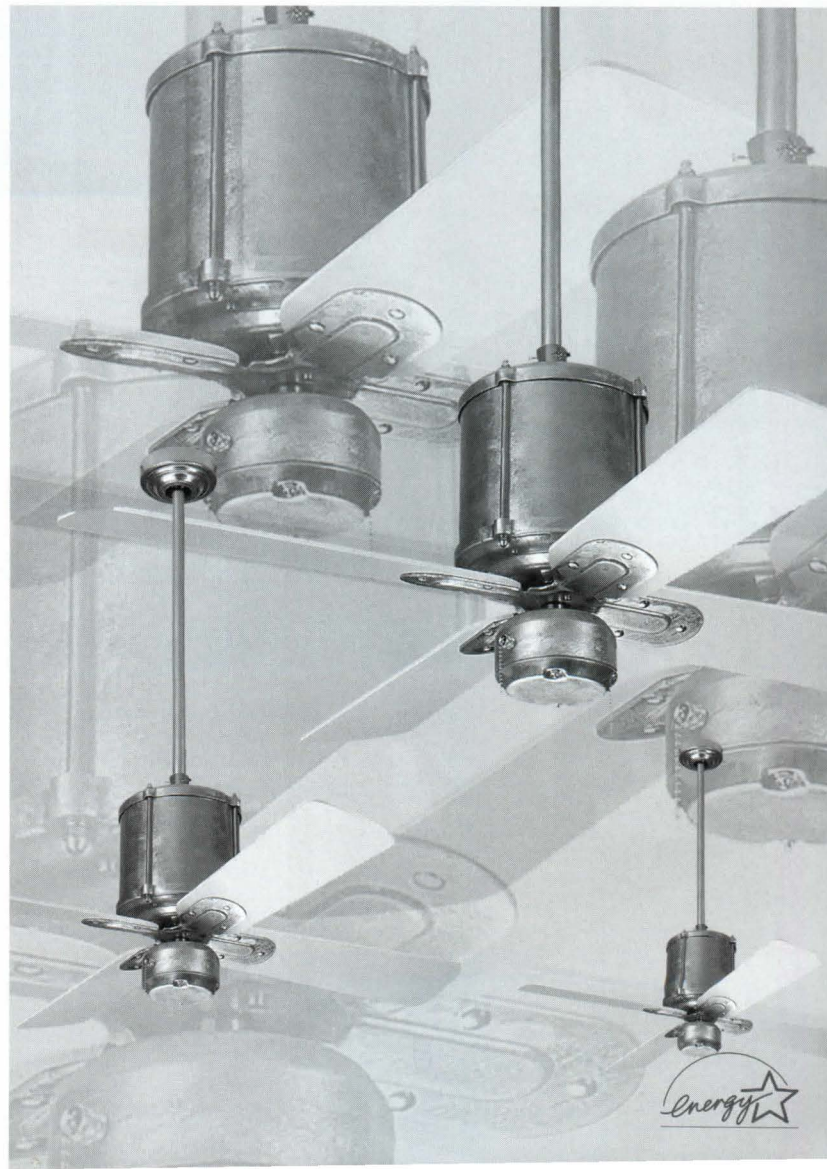
Utzon retreated from public life after leaving the project in 1966, keeping a small practice and completing a few notable projects. He lives in Majorca during the winter months, and in Denmark during the summer. The 83-year-old architect, however, will not visit the site, and in fact, has still never seen the completed opera house in person.

Though Utzon declined an interview, Richard Weston, a historian and writer who worked with the architect to publish a forthcoming monograph of his work, can attest to what this means for Utzon's career. Utzon, he says, is a cultural hero for Australians due to the great acclaim the Opera House has brought to Sydney. "Given what the building has been worth," says Weston, "[the government] is finally showing him that they owe him an incredible debt of gratitude." **ANDREW YANG**

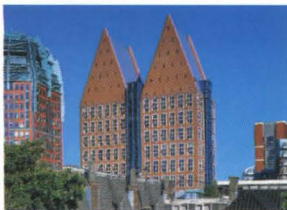
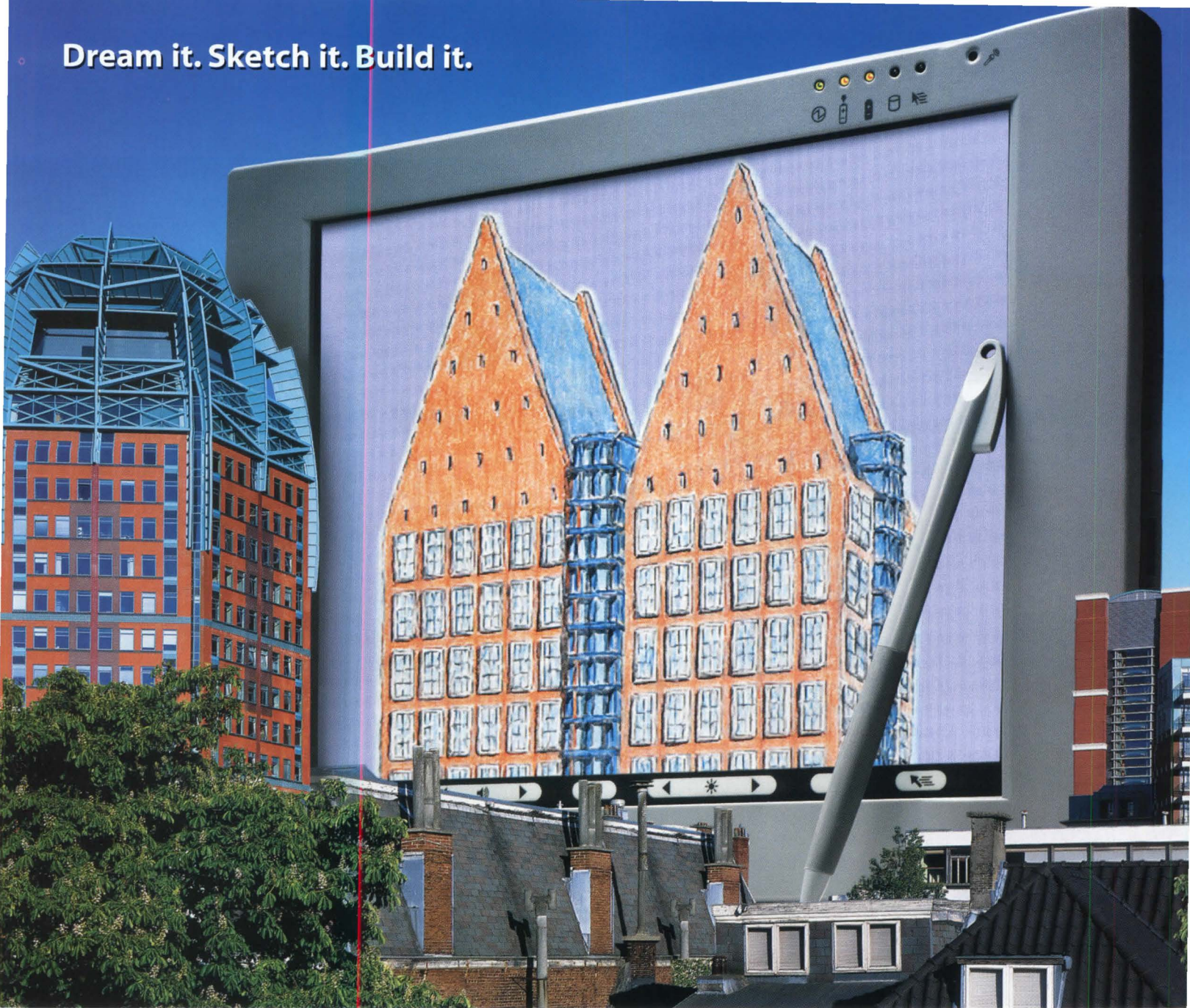


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On the Atomic Road

> BOOK

"SURVIVAL CITY: ADVENTURES AMONG THE RUINS OF ATOMIC AMERICA" / BY TOM VANDERBILT
PRINCETON ARCHITECTURAL PRESS

During the 12 years between the fall of the Berlin Wall and the fall of the World Trade Center, Americans born into the Cold War lived with the uncanny sense of having lived past the end of history. In escaping the annihilation that had seemed their fate, they had become estranged from the very recent past. Seeking to retrieve that history, design writer Tom Vanderbilt took to the interstate, finding and exploring buried traces of the Cold War in America. Touring everything from underground bunkers and missile silos (right) to massive radar arrays, he surveyed sites the existence of



which our military had until recently denied: a vast, secret, and now largely abandoned landscape. History was abruptly reawakened

at 8:45 in the morning of the day Vanderbilt was to go over the design of his completed book. A postscript written on September 17

now closes his excursion through the past by documenting its sudden, terrifying reentry to our present. **ERIC FREDERICKSEN**

State of the Arts

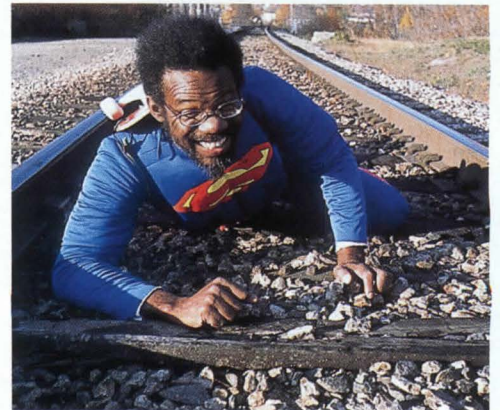
> EXHIBIT

WHITNEY BIENNIAL / WHITNEY MUSEUM OF AMERICAN ART / NEW YORK CITY
THROUGH MAY 26

The Whitney Biennial, one of the contemporary art world's many periodic surveys, became the Biennial in the early 1980s by championing the intensely correct politics of artists like Barbara "Your Body Is a Battlefield" Kruger. While the Biennial's scope has broadened over the years, recent events would suggest a renewed emphasis on politics for the 2002 installment. But Whitney Curator Lawrence Rinder, who organized this year's Biennial, returned to New York from the last of his scouting trips on September 10, 2001. Despite making the attacks the theme of his introductory catalogue essay, his choice of artists reflects a

definitively pre-war agenda: broadening the definition of what constitutes art. (It seems that Marcel Duchamp didn't open the category quite wide enough in 1927, when he exhibited a mass-produced urinal as his own work.)

As a result of Rinder's efforts at inclusiveness, architecture appears at the Biennial for the first time this year, along with an unprecedented number of sound compositions, films, digital artworks, and other "new media" projects. It's unclear exactly what, say, the Rural Studio's socially conscious, formally inventive buildings stand to gain by comparison to James Buckhouse's dance-instruction download for handheld computers or to footage of artist William Pope.L crawling across New York in a Superman outfit (right). Even considering the Taliban's prohibitions on secular music and

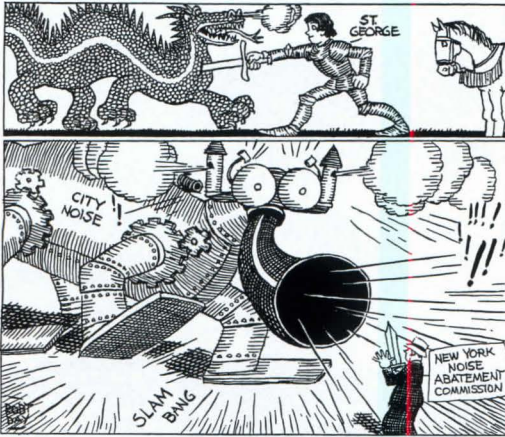


Western clothing, can such works really represent the spirit of freedom that America's armed forces have mobilized to defend?

It is Rinder's misfortune that the 2002 Biennial will be judged in the light of events that he could not have foretold. It is the art world's misfortune that so few of the works he selected hold up under that light. **NED CRAMER**

>agenda

WHAT AN EASY TIME ST. GEORGE HAD!



> BOOK

**"THE SOUNDSCAPE OF MODERNITY:
ARCHITECTURAL ACOUSTICS AND THE
CULTURE OF LISTENING IN AMERICA,
1900-1933"**
BY EMILY THOMPSON
MIT PRESS

Early 20th-century architecture not only has a distinctive look, but also its own type of sound, argues University of Pennsylvania historian Emily Thompson in her new book, *The Soundscape of Modernity*. Thompson asserts that modern acoustics and sound-amplification technology radically changed our relationship to space and time by making sound independent of them.

Until the end of the 19th century, acoustics was more a matter of intuition than a science. Harvard physicist Wallace Sabine gave acoustics a scientific basis by creating a mathematical formula to determine the rever-

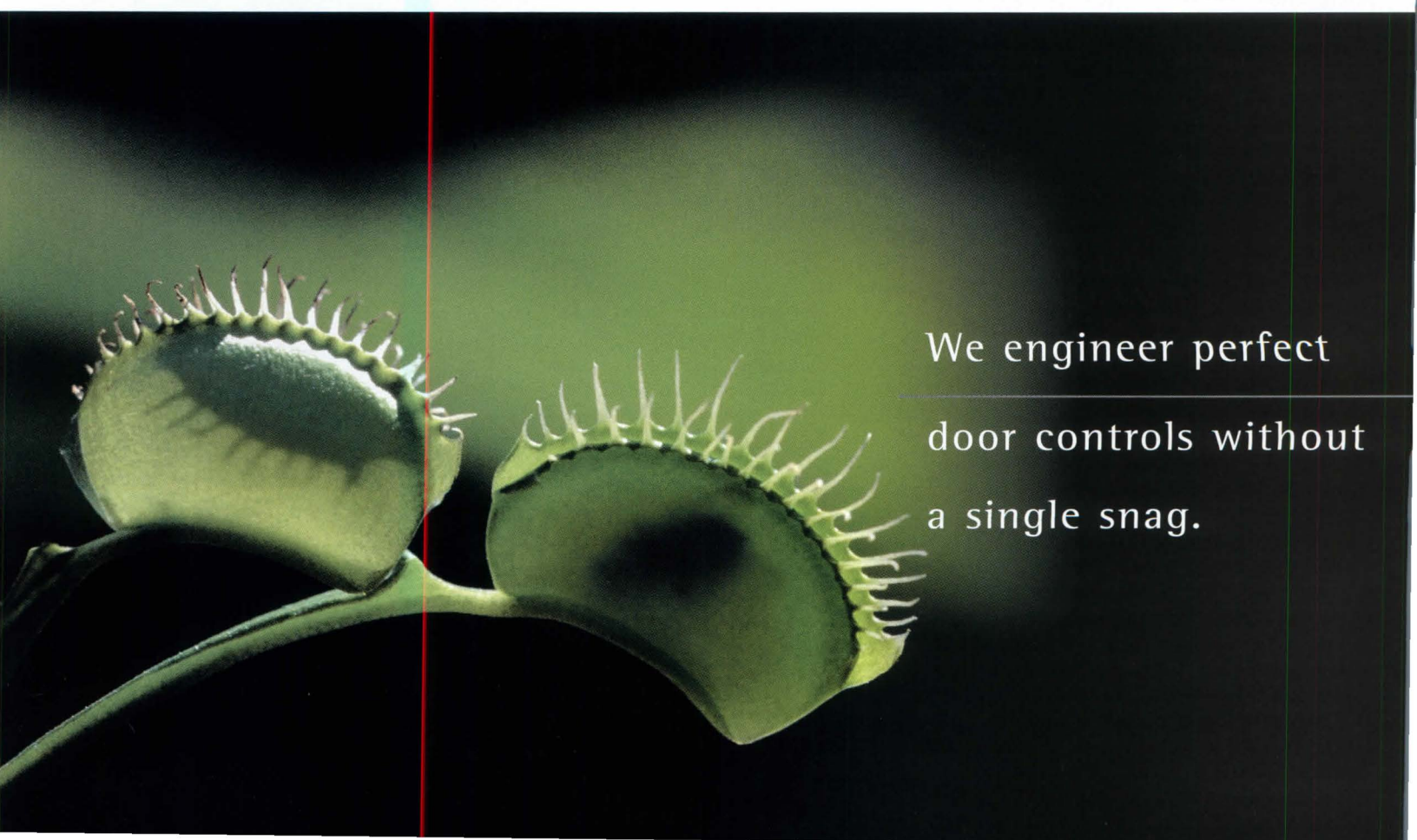
beratory properties of materials used in McKim, Mead & White's Symphony Hall in Boston in 1900.

Soundproofing soon became architects' chief acoustical focus, while in the larger world, the noises of the mechanized city became a broad public concern. In the acme of modern acoustics, Radio City Music Hall (1932), electronic enhancement and 1,000 tons of sound-absorbing plaster in the radiating arches above the stage produced the clear, direct, dead sound characteristic of radio and cinema.

Thompson concludes her excellent analysis with Howe & Lescaze's Philadelphia Saving Fund Society Building of 1932—America's first large-scale modernist building. By ending her history of early 20th-century sound at the very beginning of American modernism, Thompson leaves the reader wishing for her verdict on how the American soundscape would be transformed once again.

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Art of Noise

> SOUND

"VIEW"
STEVE RODEN
SANTA BARBARA CONTEMPORARY ARTS FORUM
MAY 18-JULY 9

If architectural acoustics is an underexplored field, then Los Angeles sound artist Steve Roden is a pioneer. Many Angelenos have been fascinated with Rudolph Schindler's King's Road House, but none until Roden have taken a strong interest in how it *sounds*. "Schindler is about the details, not the big picture," he avers, and he set



out to capture those details using only digital audio recordings. Roden stuffed microphones up the fireplace, set them next to the drafty sliding doors, and stuck them to the creaking windows. He then edited and looped his found sounds into a musical composition, and reintroduced them to their source, playing them on speakers



installed in and around the house (above).

This month finds Roden showing a variation on his Schindler project, sounds recorded in the pedestrian mall location of the Santa Barbara Contemporary Arts Forum. Art, commerce, sound, and space, all will meet, if obscurely, in this new work. **EF**

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> TECHNOLOGY

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FreeForm Plus, a computer modeling package that lets the user "touch" the virtual model, has been primarily used to make sneakers, toys, and sporting equipment, but early adopters at the Harvard Graduate School of Design have been using it in computer seminars since it was first released in 1999. The latest release's new features make it more useful to architects, enabling a higher degree of modeling precision and easier output

through CNC milling and 3D printing.

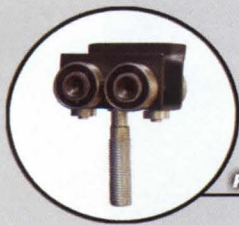
Nicknamed "virtual clay" by its manufacturers, the program allows users to push and pull portions of the model (and even feel how smooth it is) using a stylus that exerts force on the hand. Users can sculpt from a virtual "block of clay" or import preexisting models and sketches. The model is a combination of surface (controlled by points) and solid (sensitive to gravity). Made of small cells, it constantly re-divides itself according to the level of detail specified.

Like most innovative technologies, FreeForm Plus commands a high price: Version 5, with software and PHANTOM stylus, starts at \$24,000. The system runs on Windows NT or 2000. **SARA MOSS**

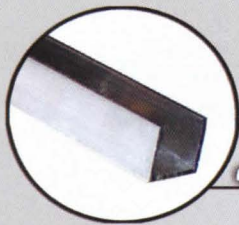
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EXHIBITIONS

> **BIRMINGHAM, ALABAMA**
Glass of the Avant-Garde: From Vienna Secession to Bauhaus at the Birmingham Museum of Art, through July 14 (202) 254-2566

> **BOSTON**
Taylor Davis: 2001 ICA Artist Prize large-scale plywood sculptures influenced by architecture and landscape, at the Institute of Contemporary Art, opens May 22 (617) 266-5152

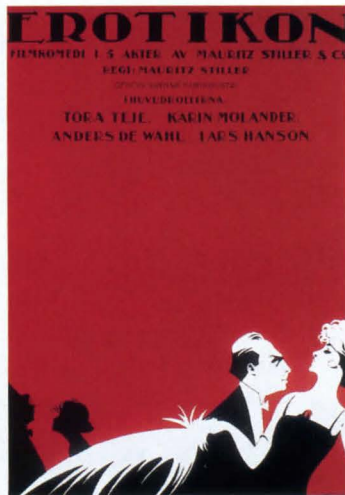
> **KANSAS CITY, MISSOURI**
Todd Hido: Open House nighttime color photographs of domestic architecture, at the Kemper Museum of Contemporary Art, through July 7 (816) 753-5784



> **LOS ANGELES**
Gerald Zugmann: Blue Universe photographs of Coop Himmelblau's built work, along with architectural models by the firm, from Zugmann's upcoming book by the same name, at the MAK Center for Art and Architecture, opens May 9 (323) 651-1510

The Geometry of Seeing: Perspective and the Dawn of Virtual Space drawings, prints, and illustrated texts spanning 400 years of perspectival theories and methods, at the Getty Research Institute Exhibition Gallery through July 7 (310) 440-7300

> **NEW YORK CITY**
Utopia & Reality: Modernity in Sweden 1900-1960 signage, graphic design, furniture, and products, at the Bard Graduate Center for Studies in the Decorative Arts, Design, and Culture, through June 16 (212) 501-3000



National Academy of Design 177th Annual: An Invitational Exhibition contemporary painting, sculpture, and architecture, at the National Academy of Design, through June 9 (212) 369-4880

> **NORTH ADAMS, MASSACHUSETTS**
Robert Wilson: 14 Stations an installation using Shaker design language to interpret Christ's Stations of the Cross, at MASS MoCA, through October 20 (413) 664-4481



> **ROTTERDAM, THE NETHERLANDS**
UN Studio: UNfold buildings, projects, and products designed by the Dutch firm from 1987-2002, at the Dutch firm from 1987-2002, at the NAI, opens May 26 31(0) 10-4401200

> **SAN DIEGO**
Out of the Ordinary: The Architecture and Design of Robert Venturi, Denise Scott Brown and Associates a 30-year retrospective organized by the Philadelphia Museum of Art travels to the Museum of Contemporary Art, San Diego, opens June 2 (858)-454-3541

> **SEATTLE**
An American Sampler colonial-era pieces made by silversmiths from Boston, New York, and Philadelphia, along with early American furniture, needlework, and miniature wax portraits, at the Seattle Art Museum, opens May 18 (206) 654-3158

> **WELLESLEY, MASSACHUSETTS**
Surrounding Interior: Views Inside the Car artists' works that address the nature of the automotive experience, including Alex Harris' *May 23, 1998*, Jorge Alberto Rojas's *1951 Plymouth* (below), at the Davis Museum and Cultural Center, Wellesley College, through June 9 (781) 283-2051



CONFERENCES

Building a Vision II: The Intersection of Art and Architecture a symposium on the relationship between architecture and contemporary art, June 1, at the Institute of Contemporary Art, Boston. Speakers include Diller + Scofidio, Judith Barry, Preston Scott Cohen, and Aaron Betsky. For more information call (617) 266-5152

34th Annual NeoCon World's Trade Fair at the Merchandise Mart, Chicago, June 10-12 www.merchandisemart.com/neocon

CNU X: Reinventing the Suburbs the 10th Congress for the New Urbanism, Miami Beach, Florida, June 13-16 www.cnu.org

UIA Berlin 2002 XXI World Congress of Architecture sponsored by the Union Internationale des Architectes, July 22-26 www.uia-architectes.org/texte/summary/p2b1.html

COMPETITIONS

Architecture and Metropolitan Home announce a new competition for **House of the Year**. Submission deadline July 15. See ad in this issue

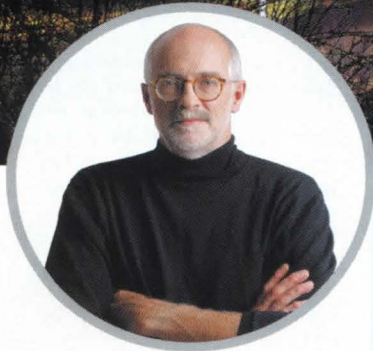
The Center for Construction and Environment at the University of Florida at Gainesville invites submissions from design professionals to the **Gainesville Eco-History Trail landscape design competition**, sponsored by the National Endowment for the Arts New Public Works Program and the City of Gainesville. Entry deadline July 19 www.cce.ufl.edu

Pamphlet Architecture is sponsoring the second round of the **Pamphlet Architecture Competition**; the winning project will be published as volume #24 in the series. Submission deadline September 1 www.pamphletarchitecture.org

The James Marsden Fitch Charitable Foundation awards a \$25,000 research grant to a mid-career professional whose project will advance historic preservation in the United States. Entry deadline September 3 (212) 691-3229

Architecture for Humanity is sponsoring a design competition for a mobile HIV/AIDS Health clinic. The winning entry will be built as a prototype for use in Africa. Registration and submission period begins May 1 www.architectureforhumanity.org

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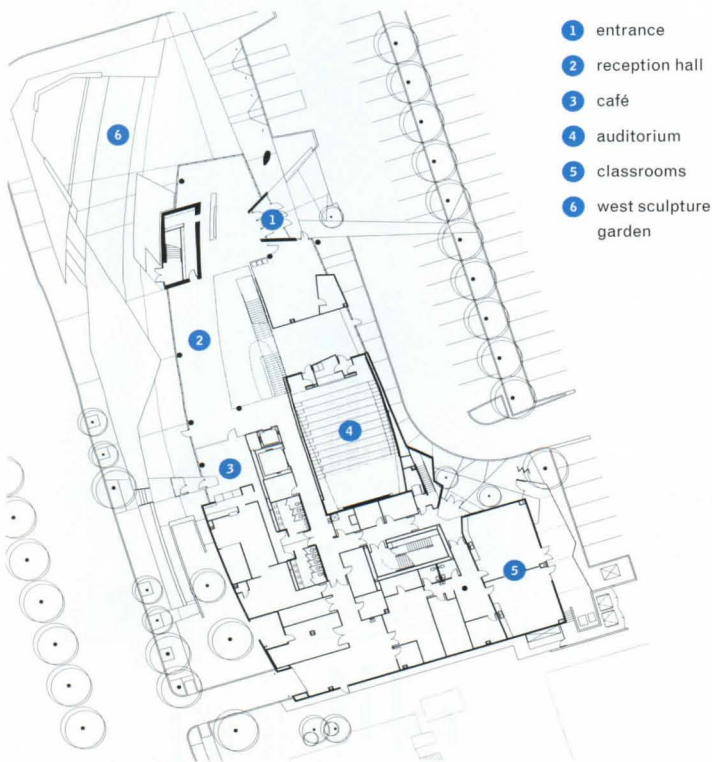
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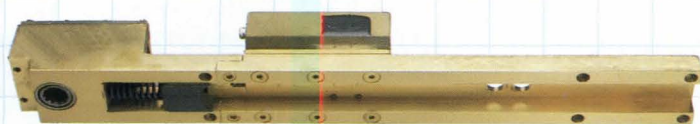
> WILLIAM P. BRUDER ARCHITECT NEVADA MUSEUM OF ART / RENO, NEVADA

"In Western cities, the landscape is much better than most of the architecture," says Arizona architect Will Bruder, who, throughout his career, has turned to that same landscape for inspiration. Bruder's 1995 Phoenix Central Library (page 122), which has been described as a "metaphorical mesa," helped to define the vigorous school of critical regionalism taking root in the Southwest at the time. When his latest project, the Nevada Museum of Art in Reno, is completed in 2003, Bruder will have added one more building to architecture's side of the ledger.

Though located in downtown Reno, the \$22 million, 55,000-square-foot building invokes the landforms of the distant Black Rock Desert more than it does any of its immediate neighbors. Three of the building's four stories are clad in dark zinc panels; each has a different texture. The ground-floor gallery is glazed and open to the street. At the narrow northern edge of the museum, the zinc is arrayed in three orderly bands that correspond to the floors inside, but as one moves around the curving western side, these levels begin to slip and overlap, suggesting the colored striations one sees in mesas.

The museum's dark and purposefully mysterious outward appearance belies the more traditional amenities within. A café, a 200-seat auditorium, and a store flank the entry hall, which features a light well to draw visitors up through the galleries to a rooftop terrace and sculpture garden. From these gardens, one can look past what Bruder calls "the neon bright and pastels" of Reno toward the mountains around the city, which, for him, is where it all begins. **ANNE GUINEY**

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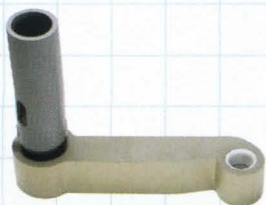
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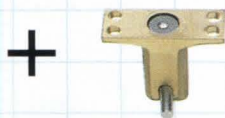
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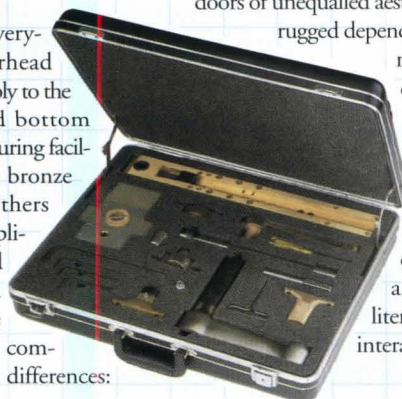


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Guerrilla City

A homeless settlement in Portland has its own government, urban plan, and skyline.

BY RANDY GRAGG / PHOTOGRAPHY BY PAUL FUSCO

> **URBANISM** It's Wednesday night and the weekly council meeting has commenced at Portland, Oregon's homeless camp-turned-experimental community, Dignity Village. Eight months ago the villagers were ferrying shopping carts between empty lots. Now, in a seven-acre settlement, they have an elected government. They even have a town hall, complete with solar panels and a curtain wall of salvaged windows.

The agenda tonight is packed. As the village's sergeant-at-arms, Watchdog, calls the meeting to order, chairman Jack Tafari passes the "talking stick" (a broken microphone) around to council members for news and announcements. A consultant from Northwest Renewable Resources has offered to advise the village on its sustain-

able building and living practices. The council must decide whether to prosecute villager Coyote Rose, accused of embezzling village funds. Longtime residents Kendall and Sonia announce to applause they are departing from Dignity for an apartment. And a student from Pacific University needs a signed consent form to begin researching a thesis project on Dignity's "space."

Since December 2000, 60-some men and women have been pioneering their own homegrown version of transitional housing. They began with donated tents under a bridge. Now they are living in cottages and community buildings constructed out of donated and salvaged materials on land temporarily leased from the City of Portland. The next step, they hope, is to acquire a permanent place

for their self-governed, economically self-reliant, environmentally sustainable community.

The village is an eclectic stew of born-again, Catholics, Muslims, gays, hip-hop heads, ex-addicts, and Rastafarians. A self-described "Eastern European anarchist," Attila, came recently for "the sense of belonging and support," a phrase frequently invoked by the people here. The villagers share a distaste for homeless shelters and a resolve to overturn public perceptions that the homeless are dirty, dangerous, or deadbeat. "We want to dispel all the vulgar bogeyman myths," says J. D. Cupps, a village cofounder and coordinator of Digsville, its 10-acre farm.

Dignity Village's inspiration was Justiceville, a Los Angeles homeless camp. Using a local architect's plastic domes for shelter, Justiceville eventually became a sanctioned transitional housing

Dignity Village's paved site, adjacent to the airport, has an unfortunate tendency to collect and retain water, so villagers often traverse makeshift bridges to get from one house to the next.

>features



Many villagers take special pleasure in affording themselves privacy, and each façade has a distinctive character (top left). Dog Dave, homeless for 22 years, is building a front yard for his dog (top right). The safety of the community allows villagers to take time for recreation in one of the village's many open plazas (above left). Grandpa, who built his shelter (above right) out of donated oilcloth, praises the material's waterproof qualities, but worries about summer heat. "I'd like to have more windows," he says. "I'm going to need cross-ventilation."

project called Genesis I, permanently sited on a downtown L.A. parking lot. But as a melange of Portland's libertarianism, wide-ranging community patronage, and grassroots city planning, Dignity has taken its own organic form.

Dignity's first green light was a municipal court ruling overturning a Portland anti-camping ordinance. Armed with government survey maps of vacant publicly owned land, the group pitched the

first "Camp Dignity" beneath a downtown bridge. But the group quickly distinguished itself from any mere "homeless camp." Working with longtime community activist and architect Mark Lakeman, they designed the settlement in community-promoting "pods"—small clusters of tents surrounding a central commons and kitchen. With an elected government, the catchy name, and quick-tongued spokesmen, the settlement blossomed into

an effective political force.

For the first 10 months of 2001, the village moved from place to place, and with each public meeting, newspaper interview, and crisis over the next camp spot, the campers refined their arguments for self-determination. Eventually, Lakeman wrote an official 40-page plan. "Dignity Village 2001 & Beyond: Outlining Strategies for a Sustainable Future" outlines four phases: "Nomadic Beginnings," "Settlement," "Development," and "Village Complete."

"As the villagers build themselves as a community," the plan reads, "they will also build the physical village as a reflection of

their collective process with one another."

Though novel as a solution to homelessness, the village blueprint is a page right out of Portland's larger urban-planning pattern book, with its emphasis on connectivity, public buildings, and plazas. Lakeman, whose father was a city planning director, compares it to ancient precedents.

"Villages are to people as nests are to birds," Lakeman says. "Most everybody is missing a communal sense of self. But the villagers had enough [of that sense of self] to understand that what they were after was archetypal."

The Portland City Council gave



LYDIA KUSHNER, 64

KUSHNER ARRIVED TWO MONTHS AGO

"I came to Dignity when my son and his wife were murdered. They were my only family. I like city culture. I like the outdoors. This has some of both. We need a washing machine. The village needs to be located near hospitals and a university. They made me a new shelter today. It's got wood floors and a real window and a potbelly stove in front. It's like an efficiency apartment. But I'd like a door. At my age, you sometimes want to slam the door on the world."

JACK TAFARI, 56

TAFARI ARRIVED 13 MONTHS AGO

"What we have is the common denominator of homelessness, the need for food, clothes, and shelter. When you get to the common denominator of nylon over your head, it's elemental enough that people will fight for it. And because of that everybody here thinks of themselves as middle class. I would like more social cohesion. But I'm quite happy. I have carpet, skylights, windows, and a built-in bed. I have a desk. I need nothing else. I'm a minimalist."

ELIZABETH SPRY, AGE UNKNOWN

SPRY ARRIVED ELEVEN WEEKS AGO

"Most everybody watches out for each other. People see to it nobody goes hungry. There's a lot of visiting, in our pod especially. It creates a sense of closeness. When you come out here, people make friendships quicker, stronger, and deeper. A couple we got to know here got an apartment a couple of weeks ago. I was devastated. We're working on a patio now which we're going to enclose for a nice place to sit."

IBRAHIM MUBARAK, AGE UNKNOWN

MUBARAK, A FOUNDER, ARRIVED 17 MONTHS AGO

"On the street you are by yourself. Here we recognize each other's needs. I liked it better when it was more free-spirited. We had only four rules: no drugs or alcohol, no stealing, no disrespect to others, no violence. Now there's bylaws and committees. You give people who've had nothing too much too quickly and they get power hungry. It's getting more like what we were trying to get away from. My shelter is a regular tent with a wood frame and plastic around it. I'm a dinosaur. Everybody else these days is doing plywood."

Vista -View

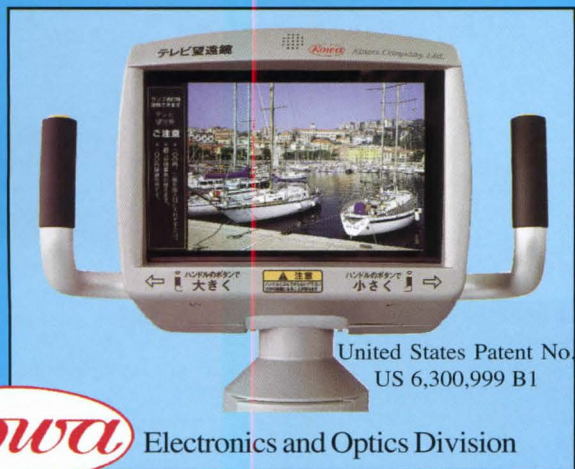
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the experiment a chance with a temporary site last September, after a patron stepped forward with \$20,000 to cover the city's administrative costs. The land is a former composting site just beyond the runways of the Portland International Airport, near a county jail. Here, Lakeman has helped the villagers realize phase two: "Settlement."

Because the site's asphalt surface collects water rather than draining it, Dignity Village has the musty ambience of Venice. Every building and tent sits among the puddles on wood pallets. Using little more than junk lumber and salvaged windows and doors, Lakeman worked with villagers to build a series of structures. The cylindrical, window-walled town hall is equipped with an inflected radial truss system, cut with an oculus—part Pantheon, part Gothic cathedral, part Pueblo kiva. Next door is the community center, where scrap-wood trusses support an undulating roof. A flag-topped tower anchors the skyline.

Meanwhile, the villagers have steadily replaced their tents with sturdier, better insulated, and ever more ornamented homes, ranging in form from tepees to cottages. After only a week, the anarchist Attila, for instance, erected (notably outside of any pod) a muscularly beautiful, skylit, gable-roofed house out of salvaged, rough-sawn planks.

Dignity is far from being a storybook society, however. It remains a collective of contrarians (and numerous barking dogs) whose personal difficulties and resistance to living by societal conventions has resulted in several less-than-utopian moments. Eighteen police calls over a two-month period earned a stern warning from Mayor Vera Katz, who nearly terminated the experiment. (And after a reprimand from the village council for stealing, Attila left the settlement at the end of March. Now Tafari and another villager room together in the anarchist's former home.)

Not all the villagers love Lakeman or his architecture. "A lot of us were saying, 'Fuck the tower, we want a shower,'" says village cofounder Gaye Reyes. "All he built was his vision, and the roof

Mark Lakeman, a local architect who designed the community center (this page), calls the settlement "a dynamic self-help environment." Village leaders find that their weekly council meetings (facing page) are growing increasingly complicated.



still leaks." Yet even Reyes concedes that the plan Lakeman helped write has kept the group moving forward.

Certainly something—the like-mindedness of the villagers, Lakeman's pods, the plan, the architecture and/or the collectivist spirit of Portland—has enabled a homeless camp to grow itself into a fully organized community.

"These are broken people," Lakeman says. "You have to take things into a cartoon realm. To keep the public and city council engaged requires a certain amount of theater."

"I was as surprised as anyone that things have held together this long," says City Commissioner Erik Sten, who with his staff has alternately fought and helped the group during several political crises. "I think we're having a conversation that not a lot of other places can say they're having."

Indeed, the newspaper editorialists, government bureaucrats, and wary neighborhood leaders seem to only inspire the group to grow more sophisticated. The village recently became a non-profit corporation. Its Web site, www.outofthedoors.org, now sells "Dignity Village" logo coffee cups, T-shirts, and tote bags.

The lease on the current site expires July 1, and village chairman Tafari says the group is reviewing four future sites, writing grants, and quietly building alliances it hopes will calm neighborhood opposition wherever the village moves next. Lakeman is working with the city on resolving building-code compliance issues while developing housing prototypes that use everything from passive solar power to recycled-sweater insulation. And every day brings a steady stream of people willing to help and wanting to study Dignity's path to the "Village Complete."

"From the structure comes the organization, comes the reparation of the people," Tafari says in his milky Rastafarian patois. "Mark Lakeman gave us a visual of what we could have and a vision to present to the city. We no longer have to play hide-and-seek, even if we still have to play a little cat-and-mouse." ■

RANDY GRAGG WRITES ABOUT ARCHITECTURE AND URBAN DESIGN FOR THE OREGONIAN, PORTLAND'S DAILY NEWSPAPER, ALONG WITH OTHER PUBLICATIONS.



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Another Brick in the Wall

Online collaboration between designers, contractors, and clients could push architects out of the picture.

BY ALEX LASH / ILLUSTRATION BY AUDE VAN RYN

> TECHNOLOGY Just when architects are finally comfortable living in a CAD-saturated world, the Internet is forcing more shifts in the way the industry works, and the role architects play within it.

In the past 18 months, online collaboration services—sometimes known as digital planning rooms—have sprung up to let designers share CAD files and other electronic documents by storing them on a server that anyone with permission can access. Some of these services disappeared in the dot-com bust, but the ones still standing see themselves in the same position Autodesk occupied 20 years ago in the CAD market—at the foot of a potentially lucrative mountain.

But mountain-climbing is difficult work. While a few large companies in the AEC world have begun using online collaboration, most architects, contractors, and owners haven't even signed on to the first generation of these planning rooms. For example, at architectural behemoth HOK, project managers in the San Francisco office are encouraged to use online collaboration, but only a quarter of projects are run on such services, estimates architect Jim Rato, the office's IT manager.

Laurie Bauch, an analyst at Gartner Dataquest, estimates the AEC collaboration market is worth

well under \$200 million, perhaps even below \$100 million—a paltry number compared to other industries. "There have been a lot of fuzzy responses from vendors," Bauch says. "It's almost a negligible market to track."

The AEC collaboration market is best described in two segments. The first comprises the products targeted at designers who want to use a common, secure Internet space to share CAD drawings and track revisions. Autodesk's Project Point—which used to be part of Buzzsaw, the start-up that Autodesk funded and then absorbed last year—is the highest profile of these "digital plan room" systems. Viecon, from Autodesk's CAD software rival Bentley Systems, is another.

The second market segment is aimed at the people who pay the bills: project managers, developers, and facilities managers. As costs spiral, the people who live "downstream" from the design process want to focus on the aspects of project management that normally require thousands of phone calls, faxes, and paper in triplicate. Services from Citadon and Primavera Systems have tackled parts of this problem.

In recent months, companies have taken steps to bring these two segments together in products that encompass the design and project-

management phases. But in a world where even the most tech-savvy offices are far from paperless, it will take years for the AEC industry to move its time-honored paper trail online.

Everyone involved preaches patience. "It'll take time the way CAD took time," says Anthony Marnell III, president and CEO of Tririga, a Las Vegas-based company with a collaboration system focused on project managers in the hotel business. Tririga is trying to take collaboration software to the next level, by creating software that automates the flow of relevant information between all the partners on a project.

The company began four years ago as an internal project at Marnell Corrao Associates, the design-build firm responsible for many of Las Vegas's largest casinos, including the Bellagio, the Rio, and Treasure Island. (Marnell is the son of the founder, CEO, and chairman of MCA.) Since funding Tririga and spinning it out as a separate company last year, MCA has remained a client, accounting for two percent of Tririga's revenue, according to Marnell. The ambitious start-up is still in its infancy: It has a handful of clients, and although Tririga is lauded for combining so many functions in one innovative product, no one contacted for this article had yet completed a project on the system.

Designers and developers are increasingly wary of misplaced software investment, after years of watching tech companies flame out. Shea Properties, a Southern California commercial and apartment developer, currently uses the Citadon collaboration service.

Development manager Duane Bradley worries what would happen if Citadon, like so many other dot-coms, went out of business. "We

asked for assurance a while ago that we could get backup if they went under," Bradley says.

"Assurance wasn't forthcoming."

Still, he's going to stick with what he has. "If we were going to try a new system, we would wait to see a track record before spending any money."

Sooner or later, in one form or another, these online tools will catch on, just as CAD eventually caught on with tech-averse architects. When that happens, data generated during the design process could have a much longer life span and become more valuable. Here's one scenario: An architect's door schedule is stored digitally and made accessible to the construction team. That team's work, including all on-site changes, is then automatically noted in the digital file. After construction, the door-frame schedule is then made available to, say, a facilities manager who needs to replace a faulty component and wants to know where to order it. Tririga's product works in this way—sorting and reanalyzing data, and putting it in the hands of project partners as they need it.

According to the American Institute of Architects' 2000 survey of its member firms, only 12 percent of large firms (those with 50 or more people) identified themselves as "single-discipline." That number has grown in the past two years, says AIA Chief Economist Kermit Baker, as more firms "alter the image of what they do for the client as design project managers instead of as mere designers."

As architecture firms feel pressure to become "full-service" shops

By allowing all the partners in the design and construction process to work together online, the next generation of collaboration software could make the architect's job simpler—and less valuable.

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If these tools catch on, data generated during the design process could have a much longer life span and become more valuable.

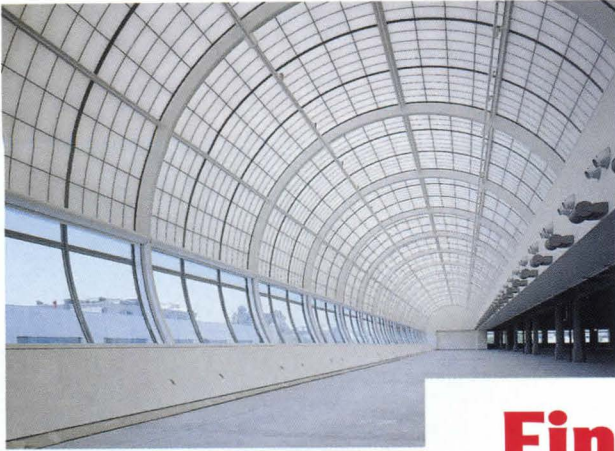
that incorporate construction management, interior design, and a host of other services, some in the industry see this upcoming wave of technology as an indication of the diminishing role of the architect. "Architects have lost the lead," says Paul Doherty, a technology consultant to the construction, design, and facilities management industries. "They're now a subcontractor to design services. People who set the information standards are in the lead."

Others see opportunities for architects to become owners of a richer set of data that can be repackaged and sold, or licensed, for many years. For example, once the AEC world gets wired, the facilities manager in the previous scenario could pay a licensing fee to the original designer to look up the door-frame specs, says Chris Bradshaw, the Autodesk vice president who runs the division formerly known as Buzzsaw. (Such ownership revenue hinges on the protection of intellectual property, which is why so many designers question the security of online systems. Bradshaw and other online vendors say there's nothing to worry about.)

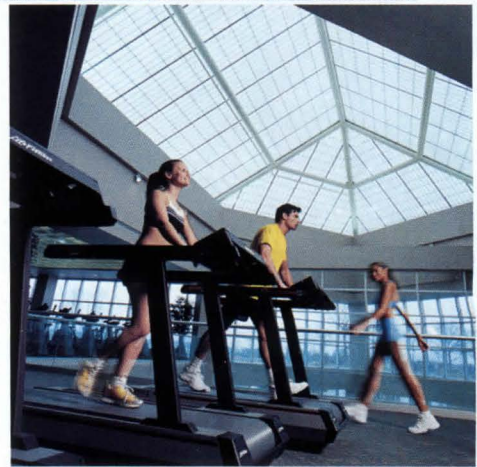
But finding new ways to plug into the most profitable parts of the design process is the key. When (or if) collaboration services finally gain widespread acceptance, the architects who benefit the most will be those who branch out from their traditional role. "Architects think of themselves as owners of the design phase," says Bradshaw, "but they're not the ones writing the check."

Architects run the risk of allowing technology to streamline them right out of the picture if they don't find new ways to forge a profitable relationship with partners through new innovations. As everyone in the AEC industry wrestles with primacy and project responsibility, architects who want to defend and expand their turf must continue to dream big and deliver big. And if the technology is there to help, all the better. ■

ALEX LASH, A FORMER SENIOR EDITOR AT THE INDUSTRY STANDARD, IS COFOUNDER OF INFORMATION MAGAZINE.



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Paradise Regained

Three new books recapture the splendor of Angkor, accessible again after 30 years of uninterrupted war in Cambodia.

BY NED CRAMER

> **HISTORY** The romantic school of archaeology considers Angkor one of the world's great lost cities. "It appears as fantastic as the Atlantis of Plato," recounted Portuguese explorer Bartolome de Argensola of his 1609 encounter with the abandoned seat of Cambodia's Khmer empire, the superpower of medieval Southeast Asia. ("Khmer" is the term for Cambodia's indigenous people.) But Angkor, unlike, say, Machu Picchu or Petra, has the strange distinction of having been lost a second time.

When the Vietnam War engulfed Cambodia in the late 1960s and brought the communist Khmer Rouge to power, the nation fell into a state of pandemonium that lasted until 1999, its first year of uninterrupted peace in three decades. So something of the wonder that de Argensola felt in seeing Angkor for the first time touches three new publications on the recently accessible temple-city: an exhaustive, 400-page guide by French architect Jean Laur; a scholarly history by New Zealander anthropologist Charles Higham; and a picture album by American photographer Steve McCurry.

Khmer Rouge chieftain Pol Pot attempted to remake Cambodia into his own impossible vision of a worker's paradise, and in the process some two million people (one-fifth of the population) lost their lives to starvation, malnutrition, and violence. The current government's 12th-grade social-



studies textbook doesn't equivocate about the experience: "Under Pol Pot's regime," it states, "Cambodia became hell." The Khmer Rouge, inspired by China's Cultural Revolution, murdered most of the native archaeologists at Angkor; the foreign ones understandably fled.

The ancient Khmer built the temples of Angkor in imitation of Mount Meru, the *axis mundi* of Hindu and Buddhist cosmology. Their Red descendants must have found the metaphor too physically and psychologically daunting to undo, because Angkor survived the bloodbath. It suffered nonetheless, and continued to do so amid the warfare and civil unrest that followed Pol Pot's 1979 defeat by the same Vietnamese army that had enthroned him in 1975. Vines and banyan-tree roots worked their way between the heavy stones of the temples, which began to settle unchecked into the monsoon-soaked earth. Bullets scarred tender relief sculptures of bodhisattvas and dancing girls, and art thieves decapitated innumerable deities to sell their heads to collectors.

Lately, however, the quasi-democratic government of Prime Minister Hun Sen (a one-time Khmer Rouge henchman) has restored something like stability to Cambodia. Preservation has resumed at Angkor; the curious and the faithful have cautiously returned. The photographs in McCurry's aptly

There are over 100 temples at the medieval Khmer capital of Angkor. The largest, Angkor Wat (above), functioned as a complete city in itself, with tens of thousands living in the temple precinct. Cambodia's first Buddhist king, Jayavarman VII, built the Bayon (facing page); each of its many towers bears, on all four sides, a giant likeness of the king as a "bodhisattva," or enlightened one. As the temple's sandstone blocks weather, it is sometimes difficult to know which is the greater architect: man or nature.

titled *Sanctuary* portray contemporary Cambodians enjoying a prosperity and freedom of action that until lately would have been unthinkable: Buddhist monks meditating; children jumping playfully into a reservoir; honeymooners posing before Angkor Wat, the greatest of the Khmer temples. After all Cambodia has been through, Angkor must seem like heaven. ■

ANGKOR: AN ILLUSTRATED GUIDE TO THE TEMPLES

BY JEAN LAUR / FLAMMARION

THE CIVILIZATION OF ANGKOR

BY CHARLES HIGHAM / UNIVERSITY OF CALIFORNIA PRESS

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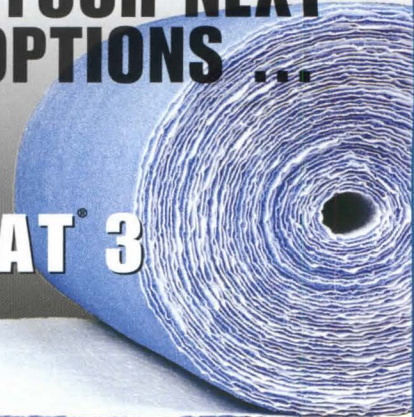
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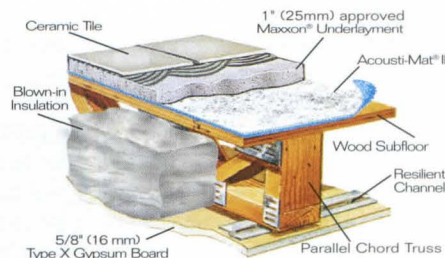
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- 144 Pella
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- 146 Rubbair Door
- 147 Therma-Tru
- 148 Traco
- 149 VT Industries

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- 153 Cline Aluminum Doors
- 154 Cornell Iron Works
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- 304 Eckel Industries
- 305 Ecophon Certainteed
- 306 Epic Metal
- 307 Fry Reglet
- 308 Gage Corp
- 309 Georgia-Pacific
- 310 Gordon
- 311 Hunter Douglas Architectural Products
- 312 Illbruck Architectural Product
- 313 Johns Manville
- 314 National Gypsum
- 315 Novawall Systems
- 316 Owens Corning
- 317 USG

Ceramic Tile

- 318 American Marazzi Tile
- 319 American Olean/ Daltile
- 320 Ann Sacks
- 321 Crossville Ceramics
- 322 Florim, USA
- 323 Graniti Fiandre
- 324 Imagine Tile
- 325 Laufen Int'l

Resilient Flooring

- 326 Amtico
- 327 Armstrong
- 328 Azrock
- 329 Centiva by International Floors of America
- 330 Colbond
- 331 Congoleum
- 332 CSSI Resilient Surfacing
- 333 Domco
- 334 Endura Flooring
- 335 Flexco
- 336 Forbo
- 337 Johnsonite
- 338 Kentile
- 339 Lonseal Flooring
- 340 Mannington
- 341 MAPEI
- 342 Marley-Flexco
- 343 Maxxon Corp
- 344 Mondo USA
- 345 R.C. Musson Rubber Co
- 346 Pacific Polymers International
- 347 Roppe
- 348 Tarkett
- 349 Toli

Rubber Flooring

- 350 Azrock
- 351 Burke Mercer
- 352 Endura
- 353 Johnsonite
- 354 Marley Flexco
- 355 Nora
- 356 Pawling
- 357 R.C. Musson
- 358 R.C.A. Rubber
- 359 Roppe
- 360 Tufflex

Laminate Flooring

- 361 ABET Laminati
- 362 Arborite
- 363 Bruce Commercial
- 364 Formica Flooring
- 365 Lamin-Art
- 366 Mannington Commercial
- 367 Nevamar
- 368 Pergo
- 369 Pionite
- 370 Tarkett
- 371 Wilsonart International

Carpet Tile / Modular

- 372 Bentley Mills
- 373 Bonar
- 374 Collins & Aikman
- 375 Flexco
- 376 Interface Flooring Systems
- 377 Lees
- 378 Mannington Commercial
- 379 Miliken Carpet
- 380 Mohawk Industries
- 381 Shaw

Carpet Fibers

- 382 BASF
- 383 DuPont Antron
- 384 Monsanto Contract Fibers
- 385 Wools of New Zealand

Paint / Stains & Finishes

- 386 Benjamin Moore & Co
- 387 Carlisle Coatings & Waterproofing
- 388 Devco Paint
- 389 DuPont
- 390 Duron Paints & Wallcoverings
- 391 ICI Dulux Paint Centers
- 392 PPG Industries
- 393 PROSOCO
- 394 SealMaster
- 395 Sherwin Williams
- 396 Valspar

Broadloom

- 397 Beaulieu
- 398 Bigelow
- 399 Blue Ridge
- 400 Durkan
- 401 Harbinger
- 402 J & J Commercial
- 403 Karastan
- 404 Lees
- 405 Mannington
- 406 Masland
- 407 Milliken
- 408 Monterey
- 409 Mohawk
- 410 Patcraft
- 411 Prince St.
- 412 Shaw

SPECIAL CONSTRUCTION

Air Supported Fabric Structures / Cable Systems

- 413 Air Structures American Technologies
- 414 Birdair
- 415 Cascade Coil Drapery
- 416 Chemfab Corp
- 417 Clamshell Buildings
- 418 DuPont
- 419 Feeney Wire Rope and Rigging
- 420 Kalwall

- 421 Pfeifer Cable Structures
- 422 Seco South
- 423 Shade Concepts
- 424 Sprung Instant Structures
- 425 Structures Unlimited
- 426 Sullivan & Brampton

Security Access & Surveillance

- 427 Ademco
- 428 Alvarado Manufacturing Co
- 429 Automatic Control
- 430 Checkpoint Systems, Inc
- 431 Controlled Access
- 432 Dynalock Corp
- 433 Byan Security
- 434 Essex Industries, Inc
- 435 Ingersoll-Rand Security and Safety
- 436 Schlage
- 437 Siedle Company
- 438 Sensormatic Corp
- 439 Von Duprin

MECHANICAL

Plumbing Fixtures

- 440 Acorn Engineering
- 441 American Standard
- 442 Bobrick
- 443 Bradley Corp
- 444 Chicago Faucet
- 445 Curvet USA
- 446 Duravit
- 447 Flushmate
- 448 Geberit Manufacturing
- 449 GROHE America
- 450 Haws Corporation
- 451 Kohler
- 452 Kroin
- 453 Rohl
- 454 Sloan Valve Company

Kitchen & Bath Hardware

- 455 Bobrick
- 456 Dornbracht
- 457 Ginger
- 458 Hafele America
- 459 Kroin
- 460 Moen
- 461 Price Pfister
- 462 Rohl
- 463 Sloan Valve
- 464 Valli & Valli

CONVEYING SYSTEMS

Elevators/ Escalators

- 465 Access Industries
- 466 Atlantic Lifts
- 467 Atlas Elevator
- 468 Concord Elevator
- 469 Fujitec America

- 470 Inclinator Company of America
- 471 Infinite Access
- 472 KONE
- 473 National Wheel-O-Vater
- 474 Otis Elevator
- 475 Pflow
- 476 Schindler Elevator
- 477 Thyssen Dover Elevator
- 478 ThyssenKrupp Elevator

ELECTRICAL

Lighting

- 479 Advant
- 480 Alkco
- 481 Allscape Lighting
- 482 American Glass Light
- 483 Architectural Area Lighting
- 484 Ardee
- 485 Artemide
- 486 Baldinger
- 487 Bartco
- 488 Bega
- 489 Birchwood
- 490 B-K Lighting
- 491 Boyd
- 492 Bruck
- 493 Capri
- 494 Color Kinetics
- 495 Columbia
- 496 Condaz
- 497 Cooper
- 498 CSI
- 499 D'ac
- 500 Davis Muller
- 501 Elite Bohemia
- 502 Elliptipar
- 503 ERCO
- 504 Exceline
- 505 Flos
- 506 Focal Point
- 507 Foscarini
- 508 Gardco Lighting
- 509 GE Lighting
- 510 Hadco
- 511 Halo
- 512 Hoffmeister
- 513 Holophone
- 514 Hubbell
- 515 ILEX
- 516 Iris
- 517 Juno
- 518 Kim
- 519 Lam
- 520 Ledalite
- 521 Leucos
- 522 Leviton
- 523 Lightolier
- 524 Litecontrol
- 525 Lithonia
- 526 LSI

- 527 Lutrex
- 528 Lutron
- 529 Luxo
- 530 Martin Professional
- 531 Nessen
- 532 Osram Sylvania
- 533 Peerless
- 534 Philips Lighting
- 535 Prescolite
- 536 Prisma
- 537 Prudential
- 538 Rudd
- 539 Selux
- 540 Sirmos
- 541 Specialty
- 542 SPI
- 543 Supervision
- 544 Targetti
- 545 Tech Lighting
- 546 Unilight
- 547 Visa
- 548 Winona
- 549 Zumtobel Staff

FURNISHINGS

Furniture Systems

- 550 Allsteel
- 551 American Seating
- 552 Haworth
- 553 Herman Miller
- 554 HON
- 555 KI
- 556 Kimball
- 557 Knoll
- 558 Paoli
- 559 Steelcase
- 560 Stone Dimensions
- 561 Teknion

Seating

- 562 Allsteel
- 563 American Seating
- 564 Haworth
- 565 Herman Miller
- 566 HON
- 567 Humanscale
- 568 Keilhauer
- 569 KI
- 570 Knoll
- 571 Steelcase
- 572 Stylex
- 573 Vitra

Casegoods

- 574 Allsteel
- 575 Bernhardt
- 576 Bretford
- 577 Hale Manufacturing
- 578 Haworth
- 579 Herman Miller

- 580 HON
- 581 KI
- 582 Kimball
- 583 Knoll
- 584 Meridian
- 585 Paoli
- 586 Steelcase

Outdoor Furniture

- 587 Barlow Tyrie
- 588 Brown Jordan
- 589 Earth Care
- 590 Knoll
- 591 Landscape Forms
- 592 Lloyd Flanders
- 593 McGuire
- 594 Smith & Hawken
- 595 Wabash Valley
- 596 Weatherend
- 597 Woodard

Solid Surfacing

- 598 Avonite
- 599 DuPont -Corian
- 600 Formica
- 601 Fountainhead
- 602 Nevamar
- 603 Swanstone
- 604 Wilsonart

Wallcoverings

- 605 Bolta
- 606 Designtex
- 607 Eurotex
- 608 Genon
- 609 Innovations in Wallcoverings
- 610 J.M. Lynne
- 611 Koroseal
- 612 Lanark
- 613 Maharam
- 614 Wolf Gordon

COMPUTER / SOFTWARE

- 615 @Last Software
- 616 Autodesk
- 617 Autodesys
- 618 Bentley Systems
- 619 CAD-1
- 620 Datacad
- 621 Graphisoft
- 622 Nemetchek
- 623 Revit Technology
- 624 Wind-2 Software

Lifelong Learning

architecture



Continuing education provides much more than credit hours—it's a way to ensure your skills and knowledge and keep you a step ahead of the competition

By Irene Korn

Years ago, architectural continuing education was simple—the quality of the lunch that a manufacturer provided was as important as the quality of the educational experience they brought to the table. But while architects still appreciate a good lunch, these days they're looking to digest a lot more when it comes to the educational experience. "There are still some architects who are just going for the hours and numbers," says Thom Lowther, director of continuing education for the American Institute of Architects (AIA), "but we're finding so many more architects understand now that it is really about learning how to run their business and do their jobs better. Some get 50 hours of education without batting an eye—because it helps them solve their problems, not because it's required." In fact, AIA requires 18 hours of continuing education (measured in LU's or learning units) to maintain an active membership status, and to date, 20 states require continuing education to maintain licensure. "Can you really change behavior?" asks Lowther. "Yes, we've done that. In 1995 [the first year that AIA required continuing education], we recorded just over 5,000 LU's at our convention. Last year, there were 50,000 at the convention."

On the Drawing Board

Lowther notes that while architects have always been interested in courses related to marketing, presentations to clients, and other business-related topics, these days, health, safety, and welfare (HSW) are growing concerns. In

Just the Facts

Q. What are the annual AIA continuing education requirements?

A. All active AIA members must successfully complete 18 LU's (Learning Units) for annual membership renewal. Of those 18, at least eight must be in the area of Health, Safety, and Welfare.

Q. What are the federal and/or state continuing education requirements?

A. There are no federal requirements; at present, 20 states have continuing education requirements to renew architectural licenses.

Q. Can I carry extra LU's over to the next year?

A. A member who exceeds the annual requirement can carry up to 18 LU's (including eight of Health, Safety, and Welfare) into the next year.

Your Own Style

The best kind of course for you to take to achieve the maximum impact depends on what's called your "learning style."

While there are dozens of ways to categorize learning style, the simplest method places all students in one of these three categories:

Visual: This type of student receives information best through their eyes—what they see and read. *Ideal structure:* Magazine and online learning.

Auditory: This type of student learns best by hearing things, either on tape or in discussion. Dialogue and discussion is important to their learning process. *Ideal structure:* Classroom.

Kinesthetic/Tactile: This type of student learns best by "doing," such as taking their own notes or participating in demonstrations and hands-on projects. *Ideal structure:* Magazine and online learning; classroom that encourages participation.

As a Continuing Education provider, *Architecture* magazine publishes AIA approved continuing education programs in the magazine and online. The magazine's online Architect's Learning Center is a flexible and accessible way for architects to earn continuing education units through in-depth, professional programs. Architects can read the course material in the magazine and follow up with an online test in their own timeframe.

For more information go to: www.architecturemag.com

fact, the AIA requirement that eight of an architect's 18 LU's must be related to professional development in HSW is catching on now with states as well, which are also starting to require HSW credits. The state of New York, for example, just added a HSW requirement last year:

"For the first time in the history of the profession, in the past three years, our top 10 most popular courses at the AIA convention have included courses on health, safety, and welfare," says Lowther:

"Some architects do just want to get their hours in and they're happy," agrees Harold Garber of ITX Corporation, which puts together day-long programs with manufacturers, "but we're finding that the right topics draw decision-makers and principles who are there for the knowledge, not the hours."

So, what are the right topics? Garber says that the three topics that are particularly hot right now are building security, in light of the events of last September; green building, which has been popular for a while; and moisture protection and mold. "That's been getting a lot of media attention around the U.S. recently," he explains, "and architects are very interested in learning how to prevent it, as well as remedy it and repair problems."

Different Strokes

Along with the increasing interest on the part of architects has come a stronger support from corporations and new ways to approach learning. "We're seeing large companies that are taking professional development to new levels, really fine tuning it," says Lowther. "They're bringing in providers that can help the company meet its professional goals and are seeing how the dollars spent on education provide a return."

According to statistics from AIA, almost three-quarters of firms with 10 or more employees offer continuing education on site, although less than one-fifth of those with fewer than 10 employees do so, most likely because of cost factors. On-site education includes hiring consultants to address specific issues as well as building product manufacturers who provide free seminars at firms.

In addition to on-site education, there are numerous other education options, allowing architects to choose whatever method is best suited to their own personalities and needs (see "Your Own Style"). For example, building product manufacturers often provide educational seminars at off-site locations, in addition to day-long courses such as the ones arranged by Garber, and AIA offers courses at its convention as well as through local chapters.

For added convenience, *Architecture* magazine runs AIA-approved courses that allow architects to read the course material in the magazine and follow up with an online test in their own timeframe.

"The whole process should really begin before an architect walks into a course," says Lowther. "They need to determine what it is they want to achieve so they can decide what topic and what method best suits their needs." ■

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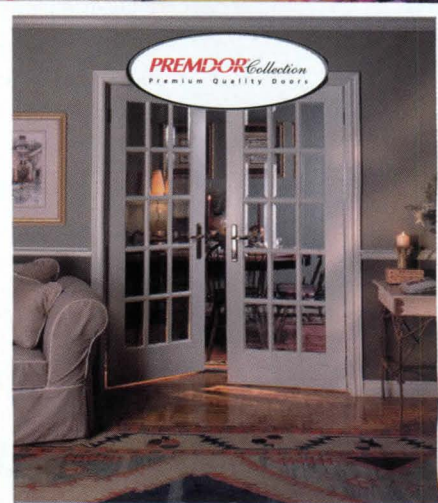


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Lighting Wise

With the cost of energy rising and issues of availability coming to a head in many communities, sustainability has graduated from its position as a “hot topic” in the lighting industry to that of an absolute necessity—and for good reason.

One of the largest operating costs for a commercial building is its lighting; cities face a similar challenge, with many a tax dollar paying to illuminate streets, neighborhoods, and parks. In the '90s, utility companies stepped up to the plate to reduce their peak output by giving rebates and incentives to companies to revamp old lighting systems with upgraded technologies—realizing that paying to reduce load costs would far outweigh the cost of building additional plants. In the new millennium, however, much of the demand for energy efficiency and environmental sensitivity is coming from the customer, and lighting manufacturers are rising to the occasion with new and emerging technologies.

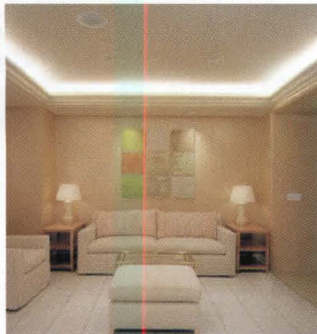
The New Wave

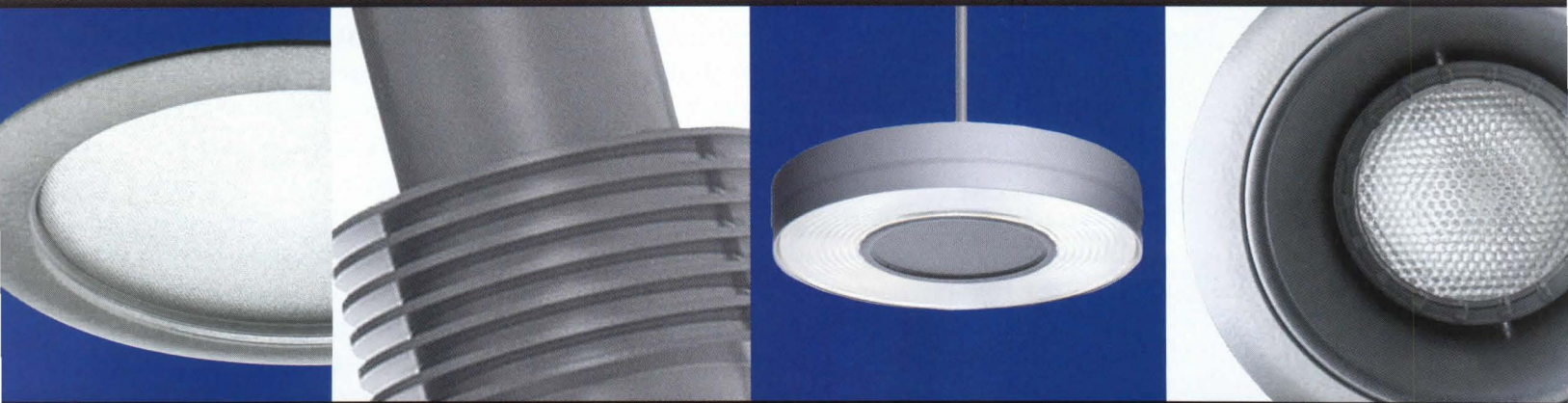
One of the most successful new technologies to have appeared over the last few years is the linear T5 fluorescent lamp, which is smaller in diameter and consumes significantly less wattage than the T8 fluorescent but can put out a comparable amount of light. “The T5 has really come to the

forefront,” says Ed Barton, owner of Huntington, California-based **Bartco Lighting**. “Because of the smaller package, it is more adaptable and designers have really latched onto it.” In the retail industry, which is an area of specialty for Bartco, “Everything is becoming more miniaturized,” says Barton. “It’s increasingly important to get maximum light output from a minimum fixture. **Lutron** is coming out with a miniature fluorescent dimming device so that you can pinpoint output at specific time frames.”

Prescolite is another company working with T5 technology—but it’s taking the T5 to new dimensions. “We are the first North American manufacturer to introduce the circular T5,” says Rene Green, director of marketing for the San Leandro, California-based company that premiered its Lunis line of fixtures in March. “As a fixture manufacturer, this lamp afforded us the opportunity to create a unique new product. The lamp and ballast combination itself creates an extremely efficient light source, and the small diameter allows shallow fixtures with excellent optical control.”

For more information on lighting associations and manufacturers, go to www.thru.to/architecture





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Lighting

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- > Architectural Area Lighting
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- > Lightolier
- > Litecontrol
- > Lithonia Lighting
- > Lutron
- > Martin Professional
- > Original Cast Lighting
- > Osram Sylvania
- > Philips Lighting Company
- > Poulsen Lighting
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- > Prudential Lighting
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- > Sterner Lighting Systems
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Among the newest lamp technologies that have come into play is the light emitting diode or LED that has taken the country by storm with its extreme long life. Diane Smith, marketing supervisor of Costa Mesa-based **Bruck Lighting**, gives details. "LED is really the hot thing right now because they are so low voltage," she says. "The individual lamps inside one fixture can last up to 100,000 hours, which means you won't have to change that lamp for 11 years. We actually did the Chicago Bridge in our LED Orion AL because they are so low maintenance and can withstand traffic and are water resistant."

According to Bill Shoenfisch, who handles public relations for **JJI Lighting Group**, a diverse company with 13 subsidiaries throughout the country, LEDs are actually post-World War II technology that have just now come into their own since the introduction of the SuperBright LED. "The problem before was that they were very dim, but with a clustered housing and brighter lamps, they have become more versatile," Shoenfisch says. One of the most popular applications is to put them in traffic lights to save on maintenance, but they can also be found in theaters where low-heat sources of color solve safety issues and in museums for lighting valuable artwork.

Catching Some Rays

The importance of daylight in buildings has also come on strong. One of the main reasons for this, perhaps, is that natural light is free, but it is also widely recognized that daylight has other benefits. "Careful design that brings daylight deep into buildings can yield higher occupant comfort in a larger area and reduces reliance on artificial lighting," says Erik Svanholm, LC, technical engineer for Highland, New York-based **Zumtobel Staff Lighting**. "Human beings are most comfortable with constant, subtle changes in the luminous environment, and daylighting systems provide this naturally." The results of this are numerous, with studies showing marked increases in worker efficiency, students' learning, and even shoppers' shopping.

Windows are only one way of inviting sunlight into the interior of residential or commercial buildings. A Vista, California-based company called **Solatube International**

offers tubular skylight systems that improve the traditional skylight by using an advanced optical system to collect, redirect, and distribute daylight into a space—even in the innermost recesses of a building. Dr. Neall Digert, technical director at Solatube, adds that the company is also developing new products. "We are moving away from a skylight and more toward an integrated daylight fixture that is used in the same manner as an electric light, and as the sun wanes the electric light takes over," he explains. These kinds of daylighting systems are critical when it comes to energy savings, according to Digert, and one of the residual benefits of integrated systems is that they can reduce a building's cooling load for further energy savings.

Into the Night

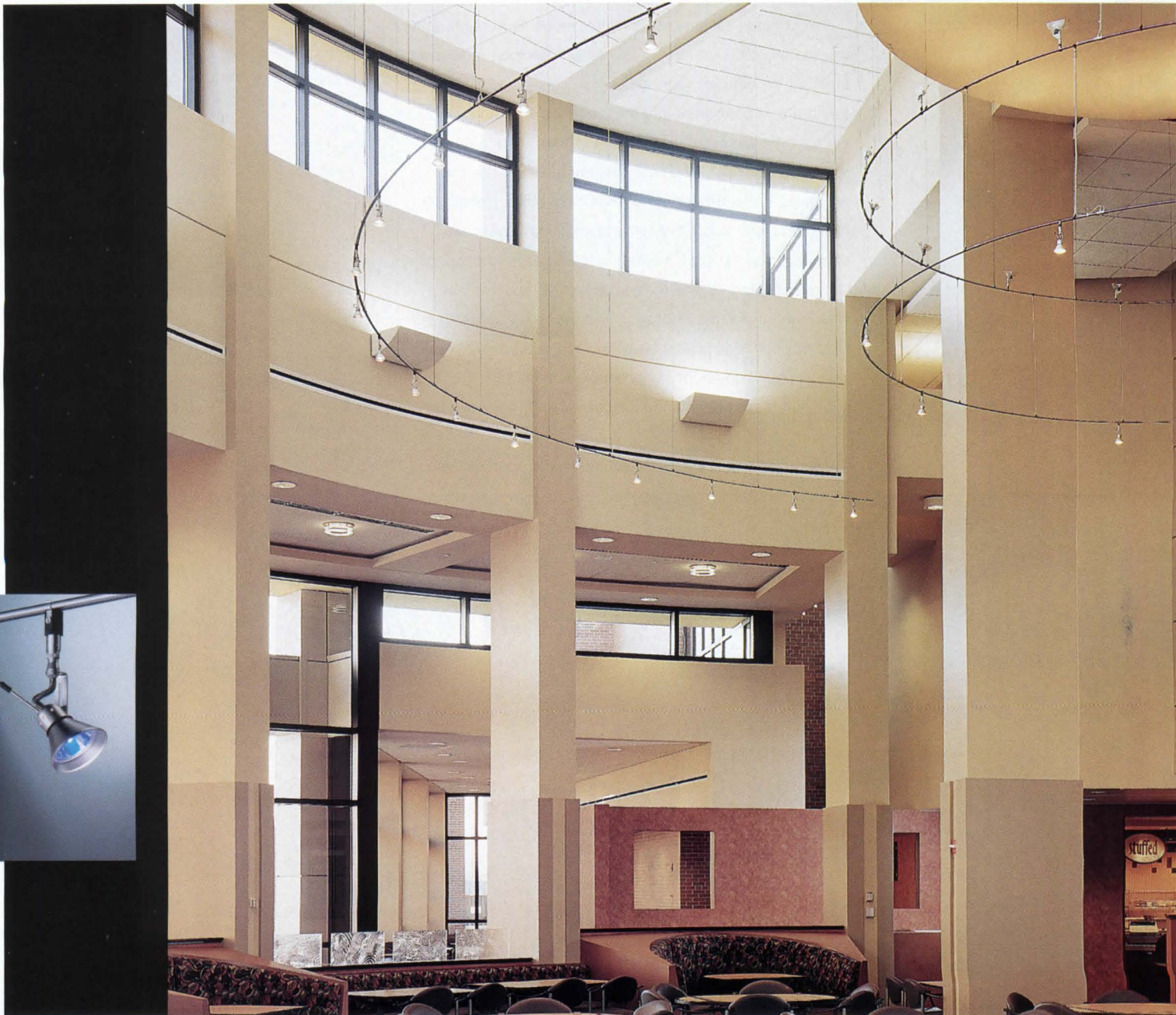
If natural light is vital to the well being of humans, the darkness of night is equally so. Members of the International Dark Sky Association (IDA) are lobbying hard for the preservation of the night sky through strict control of outdoor lighting. A member of IDA, **Sternberg Vintage Lighting** has come through with a cutting-edge optical system for its decorative fixtures. Jerry Lehrfeld, advertising manager for the Niles, Illinois-based company, explains, "We have created sharp cut-off reflectors called Night Sky Optical Systems that are designed to point light downward at 72 degrees from vertical, even in our globe-style luminaires that would normally shoot light straight into the sky. Not

ECO-FRIENDLY

With compact fluorescent lighting as one of the most popular and available technologies for decorative lighting, issues of disposal have come to the forefront due to amounts of mercury necessary for those lamps. Steve Goldmacher, director of public affairs for **Philips Lighting Company**, points out that recycling is always encouraged and that the EPA released new regulations last year that assist in this effort. The Universal Waste Rule eliminates the need for a hazardous waste hauler and eases paperwork so that recycling for these products is simplified. For detailed information, go to <http://www.epa.gov/epaoswer/hazwaste/id/univwast.htm>

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only does this angle preserve the night sky, it also eliminates discomfort and disability glare for pedestrians and drivers."

Educational seminars and conferences dedicated to these issues are working to get the word out. **Architectural Area Lighting**, an outdoor lighting company based in La Mirada, California, is contributing to the cause by offering continuing education courses accredited by the American Institute of Architects (AIA). "We took the one hour course and expanded it to a three hour course called 'Site Lighting—Layers of Light' to cover some common lighting issues," says April Ruedaflores, marketing manager for the company. Lamp technologies, environmental issues, and security rank high on that list of issues. "We are really focusing our products on these issues now," says Ruedaflores. "We've always been known for our products because they look good, but that's not going to sell anymore—they have to have a purpose."

Many manufacturers have followed suit, with partial

GOING DIGITAL

Conventional dimming systems have been available for almost 30 years, but only about one percent of the U.S. lighting market has taken advantage of them. Perhaps that is why the newest trend in dimming—networked control systems—has come from the European market. The most successful product in Europe has been the Digital Addressable Lighting Interface, also known as DALI. "It's really whiz-bang technology," says Al Borden, president of The Lighting Practice, Inc. and on the board of directors of the **International Association of Lighting Designers**. "There is a microchip inside the ballast so that each lamp can have its own network address"—which provides maximum customization when it comes to occupant control, energy savings, automatic maintenance information, and reconfiguration. **Osram Sylvania** is a major lighting company working on DALI systems, while Prescolite is partnering with a manufacturer in Chicago to bring similar digital technology to their clients.

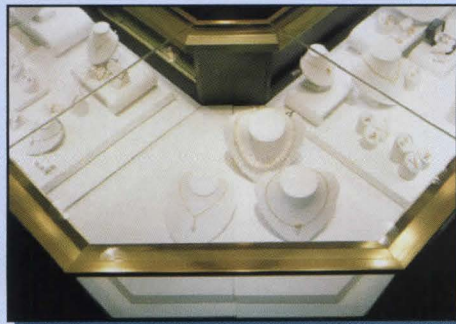
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architecture products

Lighting

and full cut-off luminaires in their outdoor fixtures, and the numbers are growing. Veit Mueller, president of Highland, New York-based **Selux Corporation**, comments that his number-one outdoor fixture remains the Saturn family, which is a partial cut-off design. Despite this, says Mueller, "Our product emphasis is going into full cut-off, and making them decorative becomes a little bit more challenging." But it is a challenge that Selux conquers with such products as the bell-shaped Beta family of luminaires, which are top sellers as well.

Perhaps one reason that partial cut-off fixtures remain a popular choice is the need for security. "There is a certain component that would like to see light levels come down," says Cheryl Fraga, general manager of San Leandro, California-based **Gardco Lighting**, "but there is another sector in the market that wants higher lights—those concerned with liability and security issues." Kevin Willmorth, director of marketing for City of Industry, California-based **Kim Lighting**, actually sees this happening. "In places like parking garages and lots, lights are actually getting brighter and brighter, which goes against the environmental concerns," he says. "We have to get more efficiency out of the fixtures in the end and we are working on precision by die casting the reflector housings and constantly looking at different technologies." With new building codes for exterior lighting being crafted by the California legislature to reduce energy consumption (and with similar legislation sure to roll across the country in the next several years), a call for higher lights may fall on deaf ears, but a call for better lighting surely will not.

According to Shephard Kay, vice president of engineering for Freeport, New York-based **Sentry Lighting**, city governments across North America are beginning to take notice of the advantageous opportunities new technologies are offering, and that the quality of light has a great affect on the quality of life on "Main Street USA." He explains, "The country is really picking itself up and revitalizing. Light poles and fixtures can be absolutely beautiful, and really add a feeling to a community. To be able to offer that with the latest and greatest in technology makes our job exciting."

For more information on lighting associations and manufacturers, go to www.thru.to/architecture

■ By Elizabeth West

rick joy / 96
debartolo architects / 99
ibarra rosano / 104
architekton / 106
richard & bauer / 108
marwan al-sayed / 115
jones studio / 117
line and space / 120
wendell burnette / 122

87 /
the
arizona
school

A towering Saguaro cactus grows in the Superstition Mountains, 30 miles east of downtown Phoenix.



the making of the arizona school

by lawrence w. cheek / photography by justine kurland

LEARNING FROM WUKOKI

Twenty miles northeast of Flagstaff, the great ponderosa forest of the Coconino Plateau evaporates suddenly into a sere desert of pale sand, black volcanic cinders, and the occasional lonely juniper, stunted by a skin-flint 8 inches of precipitation a year. It is stark, lovely, and hauntingly evocative, the sort of landscape that inspired the English novelist J. B. Priestley to describe Arizona as “the oldest country I had ever seen, the real antique land, first cousin to the moon.”

There is a real antique building out there, a prehistoric ruin that forms the perfect template for architecture in Arizona—not as it

is, but as it could be. Every few years I make a pilgrimage to Wukoki Ruin (A), preferably at dawn when nobody else is around, and I meditate on the relationship of humans and landscape. In few other places on earth is that ecology so delicate as in Arizona.

Around A.D. 1100, an optimistic Sinagua family built this six-room pueblo on a sandstone outcrop, taking the floor plan from the natural contours of the rock and chiseling the masonry from similar formations nearby. This is architecture in deep conversation with the land, the apotheosis of Wright’s declaration that a house should be *of* the hill. It seems profoundly respectful of its environ-

ment and yet defiant, expressing the courage the family would have needed to pry a living from this desert.

I romanticize. Wukoki may have “expressed” nothing to its makers except necessity. But the forces that have driven Arizona architecture and civilization in its later centuries of Hispanic and American occupation—fantasy, hubris, nostalgia, expedience, rapacity, an itch to rehabilitate the desert into something softer and greener, and, most pressingly, insatiable urban sprawl—have produced little that responds to the land as gracefully as Wukoki. Arizonans have imposed wave after wave of styles on the place, but few have stood still long enough to let the land explain what it wanted.

There is an emergent “Arizona school” of architecture, however, one that maybe began with Wukoki or with Frank Lloyd Wright’s unbuilt but influential San Marcos in the



Desert resort, and that now persists in the work of a scattering of modernists, most in the Phoenix area. Unlike the Bauhaus Brahmins, their work is rooted in place, not dogma, squarely facing Arizona's unique issues and opportunities: dramatic landscape, brutal heat, a deceptively fragile environment, and cultural traditions that are at once profoundly deep and veneer-thin. The good news is that these architects' influence is expanding; the bad is that Arizona's population is exploding even faster than that.

PARADISE LOST

Arizona's architectural history has been a pastiche of imported styles, attempts to impose the sensation of home on an unfamiliar land. The most spectacular imposition was (and is) the mission of San Xavier del Bac (B), completed in 1797 and recently restored to its original head-spinning baroque glory. San

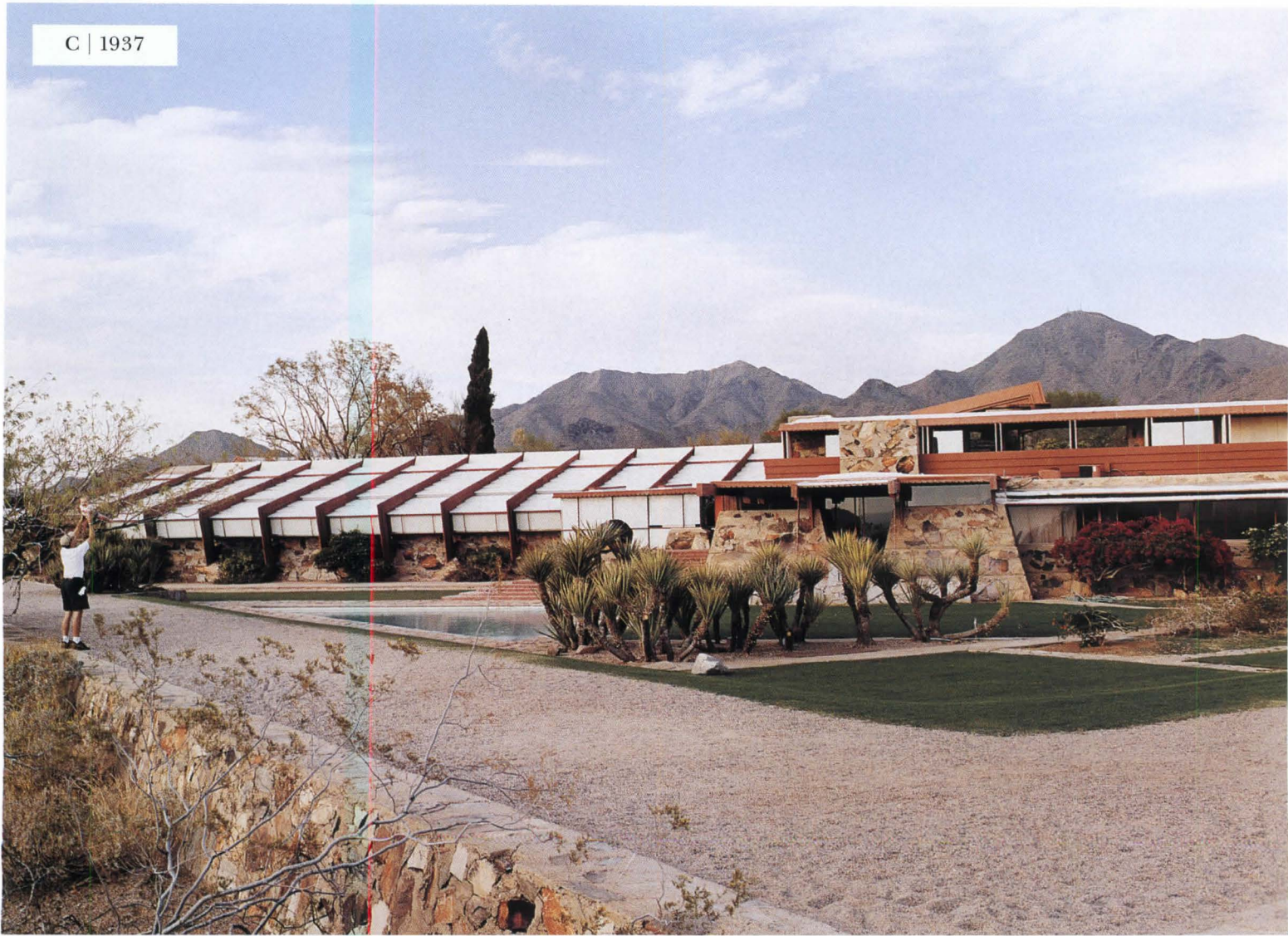
Xavier was intended to dazzle the indigenous Tohono O'odham Indians not only with the majesty of a new God, but also with the power of the Spanish crown, and it rides the desert with a conqueror's resplendence.

Anglos began dribbling into the territory after the Gadsden Purchase of 1854; the trickle became a tide after the railroad arrived in 1880. The newcomers were not intrigued by the vernacular Mexican architecture they found. "The adobe does not make an attractive or clean building," huffed the *Arizona Citizen* in 1877, "and Eastern people find it somewhat repulsive... It is hoped that all new buildings of any pretensions will be built of brick and the unsightly adobe discarded." This has the not-so-subtle whiff of racism—and predictably, the moment the trains began rumbling in with bricks, lumber, and craftsmen, Anglo Arizona dressed itself in Victorian cosmetics. In Florence, a sad-eyed town

between Tucson and Phoenix, someone built a remarkable two-story Italianate Victorian house in 1884—of adobe. The railroad, you see, never made it to Florence.

What happened next illustrates a deeply rooted Southwestern paradox. In 1893 California crashed the Columbian Exposition with a replica Spanish mission, and that building triggered a stampede out West. The Mission Revival was a way for architects to declare independence from the Eastern design establishment, and for an eager Anglo public to sip from the spring of the land's real and imagined Hispanic history. Non-Latin Americans have long romanticized Latino culture, while at the same time often remaining wary and inwardly contemptuous. Architecture provided Anglos with a way to insinuate themselves into an exotic culture without a more threatening commitment.

The Mission and Spanish Colonial



revivals produced some magnificent buildings in Arizona—homes, churches, schools, courthouses, even barns—although the interiors seldom fulfilled the romantic promises outside. In the 1970s, though, a virulent epidemic of cartoon revivalism (I term it Taco Deco) became the pervasive vernacular, a quick way for newcomers to sink roots into an exotic land. Unfortunately, the authentic Mexican architecture of Arizona, the adobe house with enclosed courtyard and *zaguán* to channel ventilation through on a hot day, has been almost ignored as inspiration.

Modernism marched into Phoenix without critical contemplation. The city, its post-World War II boom ignited by the twin blessings of air conditioning and irrigation, needed to convince the country that it was to be taken seriously, so it sprouted groves of office towers, most of mind-numbing banality, a few clad in mirrored glass so as to bounce

sunlight around in a place that hardly needed more of it. Phoenix never saw itself as a desert city, so it ignored desert issues. Palm trees, laughably useless in providing the one thing Phoenix desperately needs—shade—still form an endless cortege down city streets. Suburban developers dredged so many artificial lakes that the legislature finally had to ban them as an unconscionable waste of water. Tucson, poorer, more liberal, and less ambitious than Phoenix, has always felt morally and intellectually superior, and it enjoys a far more enlightened attitude toward water conservation and xeriscaping—but in architecture, its most notable achievement remains San Xavier, completed two centuries ago.

Modernism produced some desert jewels in Phoenix, thanks mainly to the Miesian Al Beadle and his influence. Beadle embraced both the aesthetics and the ideals of the Bauhaus (and doggedly stayed the course

long after both had been heaved out with the bath water), and produced a prolific number of well crafted houses, apartment complexes, and commercial buildings. He fixed the inherent discombobulation of glass boxes on stark, bumpy desert sites by floating buildings like his own house in Phoenix (D) on elegant legs, and he embraced the climate with the “garden office” concept, wrapping buildings around atriums and filtering the sun with a scrim to create a temperate forest within. The forest also provided office workers with a fantasy environment, a few hours a day of refuge from the growing visual chaos outside.

AN ACRE AN HOUR

Oceans of khaki stucco and salmon tile flood into the desert in every direction from Phoenix and Tucson, tsunamis of development lapping over foothills and pouring into canyons, turning aside only where dammed



by a National Forest or reservation boundary. The current fury of expansion, the wealth surging into Arizona and demanding a place in the sun, is simply staggering, whether one views it as economic orgasm or environmental cancer. In 1995 the *Arizona Republic* calculated that metropolitan Phoenix was metastasizing at the rate of an acre an hour, a pace that has not slackened since. In the first 12 months after the 2000 census, Arizona grew by 155,000 people, two-thirds of them arriving from other states or countries.

The engine powering Arizona's built environment has always been cheap land (and lots of it—even at an acre an hour it would take Phoenix 8,328 years to fill up the state) as well as an endless tide of newcomers and speculators eager to buy something, anything, in sun-splashed paradise. To interact gracefully with a landscape and ecosystem takes an investment of time in the place, and not many

Arizonans have that. For every three who arrive, two leave. The demand for an appropriate and respectful architecture is an occasional wail in the wilderness.

Phoenix is a relentlessly horizontal city, its arterial grid a 40-mile-square checkerboard, except where inconvenienced by a mountain. Even the ranch-style houses seem stretched, like brick limos. Phoenix boasts close to the lowest population density of any major U.S. metro area, but it ranks among the world's highest rates of home ownership, at 65 percent. As Grady Gammage Jr., a Phoenix planning and development lawyer, points out, Frank Lloyd Wright's utopian vision of "Broadacre City" has been realized with eerie prescience in the acre-an-hour metropolis. What Wright would say about its architecture would be unprintable, but he would applaud the egalitarian freedom that its sprawl has enabled. In the sense that the new cities of the West

offered people the opportunity to escape the squalor of 19th-century working-class life back east, Phoenix has succeeded more spectacularly than anyplace else.

But sprawl has imposed its own brand of squalor. As the sociobiologist Edward O. Wilson has written, humans animals have been conditioned across evolutionary time to seek shelter on a hill or mountain, the better to scan the savanna for game or enemies. This ancient instinct, fueled with 20th-century wealth, has been a disaster for Arizona.

Phoenix is punctuated with colorful buttes and mountains; Tucson is dominated by a towering range 9,157 feet high. But their slopes support low-rise thorn forests of cacti and lacy trees such as mesquite and acacia, and roads and houses on them read as scars. The houses are increasingly prominent and pretentious—wannabe castles and Mediterranean villas—and zoning, even



where it restricts houses to one every 40 acres, has failed. People who buy such properties tend to have both the means and the ego to blow up half a mountain for a driveway.

The mythic attractions of the West—big skies, heroic landscapes and the sense that one can own it all and do whatever the hell he wants with it—remain a vivid cultural force in the Southwest, even as the crowds thicken. The land itself, larger than life, feeds the myth.

“Here the land always makes promises of aching beauty and the people always fail the land,” observed essayist Charles Bowden, the Southwest’s most poetic fatalist. But no, not everyone, not always. There are successes, and the common thread is that their creators understood, by intellect or instinct, the unique mood, texture, and demands of the land.

OUT OF THE STUCCO JUNGLE

Will Bruder came to Arizona in 1967 to study

with Paolo Soleri, who had arrived in 1947 to apprentice with Wright. The latter had first ventured into Arizona in 1928 to design the San Marcos resort, aborted by the Depression. There is not a shred of stylistic or philosophical continuity in this lineage, but influences passed among them in other important ways.

Bruder, for example, says of his work with Soleri: “It was all about invention with modest means, and never assuming you couldn’t do something because you didn’t have the money to do it conventionally. What I took away from him was the ethos of looking at materials in new ways, trying to find the extraordinary in the ordinary.”

Bruder, now 56, has in turn influenced a rising generation of Arizona architects: Jack DeBartolo 3, Wendell Burnette, and Rick Joy all worked in his studio. “None of the stuff we’re doing now would be possible if Bruder hadn’t paved the way, hacked through the

stucco jungle,” said Jim Richârd, another young Phoenician.

Wright was the first Arizonan, at least since Sinagua times, to interpret the land itself in architecture. In the San Marcos project he mimicked the massing of the mountain behind the hotel and echoed the vertical fluting of the saguaros around it. In his desert masterpiece of 10 years later, *Taliesin West* (C), he evoked not only the textures of the land, but also, miraculously, its mood—quiet, angular, paradoxically delicate. “The dotted line is the line for the desert,” he wrote, suggesting a principle of broken, irregular massing and articulation that still influences architects wise enough to listen today.

Wright reacted to the desert instinctively and romantically; others have responded metaphorically. The late Judith Chafee, who would bristle at talk of “style” in her work, once lowered her guard enough to explain



where the decisive, muscular mood of her southern Arizona houses came from. “I still have a sense of frontier about this part of the world,” she said. “The houses are lonely, kind of freestanding worlds unto themselves.” Bruder’s acclaimed Phoenix Central Library (F) is an abstract mesa riddled with canyons and mineral treasures hidden inside. His Deer Valley Rock Art Center is crusted in black slag from a copper mine, which visually establishes the building as kin to the basalt rock pile next door while making a statement on waste: *It can be beautiful—and useful!*

The Arizonistas can bow to a dramatic site or abstract the environment in a provocative pose—both are legitimate and dramatic additions to the landscape if they’re done well. Les Wallach virtually lets the site design his buildings, taking fastidious care with the topography, views, sun angles, and vegetation. The architecture merges with the desert.

And every architect working in Arizona has to acknowledge the sun and light—creatively, defensively, or provocatively. There is no single solution, no formula. Wright liked to break it up with his “dotted lines” or invite it in, filtered into harmlessness as by the original canvas ceiling of the drafting room at Taliesin West (updated provocatively in Marwan Al-Sayed’s *House of Earth + Light*, page 115); Antoine Predock created a well in his Nelson Fine Arts Center at Arizona State University, where diffused sunlight becomes an unearthly work of art. The Arizona school lately has been using more metal—as cladding, scrim, or sculptural form—because of its infinite possibilities in filtering, reflecting, and sharply articulating light and shadow. It also bakes in the relentless sun without minding.

But here, finally, rises the core question: Can a scattering of good buildings make a difference in a place that grows by 155,000

new souls a year, where the architectural forms most Arizonans encounter on a given day are the woozy nostalgia of the stucco subdivisions and the amorphous frenzy of the commercial strips?

It might, because Arizona’s big skies and dramatic landscapes have always nurtured dreamers with grand ideas (and crackpot schemes—the 1970s relocation of London Bridge to Lake Havasu qualifies as both). Arcosanti (E) is by any rational judgment a failure, both as architecture and in its attempt to renovate humans into social insects. But Soleri is right about one thing: Six billion people cannot live as suburbanites. Its antipode, Broadacre City, is equally preposterous, and yet, after a fashion, it’s working. *Perhaps a landscape gets the architecture it deserves.* It did at Wukoki; it could again. I think, though, that more of us should make that pilgrimage. ■

GLOSSARY

Adobe a load-bearing building material made of sun-dried clay or earth mixed with straw.

Acacia (*Acacia*) a large genus of leguminous shrubs and trees native to Africa and Asia that typically have gnarled bark, and that bear clusters of yellow flowers.

Arroyo a small stream or gully in a typically dry area.

Mesquite (*Prosopis*) a genus of deciduous shrubs and trees native to the Sonora, Mojave, and Chihuahuas deserts. The trees can grow up to 30 feet and bear yellow flowers and beanlike pods.

Ocotillo (*Fouquieria splendens*) a plant native to the Sonora and Chihuahuas deserts whose many woody canes form an inverted funnel shape that can reach up to 20 feet. Leaves emerge immediately after rain, though small red flowers emerge in early summer regardless.

Pueblo a large communal dwelling built by Native Americans in Arizona and New Mexico. They are typically constructed out of stone or adobe, have flat roofs, and are several stories high.

Ponderosa (*Pinaceae pinus ponderosa*) a large evergreen tree with an irregular crown that, as it grows to its mature height of 200 feet, develops a flat top or short conical crown. Also known as the Western yellow pine, it is found in the Rocky Mountains from Canada to Mexico.



Ramada an outdoor, shaded work structure with open sides that permit the passage of wind.

Rammed earth a building material used primarily for walls, and comprised of a mixture of screened earth, portland cement, and water. It is poured into formwork and then compacted with a pneumatic tamper.

Saguaro (*Carnegiea gigantea*) a cactus native to the Southwestern United States and Northwest Mexico that takes 150 years to reach its full height of 40 feet.

Sinagua the best-known regional group of the Western Anasazi people. The Sinagua occupied an area between Flagstaff and Phoenix between A.D. 500 and 1300, and lived on corn farming and subsistence hunting.

Tohono O'odham ("Desert People") a Native American people related closely to the Pima and whose lands lie along the border between Mexico and Arizona. The O'odham traditionally migrated between villages in order to follow the annual rains.

Xeriscape a school of landscaping that is based on the conservation of water. Popular in areas with little rainfall, xeriscaped gardens typically make use of native plants or those well suited to the local conditions.

Zaguan a large entrance porch or corridorlike vestibule that is a typical feature of Mexican architecture. It typically runs perpendicular to the road.



FROM LEFT: DOUGLAS BROWN, EDDIE JONES, JACK DEBARTOLO 2, JACK DEBARTOLO 3, JAMES RICHARD, WENDELL BURNETTE, NEAL JONES, LES WALLACH, HENRY TOM, TERESA ROSANO, WILL BRUDER, LUIS IBARRA, JOHN KANE, JOE SALVATORE



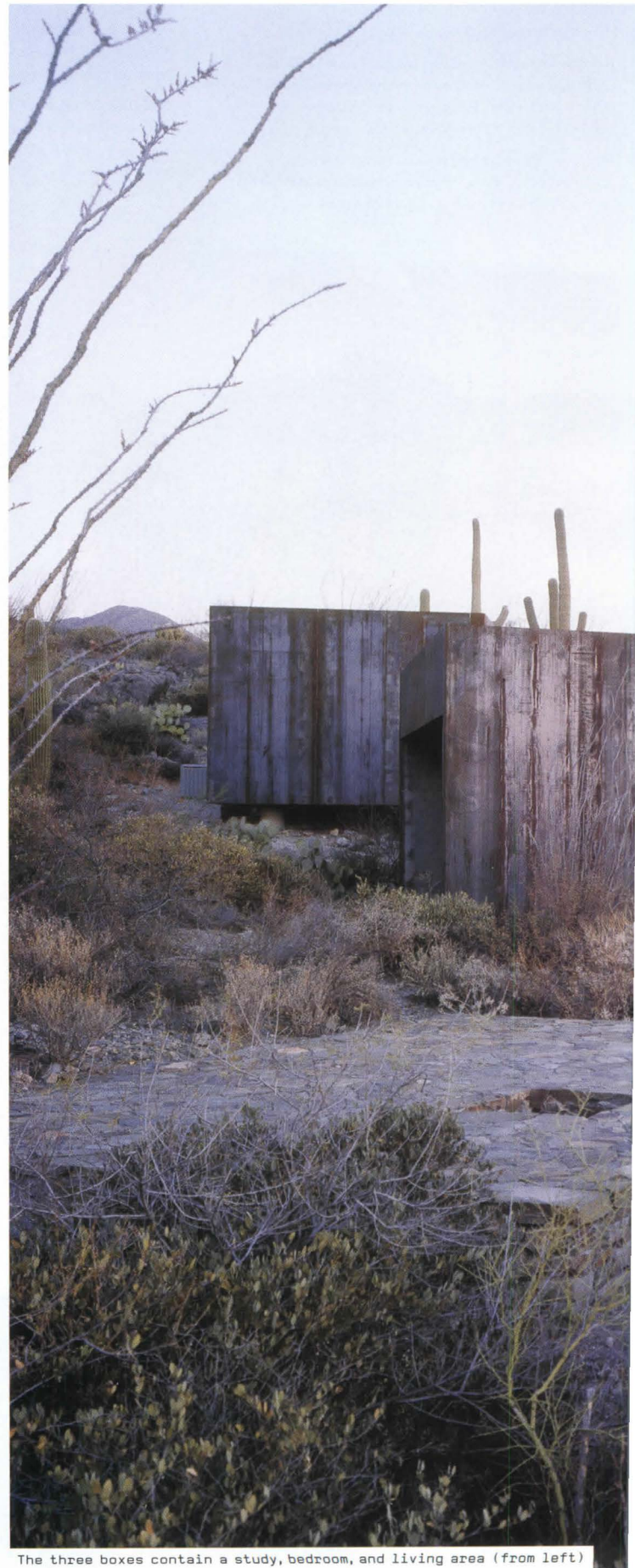
tucson mountain house / 2001

Rick Joy constructed his most recently completed house, the Tucson Mountain House, using his signature building material, rammed earth. The thick, heavy walls provide a strong formal contrast with the delicate corrugated-metal roof.

In the desert, the right architecture may be the least architecture. For Rick Joy, that means a deferential minimalism sited to rake in the views, and textured to slip into the landscape with little commotion. "It's about distilling [architecture] down into a pure, raw experience with the desert," he says. "I try to avoid expressing myself at all costs."

Before architecture, Joy was a musician and finish carpenter. He worked on the Phoenix Central Library with Will Bruder for three years, then opened his own practice. His studio in Tucson's oldest barrio is a celebration of elemental opposites—rammed-earth walls framing intense blue sky over a courtyard. But he does not want to be labeled a rammed-earth specialist. His passions are sustainability and the sensuality of the architectural experience.

Casa Jax, which is still under construction, comprises three steel boxes strewn like dice across the Tucson mountain foothills. Each box orchestrates a carefully considered view, and the interiors are finely finished in maple-veneered plywood to contrast with the exterior armor. The containers, rusted to a desert rock patina, conceal sophisticated adaptations to environment. In the box enclosing the main living/dining space, Joy engineered a 10-by-25-foot window wall with silicone caulking instead of mullions, and a photoelectric sensor that lowers shades in direct sunlight. To avoid broiling the occupants, he fabricated air channels of 2-by-2-inch steel angles between the metal skin and the structural framework. Convection draws in cool air at the base and exhales heated air at the top; in effect, each box is swaddled in passive radiators. "We have this phrase around the office," Joy sighs. "Less is more work."



The three boxes contain a study, bedroom, and living area (from left)

RICK JOY ARCHITECTS / 400 SOUTH RUBIO AVENUE / TUCSON, ARIZONA 85704

PRINCIPAL: RICK JOY, 43 / STAFF: 4 / FOUNDED: 1993

Photography by Timothy Hursley





Gap between the living area (at right) and bedroom



Plan 17' Δ

- 1 kitchen and living/dining area
- 2 bedroom
- 3 study/guest bedroom

CASA JAX, TUCSON

CLIENT: Withheld at owner's request **ARCHITECT:** Rick Joy Architects, Tucson—Rick Joy, Andy Tinucci, Chelsea Grassinger, Franz Buhler **ENGINEER:** Southwest Structural Engineers (structural) **GENERAL CONTRACTOR:** Owner **COST:** Withheld at owner's request



Casa Jax from the north, with the living area (at left)

Any more-than-casual conversation with the two Phoenix architects named Jack DeBartolo revolves, inevitably, around the matter of honesty. The exact word may not surface, but it is always the bedrock for their thought process and, ultimately, for every design the father-and-son partnership produces.

"The thing we try to do is distill cultural values from cultural clichés," says 32-year-old Jack 3. "So much of what we see in Arizona is some cliché that somebody has decided means 'desert' or 'Southwest,' and painted onto the building."

In his former career, Jack 2, now 63, was design principal at Anderson DeBartolo Pan, Arizona's largest firm at the time. Recalling those days, he tightens visibly. A country club in Tucson wanted a brick veneer to dress its concrete structure. DeBartolo agonized, gave in, and hated himself for it. "I was destitute," he says. "I wanted to be free."

He and his partners sold the 200-person firm in 1994, and he went on to establish a solo practice in Phoenix, focusing on much smaller, church-related projects. In 1996 his son, Jack 3, became his partner.

While doing research for the Phoenix First Assembly of God's Early Childhood Education Center, says Jack 2, "We toured blue, pink, and purple buildings with wacky windows. We thought that approach dishonored children. We thought this building ought to be fairly quiet—let the children make the color."

Quiet the building is, but this 26,000-square-foot Sunday school and nursery offers delight and complexity at



debartolo house, phoenix / 1993

Jack DeBartolo 2 designed this house for himself while he was still at Anderson DeBartolo Pan, but treated it as a side project, and soon Jack 3 began to chip in while home on break from graduate school. The project convinced Jack 2 to leave the firm and have more control over his work.

every turn. It respects children by offering them a panoply of environmental experiences, most remarkably the apparent flexing of concave and convex spaces as one moves through it. The circulation pattern consists entirely of shaded outdoor walkways, offering vignettes of the mountain and desert landscape around the building.

It's a tough building, as the DeBartolos say, made out of exposed concrete stem walls, cement-fiber panels for wall infill, concrete floors, and maple plywood millwork. At the same time, it exudes a sense of fun without coming off like a giant toy. Grown-up architecture could learn something here.

DEBARTOLO ARCHITECTS / 4450 NORTH 12TH STREET, SUITE 268 / PHOENIX, ARIZONA 85014 / PRINCIPALS: JACK DEBARTOLO 2, 63; JACK DEBARTOLO 3, 32 / STAFF: 5 / FOUNDED: 1996

Photography by Timothy Hursley



Main entrance



A shaded play area



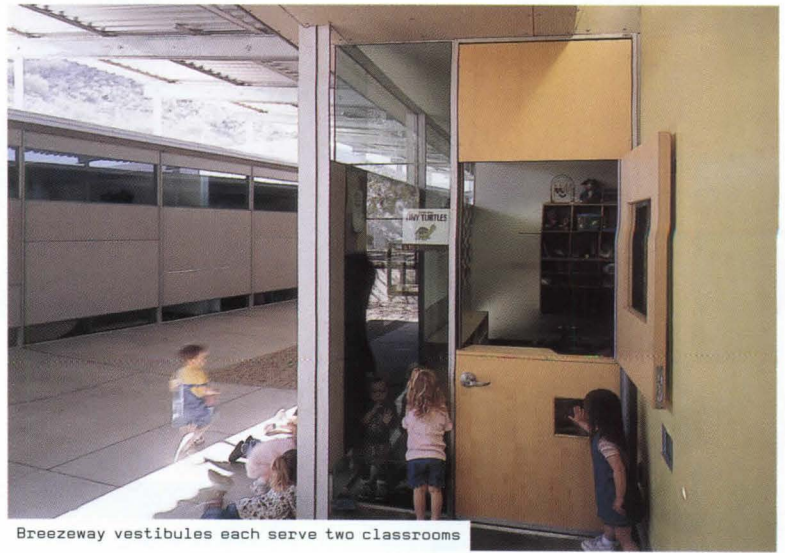
One of two ramps that run the length of the building

EARLY CHILDHOOD EDUCATION CENTER, PHOENIX

CLIENT: Phoenix First Assembly of God, Phoenix—Tommy Barnett (pastor); Gary Allison (business administrator) **ARCHITECT:** DeBartolo Architects, Phoenix—Jack DeBartolo Jr. (principal in charge); Jack DeBartolo 3 (principal-in-charge); Tim Smith (project architect); Brian Meade, Steven Rouse, Mike Pollmann, Chris Lasch, Eric Aust, Christoph Kaiser, Sheryl Ross (design team) **LANDSCAPE ARCHITECT:** Ten Eyck Landscape Architect, Phoenix **ENGINEERS:** Rudow + Berry (structural); Clark Engineers SW (mechanical/HVAC); C.A. Energy Designs (electrical); JMA Engineering Corporation (civil) **CONSULTANTS:** Roger Smith (lighting design); Vince Notaro (cost estimating); Steve Andros (specifications); Smithcraft (signage) **GENERAL CONTRACTOR:** Arthur Porter Construction **COST:** \$3.8 million

SPECIFICATIONS

EXTERIOR METAL CLADDING: Tomen Building Components **BUILT-UP ROOFING:** Firestone **WOOD DOORS:** Meyer and Lundahl **INTERIOR STUCCO FINISH:** Dunn Construction **DOWNLIGHTS:** Zumtobel (Bivergence series) **SUSPENDED LIGHT:** Elliptipar **PLUMBING FIXTURES:** American Standard

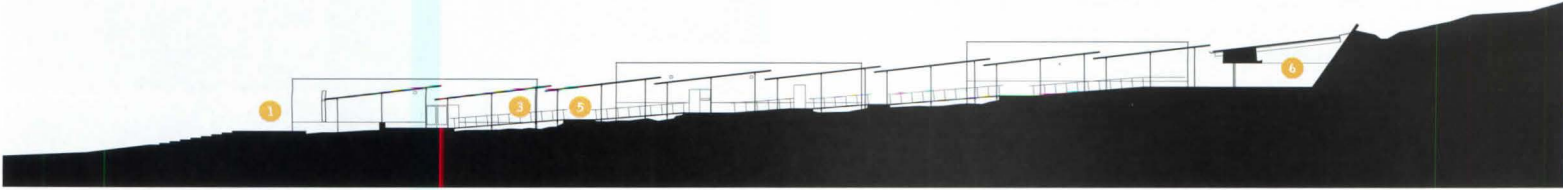


Breezeway vestibules each serve two classrooms



Classrooms open onto shaded breezeway/play areas

- 1 entrance
- 2 offices
- 3 typical classroom
- 4 shaded breezeway
- 5 courtyard/play area
- 6 multipurpose/lunch room



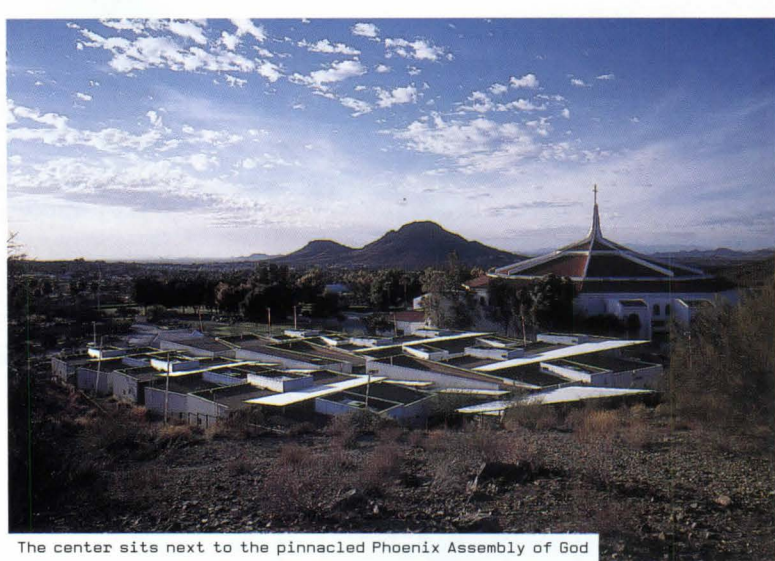
East-west section | 23'



Multipurpose room with a slanted granite wall



Floor plan | 130' ^



The center sits next to the pinnacled Phoenix Assembly of God



Bars of classrooms flank open play areas

"Indigenous" architecture, in the Southwest's popular imagination, usually means revivalism—Anasazi, Pueblo, Mission, Mediterranean (quite an imaginative spin on indigenous, that last one). For Luis Ibarra and Teresa Rosano, it is an ethic of simplicity. Perhaps it comes from their backgrounds: Both are of that rare species, native Tucsonans. Rosano grew up in an *adobe house* built by her father. Ibarra's favorite building is his grandmother's home in the Mexican border town of Nogales, Sonora. "Down there it's not so much about aesthetics," says Ibarra. "It's what you can manage to put together."

They met in the University of Arizona's College of Architecture. After graduation (he in 1993, she in 1994), they married, worked in small offices around the city, then launched their firm in 1999. Their completed work is all residential, but they have also created pro bono a charming design for a rammed-earth *ramada* where desert newcomers will learn the fundamentals of xeriscaping, a method of dry-climate landscaping that uses little or no water beyond that from rainfall. The project awaits fund-raising.

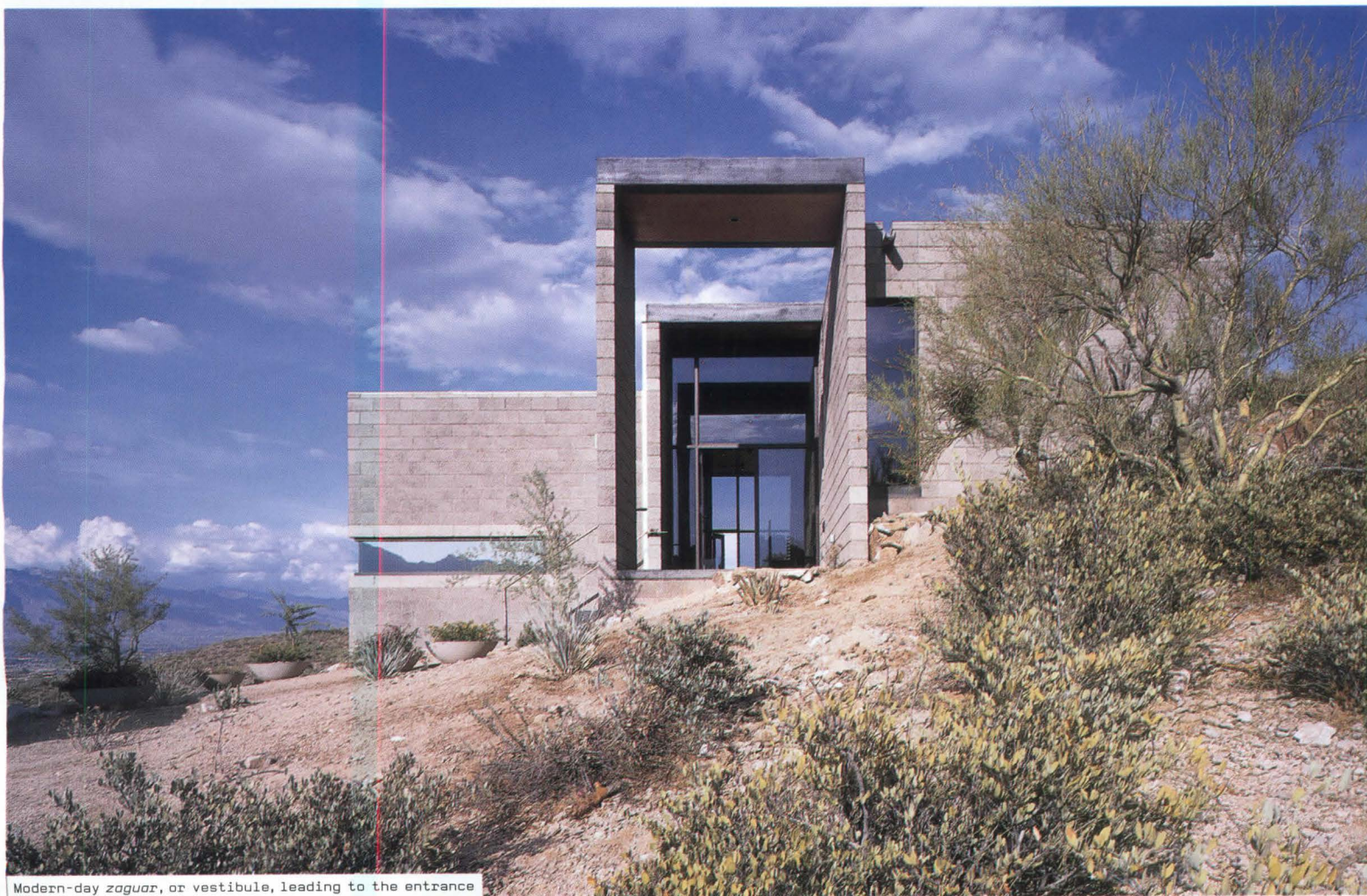
The late Judith Chafee, one of Ibarra and Rosano's most influential teachers, once built a tiny house on a spectacular site in the Tucson Mountains. Her idea was to create "the

least architecture possible" so as not to compete with the land, but the house had attitude. Controversy simmered for years, and in 1989, the house was razed.

Ibarra and Rosano credit that house for inspiring their latest one, a 2,150-square-foot residence not far away, but there are important differences. Its Integra block walls (an insulation-filled cavity block system) slip into the desert's natural textures more sympathetically than the cast concrete of Chafee's house, and its interior spaces are more graceful and cheerful. There's an echo of Legorreta in a lurid grape patio wall, and plentiful custom birch cabinetry to banish clutter—always the bane of a "simple" space.

The house is essentially three boxcar-like volumes that step up the 30-degree slope (this is hard-rock mountain; excavation alone consumed one-fifth of the budget). But the east end of the living room elbows 31 degrees to the left and terminates in a 14-foot-high window wall that grabs a grand view of city lights and the 9,157-foot Santa Catalina Mountains. It is a simple building, but it isn't naive.

IBARRA ROSANO DESIGN / 2849 EAST SYLVIA STREET / TUCSON, ARIZONA 85176
 PRINCIPALS: LUIS IBARRA, 32, TERESA ROSANO, 30 / STAFF: 2 / FOUNDED: 1999



Modern-day *zaguar*, or vestibule, leading to the entrance



Floor plan 18' Δ

- 1 entrance
- 2 gallery
- 3 deck
- 4 kitchen
- 5 living/dining room
- 6 master bedroom
- 7 bedroom

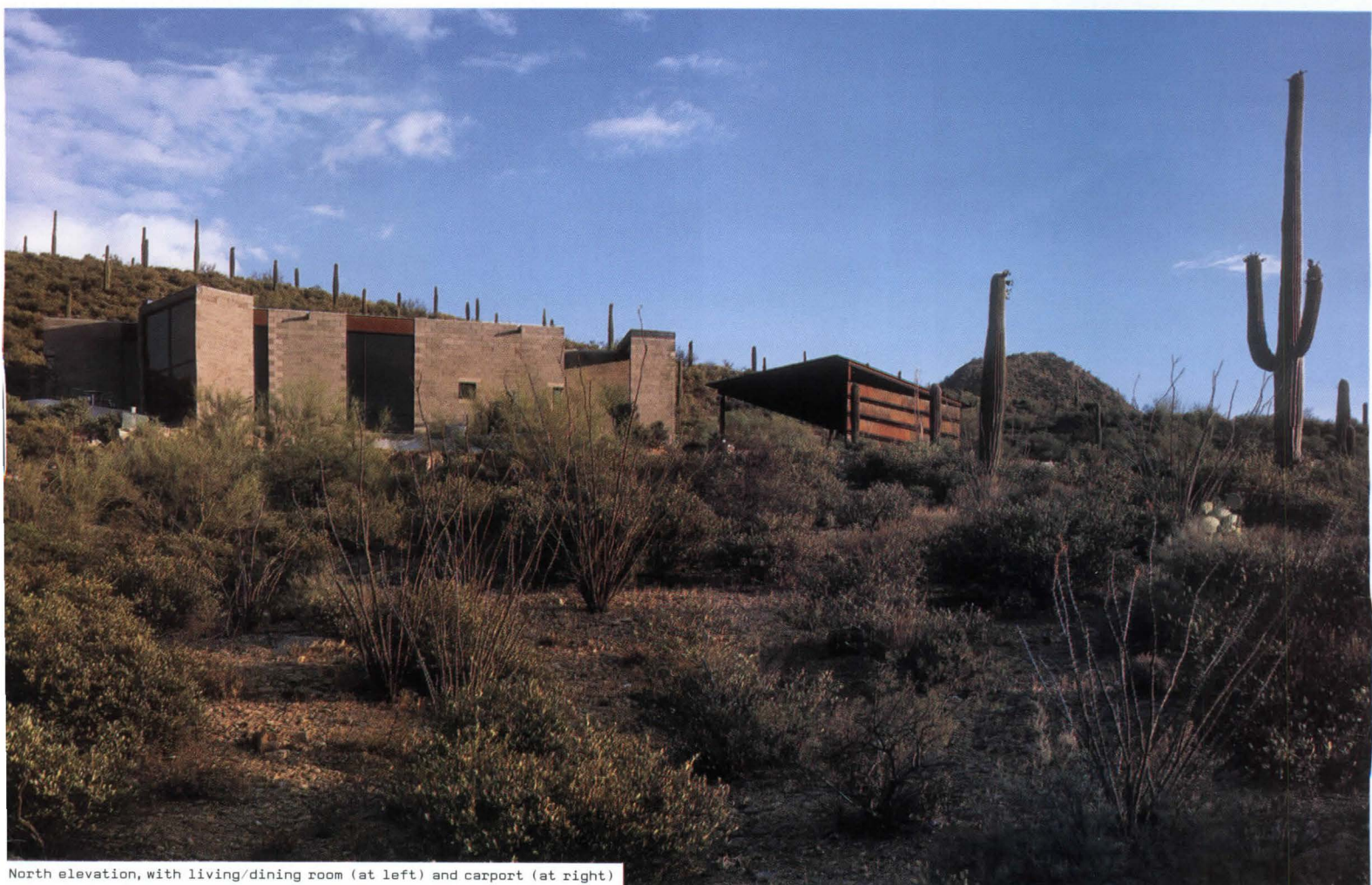
GARCIA RESIDENCE, TUCSON MOUNTAINS IN TUCSON
CLIENT: Withheld at owner's request **ARCHITECT:** Ibarra Rosano Design Architects, Tucson—Luis Ibarra (principal) Teresa Rosano (principal) **ENGINEER:** Nichols On-Site Engineering (civil) **CONSULTANTS:** Paul Formentini (mechanical/electrical/HVAC); Ross Mellencamp (plumbing); City Home Furnishings/modernhome.com (furnishings) **GENERAL CONTRACTOR:** Repp Construction **COST:** Withheld at owner's request



Carport



East elevation



North elevation, with living/dining room (at left) and carport (at right)

John Kane likes cheap buildings. This is in part a pragmatic posture, because his firm, Architekton, specializes in public-sector work, things like suburban rec centers where the budgets never stray far from \$100 a square foot and the low bidder automatically becomes the contractor.

"We can touch a lot more people with a community building than we can with a single-family residence," Kane says. "Our buildings are typically in neighborhoods where the housing projects are developer-driven, and they have an identity crisis. But these can be catalyst projects."

Kane's idealism addresses one of Arizona's critical but seldom-voiced developmental issues: cities expanding so rapidly that they don't have the time for an investment in character. Their neighborhoods, commercial strips, and civic buildings are anonymous and interchangeable, and their residents are too new to the place to understand how or why it could be any different.

Kane and his three partners—Doug Brown, Greg Lambright, and Joe Salvatore—launched their Tempe-based firm in 1989, in the trough of the last recession. "The only work we could get was an Exxon station," Kane recalls. Today the firm has 32 employees.

Architekton favors off-the-shelf materials and modules that don't scare contractors, but it deploys them in intriguing ways. The firm frequently uses perforated-metal screens to filter the fierce sunlight, which municipal maintenance departments applaud because the screens never need painting and don't attract graffiti. The architects like grandly curving forms, maybe just one per project to keep costs in sight—a window wall, a screen or a roofscape that gently lectures its blocky suburban neighbors. "We're designing for the person who's spent a lot of time at the mall," says Kane. "So if



tempe police substation / 1995

Built in brick with perforated-metal screens, the station, Architekton's first major commission, brought modern style to a bland suburban environment. A curved awning provides some shade as it leads visitors inside.

there's industrial texture, there's also refinement to make it comfortable."

Student bodies in Scottsdale (as everywhere) are growing wider, so the program for the local community college fitness center called for a building with the sizzle to sell fitness—at a budget of \$85 a square foot. Architekton responded with a pre-engineered Varco Pruden steel shed and nibbled geometric cavities out of the southwest and northeast corners for entry porches. They opened the north wall with Solex blue-glazed windows to provide a view of moving bodies inside without allowing voyeuristic detail. An extruded screen of 26-gauge industrial siding shades the west wall, though it's already oil-canning. "We started with copper, but that was wishful thinking on this budget," says Kane.

Inside, there's not a lot of engaging detailing. But with a hangarlike volume (the ceiling is 24 feet high), a mezzanine lap track with views of the campus and mountains, and constant rigorous commotion, the space is a bazaar of productive sweat.

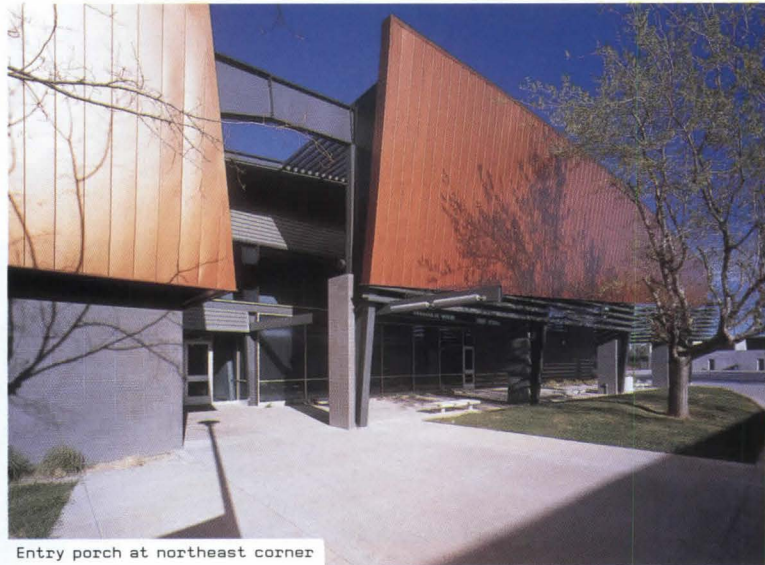
ARCHITEKTON / 398 SOUTH MILL AVENUE #301 / TEMPE, ARIZONA 85281
 PRINCIPALS: JOHN KANE, 42; DOUG BROWN, 45; GREG LAMBRIGHT, 39;
 JOE SALVATORE, 47 / STAFF: 32 / FOUNDED: 1989

SCOTTSDALE COMMUNITY COLLEGE FITNESS AND WELLNESS CENTER, SCOTTSDALE, ARIZONA

CLIENT: Maricopa Community Colleges—Arlen Solochek; Paul Langworthy ARCHITECT: Architekton, Tempe, Arizona—John F. Kane (design principal); Christopher J. Kelly (project architect); Douglas R. Brown (principal); Bill Osborne (project captain) LANDSCAPE ARCHITECT: Moore/Swick Partnership ENGINEERS: Brickey Design Associates (structural); Clark Engineers SW (mechanical); NP Engineering (electrical); Southgate & Associates (civil) GENERAL CONTRACTOR: TelStar Construction COST: \$2,610,615



Entry porch at southwest corner

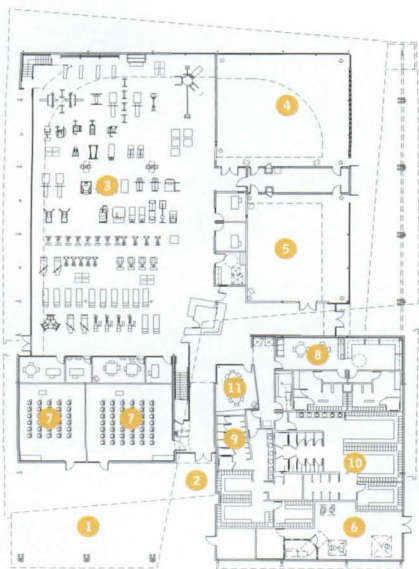


Entry porch at northeast corner



View of west façade from tennis courts

- 1 entry porch
- 2 lobby
- 3 workout room
- 4 aerobic room
- 5 dance studio
- 6 mechanical
- 7 classroom
- 8 staff lounge
- 9 men's locker room
- 10 women's locker room
- 11 conference room



first-floor plan 23' Δ



Second-floor running track

Jim Richärd, partner in the Phoenix firm of Richärd & Bauer, has abstracted a way of thinking about design from his decades in the desert. "You go on a hike and look at the giant saguaro, and begin to understand how specialized that form is, how it shades itself, collects and stores water, expands and contracts as necessary," he says. "And as you go down in scale, you realize that each form in the desert has the same richness. If we are able to do that in architecture, be very purposeful about the forms we create, then we get a similarly rich palette." Richärd talks the game of simple materials, bold forms, rich layering, and engaging daylight in the interior life of the building, but he resists the idea of rolling all this into a recognizable signature.

Richärd, 39, and partner Kelly Bauer, 41, an interior designer, are alumni of the University of Arizona and Tucson-based Anderson DeBartolo Pan Architects (where they worked with Jack DeBartolo II, page 99). They formed their own firm six years ago and have steadily made their way into more challenging projects. Their first was an expansion of a darkly



mesquite branch public library / 1998

Richärd & Bauer's first big project was a \$2 million renovation and expansion of a Will Bruder-designed public library in Phoenix. The open truss work of the new roof tilts up over concrete walls to bring indirect daylight into the 18,000-square-foot building.

ponderous Phoenix branch library by Will Bruder; next was a trio of projects for Glendale Community College. Now on the boards is a \$12 million optical sciences lab for the University of Arizona.

The Glendale campus presented a tabula rasa for their efforts. Its existing style was Sixties Suburban, a low-density huddle of anonymous buildings sharing a halfhearted leitmotif of "flower columns" that support wraparound eaves with blossoming capitals. In their new projects, Richärd and

physical sciences building



The northern elevation with tilt slab concrete walls and a mechanical service module clad in zinc panels

Bauer reinterpreted the columns in various forms, providing a thematic link that—they hope—will push the campus forward without repudiating what slim history it has.

For their expansion of the math building, the architects teased a complex counterpoint of geometries—from triangular tutoring tables to an egglike reception cubicle—into the interior of a basic box, then raked the roof slab at 6 degrees to introduce some dynamism. In the Physical Sciences Building, the roof floats on a collar of clerestories that draw in sunlight ricocheted from the sidewalks outside. The bounce civilizes the desert light, cheering up what could seem a rather industrial-grade interior.

A library is supposed to be a place of enlightenment, but Glendale Community College's original, built in 1965, seemed to forget the root of that word: light. Richard and Bauer's \$2.75 million renovation introduces daylight to the mole warren and adds a sleek, new perforated-steel shell on three sides that dramatically updates a dowdy elevation.

The interior space has been reordered in a logical

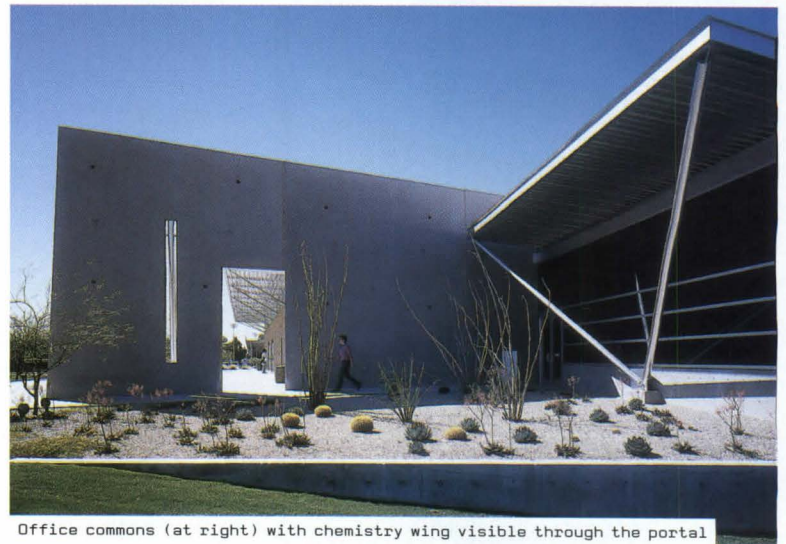
hierarchy: a computer commons in the center, with concentric orbits of book stacks, art galleries, study rooms, and staff offices radiating out from it. The new building pieces appear to hover around and above the old structure, avoiding clumsy intersections and symbolically deferring to the old. Interior flower columns still bear their load, but now coolly double as torchères. A freestanding perforated wall on the west side shields the entry sequence from the fierce afternoon sun, and has politely rusted to a near-match of the brick veneer on the neighboring buildings.

There's one problem. A big, tent-shaped translucent monitor above the computer commons serves as a campus lantern at night and collects sunlight by day, so much that it seems overwhelming. In Arizona, there can be such a thing as too much enlightenment.

RICHARD & BAUER ARCHITECTURE / 4450 NORTH 12TH STREET, SUITE 120 / PHOENIX, ARIZONA 85014 / PRINCIPALS: JAMES RICHÁRD, 39; KELLY BAUER, 41, STEPHEN KENNEDY, 39 / STAFF: 8 / FOUNDED: 1996
Photography by Timothy Hursley



Northern entrance to the commons area



Office commons (at right) with chemistry wing visible through the portal



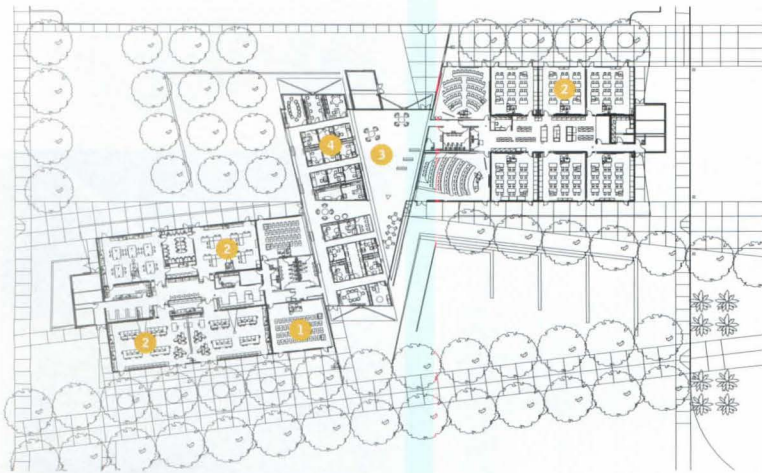
View to the east entry from grass amphitheater



Clerestories illuminate chemistry lab wing



Office commons looking north along central skylight



Site plan 80' Δ

- 1 lecture hall
- 2 labs
- 3 commons
- 4 faculty office

GLENDALE COMMUNITY COLLEGE LIBRARY MEDIA CENTER, GLENDALE, ARIZONA

CLIENT: Maricopa Community College District—Tessa Pollock (president); Joyce Elsner (dean of administration); John Sazama (project manager) **ARCHITECT:** Richärd & Bauer Architecture, Phoenix—James Richärd (design principal); Kelly Bauer (managing principal/interiors); Stephen Kennedy (principal); Erik Koss, Andrew Timberg (project architects); Steve Rouse **LANDSCAPE ARCHITECT:** CF Schuler **ENGINEERS:** Caruso Turley Scott (structural); Energy Systems Design (mechanical/electrical) **GENERAL CONTRACTOR:** Sun Eagle Corporation **COST:** \$2.9 million

GLENDALE COMMUNITY COLLEGE PHYSICAL SCIENCES & MATHEMATICS CLASSROOM BUILDINGS, GLENDALE, ARIZONA

CLIENT: Maricopa Community College District—Arlen Solocheck (project manager) **ARCHITECT:** Richärd & Bauer Architecture, Phoenix—James Richärd (design principal); Kelly Bauer (managing principal/interiors); Stephen Kennedy (principal); Erik Koss, Andrew Timberg (project architects); Steve Rouse, Kevin Evernham **LANDSCAPE ARCHITECT:** CF Schuler **ENGINEERS:** Caruso Turley Scott (structural); GLHN Engineers (mechanical/electrical); CMX (civil) **GENERAL CONTRACTOR:** Sun Eagle Corporation **COST:** Physical Science Building, \$4.7 million; Mathematics Classroom Building, \$2.1 million

SPECIFICATIONS

MASONRY: Sun Valley **EXTERIOR CLADDING:** Elward Construction **METAL/GLASS CURTAIN WALL:** Vistawall **DOORS:** Commercial Door & Hardware **HARDWARE:** Schage **CEILING SYSTEMS:** Armstrong **PANELS:** Tectum **LABORATORY CASEWORK:** Kewanee **CUSTOM CASEWORK:** Stradling's Building Materials **PAINTS AND STAINS:** ICI **GROUND CONCRETE FLOORS:** Advanced Terrazzo **CARPET:** Design Weave **FURNISHINGS:** Knoll



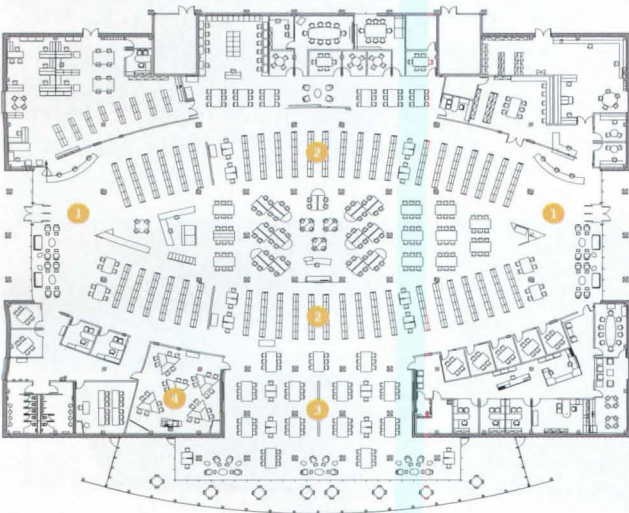
East façade





Southeast entrance

- 1 entrance
- 2 stacks
- 3 reading area
- 4 classroom



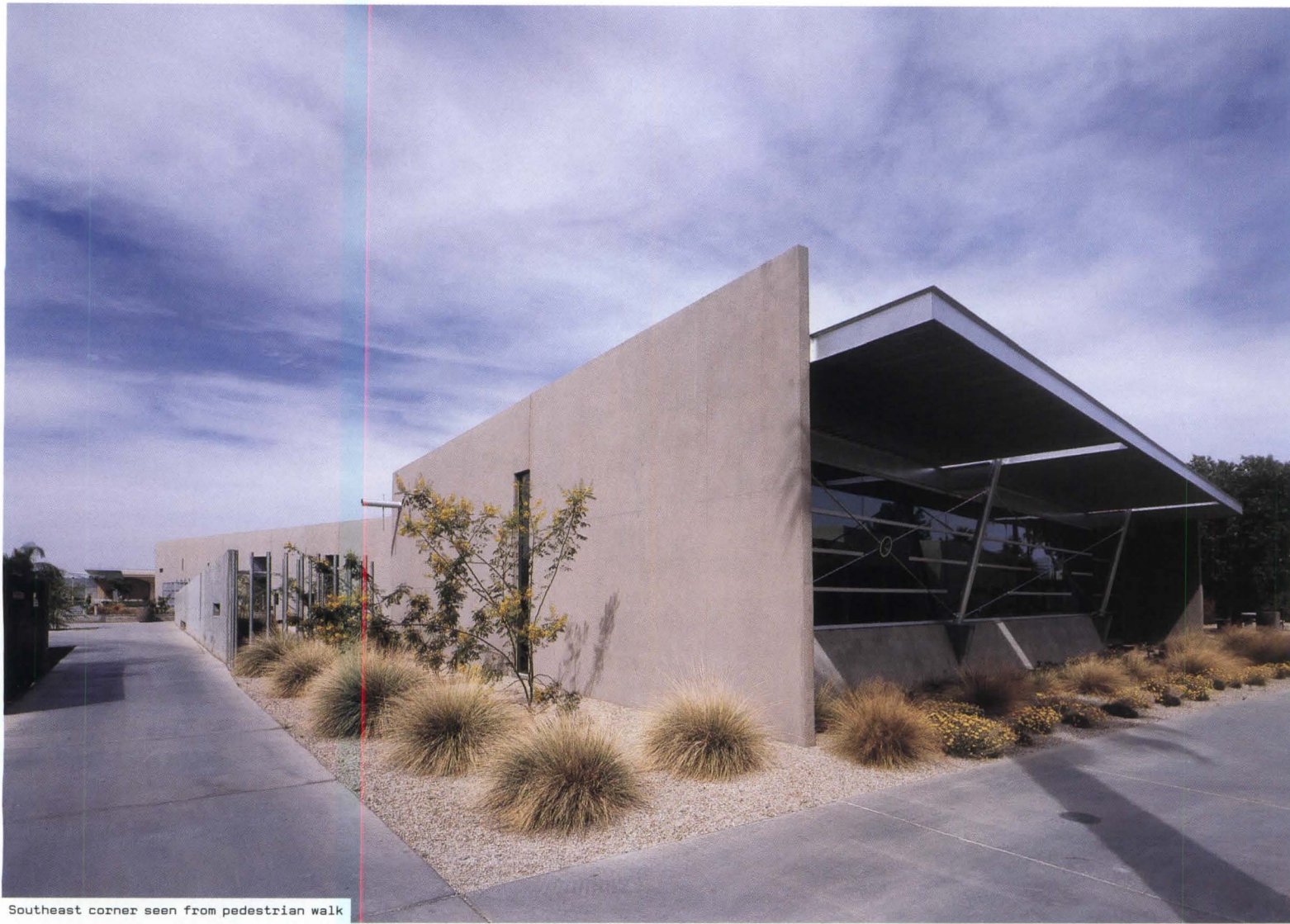
Floor plan 40' ^



South façade, with original flower columns visible

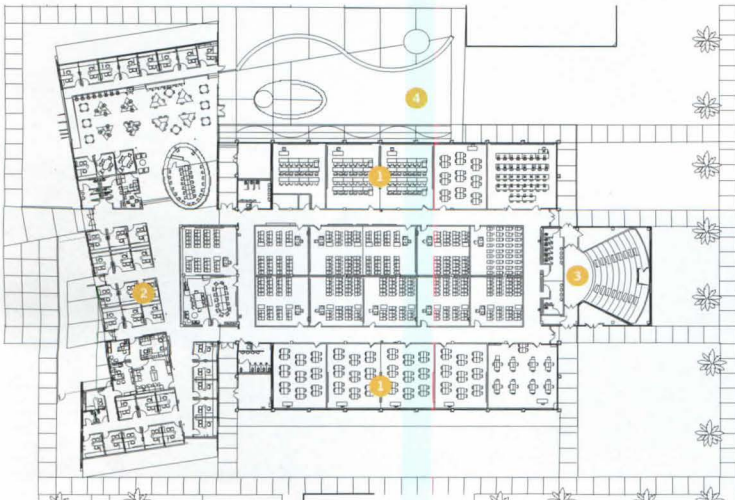


Exterior view of faculty offices



Southeast corner seen from pedestrian walk

- 1 classrooms
- 2 faculty offices
- 3 auditorium
- 4 courtyard



Site plan 45' ^



Tutoring commons looking to courtyard beyond

Clouds make magic in the desert. They offer more than temporary shade and the faint dream of rain; they perceptibly soften the mood of the land.

Marwan Al-Sayed conceived the House of Earth + Light as a serene refuge for a Phoenix couple, a building rooted solidly in the earth but connected, tangibly and spiritually, to the sky.

The walls are 18-inch-thick slabs of poured earth, a mix of dirt and portland cement cast like concrete in plywood forms. Floating overhead (and overhanging the south wall by 6 feet) is a two-layer translucent fabric roof stretched over a steel truss—"a kind of sky painting," Al-Sayed explains, "like a cloud is parked over the house." It embodies a delicious contradiction—a fragile desert nomad's tent and a fortress's walls that look to be good for the next millennium.

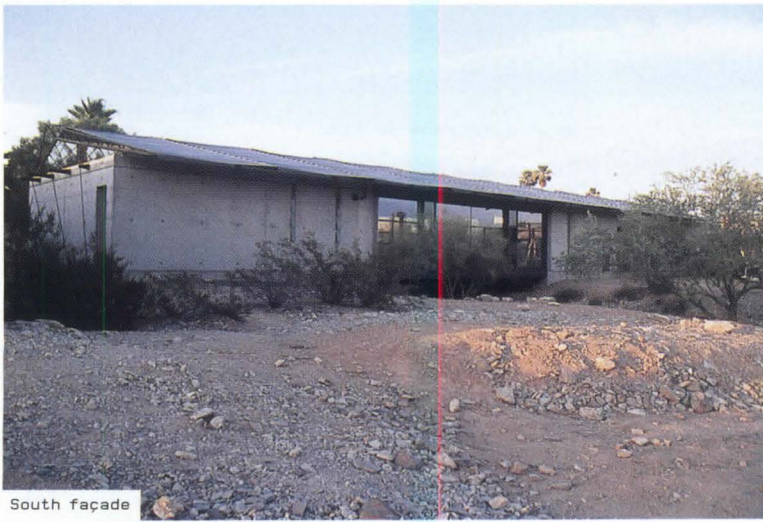
Al-Sayed came to Arizona in 1994 to supervise construction of the Phoenix Art Museum expansion by Tod Williams and Billie Tsien. When the job ended two years later, he decided to stay, forming a partnership with glass artist Mies Grybaitis. The five-person firm has several other projects in the works, including an office building in Arizona, two other houses, and a sculpture garden for the Phoenix Art Museum.

The House of Earth + Light remains a work in progress; the owners have been building it themselves for four years. But thanks to that tethered cloud, the magic is there every day—and occasionally at night, too. The full moon relishes the tent, gracing the rooms with a faint, silvered light.

MARWAN AL-SAYED ARCHITECTS / PHOENIX, ARIZONA / PRINCIPALS: MARWAN AL-SAYED, 40; MIES GRYBAITIS, 33 / STAFF: 5 / FOUNDED 1997



North façade



South façade



Site plan 1" = 22' Δ

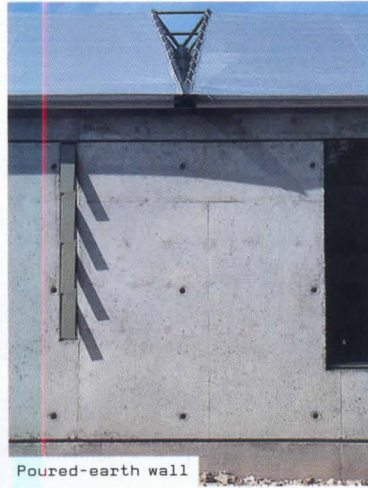
- | | |
|----------------------|------------------|
| 1 studio | 6 entrance |
| 2 family room | 7 master bedroom |
| 3 bedroom | 8 lap pool |
| 4 living/dining room | 9 carport |
| 5 kitchen | 10 bridge |

HOUSE OF EARTH + LIGHT, PHOENIX

CLIENT: Patrick and Marika McCue **ARCHITECT:** Marwan Al-Sayed Architects, Phoenix—Marwan Al-Sayed (principal, lead designer); Mies Grybaitis (principal, artist/concept design and custom cast glasswork); Janet Fink (schematic design); James O’Leary (studio) **ENGINEER:** Ishler Design and Engineering, Douglas A. Snow Engineers (structural); Otterbein Engineering (mechanical); CA Energy Designs (electrical); Atherton Engineering (civil) **CONSULTANTS:** Aricon3 (poured-earth walls) **GENERAL CONTRACTOR:** Owner **COST:** Withheld at owner’s request



Bathroom



Poured-earth wall



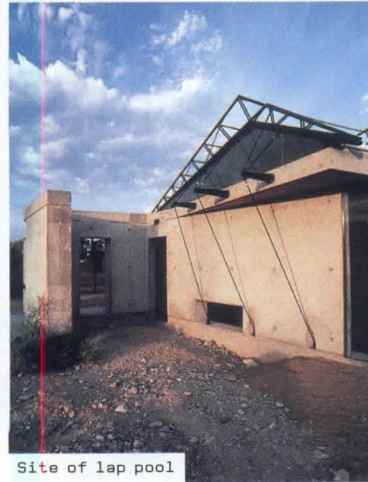
Dressing room



Steel studio wall



Looking north



Site of lap pool



Dressing room



Living room spanning arroyo

Eddie Jones is frequently in trouble with the Good Taste Committee—his endearing term for whichever neighborhood association is reviewing one of his residential designs at the moment. Jones is baffled that Arizonans don't learn from what, to him, seem the obvious sources: the topography, texture, light, color, and climate of the desert.

His most immediate inspiration is the indigenous O'odham ramada. Before the advent of government-issue housing, and sometimes after, the Sonoran Desert tribes built freestanding arbors of mesquite trunks and ocotillo branches and cooked, ate, and slept in these mottled shelters. Arizona architecture, Jones believes, should echo them in spirit: elegantly simple, protective, well ventilated, and tough.

Jones grew up in Oklahoma, earned his degree from Oklahoma State University, and came to Arizona in 1973 to work for Lescher and Mahoney, the state's oldest architecture firm. He opened his studio in 1979 in a spare bedroom, and five years later collected his brother, Neal, as a partner. Jones Studio now employs 11, which is as large as the brothers want it.

Echoes of Bruce Goff, Frank Lloyd Wright, and the O'odham abound in the Jones's work, but appear in unpredictable permutations. Unpredictability, in fact, may be the studio's trump card; Eddie Jones will seize inspiration from anywhere. When someone tossed a rock through a window of his house during construction, he says, "I was pissed off—it cost \$600—but the shards were beautiful!" A few months later, he landscaped the courtyard of his house with shards of tempered glass, construction detritus from his first-ever spec office project, the NAI Horizon building on 44th Street in Phoenix.



arizona state university women's softball and soccer stadiums / 2000

Jones Studio designed the ASU Red Devils' 1,000-seat women's soccer stadium (left) as a stand running the length of the field, terminating in a steel staircase with perforated-metal railings.

Jones Studio got the Phoenix commission because one of the partners of NAI Horizon, a commercial real estate brokerage, wanted to make a statement. Still, it had to be a bottom-line building. Jones responded with "the cheapest glass box I could imagine," then swaddled it in a lattice of Trex, planks of recycled plastic and sawdust that weather to a dusty silver. Mobil Oil, which markets the product for household decking, refused to sell it—even without warranty—for Jones's unconventional use, so he resorted to subterfuge. He ordered a shipment of 2x6 planks and had them sent to Tucson, then trucked them to Phoenix and ripped them into 2x2s. The splintered shades cut heat gain on the glass skin and reduce daylight in the office space. Outside, in a quick windshield view, commuters might take the building's linearity as a symbolic affirmation of long, low, expedient Phoenix. A native O'odham might see it as the way to survive in the desert.

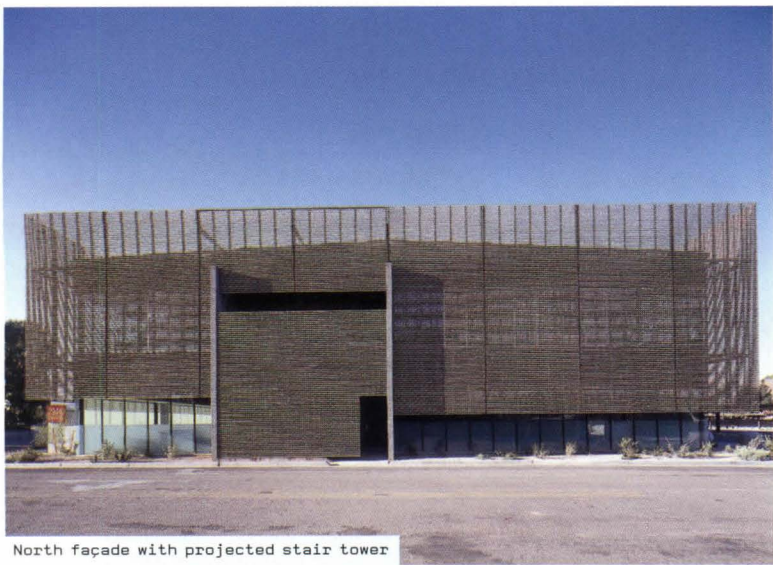
JONES STUDIO / 4450 NORTH 12TH STREET / SUITE 104 / PHOENIX, ARIZONA 85014
PRINCIPALS: EDDIE JONES, 52; NEAL JONES, 47 / STAFF: 11 / FOUNDED: 1979



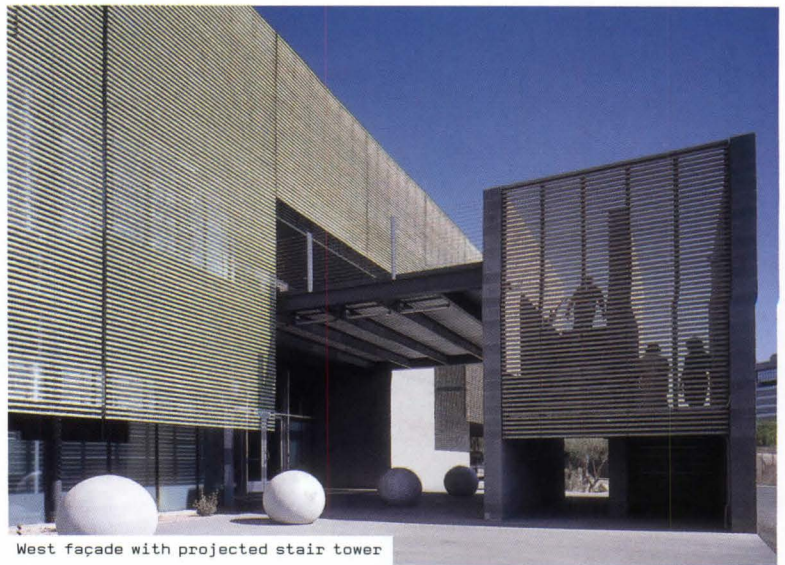
East façade



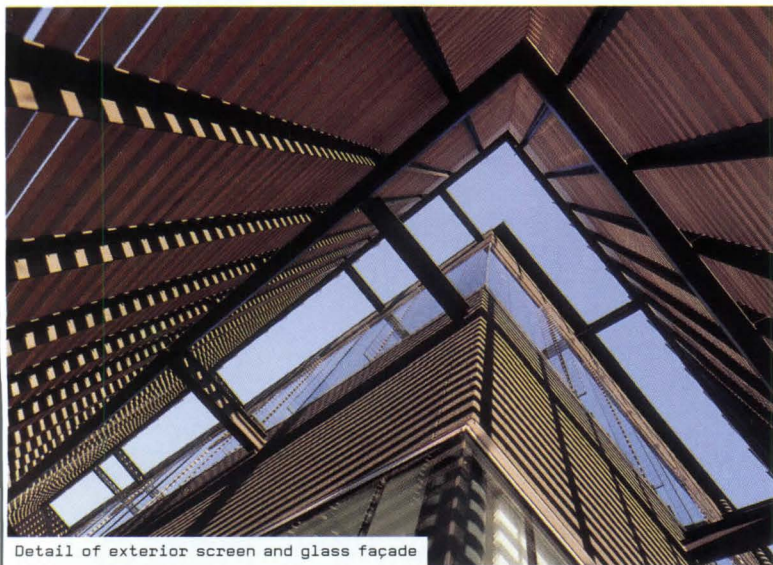
West façade detail, with concrete bollards



North façade with projected stair tower



West façade with projected stair tower



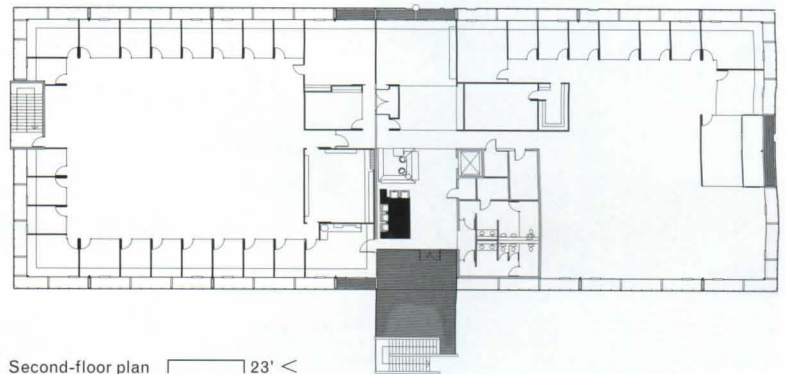
Detail of exterior screen and glass façade



Corner office

NAI HORIZON CORPORATE OFFICE BUILDING, PHOENIX
CLIENT: Pinnacle Diversified (developer) **ARCHITECT:** Jones Studio, Phoenix—Neal Jones (principal-in-charge); Eddie Jones (principal designer); Burt Little (project manager) **LANDSCAPE ARCHITECT:** e group **ENGINEERS:** Rudow + Berry (structural); Kunka Engineering (mechanical); Associates Engineering (electrical); Woodson Engineering (civil) **CONSULTANTS:** Norm Littler (specifications); Lighting Dynamics (lighting) **GENERAL CONTRACTOR:** The Weitz Company **COST:** \$2.2 million

SPECIFICATIONS
PLASTIC SUNSCREEN: Trex **ROOFING:** Derbigum **PAINTED HOLLOW METAL DOORS:** 3G Industries **BIRCH-VENEERED AND P-LAM DOORS:** Meyer and Lundahl



Second-floor plan | 23' <

Architecture and nature strike hard at each other in the Sonoran Desert, and the potential for trouble multiplies when a 25,000-square-foot colossus lands on a mountainside. But Les Wallach has a talent for laying a building on the land not only sympathetically but with the grace of inevitability. With this museum-sized house, there was just more to lay.

Wallach has ridden a unique career trajectory: a diploma in mining engineering, then a flirtation with law, and finally an architecture degree from the University of Arizona. His nine-person Tucson firm, Line and Space, designs and builds—a reflection of Wallach's perfectionist bent.

Design of Campbell Cliffs took two and a half years; realization has consumed four more. "We knew it would be a challenge when we camped on the site with the owner and couldn't find a flat place big enough to put a tent," Wallach recalls. But despite cavernous interior volumes, the house was shelved into the mountain contours until it rose only 4 feet above the highest rock on the lot. It isn't invisible, but the massive sandstone masonry slabs and the façade harmonize with the thorn forest and scabrous escarpment above.

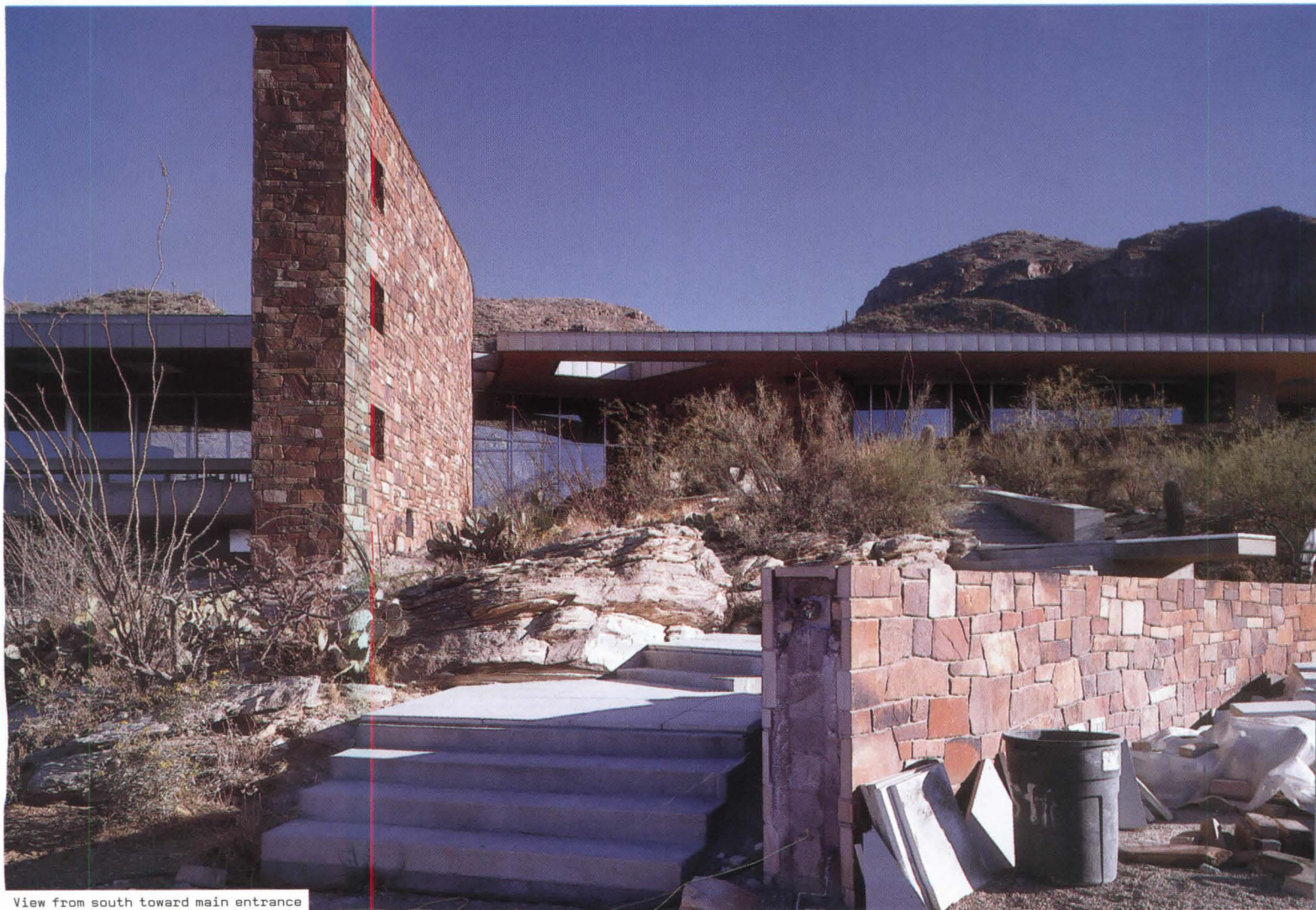


arroyo house / 1989

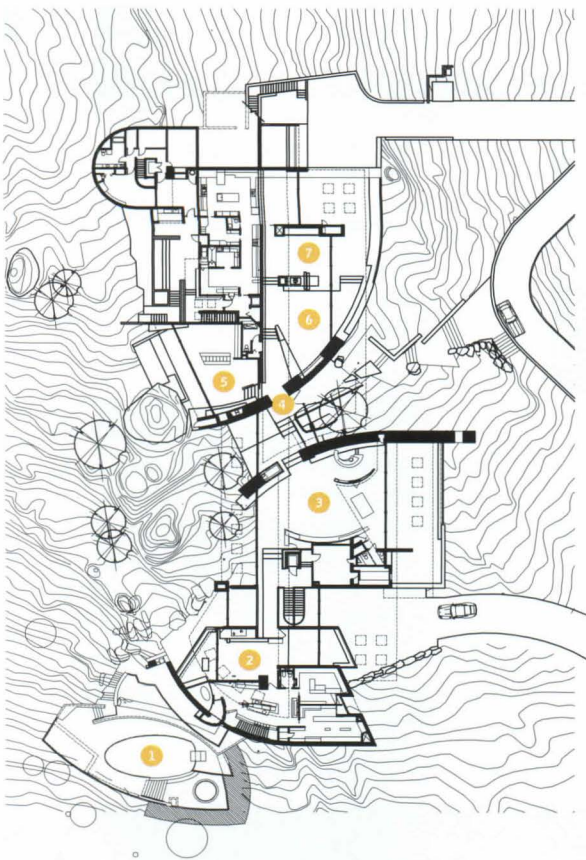
This house, built in concrete, wood, and local stone for Line and Space's Les Wallach, wraps itself around an existing tree and is lifted up over a dry creek bed, hence the name.

The Santa Catalina Mountains form the craggy soul of Tucson, and it's a fair question to ask whether anything, particularly a private residence, should have been built on this site. The vote here is a thundering no. But this mountain has been under legally sanctioned assault for half a century, and although Campbell Cliffs raises the bar of sheer mass and monumentality, it isn't the neighborhood bully.

LINE AND SPACE / 627 EAST SPEEDWAY / TUCSON, ARIZONA 85705 / PRINCIPALS: LES WALLACH, 58; HENRY TOM, 38; BOB CLEMENTS, 37 / STAFF: 9 / FOUNDED: 1978
Photography by Timothy Hursley



View from south toward main entrance

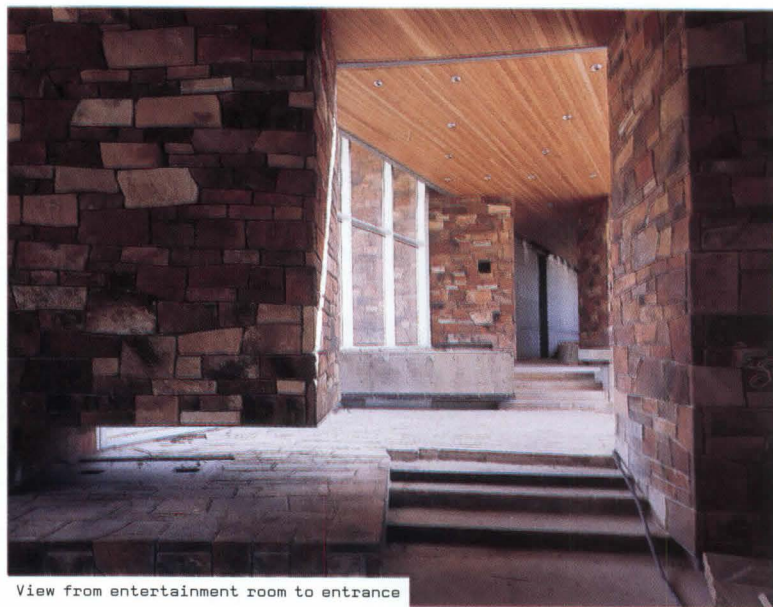


First-floor plan 29' <

- 1 pool
- 2 master bedroom
- 3 entertainment room
- 4 entrance
- 5 study
- 6 living room
- 7 dining room

CAMPBELL CLIFFS, TUCSON

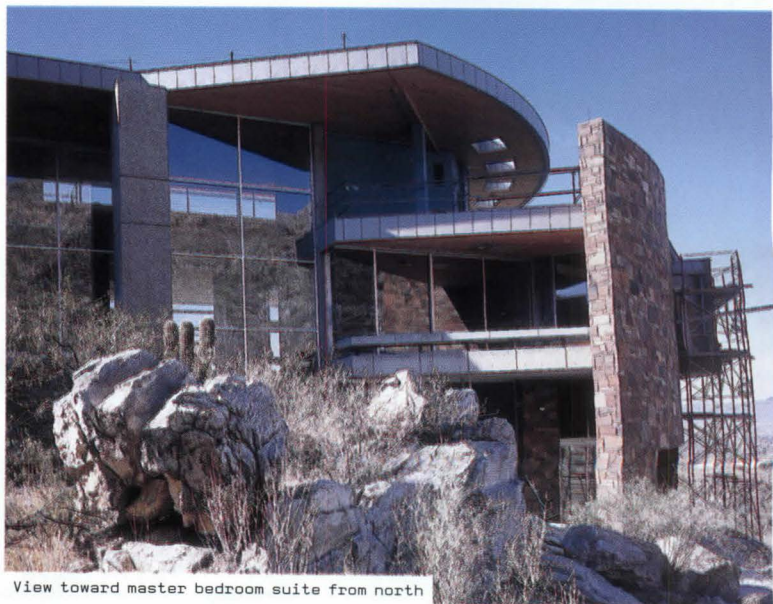
CLIENT: Withheld at owner's request **ARCHITECT:** Line and Space, Tucson—Les Wallach, Henry Tom, Bob Clements (principals); Bob Clements (project architect); Les Wallach (lead project designer); Henry Tom, John Birkinbine III, Colby Campbell, Bruce Greenway, Jeff Adams (design team); Sean Hartigan, Tom Dieterle (model builders) **ENGINEERS:** Holben Martin White (structural); Adams and Associates (mechanical); Burnside Canney (electrical); Presidio Engineering (civil); Adams and Associates (HVAC) **CONSULTANTS:** Line and Space and Elizabeth A. Rosensteel Design/Studio (interiors); Creative Designs in Lighting (lighting) **COST:** Withheld at owner's request



View from entertainment room to entrance



South façade with deep overhang



View toward master bedroom suite from north

Wendell Burnette's work is a stark rebuttal to the assumption that the Frank Lloyd Wright School of Architecture spins out Frank Lloyd Wright clones. Burnette's current work-in-progress, a black box of a house on a Phoenix hillside, falls as far from the Wrightian aesthetic as it's possible to get.

Burnette came to Phoenix from his native Nashville, joining the Taliesin program a month out of high school. He stayed three years, worked with Will Bruder for 11, then launched his own firm five years ago. Most of his work to date consists of houses and studios; his own residence is a remarkable hillside aerie that re-creates a working creek in the arroyo beneath the structure.

He doesn't see his work as a repudiation of Wright's influence, however. Burnette's time at Taliesin left him with two foundational principals: that architecture is a dialogue with landscape, and that spatial experiences are its heart.

His current P/A Award-winning house resides self-consciously in a North Phoenix neighborhood of Taco Deco and ranch burgers. It's a 36-by-48-foot box with a cavelike lower level ensconcing the entrance, media room, study, sauna, and guest bedroom. Above is the living area, which includes a



burnette studio/residence / 1996

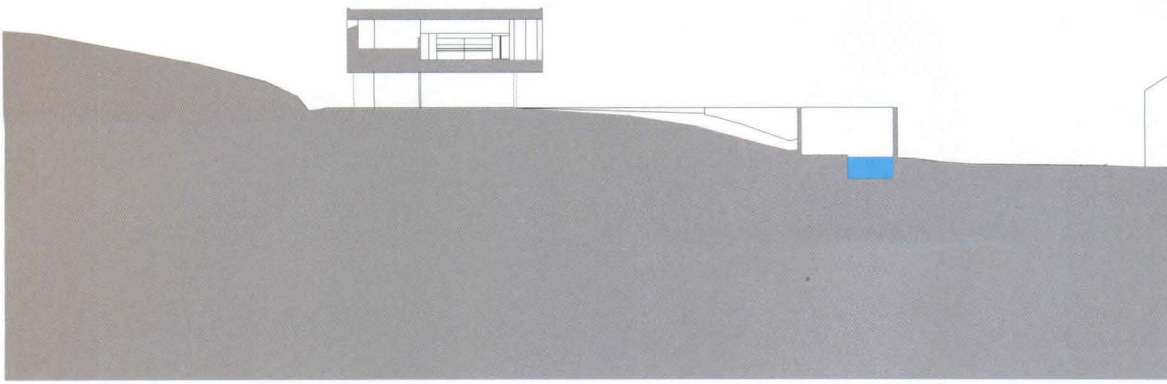
Built in concrete block and cast-in-place concrete, Burnette's home isolates views from its hillside location with high, forbidding walls.

raised platform for a bedroom and a south-facing window wall. The structure blocks out the immediate context, orienting itself instead toward expansive views of the city and South Mountain. The house's essential idea is contradiction: the thinness of light supporting a dark, imposing volume. "It's not minimalist as an imposed style," Burnette says. "It is minimal in the sense that if we can do it in one line instead of two, we should."

WENDELL BURNETTE ARCHITECTS / 9830 NORTH 17TH STREET / PHOENIX, ARIZONA 85020 / PRINCIPAL: WENDELL BURNETTE, 40 / STAFF: 3 / FOUNDED: 1995
Photography by Timothy Hursley



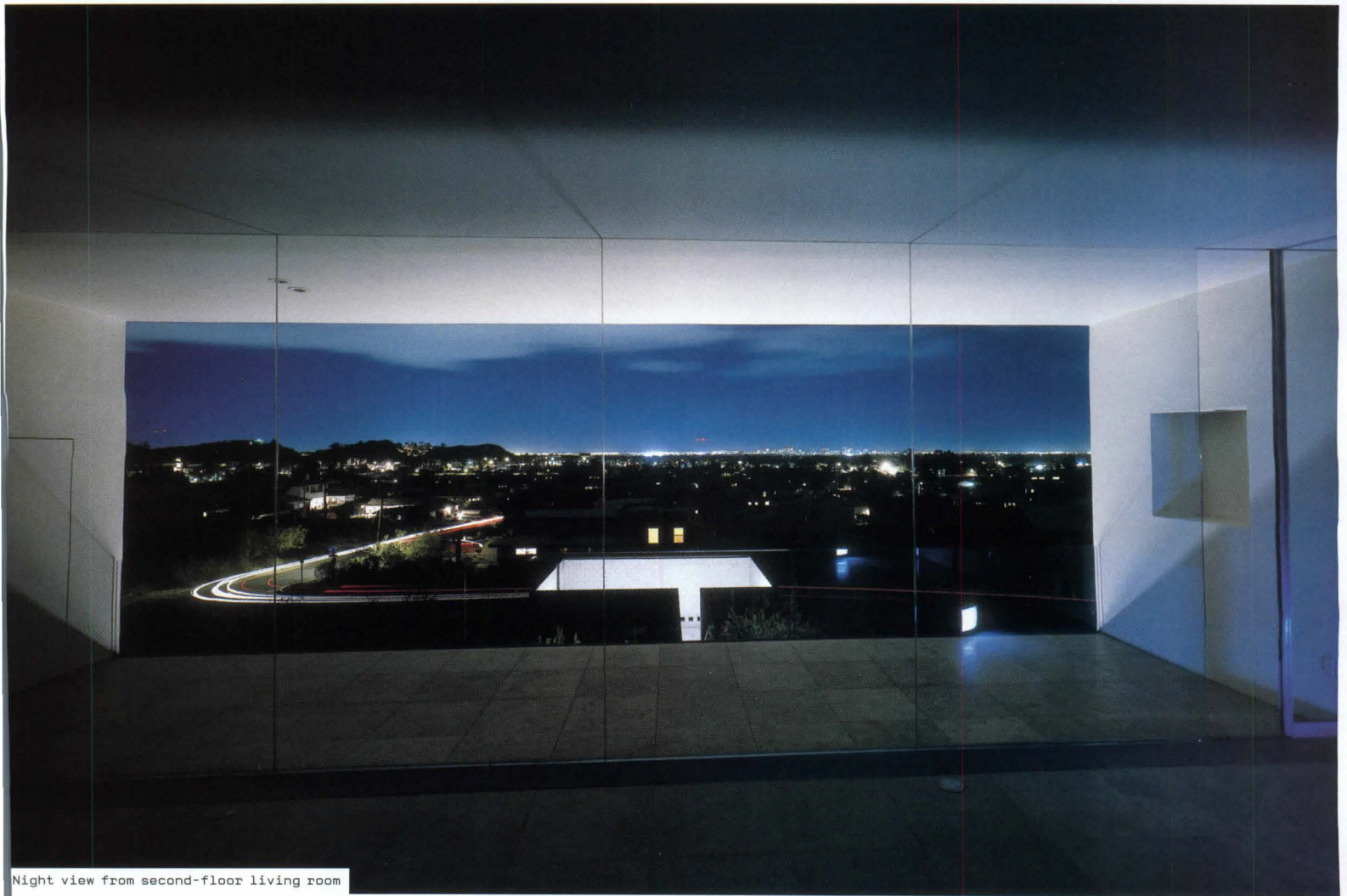
South night view



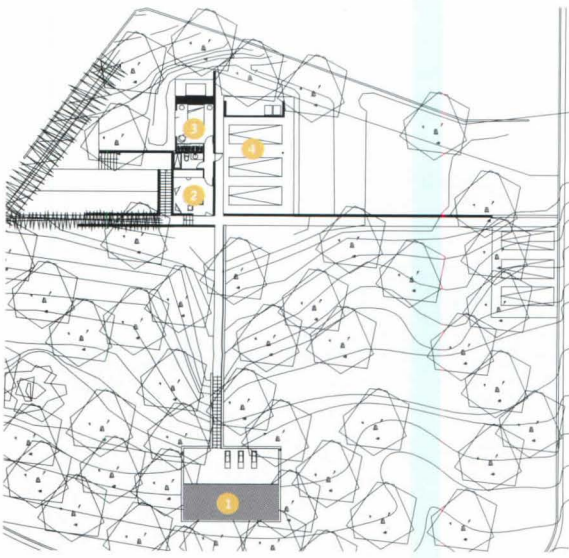
North-south section 16'

TOCKER RESIDENCE, PHOENIX

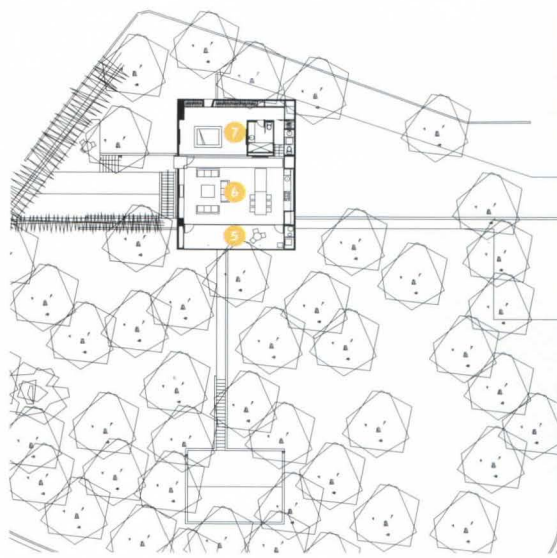
CLIENT: Brad Tocker **ARCHITECT:** Wendell Burnette Architects, Phoenix—Wendell Burnette, Christopher Alt (design team) **LANDSCAPE ARCHITECT:** Debra Burnette Landscape Design **ENGINEERS:** Rudow and Berry (structural); Otterbein Engineering (mechanical); CA Energy Designs (electrical); Atherton Engineering (civil) **GENERAL CONTRACTOR:** Owner **COST:** Withheld at owner's request



Night view from second-floor living room

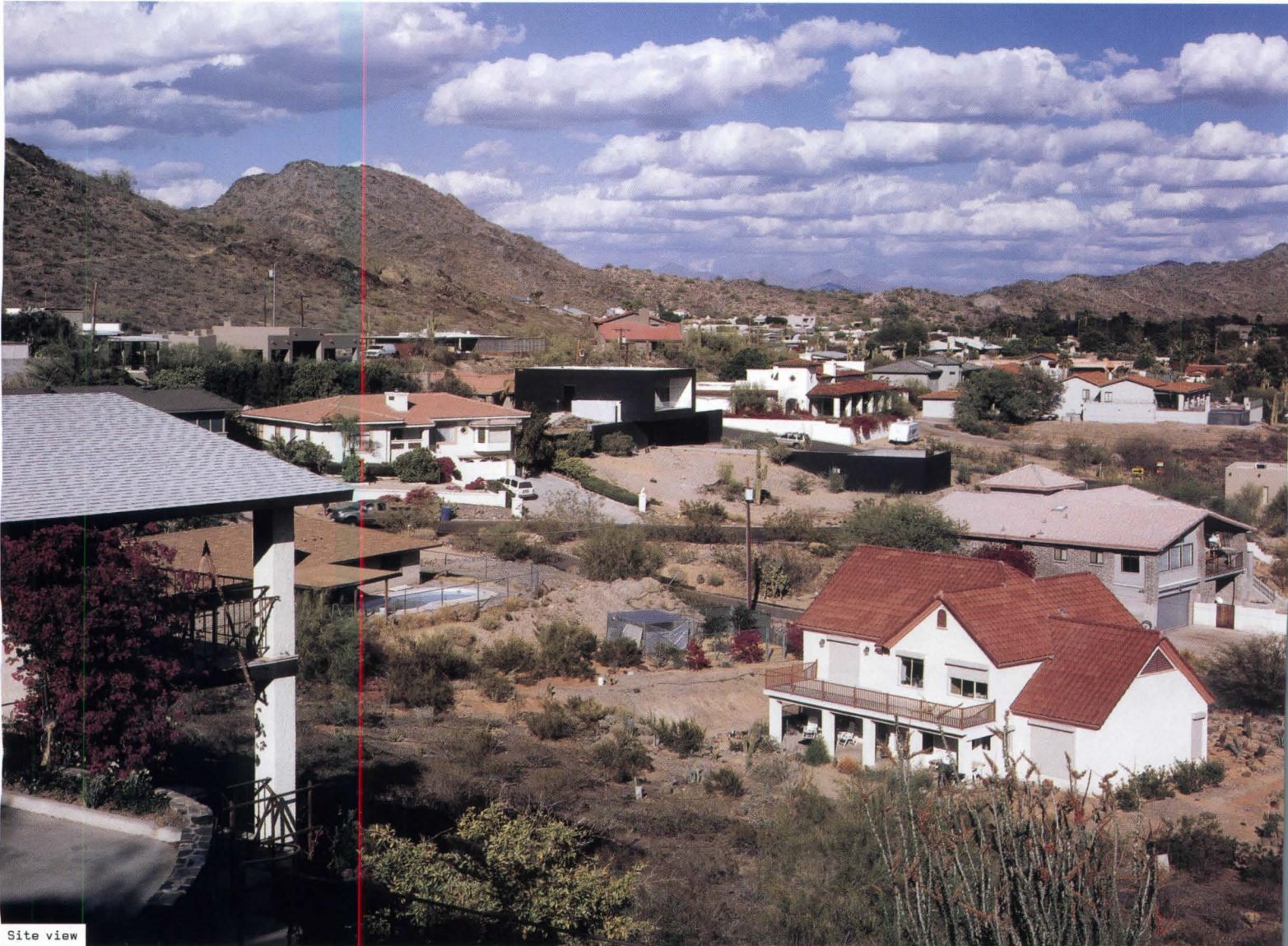


First-floor plan 13' ^



Second-floor plan

- 1 pool
- 2 sitting room
- 3 bedroom
- 4 garage
- 5 terrace
- 6 living/dining room
- 7 master bedroom



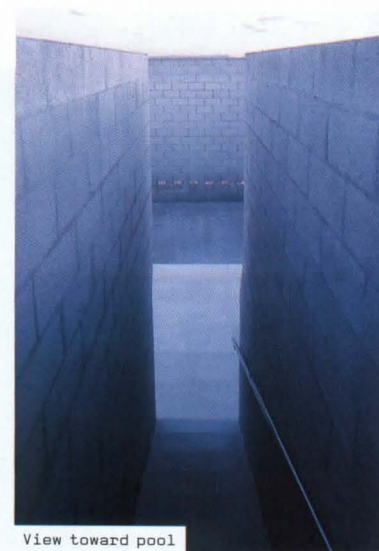
Site view



South façade



View toward house from pool



View toward pool



East façade



From the Phoenix Mountain Preserve, one can see the high-rises of central Phoenix in the distance.





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1



3A

1 GROOVY LAMP

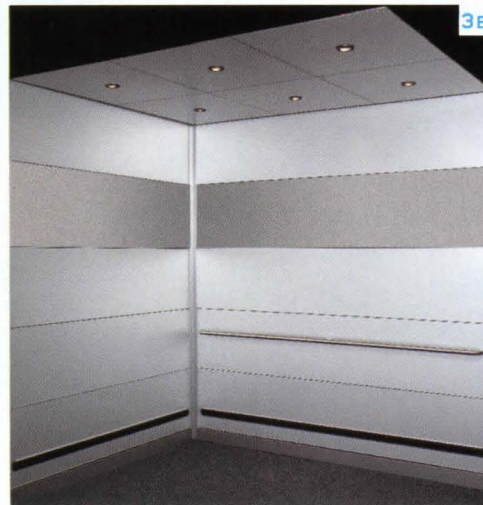
Lighting manufacturer **Focal Point** introduces **Groove**, a new line of pendant lamps inspired by contemporary Swiss design. The spun-aluminum fixtures feature braided-aluminum suspension cords and optional frosted white or green diffuser discs. The fixtures come in six sizes ranging from approximately 7 inches to 12 inches in diameter.

2 NICE RACK

USM is best known in the United States for its minimalist, modular Haller system for open offices, which was recently incorporated into the Museum of Modern Art's design collection. The company's new **eleven22** system provides more privacy, while retaining USM's trademark flexibility. Based on a vertical frame system, eleven22 integrates height-adjustable work surfaces, as well as different lighting, cabling, storage, paneling, and shelving options.



2



3B

3 LOVE IN AN ELEVATOR

A The **Econodisc** elevator-hoisting machine from **Kone** uses a patented magnetic motor and gearless construction. The motor is mounted between the vertical guide rail and the shaft wall, eliminating the need for an elevator machine room. The energy-efficient device has only one moving part, making for a smooth, quiet ride.

B **Forms + Surfaces'** elevator interiors have custom style and finishes at prefabricated prices. Their Cabforms series offers combinations of wood and steel wall panels, handrails, trim, and ceiling panels that interlock. The systems also coordinates with Forms + Surfaces' elevator door and skin surrounds, railings, door pulls, and levers.



4

4 SLICK SECURITY

A new line of **Fence Gratings** from **Meiser** addresses both security and aesthetic concerns. The gridded metal gratings are available in galvanized steel, stainless steel, and aluminum for commercial, residential, or industrial applications. Both rugged and refined, the gratings are available with zinc plating or a variety of powder-coated colors.

For information on the products specified in this section, go to:
WWW.THURU.TO/ARCHITECTURE



PHOTOGRAPHY BY MARK LUTHRINGER

While photographing abandoned malls, free-ways, and hotels for his series *Hancock Fabrics has Moved to the Target Center*, photographer Mark Luthringer found himself confronting issues much larger than just the physical decay of dated architecture. Standing in the California sun, camera in hand, Luthringer bumped right into his own mortality.

Initially, "I was trying to update the role of the ruin as a tradition in art," he says. Before long,

however, he began to realize he was photographing buildings from the era of his childhood, "stuff that was forward-looking in the '70s, and is now at the end of its life."

Shot using the same techniques he applies to newly completed architecture, these structures, now weed-cracked and crumbling, are a reminder, Luthringer says, "that we put a lot of effort and planning and love into buildings, and we want to think they can last, but they don't."

JACOB WARD

**HANCOCK FABRICS HAS MOVED TO
THE TARGET CENTER; EXIT GALLERY,
UNIVERSITY OF NEVADA;
RENO, NEVADA; AUGUST 2002**



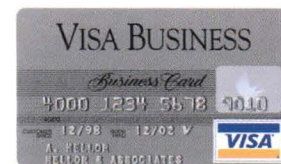
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