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JUNE 1995

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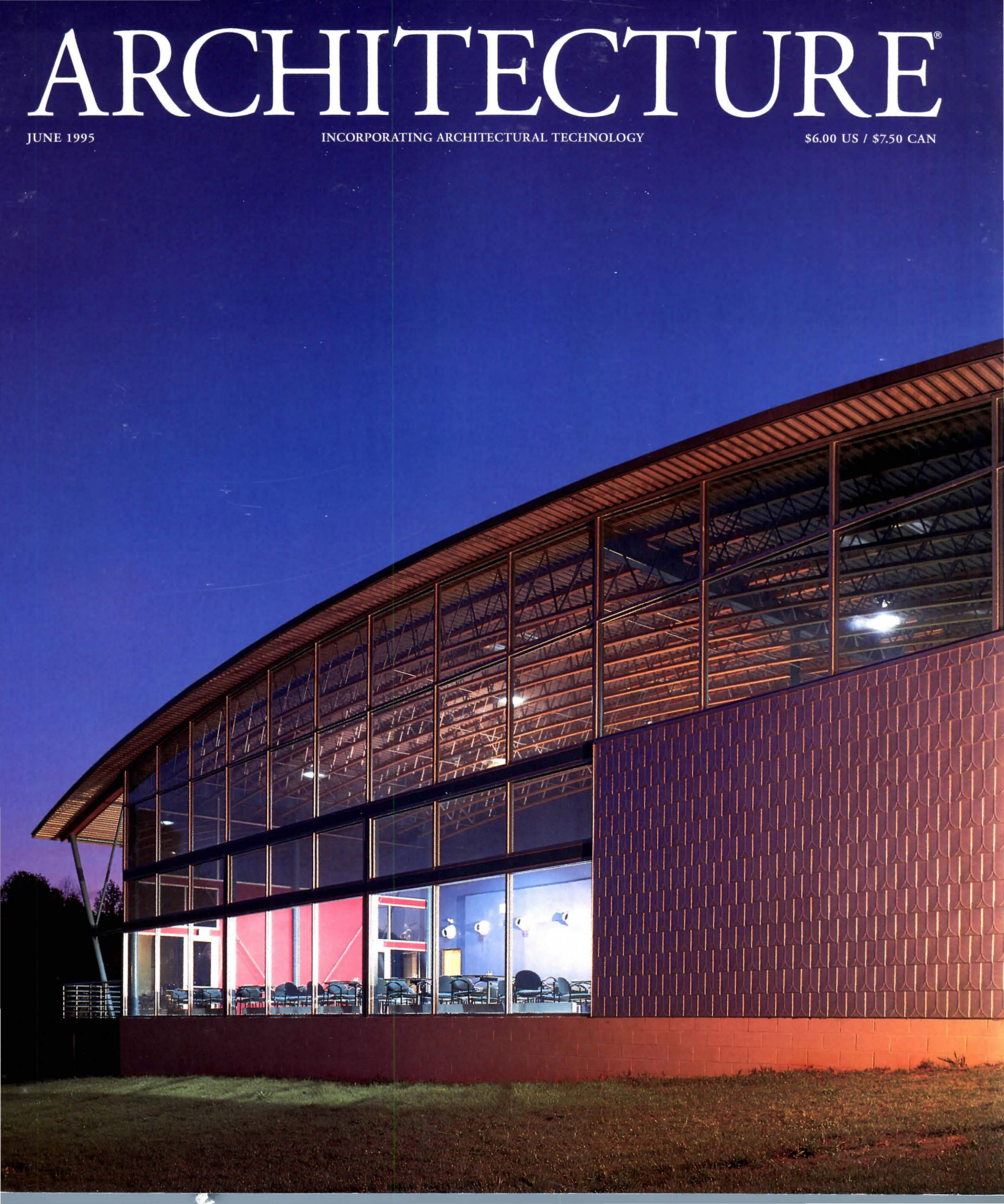

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New Threats to Public Space

Terrorism, funding cuts, and privatization are endangering public architecture.

BETTMANN / TERRY PHILLIPS

When the Alfred P. Murrah Federal Building in Oklahoma City was bombed in April, public architecture was among the casualties. The blast destroyed not only a glass and concrete structure, but also our trust in the design, security, and safety of our government buildings. For architects, the repercussions of Oklahoma City's tragedy are still being determined. But it's clear that a defensive posture will influence public design, especially since, according to *The New York Times,* accused bomber Timothy McVeigh admitted he targeted the Murrah building for its architectural vulnerability.

The recent debate over security and its implications for government buildings comes at a time when public space is being assaulted from every side. This mounting campaign against public space is rooted in fear and economic shortsightedness.

In the U.S. Congress, the House of Representatives and Senate agreed to rescind 39 federal projects for 1995—$580 million worth of new courthouses, border stations, and other government buildings. This compromise was reached after the Senate originally voted in March to halt $1.8 billion worth of federal projects.

The federal funding cuts would severely undermine the Design Excellence Program established last year by the General Services Administration to improve the quality of government buildings. Streamlining the way architects are selected, this federal program is one of the few to recognize the importance of good design, and it should be supported.

The private sector is also extinguishing public spaces in our cities. Sony, the new owner of the Philip Johnson-designed AT&T headquarters in New York, converted the tower's public ground-floor arcade into retail spaces last year. The new owner of the IBM headquarters, Edward J. Minskoff Equities, is following suit, with plans to transform Edward Larrabee Barnes' once-elegant, bamboo-filled greenhouse into a sculpture gallery (pages 51-57, this issue). In the 1980s, these public spaces were mandated for developers who were allowed to construct bigger buildings in return. Now, the private sector is reneging on the deal, setting a dangerous precedent for other cities with similar zoning trade-offs.

Both the public and private sectors should reconsider the consequences of devaluing public architecture. Government buildings must incorporate tighter security, but not by sacrificing civilized environments to inhumane, windowless bunkers. Congress must balance the federal budget, but not by impeding the progress of our courts and other federal institutions. And building owners must realize the urban consequences of sabotaging the precious few public spaces constructed in our cities.

As so tragically demonstrated in Oklahoma City, how we treat our public buildings sends a message about who we are. These buildings are important symbols of our hopes and fears. Public architecture must continue to be funded and preserved, coaxing us back to a common ground.

Deborah K. Dietsch

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Letters

Nashville protest

It strikes me as incongruous that ARCHITECTURE's April 1995 issue would devote so much space to the problems of American cities and fail to praise one success in bringing life back downtown that is so evident in Nashville ("Protest," page 41).

It is through the formalized planning process that South Central Bell brought 1,800 jobs and life to an area of our city that, left alone, would mirror the cities described in the rest of your issue.

Almost all of Nashville applauds South Central Bell for its contribution to our city, and I applaud the building's architect for working with many agencies and interest groups—no small feat.

Gilbert N. Smith
Chairman, Metropolitan Nashville Planning Commission
Nashville, Tennessee

Generally, I am an admirer of ARCHITECTURE magazine, finding most articles timely and well presented. But I can't fail to state my regrets for your having published "Nashville Tower Bullies Downtown Neighbors." The article represents an unfortunate example of superficial observation, intended primarily to make public a few relatively precious private preferences.

The new tower appears to have tried to bring life to a neighborhood of rather dark and grumpy structures, old and new. "Batman Building," indeed. What nonsense.

The rest of the April issue deserves high marks for calling our attention to the crying need to focus on the plight of our cities. Architects must capture the lead as being the professionals most able to understand the whole urban picture.

Roy F. Knight, AIA
Dean, School of Architecture
Florida A&M University
Tallahassee, Florida

The review of South Central Bell's new headquarters building in Nashville is mean-spirited and unnecessarily critical. During the past year, I have visited Nashville on three occasions, and each time I have enjoyed observing this downtown building—its unique form and its presence in context with others. Although I can usually find some type of architectural criticism for a building, I would never have imagined this building would evoke such a scathing review.

As an architect, I believe architecture should represent the broader time horizon in the creation of imagery, metaphor, and allusion. The remarks in the critique appear to show the reviewer's lack of historical knowledge. The "Batman Building" is apparently a nickname associated with the project due to its twin spires.

Many Nashville-area churches feature tall, thin steeples, and these immediately came to mind when I first observed the South Central Bell building. I suggest the reviewer look further than the idiom of Postmodern pop culture as a foundation for her opinions.

David W. Clary, AIA
Joiner Acoustic Group
San Marcos, Texas

Events

Exhibitions

DENVER. "New Concepts: Modern Architecture, Design & Graphics, 1750-1995," through January 28, 1996, at the Denver Art Museum. Contact: (303) 640-2466.

MONTREAL. "Popularizing Architecture in the U.S.A.," June 14-October 29 at the Canadian Centre for Architecture. Contact: (514) 939-7000.

NEW YORK CITY. "The Architecture of The Metropolitan Museum of Art, 1870-1995," through September 3 at The Metropolitan Museum of Art. Contact: (212) 570-3951.

Conferences

BIG SKY, MONTANA. "Second International Green Building Conference and Exposition," August 13-15. Sponsored by U.S. Green Building Council and the National Institute of Standards and Technology. Contact: (301) 657-3469.

BOSTON. "Mastering the Journey: A Blueprint for Managing Change," August 4-6, Society for Marketing Professional Services' conference. Contact (800) 292-7677.

CLEVELAND. Lighting conference for architects, June 19-21. Sponsored by the GE Lighting Institute. Contact: (800) 255-1200.

LAKE TAHOE. "Fundamentals of Lighting Efficiency," August 3-4 at Harrah's Lake Tahoe. Sponsored by the Association of Energy Engineers. Contact: (404) 447-5083, ext. 210.

LONDON. "A Methodological Approach to the Conservation of Historic Masonry Structures," July 2-29. Sponsored by U. Penn. Graduate Program in Historic Preservation. Contact: (215) 898-3169.

MINNEAPOLIS. "Solar '95 Conference," July 15-20. Presented by the American Solar Energy Society, cosponsored by the U.S. Department of Energy. Contact: (303) 443-3130.

OSLO. "Indoor Air Quality in Practice: Moisture and Cold Climate Solutions," June 18-21. Contact: (613) 737-2005

SAN FRANCISCO. "The ICE Has Been Broken," AIA's second annual diversity conference, August 11-13. Contact: (202) 626-7305.

ST. LOUIS. "Practice Leadership" and "Project Leadership," seminars for midcareer and advanced architects, held the weeks of July 10 and 17. Sponsored by Washington University. Contact: (314) 935-4636.

Competitions

National competition for Maryland's World War II Memorial. Entry deadline: **August 15.** Contact: (410) 333-4429.

10th Membrane Design Competition. Entry deadline: **August 31.** Contact via fax: 81-6-306-3154, attn: Hideyo Morimoto.

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News

AIA Convention Promotes Community Leadership

Focused on collaborations, the AIA's national convention in May produced several "firsts" for the Institute. Convention delegates elected the AIA's first person of color and foreign-born architect as president-elect: Raj Barr-Kumar of Washington, D.C. Host chapter AIA Atlanta initiated the first "legacy" project of the convention—three houses specified for Habitat for Humanity and partly constructed by convention attendees. The Atlanta convention was also the first to embrace in earnest new roles for architects outside conventional practice.

The theme of community leadership resounded throughout the three-day event. Secretary of the Interior Bruce Babbitt opened the convention with a forcefully articulate appeal to architects' sense of public stewardship. Babbitt defended the nation's environmental legacy of the past 25 years, heralding an "important reawakening" in awareness of the link between nature and the built environment. However, he also warned darkly of a "radical, fundamental assault" on the ideals of sustainable communities. In particular, Babbitt attacked legislation proposed by congressional conservatives to address the constitutional matter of "takings," that is, private owners' loss of real property to public purpose, such as wetlands protection. Proposed takings laws, Babbitt noted, "would weaken countless other laws that protect the American landscape and each American's unique sense of place."

William J. Stanley III, recipient of the 1995 Whitney M. Young, Jr., Citation, which recognizes social responsibility in architecture, also addressed community involvement. Stanley, partner of 30-person Stanley, Love-Stanley in Atlanta, urged attendees to devote their time, money, and resources to public service. "Architects give away fees anyway," Stanley added wryly, "so you might as well feel good about doing it."

Architect M. Arthur Gensler, president of the 700-person, 14-office megafirm of Gensler and Associates, offered sanguine views on entrepreneurship in the risk-intensive, but risk-averse, architectural profession. His guiding tenets: Speed, simplicity, and confidence.

As far as architects' traditional design role, 1995 AIA Gold Medalist Cesar Pelli expressed a transcendent attitude toward ideological posturing. "My work has not been one of a developing style or school," Pelli observed. "My projects belong to the place where they are built and the people who use them."

AIA Elects New Officers

AIA convention delegates elected Raj Barr-Kumar, of Washington, D.C., as its first vice president/president-elect. Principal of 25-person Barr-Kumar Architects Engineers in Washington, D.C., the 49-year-old architect asserts, "The AIA must stand for Advocacy, Information, and Advancement."

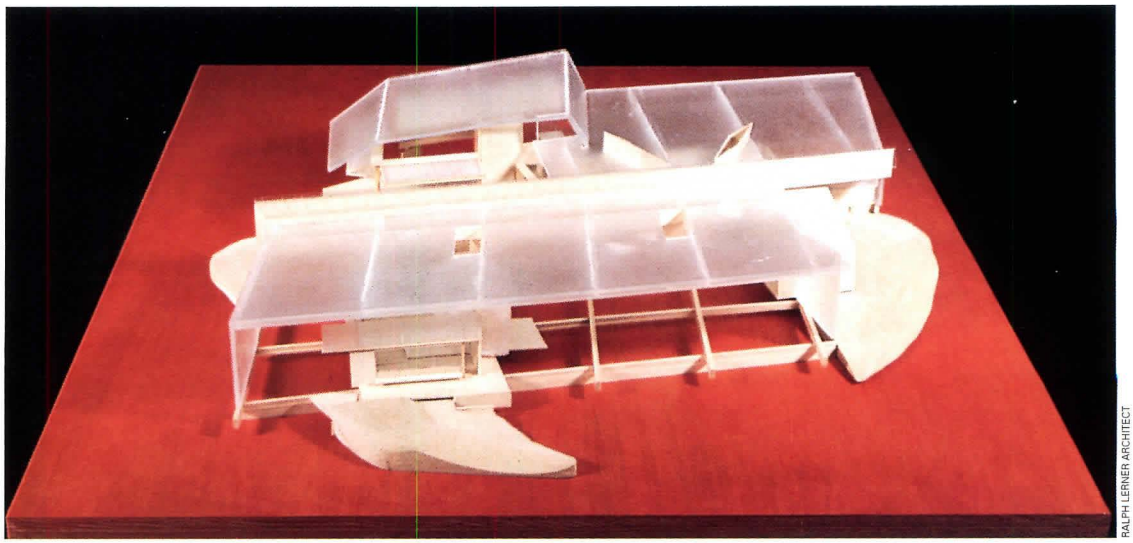
In 28 years of practice, Barr-Kumar has designed medical and institutional facilities, as well as interiors in the U.S., the U.K., Hong Kong, and his native Sri Lanka.

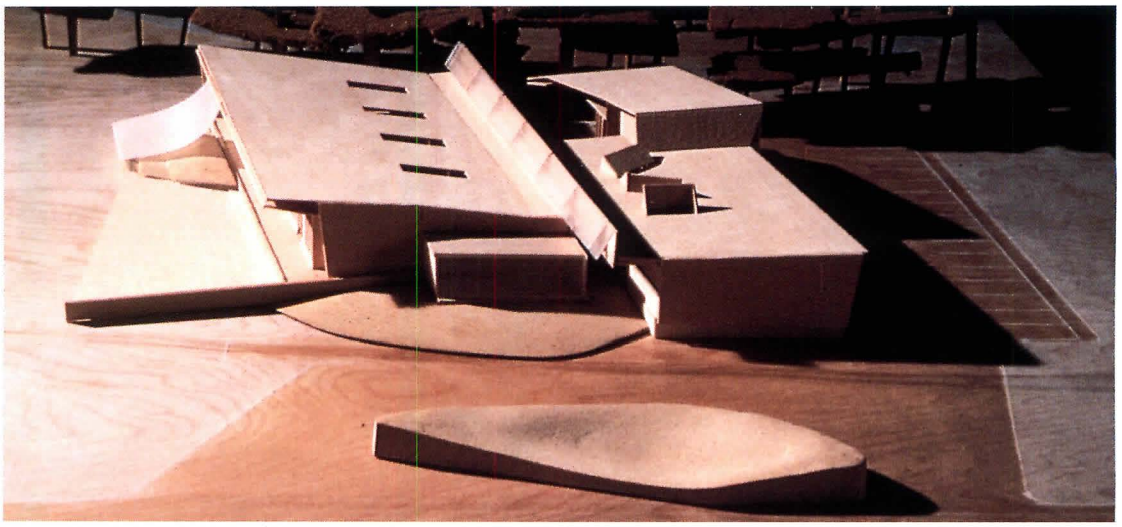
Barr-Kumar will assume his new office in December 1995 and become the AIA's president one year later, succeeding 1995 President-Elect Raymond G. "Skipper" Post, Jr., of Baton Rouge, Louisiana.

Delegates at the convention also elected three national vice presidents: Richard Bradfield of Atlanta; Michael Stanton of San Francisco; and Joseph Wisnewski of Alexandria, Virginia. Duane Grieve, of Knoxville, was elected as AIA treasurer.—*Bradford McKee*

Raj Barr-Kumar
AIA First Vice President/ President-Elect

1995	Regent of the American Architectural Foundation
1993	AIA Fellow
1994	AIA National Vice President
1991-94	National Coordinating Council, Intern Development Program
1991	Executive Committee, AIAS
1991	Examiner, NCARB Architect Design Licensing Examination
1990	President of AIA Washington, D.C., chapter
1990-	Member, AIA Board of Directors
1990-	Chair, D.C. Home; Advisor, Luther Place Shelter for Battered Women and Children
1986-94	Professor of Architecture, Howard University
1984-86	Professor of Architecture, Virginia Polytechnic University
1981	Founded Barr-Kumar Architects Engineers, Washington, D.C.
1981-	Member, Royal Institute of British Architects
1979-85	Professor of Architecture, Florida A&M University
1975-79	Professor of Architecture, University of Kansas
1972-74	Llewellyn-Davies Associates, London
1971-72	Jon Prescott, Architect *Planner, Hong Kong*
1966-71	Panditaratna & Aditiya, Architects Engineers, Ceylon





RALPH LERNER ARCHITECT

FIRST PLACE: Winning project by Homa Fardjadi, Sima Farjadi, and Craig Scott is inspired by sea turtle.

Design Competition Launches Head Start Building Campaign

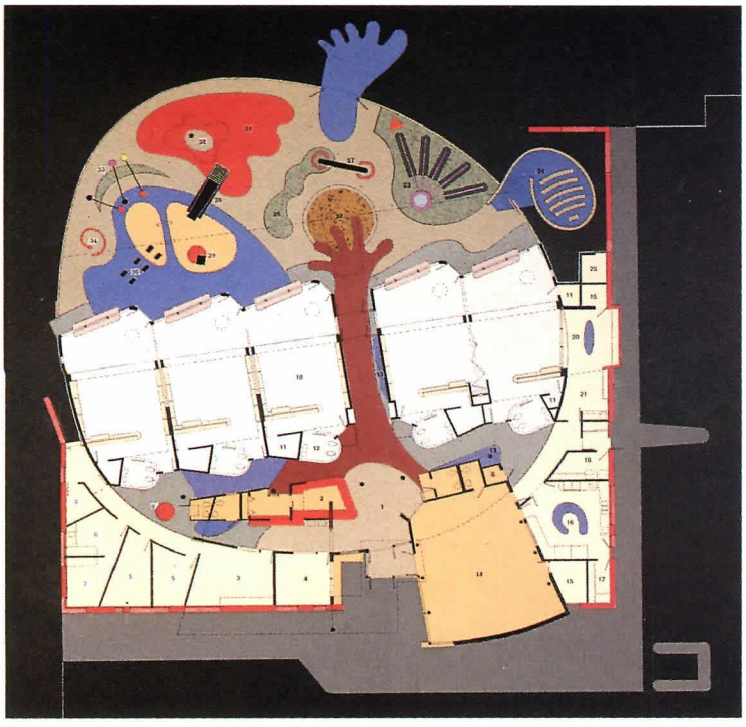
Founded in 1965, Head Start is entering its fourth decade as the guardian of children of low-income families. This successful program, administered by 1,400 nonprofit organizations and schools throughout the country, provides preschool children with education, meals, and medical care under one roof. Head Start is funded primarily by the federal government; 20 percent of each program's operating costs must be raised by the community.

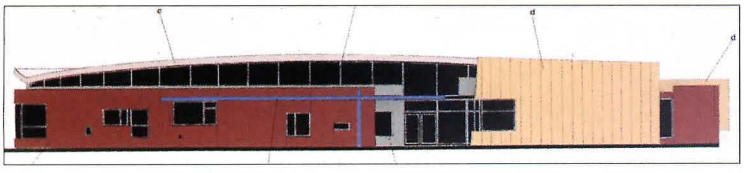
Often relegated to makeshift spaces in basements, garages, churches, warehouses, and office buildings, 37 percent of existing Head Start centers must be relocated or renovated due to poor conditions, according to a 1992 study commissioned by the U.S. Department of Health and Human Services. Existing child-care facilities accommodate 721,000 children—only one-third of those eligible for Head Start—and this shortage of available space prohibits programs from growing.

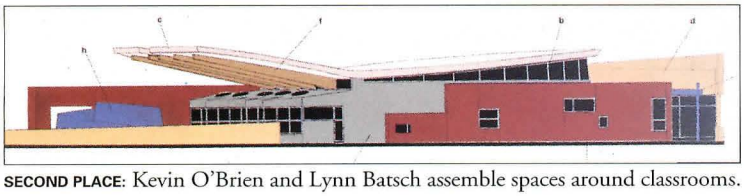
The Head Start Improvement Act passed by Congress in 1992 authorizes Head Start to purchase and construct new buildings. Previously restricted to renting or leasing space, Head Start regional offices now can allocate funds for building new facilities through the Early Childhood Facilities Fund (ECFF), responsible for facilities planning, financing, and development services.

Last March, ECFF organized a conference to define design and programmatic standards for Head Start facilities. Architects, Head Start staff members, and parents attended a conference at the New Jersey Institute of Technology School of Architecture to develop criteria, which translated into a competition program for a Head Start prototype: four to six classrooms; health services area; staff training; indoor play space; kitchen; laundry and maintenance rooms; partially covered outdoor play space; and areas for drop-offs and pick-ups, as well as staff parking and delivery areas.

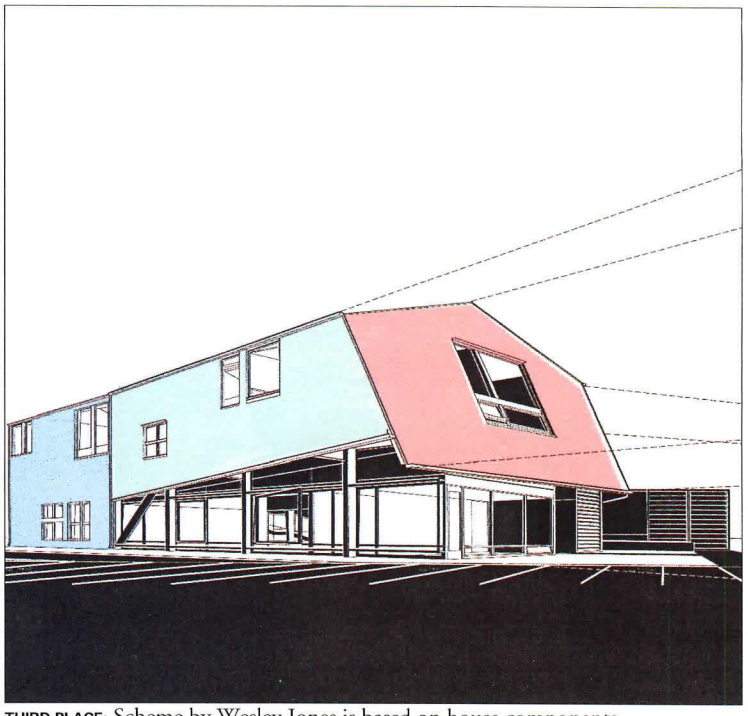
Titled "Patterns for Head Start Facilities," the national competition was held last year and supported by a $50,000 grant from the National Endowment for the Arts. The jury comprised architects Merrill Elam, Mario Gandelsonas, Sharon Sutton, and Tod Williams, and 28-year Head Start veteran Carolynn Henderson, current director of the Early Childhood Programs of New Jersey's Burlington County Community



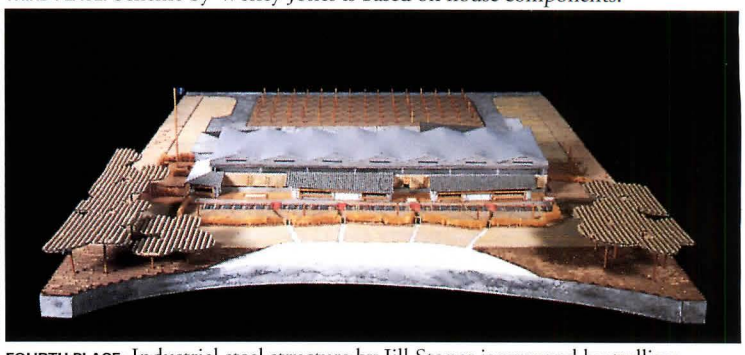




SECOND PLACE: Kevin O'Brien and Lynn Batsch assemble spaces around classrooms.



THIRD PLACE: Scheme by Wesley Jones is based on house components.



RALPH LERNER ARCHITECT

FOURTH PLACE: Industrial steel structure by Jill Stoner is wrapped by trellises.

Action Program. Lisa D. Fischetti, adjunct professor of architecture at New Jersey Institute of Technology, served as professional advisor.

Vigorous new ideas emerged from entries submitted by 143 young architects and designers, many of whom had not previously designed child-care facilities. The winning scheme, announced in February and titled "Turtle Court," was designed by Homa Fardjadi of Fardjadi/Mostafavi Associates, Cambridge, Massachusetts; architect Sima Farjadi of Paris, France; and architect Craig Scott of Cambridge, Massachusetts. The plan is inspired by a sea turtle, with the lines of the shell inscribed on the floors of public spaces. Five classrooms, organized along the east side of a central axis, contain skylit terrariums for learning about nature. Located on the south face, a multipurpose playroom incorporates large folding doors that open to an adjoining outdoor courtyard.

Turtle Court was designed for a parcel in East Windsor, New Jersey, but may be adapted for sites across the country. Jury members applauded the project for its thoughtful assimilation of economic and spatial requirements, imbued with a lively atmosphere appropriate for children, their families, and staff members. "It's a healthy building, full of spirit and ready for use," maintains Tod Williams.

Kevin O'Brien and Lynn Batsch of O'Brien Design in Venice, California, won second place. They combined materials, textures, and colors to create a collage of elements, centered around the classrooms. The architects' painstaking attention to detail, evident in custom furniture designs and playground pieces, ultimately hurt the submission; jury members feared the dynamic structure would be too complex and too costly for a prototype.

Wesley Jones of Jones, Partners: Architecture in San Francisco captured third place with an angular composition based on the traditional components of a house: square windows, gabled roof, and a chimney. Shifts in scale and geometry are designed to foster a child's propensity to explore and discover. "It's a metaphor of the house turned upside down," observes Merrill Elam, "which is exactly what Head Start is about, the hope to rethink family life."

Jill Stoner of Lahn Architects in San Francisco placed fourth. The architect's scheme similarly employs a houselike vocabulary to soften the building's industrial steel structure: Inside, bookshelves, a mudroom, and an attic enliven the simple volume; outside, porches and trellises wrap around the rigid shell.

The schemes will be on display at Princeton University this fall. Head Start is awaiting the reconciliation of federal budget increases proposed by Democrats in February of this year and spending cuts threatened by Republicans in April. The outcome will affect funding from Head Start's national headquarters in Washington, D.C., to its 10 regional offices, which are responsible for allocating money to local programs.

ECFF is currently conducting feasibility studies for construction of the winning Turtle Court in East Windsor, New Jersey—the site designated in the competition; however, no construction date has been scheduled. Head Start officials remain uncertain how many additional facilities will actually be built.—*Ann C. Sullivan*

EXHIBITS: Feature 550 native species.

Florida Aquarium Opens in Tampa

There used to be two basic approaches to designing public aquariums: highly sculptural buildings such as the Baltimore and Tennessee aquariums, with their signature glass pyramid tops, strong graphics, and one-way paths for visitors to follow, or more subdued, contextual structures typified by the Monterey Bay Aquarium, which blends into Cannery Bay and encourages visitors to move in random fashion from exhibit to exhibit.

A new aquarium in Tampa, Florida, blends the best of both design approaches. The $84 million Florida Aquarium, which opened March 31, boasts a glass dome shaped like a seashell and vivid exterior colors inspired by the sea. But it also has a low-slung profile and wide corridors that enable visitors to follow a one-way route or roam as they please. "We set out to create a middle ground," explains Florida Aquarium President John Recanelli.

The aquarium was designed by a joint venture of Esherick Homsey Dodge, and Davis (EHDD), designers of the Monterey Bay Aquarium, and Hellmuth, Obata & Kassabaum. Exhibits were designed by Joseph A. Wetzel Associates.

Chuck Davis, EHDD senior design principal, explains that the Tampa building is more of an icon than Monterey because the earlier aquarium did not have the same sort of context to fit into. He notes that the Florida Aquarium is the first phase of a $300 million waterfront redevelopment program for the Tampa Port Authority's Garrison Seaport Center, on cleared land between downtown and historic Ybor City, and public officials wanted a symbol of change. The context is provided by the cranes, sheds, containers, and other structures of the working port, suggesting an industrial esthetic.

Expected to draw 1.85 million visitors a year, the aquarium contains 4,300 animals and plants representing 550 species native to Florida. Like the Cambridge Seven-designed aquariums, the Florida Aquarium tells a story about the state's diverse habitats by tracing the path of a drop of water from its underground source to the open sea. Moving along a one-way route, visitors encounter four distinct exhibits: Florida wetlands (covered by Gyo Obata's shell-shaped dome); bays and beaches; coral reefs; and the ocean waters offshore. They can also circumvent the route by taking a shortcut through the central lobby.

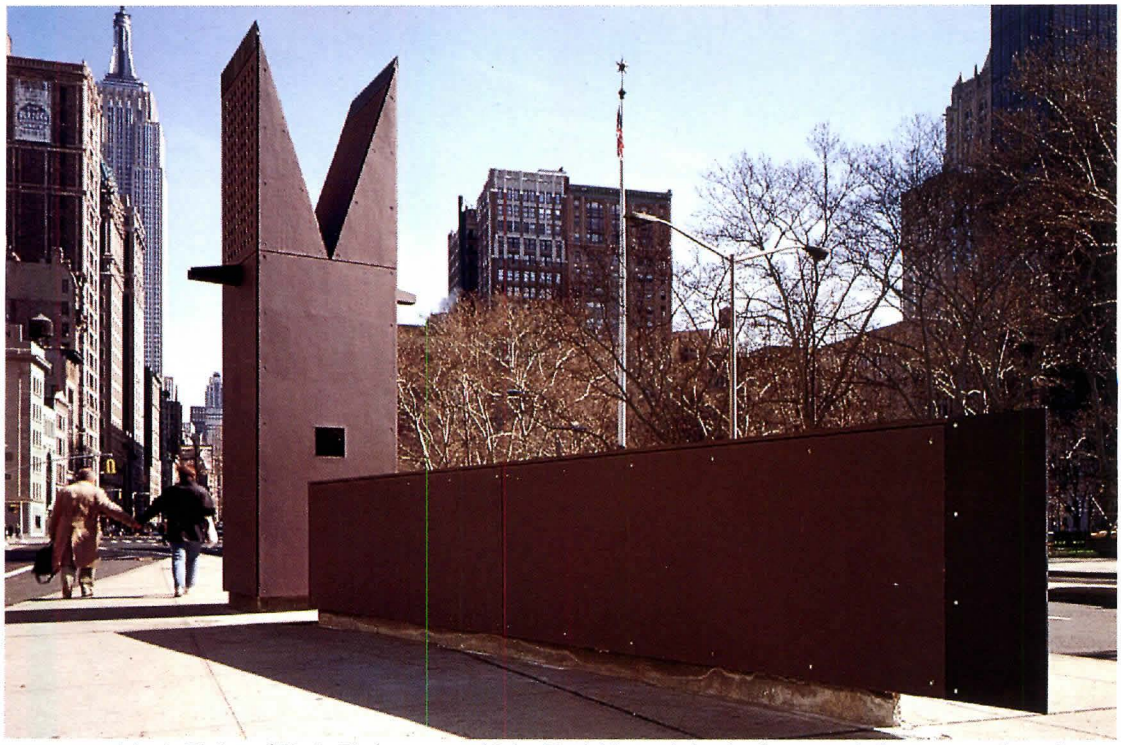
The Florida Aquarium opened the same month that the $52 million New Jersey State Aquarium, designed by the Hillier Group and opened in 1992, announced a $4 million overhaul to boost sagging attendance. BRC Animation Arts of Burbank, California, will redesign the Camden building to contain a simulated coral reef, fossilized teeth from a prehistoric shark, and interactive exhibits that shift the emphasis from New Jersey to habitats such as the Caribbean, where the fish are more colorful than the species native to the state.—*Edward Gunts*

BALTHAZAR KORAB / HEDRICH-BLESSING

GYO OBATA'S DOME: Seashell-shaped structure reflects industrial context of port on Garrison Channel.

BALTHAZAR KORAB / HEDRICH-BLESSING

FLORIDA WETLANDS: One of four distinct exhibits.



CONCILIATOR: Martin Finio and Kevin Fischer executed John Hejduk's 1984 sketch of tower in dark gray painted wood.

JEFF GOLDBERG / ESTO PHOTOS

FLATIRON BUILDING: I-beam section pays homage to skyscraper and Peter Cooper.

First Hejduk Structure Installed in New York City

The allegorical structures that John Hejduk sketched in his book *Mask of Medusa* and in others have been constructed by volunteers in Atlanta, Philadelphia, Boston, London, Berlin, Oslo, Milan, and Prague. In March, the first piece for New York City, the architect's hometown, was installed for a two-month stay on a traffic island opposite the Flatiron Building.

"It just seemed wildly wrong that none of these structures had been built in New York," maintains Martin Finio, who, with Kevin Fischer, hand-crafted the 18½-foot-high, painted-wood *Conciliator*. Both are late 1980s graduates of the Cooper Union School of Architecture, where Hejduk has been dean since 1975.

Hejduk's original 1984 *Conciliator* sketches depict a small tower or booth with a notched crown and flanking pair of ramps and stairs. Two people with a dispute could ascend the ramps on either side of this secular confessional and speak through facing windows to the booth's occupant, the conciliator.

Finio and Fischer modified the sketch to respond to the site's asymmetries: They replaced the ramps with a vestigial wedge and substituted the human occupant with an I-beam section in homage to the Flatiron Building, New York's first steel-framed skyscraper, and to Peter Cooper, the founder of Cooper Union and first manufacturer of rolled steel beams in America.

Major financial support came from a New York State Council for the Arts (NYSCA) grant, with substantial contributions from "21" International Holdings, Knoll International, and others.

Conciliator is dedicated to the memory of NYSCA Administrator Deborah Norden, who died in the USAir crash last September. Norden was instrumental in realizing the project.—*Sarah Amelar*

Sarah Amelar is a writer and an architect based in New York City.

Vienna's Modern Masters Dominate Museum Shows

History and historicism weigh heavily on the Ringstrasse, the great 19th-century imperial thoroughfare circling Vienna's historic core. But this spring, three architectural exhibitions along the Ring, which were on view through April 16, as well as new ongoing displays at the Museum for Applied Arts, highlight Vienna's strong and ongoing traditions of Modernism. There is much more to Vienna and Austria than the pomp of Baroque circumstance and the architectural dream states of the Viennese Secession.

Within a stone's throw of the restored Secession building on the city's huge Karlsplatz, the Kunsthalle Vienna has staged a major show on the diaspora of Austrians who packed their T-squares and left Austria for North and South America. R.M. Schindler, Richard Neutra, Frederick Kiesler, Bernard Rudofsky, and Joseph Urban are the best known in "Visions and Exiles," but there were another 20 Modernists who left Austria to practice abroad. Three years in the making, the exhibition offers a splendid panorama of the Austrian loss that was the American gain.

On the opposite end of Karlsplatz, along the Ring itself, a retrospective of the work of Hans Hollein revealed an Austrian who did not remove himself from the difficult circumstances of working in Vienna, significantly changing the expectations of what a modern practice could be in this country. The exhibition, titled "Hans Hollein," emphasized the architect's early and most recent years (with a discreet amnesia on his intervening Postmodernist period). The language of his latest buildings suggests Hollein has returned to his Modernist roots.

The Museum for Applied Arts, a short walk from the Karlsplatz, is Vienna's equivalent of London's Victoria and Albert, but in the hands of its brilliant director, Peter Noever, the museum recasts the weight of the enormous collections in fresh displays. Collections are arrayed within installations conceived by contemporary artists and built in 1993. An intact Baroque-Rococo period room is housed in a pure white shell designed by Donald Judd, while the collection of Biedermeier furniture is illuminated by quotations culled by Jenny Holzer, which run like an electronic crown molding at the top of the lofty gallery. Recent visitors to the museum were surprised to find drawings and the seminal sketch model by Frank Gehry for his house in Santa Monica, on view until June 25.

The Museum for Applied Arts has also purchased Schindler's 1939 Mackey apartment building in Los Angeles for use by visiting Austrian students, artists, and architects and has entered into a long-term agreement to manage Schindler's own house in Hollywood as a cultural institute. Vienna at last has found ways of repatriating its expatriates and folding their accomplishments back into Austria's complex patrimony.—*Joseph Giovannini*

ROLAND RAINER / MAK

APPLIED ARTS: Peter Noever refreshes collections.

G. KOLLER PHOTOS

KUNSTHALLE: Rudofsky/Cosenza's Oro House (1936).

KUNSTHALLE: Adolph Stiller-designed exhibition showcases works by Schindler, Neutra, and other exiles.

Times Square winner

Arquitectonica's comet-crashing scheme for a glass hotel near Times Square was declared the winner last month by New York Governor George Pataki and New York City Mayor Rudolph Giuliani, over schemes proposed by **Michael Graves** and **Zaha Hadid**. The high-rise hotel will anchor a proposed entertainment complex of the 42nd Street Development Project. Tishman Urban Development Corporation heads the winning "Dream Team Associates," charged with developing the 871,000-square-foot parcel. Disney is signed on as resort owner and tenant for the retail component, to be designed by D'Agostino Izzo Quirk Architects. Construction of the winning scheme is scheduled to begin next spring.

Season finale

As the last Celtics game was played on Boston Garden's famed parquet floors, another Boston establishment closed its doors for the last time. **The Architects Collaborative** (TAC) dissolved in April. Founded in 1945 by six young architects and Bauhaus-founder Walter Gropius, TAC was the AIA Firm Award winner in 1964 and grew to employ 400 in the early 1980s.

TAC's current projects will be handled by various joint-venture firms. Two of TAC's founding partners, Norman C. Fletcher and Chip Harkness, have set up practice in Cambridge with former TAC Vice Presidents Michael Cohen and Gary Moneyhun. The new firm, **Fletcher Harkness Cohen Moneyhun**, has two new library commissions.

Capitol candidates

The AIA has recommended nine candidates to be considered by Congress for the position of Architect of the Capitol, a post to be vacated by Nixon appointee George M. White in November. The suggested candidates are **Harold Adams**, president of RTKL Associates in Baltimore; Pittsburgh architect **Sylvester Damianos**, 1990 AIA president; **Paul R. Neel**, dean of California's Polytechnic State University's College of Architecture and Environmental Design; **Dianne Walters**, program director of the GSA's Courthouse Management Program; **Pedro Porro**, supervisory architect with the U.S. Department of the Treasury; **David Castro-Blanco**, principal of Castro-Blanco, Piscioneri & Associates in New York; **Kathryn Vernon-McKeen**, director of program management in the Bureau of Facilities Design and Construction of the Connecticut Department of Public Works; **George Hartman**, principal of Hartman-Cox Architects in Washington, D.C.; and **Jack DeBartolo**, a principal of Anderson DeBartolo Pan, a Phoenix firm recently acquired by **Fluor Daniel**.

Blocked bridge

Preservationists prevailed in a two-year battle to stop construction of a $15 million bridge linking Ellis Island to New Jersey. The scales were tipped heavily in historic preservation groups' favor: New York state

officials didn't want to lose control of the island's stream of tourists, all of whom travel via the Statue of Liberty Ferry; and economic groups objected to the traffic, citing the damage it would inflict on New Jersey's waterfront Liberty State Park. Only New Jersey officials heralded the bridge—in an attempt to lure tourists to its shores. The conflict ended when funding for the bridge was removed from a congressional spending bill in May.

Recent appointments

A professor of architecture at Cornell University for 28 years, **Colin Rowe** is the 1995 recipient of the Royal Institute of British Architects' Gold Medal for Architecture. President Clinton has named **Harvey B. Gantt** chair of the National Capital Planning Commission. Gantt, the former mayor of Charlotte, North Carolina, is principal of Gantt Huberman Architects in Charlotte. **Elizabeth Plater-Zyberk** has been appointed dean of the School of Architecture at the University of Miami. **Alan Balfour**, former chairman of the Architectural Association School of Architecture, is the new dean of Rensselaer Polytechnic Institute's School of Architecture. Professor of Landscape Architecture **Robert Z. Melnick** has been appointed interim dean of the School of Architecture and Allied Arts at University of Oregon.

Awards

Who says architects don't make good businesspeople? **Sorg and Associates, Architects and Engineers**, based in Washington, D.C., received an award of excellence from the U.S. Small Business Administration. The certificate recognizes the firm for its exemplary performance in serving the federal procurement system. Sorg and Associates was nominated by the Department of Justice division of the Federal Bureau of Prisons.

The **City of Portland** has been named the 1995 recipient of the Seaside Prize for outstanding urban planning. The first municipality to be awarded the Seaside Institute's prize, Portland was selected for its well-defined downtown, efficient light-rail transit system, and waterfront redevelopment initiatives. Further north, in Seattle, **Miles Yanick & Company Architects and Planners** has been awarded the 1994 Department of Housing and Urban Development's Cultural Design Energy Conservation Award for the firm's design of a group of 10 single-family houses for Native Americans at the Port Gamble S'Klallam Reservation.

Competitions

Minneapolis-based **BRW Elness Architects** is the winner of the EFCO-Drury National Design Competition to develop student housing for Drury College in Springfield, Missouri. **The Lawrence Group Architects** of St. Louis captured second place; Philadelphia architect **Joseph G. Brin** landed third; and **Little & Associates Architects** of Charlotte, North Carolina, placed fourth.

Renovation commissions

Ann Beha and Associates with acousticians **Kirkegaard and Associates** is restoring the 1903 Jordan Hall at the New England Conservatory of Music. Entered on the National Register of Historic Places in 1980, Jordan Hall is undergoing the $8.2 million renovation to upgrade mechanical systems and facilitate handicap access.

The Hillier Group is restoring and restructuring Cornell University's Sage Hall, built in 1872 to house the university's College for Women. The renovated facility will be occupied by the Johnson Graduate School of Management.

The Arts Club of Chicago has selected architect **John Vinci** to design its new building, one block away from the club's Mies-designed interiors in a building scheduled for demolition (ARCHITECTURE, December 1994, page 37).

Los Angeles-based **Johnson Fain and Pereira** is converting the Agana Naval Air Station to a new Guam International Airport.

THIS BANK SELECTED US BECAUSE WE PAID HIGHER

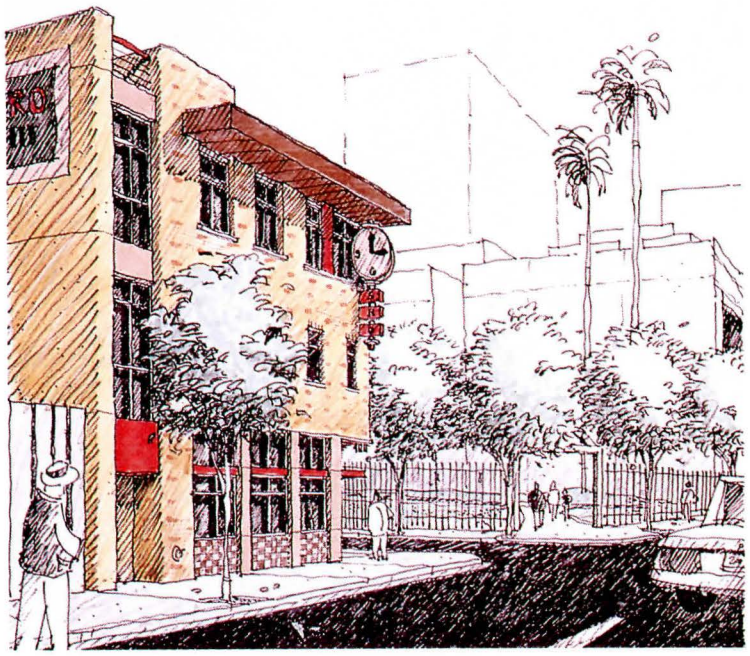
It looks less like a bank and more like an English country manor. But the charm of the Investors Savings Bank belies the challenges its design and construction presented. Particularly to Marvin Windows and Doors.

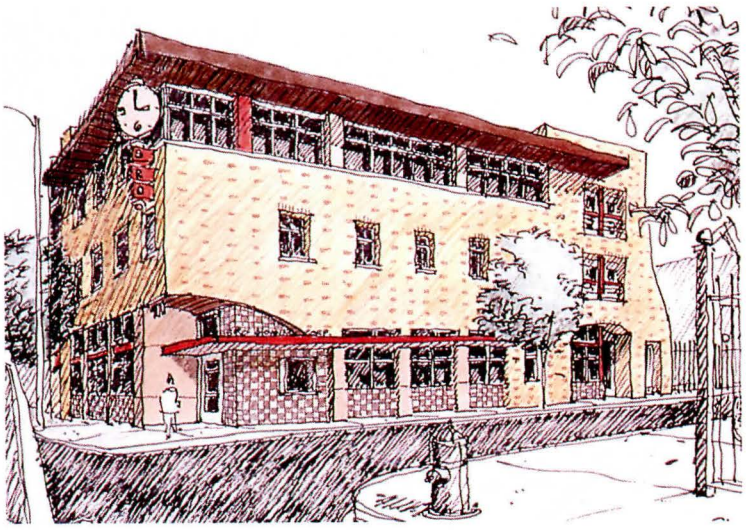
For one thing, fast-track construction scheduling was necessary due to constantly evolving design constraints. For another, it wasn't until thermal efficiency, condensation resistance and aesthetics were factored in that wood was chosen over aluminum. Consequently, Marvin wasn't selected for the job until construction was underway, making manufacturing and delivery deadlines extremely tight.

But Marvin's biggest challenge proved to be the building's three massive window and door assemblies, the largest of which measures 28 feet wide by 30 feet high. Using a combination of sturdy Magnum Double-Hungs and French Doors, Marvin not only built them on schedule, but also engineered them prior to delivery to guarantee they would withstand the strong, prevailing winds off the lake. And, like all 177 of the bank's other made-to-fit windows and doors, they were built with features designed specifically for the project. *Features such as authentic* divided lites, interior windows and doors glazed to match those on the exterior and a durable, factory applied finish in two complementary colors; Midnight Teal for the sash

On the Boards

A community center anchors a plan for downtown L.A.





Community Center & SRO Housing Corporation Central Services Facility
Los Angeles, California
Cavaedium Architects

SRO Housing Corporation, a nonprofit organization started in 1984 by the City of Los Angeles, renovates and maintains affordable housing for homeless and low-income individuals. The corporation's largest project is a new 14,500-square-foot building that houses its offices and a community center in Central City East, an area outside of downtown Los Angeles.

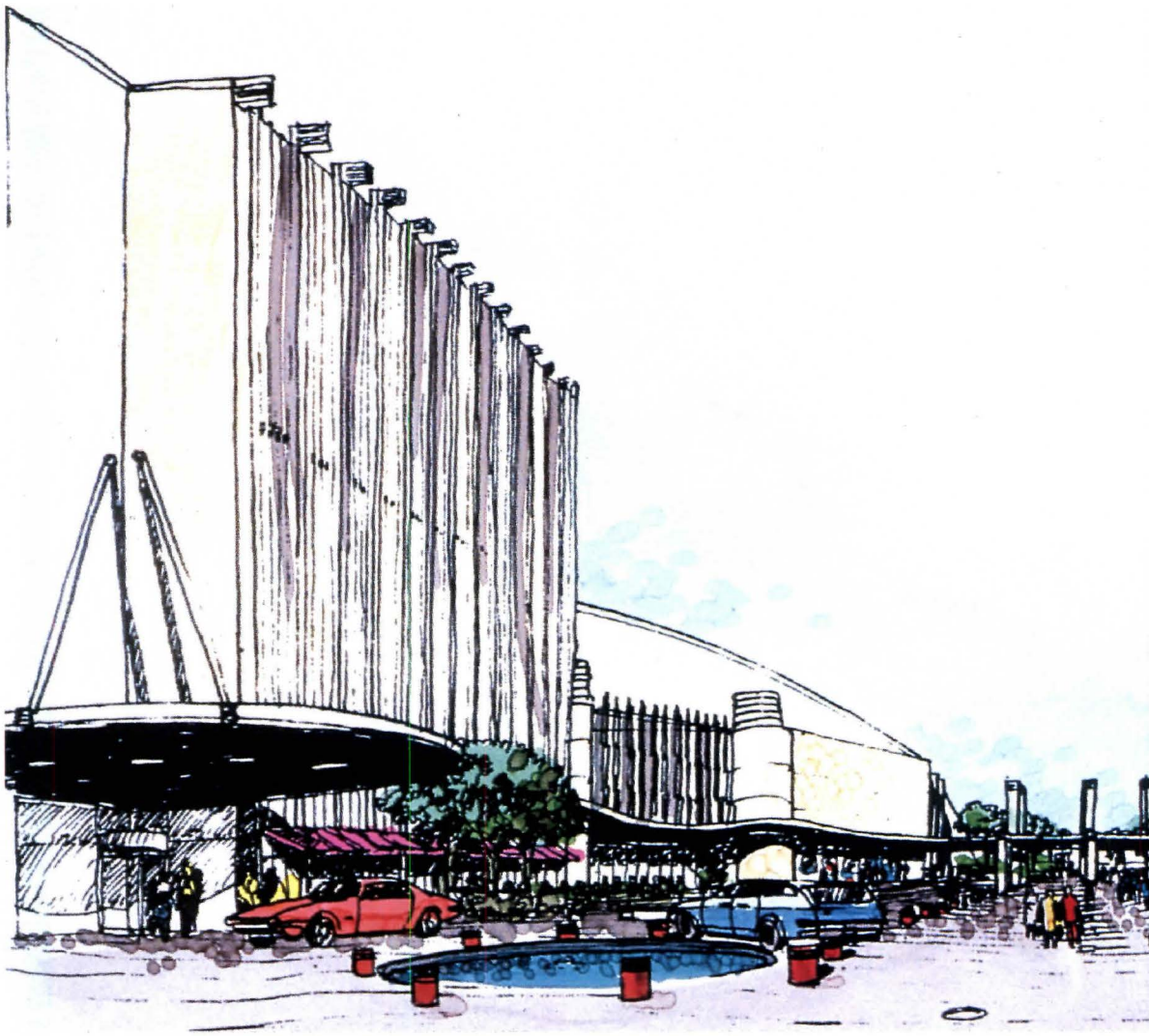
Located to the north of Koning Eizenberg's Simone Hotel (ARCHITECTURE, January 1993, pages 43-47), the community center is the first step in the Community Redevelopment Agency's plans to stabilize the overcrowded neighborhood and stimulate economic development. The new building will form the cornerstone of San Julian Commons, a residential neighborhood proposed in L.A.'s Downtown Strategic Plan, developed by Elizabeth Moule & Stefanos Polyzoides Architects and Urbanists.

Designed by Cavaedium Architects to blend in with its low-rise neighbors, the three-story building will fill its corner site with a simple rectangular volume, replacing a building that was damaged in the 1994 Northridge earthquake. The north and west facades will be clad in patterned brick and brightly colored tile, while south and east facades will be stuccoed.

The architect cut away the building's northwest corner to create a vaulted entry, which is clad in metal decorative tiles. Above the entry, a vertical neon sign and illuminated clock recall the vernacular of the district's single-room-occupancy (SRO) hotels. A metal cornice will shade west-facing windows that overlook a park maintained by the SRO Housing Corporation.

Inside, the ground-floor community center will provide neighborhood residents with such services as an employment office, meals, and transportation assistance. The two upper levels of administrative and management offices, responsible for maintaining the corporation's 1,400 units of SRO housing in the area, will be linked by a central, skylit stair. Construction of the $2.2 million community center is scheduled to begin this fall.—*Melanie Rehak*

On the Boards



Oklahoma City Master Plan
Oklahoma City, Oklahoma
Frankfurt Short Bruza Associates

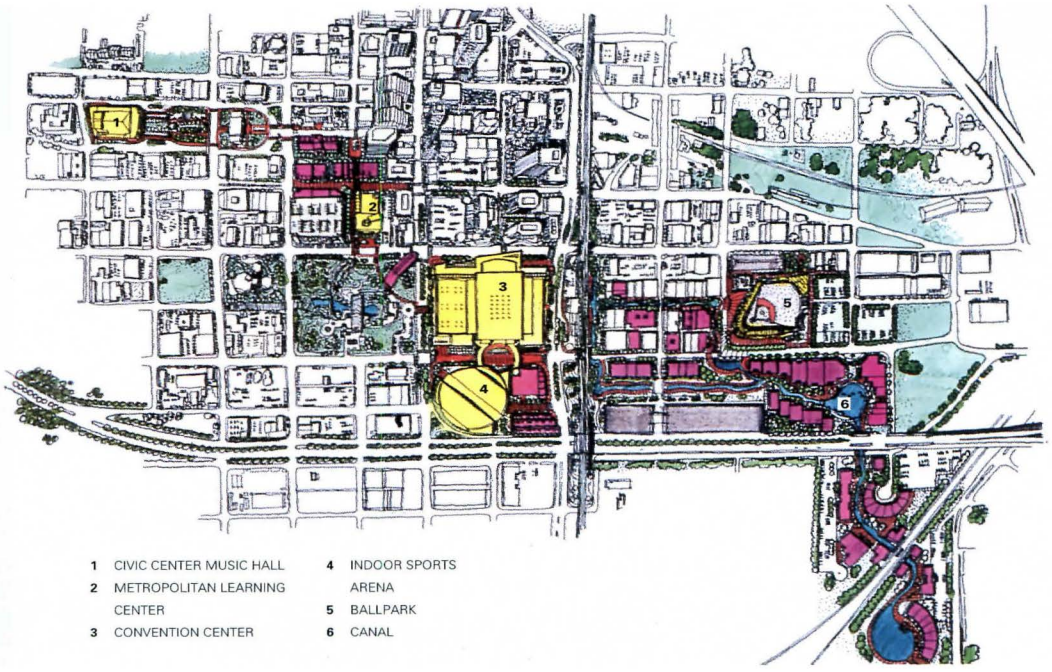
The April 19 bombing of the Alfred P. Murrah Federal Building in Oklahoma City damaged more than 300 commercial buildings, warehouses, and houses on the blocks surrounding the site. Architects and urban planners are now devising a strategy to rebuild the city's shattered central business district. Oklahoma City officials will attempt to turn the tragedy into a planning opportunity by augmenting an existing master plan for downtown.

In 1993, a master plan (bottom) was created by the Metropolitan Area Projects (MAPS) Committee, an alliance of city and county officials and business leaders. It focuses on upgrading the city's cultural and recreational facilities. The cornerstones of the plan are two new sports arenas, a new public library, a renovated convention center, and a refurbished performance hall.

MAPS' goal is to position Oklahoma City to compete with other cities in the West for national sporting events and conventions. Funding for the construction of these downtown facilities, estimated at $250 million, has already been secured through a five-year sales tax approved in 1993.

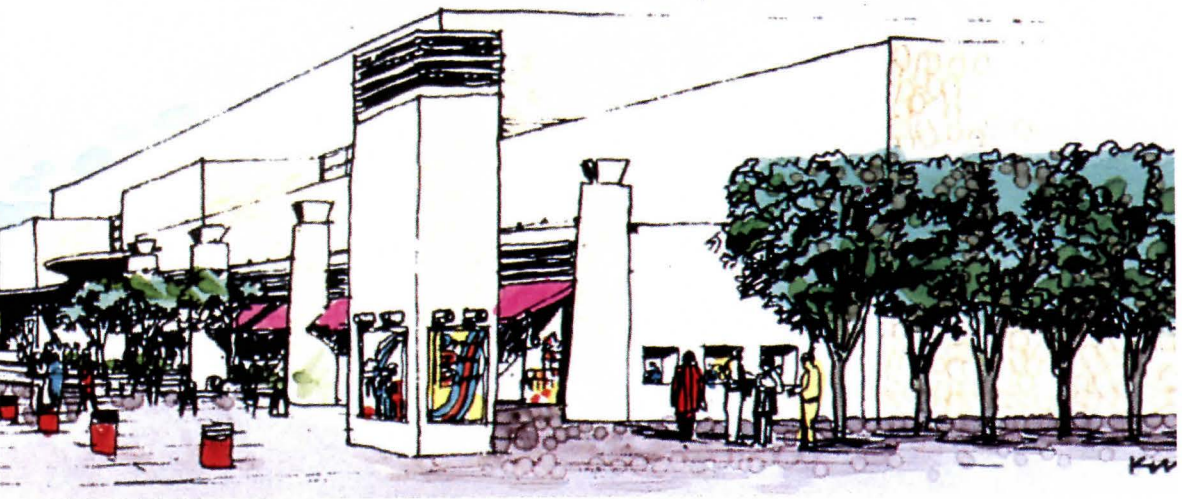
Coordinating the plan is local architect Frankfurt Short Bruza (FSB) Associates. Programming and schematic design of each venue has been completed, and the firm has begun selecting an architect of record for each venue. HOK Kansas City developed plans for the city's new sporting venues—an indoor arena to the east of the convention center, and a minor league ballpark, located on the city's northern boundary in an historic region shaped by early 20th-century warehouses.

Oklahoma City's 1967 Civic Center Music Hall will be renovated to



1 CIVIC CENTER MUSIC HALL
2 METROPOLITAN LEARNING CENTER
3 CONVENTION CENTER
4 INDOOR SPORTS ARENA
5 BALLPARK
6 CANAL

Oklahoma City is rebuilding its downtown core according to a new master plan.



increase seating capacity and improve acoustical performance. Theater consultant Jules Fisher/Joshua Dachs Associates and acoustician Jaffe Holden Scarbrough developed the scheme with FSB.

The Metropolitan Learning Center will replace the city's 1954 public library. Designed by Providence Associates with FSB, the new three-level center will provide state-of-the-art telecommunications capabilities. A park will link the learning center and the city's convention center (top rendering), targeted by HOK St. Louis for an extensive overhaul in an attempt to bring the monolithic structure down to a pedestrian scale.

A proposed canal, originating to the east of downtown at the North Canadian River, will thread through the city and link the central business district with the ballpark. Retail and commercial development will animate the scenic route (bottom), designed by San Antonio-based Urban Advisory Services.

Since the April bombing, local architects have increased preservation efforts to salvage damaged buildings not already condemned. The Central Oklahoma chapter of the AIA assembled volunteer architects to assist the city and building owners in assessing property damage. Working with the Oklahoma Historical Society, the National Trust for Historic Preservation, and the National Park Service, AIA team members examined 73 historically significant buildings that suffered damages and reported its findings to city planning officials last month.

City officials are debating strategies for rebuilding the area around the Murrah Federal Building. The National Endowment for the Arts is organizing a charette to be held this summer to develop the city's ideas, which include replacing the building with a park to commemorate the bombing victims.—*A.C.S.*

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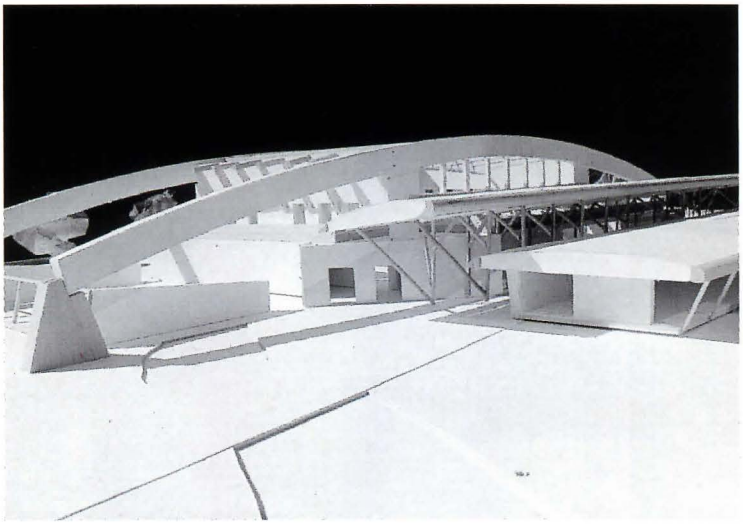
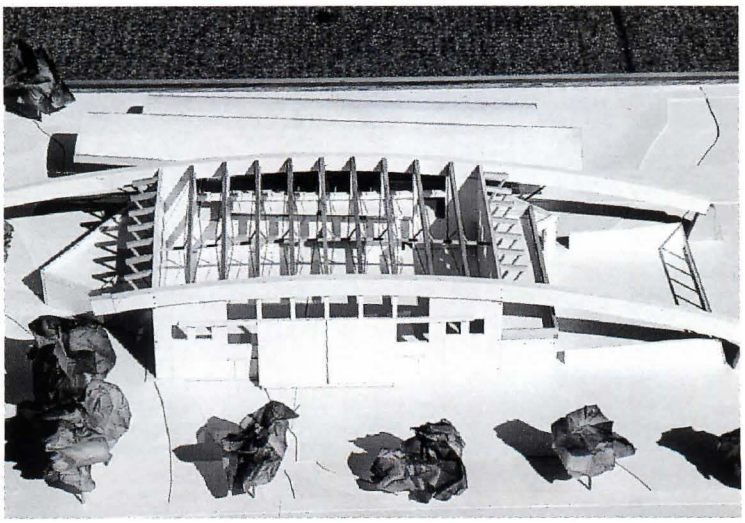
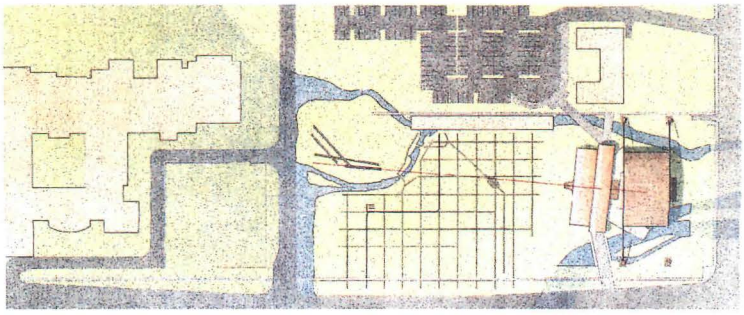
On the Boards

A recreational complex is inspired by aviation.







Thompson Community Center
Henriquez Partners Architects
Richmond, British Columbia

Henriquez Partners' new 2,000-square-meter community center recalls Richmond's historic role as the aviation center of British Columbia's Lower Mainland. Wood and steel trusses, bowed metal casings, and long-span members allude to the construction of airplane hangars and early aircraft.

The new center will include a gymnasium, fitness center, and multipurpose rooms to augment programs at the existing Thompson Community Center, located to the north of Henriquez's addition.

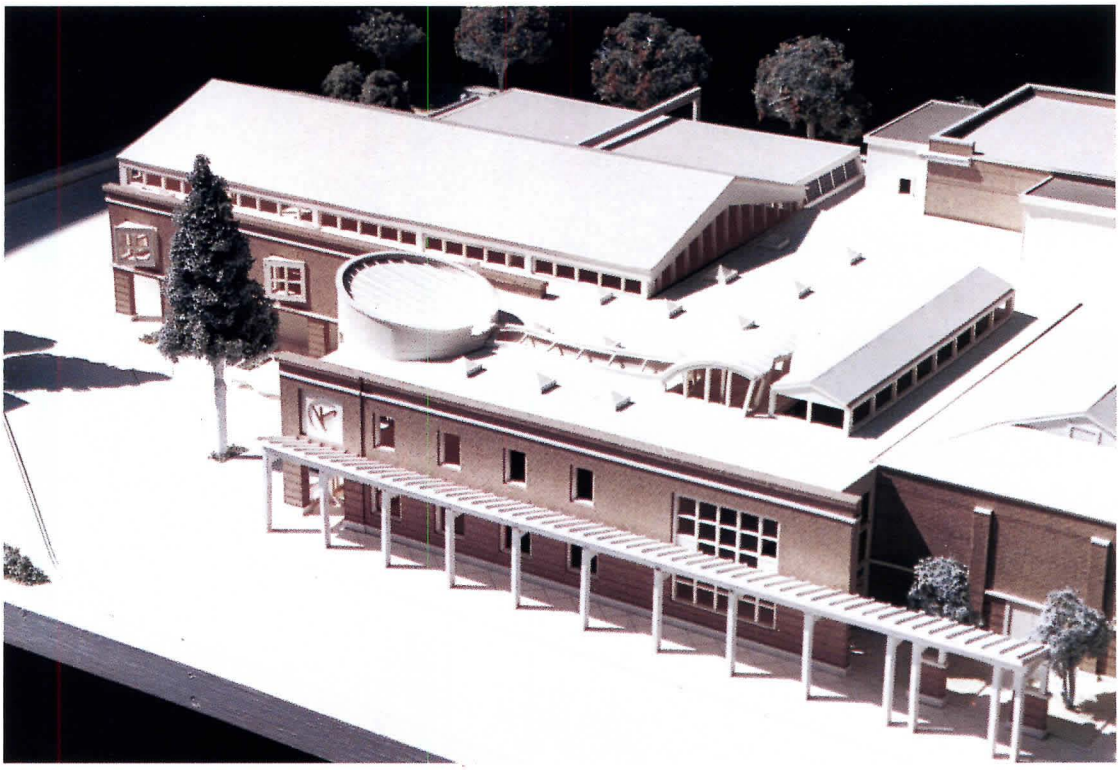
Stretching 80 meters, two steel arches shape the center's main volume, the gymnasium. Nine glulam beams will span between the dual arches and form the roof of the structure. For the walls, Henriquez will employ tilt-up concrete construction, which makes use of the site's flat topography.

The pair of wings that flank the gym are topped by metal-clad roofs shaped like biplane wings (top model photo). Bow-shaped steel and wood trusses are supported by custom-sculpted glulam columns, bent at an angle and countered by diagonal bracing. The larger of the two roofs hovers 20 feet above a corridor that links the building's north and south entrances; the smaller encloses a game room, lounge, office, and reception area.

Henriquez Partners' design for a park on the site is based on the plan of Richmond. The form of the new building represents an airplane emerging from a hangar and preparing to take flight (left). Suggesting the runway, a playground in the northwest corner of the site is shaped like the island that contains the Vancouver airport. The community center is scheduled for completion this fall.—*Ann C. Sullivan*

On the Boards

Community programs are enhanced through sympathetic additions.



Protest

A research and educational center fails to express its important public purpose.

RESEARCH SIDE: Metal-clad block, punctuated by curving hoods for fume exhaust, houses laboratories.

EXHIBIT SIDE: Teflon-coated fiberglass canopy will enclose public Hall of Exploration.

Marine Building Pollutes Baltimore's Harborfront

In local circles, it's considered practically heretical to speak ill of Baltimore's newest harborfront project, the $160 million Columbus Center. Part marine research center and part tourist attraction, the building may well fulfill its planners' expectations in terms of economic development. But it is one of the strangest works of architecture ever to appear on the Inner Harbor, a confounding concoction that is neither fish nor fowl.

The premise was innovative enough—to combine private laboratories for marine biotechnology and public exhibit space where visitors can learn about the research activity under way. The problem lies with the hybrid nature of the design, by the Zeidler Roberts Partnership. To express the building's dual mission, the architect divided it into two distinct parts: A metal-clad research block opened to scientists this spring, and a multilevel Hall of Exploration, beneath a large tent of Teflon-coated fiberglass, will debut in 1996. The tent's free-flowing shape is vaguely zoomorphic, with elliptical skylights that pop out of the top like insect's eyes and an undulating canopy that suggests a mollusk. On the opposite side, giant hoods for fume exhaust vents jut out from the labs like parts of an oversized vacuum cleaner.

These peculiar shapes result in a curiously clunky building that is unwelcoming and unrelated to the city around it. The composition never synthesizes its public and private halves into a coherent architectural whole. Instead, the Columbus Center adds to the regrettable carnival atmosphere that has evolved around Baltimore's Inner Harbor—an atmosphere this building should have helped dispel.—*Edward Gunts*

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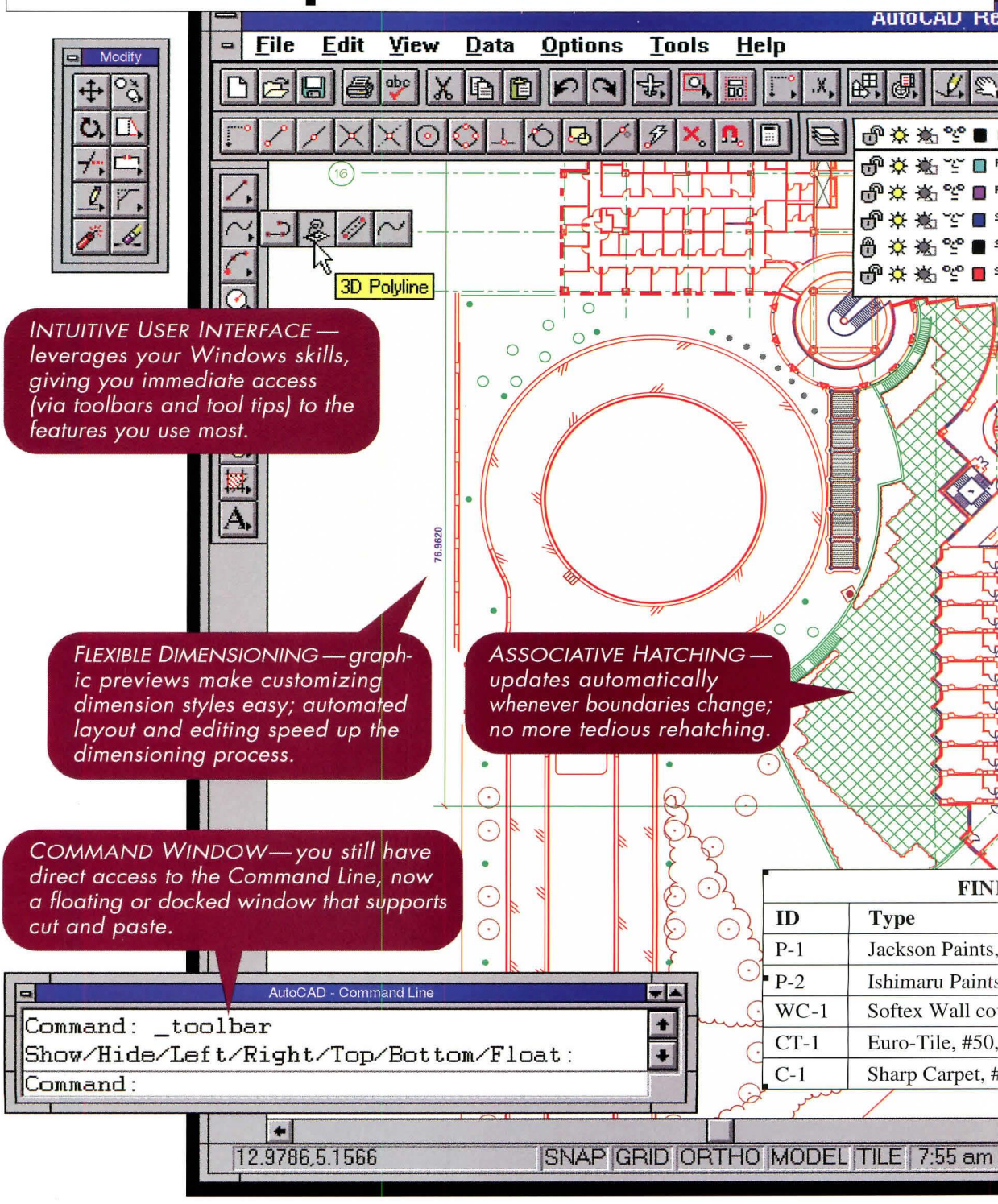

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Public Use vs. Private Abuse

Once an incentive for developers, public atriums, lobbies, and arcades are now endangered.

Among New York City's giant midtown office slabs constructed in the 1980s, the two best known are the 36-story AT&T Building, designed by Philip Johnson and John Burgee, and on the next block to the north, the 43-story IBM Building by Edward Larrabee Barnes. Both are so-called "special permit" buildings: They were released from the height and setback requirements of the 1961 New York City zoning regulations, allowing more square feet of interior space in exchange for providing public plazas and through-block arcades at the street level. Since AT&T and IBM were built, the zoning ordinances of Pittsburgh, Chicago, Seattle, and San Francisco have been revised to include similar bonus incentives.

Now the public spaces generated by these incentives are being threatened by commercial exploitation. In 1994, only 10 years after it was completed, the public space of the AT&T tower was drastically altered by its new owner Sony, and the 12-year-old IBM garden plaza, the building having been purchased by Edward J. Minskoff Equities, is in an advanced stage of decay. The fate of such public amenities raises questions about their future survival in our cities.

By law, it is the responsibility of the owner/tenant group to maintain these sidewalk-level spaces, a duty generally neglected, as so many dark, dirty, scarcely used, so-called public amenities in our cities reveal. Well cared for or not, however, local planning commissions are obligated to keep these public spaces public against pressure from owners and tenants to exploit them for commercial purposes, thereby destroying in whole or in part their public value.

Now that privatization is increasing, owners and tenants are being allowed by planning commissions and local citizen watchdog groups to renege on their own deals or on those made by their predecessors to maintain such spaces. New players on both sides of the public/private partnership equation are

CERVIN ROBINSON

IBM: Greenhouse designed as tree-filled oasis.

PETER MAUSS / ESTO

ATRIUM: Once popular, it is now decaying.

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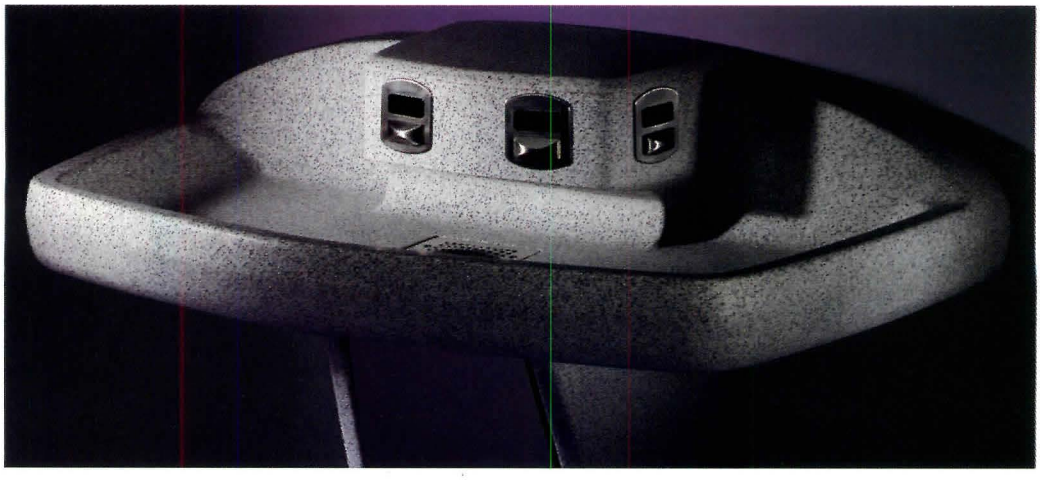

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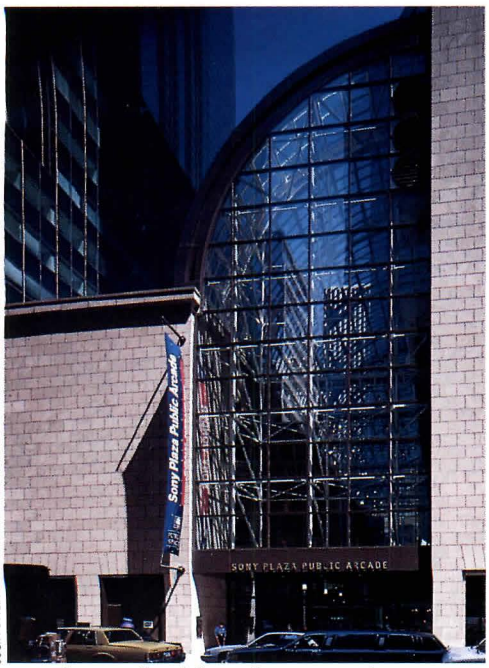
asking if they should be bound by obligations made a generation ago. The answer is yes they should, but the outcome for such public space is not favorable unless the public, including architects, fights to keep and maintain the best of it, while persuading owners to make the most of the worst.

The bonus-incentive concept began in New York City during the administration of Mayor John Lindsay. AT&T and IBM received concessions from a government that desperately wanted them to stay in town. The IBM deal was made in the mid-1970s when a near-bankrupt city feared there was to be no new development at all. Later, AT&T won its concessions by threatening to move to New Jersey. In exchange for having been allowed a larger tower footprint than the ordinance required, AT&T provided a public space consisting of a curved-glass-roofed, through-block arcade, ranging in height from 60 to 108 feet, connected to 60-foot-high, ground-level arcades extending to Madison Avenue. IBM, permitted to construct additional floor area of 103,262 square feet, gave the public an 8,261-square-foot, 55-foot-high, glass-enclosed garden plaza and adjoining through-block arcade.

The original AT&T arcades could not have been less welcoming to the public. They soared above dark, dank, virtually unusable space, in which cast-iron garden furniture was chained to the pavement. The through-block space was uninviting. A year ago, Gwathmey Siegel & Associates, architects of the new Sony space, filled Philip Johnson's flat arches along the street facades with glass, providing an enclosed indoor climate-controlled space, designed as a commercial showcase for Sony electronics, as lively as a well-done corporate pavilion at a world fair. Hardly a quiet oasis from urban tension, one can nevertheless buy a newspaper and have a light lunch in handsomely planted space amid movable tables and chairs. And the general public throngs to the Sony exhibits



JOCK POTTLE / ESTO PHOTOS

AT&T: Sony enclosed formerly open arcade.

ARCADE: Sony exhibits attract the public.

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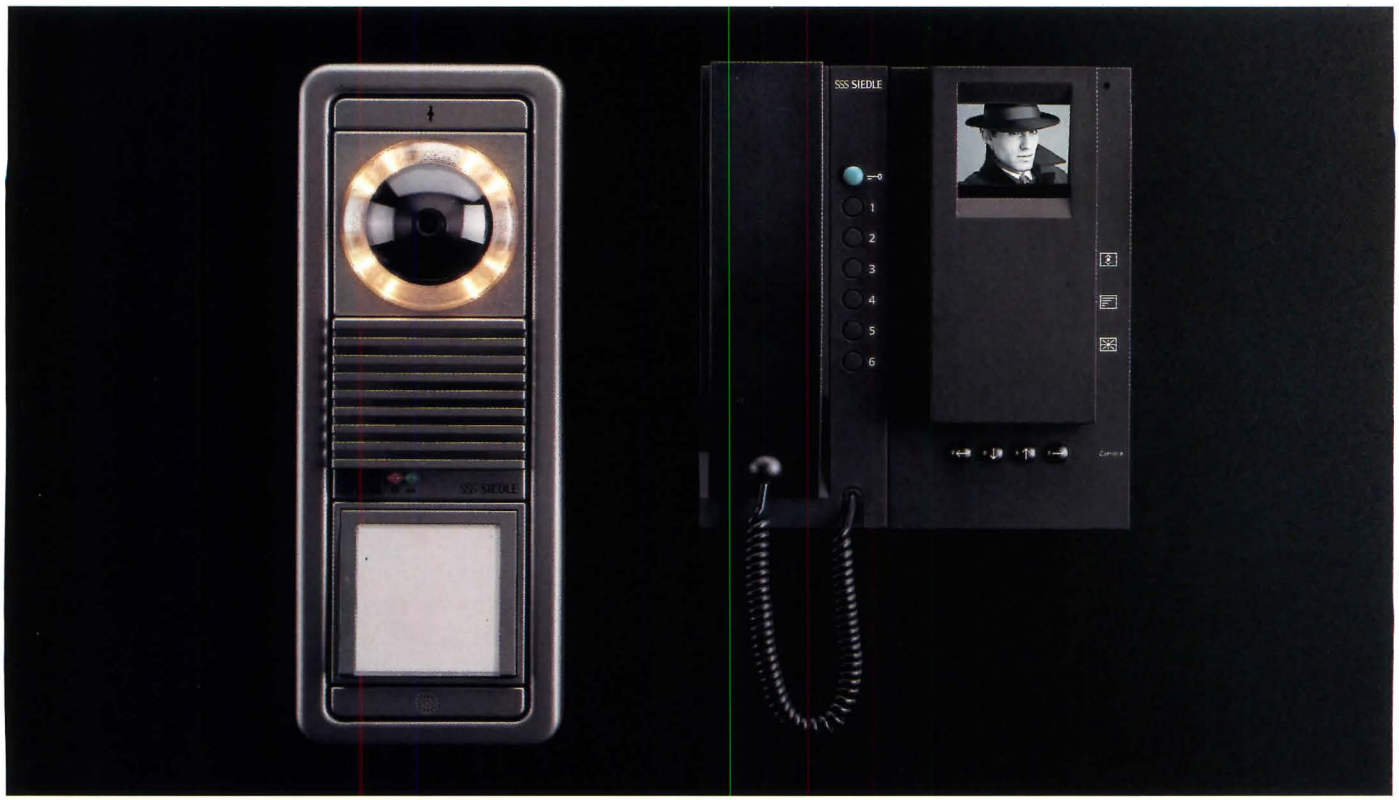

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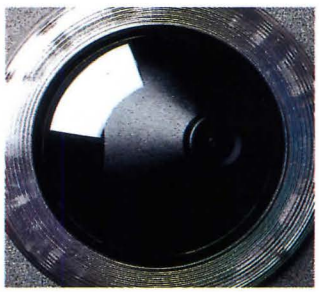

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and shops. This transformation was accomplished with almost no public opposition over the loss of public space, although more than 6,000 square feet of the public space was taken back by Sony for retail. The Municipal Art Society (MAS), the city's most powerful urban watchdog, blessed the proposal, and the New York City Planning Commission declared it a "minor modification," thereby allowing a prompt approval. Had the original AT&T arcades been a genuine public amenity, the proposed Sony alterations might have been viewed more critically and successfully opposed.

In contrast, the IBM garden plaza, the work of Barnes and landscape architect Robert Zion, in consultation with urban space authority William H. Whyte, became a widely acclaimed public success. A great skylit triangulated greenhouse, filled with clusters of bamboo trees, low planters, and a circular food kiosk with informally arranged chairs and trees nearby, the 1983 atrium was what the AT&T arcades never were—a beautiful, peaceful retreat amidst the noise and bustle of midtown, enjoyed by pedestrians and nearby office workers.

Before IBM's recent decline, the corporation maintained the space meticulously. The New York Botanical Garden had a shop on its interior perimeter, and the IBM art and science galleries were adjacent. In July 1994, the corporation closed the galleries and began to cut back the care of the greenhouse and its plantings. Since Edward J. Minskoff Equities purchased the building last August, the degradation of the space has rapidly accelerated. The bamboo trees are dying; the windows and skylight are filthy; the earlier tables and chairs have been replaced by junk; the level of illumination is lowered; and the food service, now temporarily reinstated, was closed for months. The homeless (allegedly encouraged by Minskoff) have taken over, and office workers have vanished. Minskoff may have believed that these measures would make the public forget the lost beauty of the garden plaza and welcome the plans for its transformation into a quasi-public sculpture showroom. If so, he was wrong. When Minskoff and Arnold Glimcher of Pace Wildenstein Gallery revealed their scheme to the MAS Planning Committee early this year, the entrepreneurs appeared to expect the same ready acceptance granted to the Sony proposal. To their surprise and disappointment, MAS strongly opposed the plan and now leads the battle against it.

The scheme, like the one for Sony, was designed by Gwathmey Siegel, chosen no doubt because of the firm's success across the street. Because the architects faithfully carried out their client's privatizing intentions, their proposal utterly disregards the public interest and, if carried out, would have destroyed the garden. The plan creates a 4,050-square-foot sculpture exhibition area in the center of the public space for the display of large-scale art by Alexander Calder, Henry Moore, Isamu Noguchi, and Claes Oldenberg, whose works are handled by Pace.

To accommodate the sculpture, the Gwathmey Siegel scheme calls for the removal of six of the 11 existing bamboo clusters and filling in the vacant tree pits with dark paving stones. The existing food service kiosk would be removed, with the seating greatly reduced and, for the most part, inflexible. No change was proposed to the size and area of the garden plaza or the adjoining through-block arcade, thus complying with the letter, if not the spirit, of the special permit law.

MAS President Kent Barwick, who attended the Minskoff/Pace presentation to the planning committee, reports that "what we thought we were going to see was a sculpture garden, but their plan was to get rid of the garden and create a sculpture gallery, and that is a big difference." It would be possible to add major sculpture pieces to the present setting of bamboo trees, Barwick believes, with very little tinkering—move a few tables; add flexible seating; make food service per-

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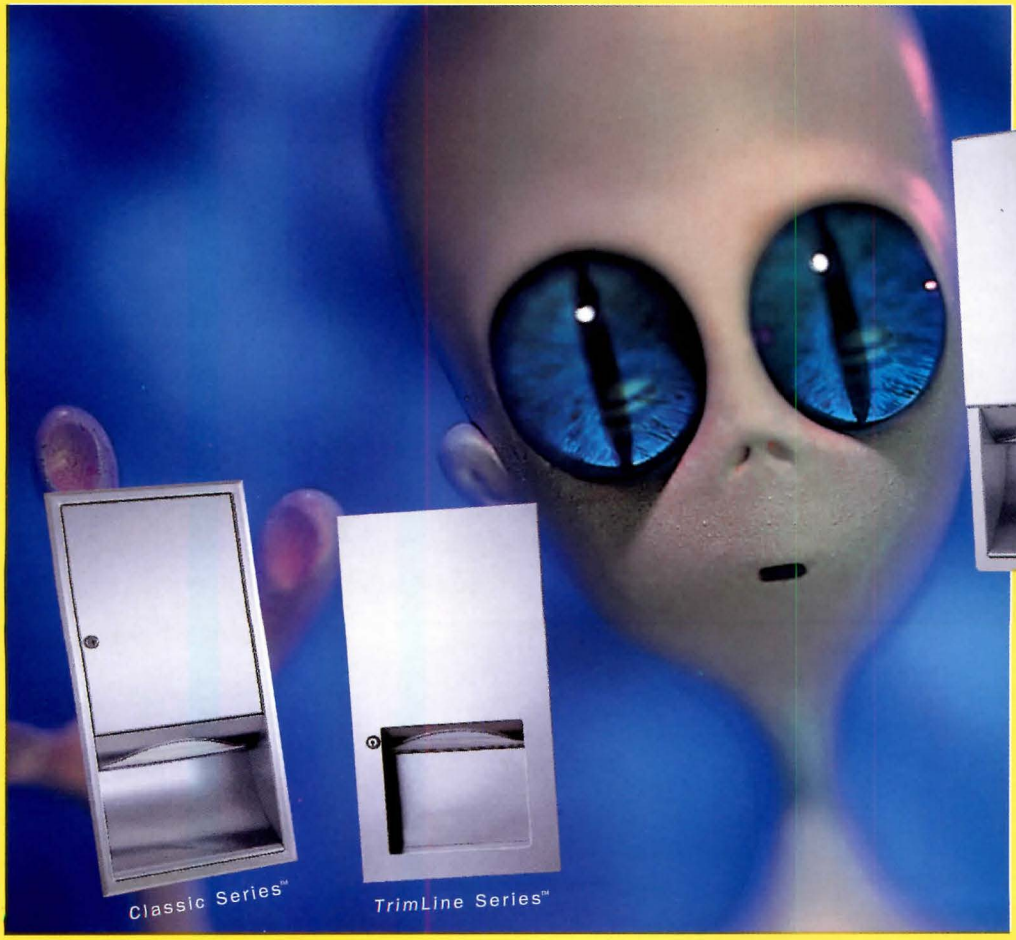

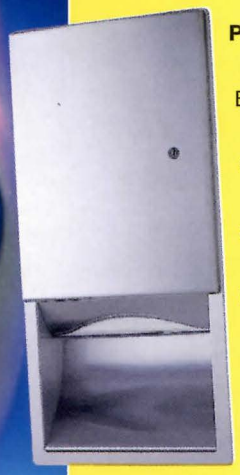

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manent; wash the windows. The committee rightly contends that a grove of trees in the midtown area is a rare and valuable public amenity that should not be readily surrendered. The MAS proposes further that an independent curator be appointed to ensure that the installation of sculpture neither infringes upon the public amenities of the garden space, nor unduly favors sculpture from Pace over other sources.

At this writing, the New York City Planning Commission has yet to rule on the Minskoff/Pace proposal, and Planning Commission Chairman Joseph Rose is seeking an acceptable compromise on behalf of owner and public. Gwathmey Siegel has resigned from the job. Partner Charles Gwathmey called his decision "a choice of professional noninvolvement. ... Not only were we being misrepresented as advocates, but our reputation for being responsible and respectful architects was being questioned." As it should have been, given the architecture firm's insensitive treatment of Barnes' elegant space. Minskoff has recently engaged Kohn Pedersen Fox (KPF) to revise the scheme, and KPF will consult with the garden plaza's original architect, Edward Larrabee Barnes.

In the nation's leading cities, the first generation of bonus-incentive buildings have become candidates for remodeling and adaptive reuse. As a result, much attention will be paid to the outcome of the Minskoff/Pace effort to commercialize, even for the high purposes of art, IBM's once beautiful urban retreat. The fundamental issue is an ethical one. City governments, pressured by a new generation of owners and tenants, do not have the right to take back from the citizenry, through subtle or overt commercialization, street-level amenities granted by law.

What can architects do? They can continue to join other community activists in the fight to save the best of public/private space. When remodeling such space, they must become public interest watchdogs over their own efforts.—*Mildred F. Schmertz*

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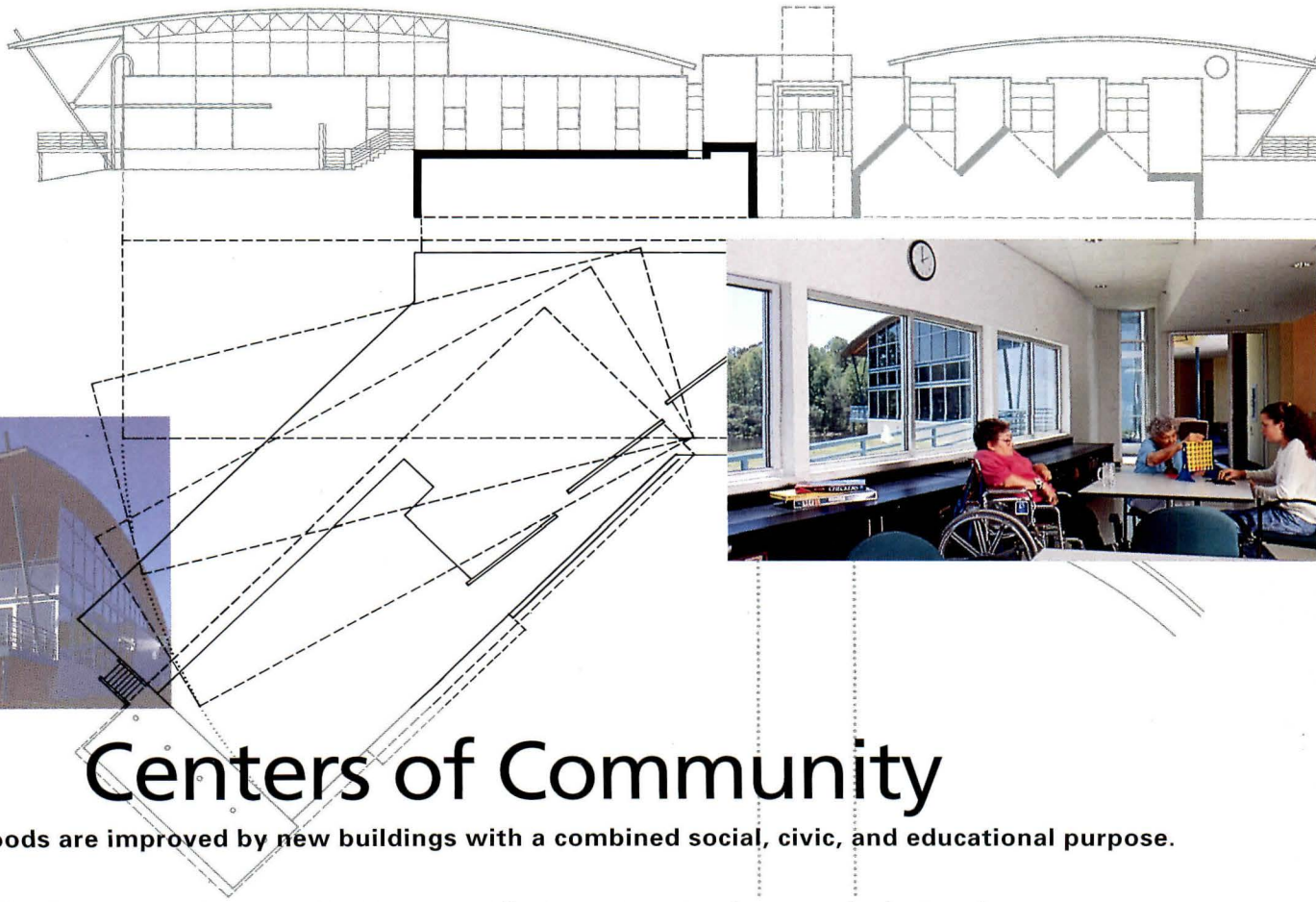


Centers of Community

Neighborhoods are improved by new buildings with a combined social, civic, and educational purpose.

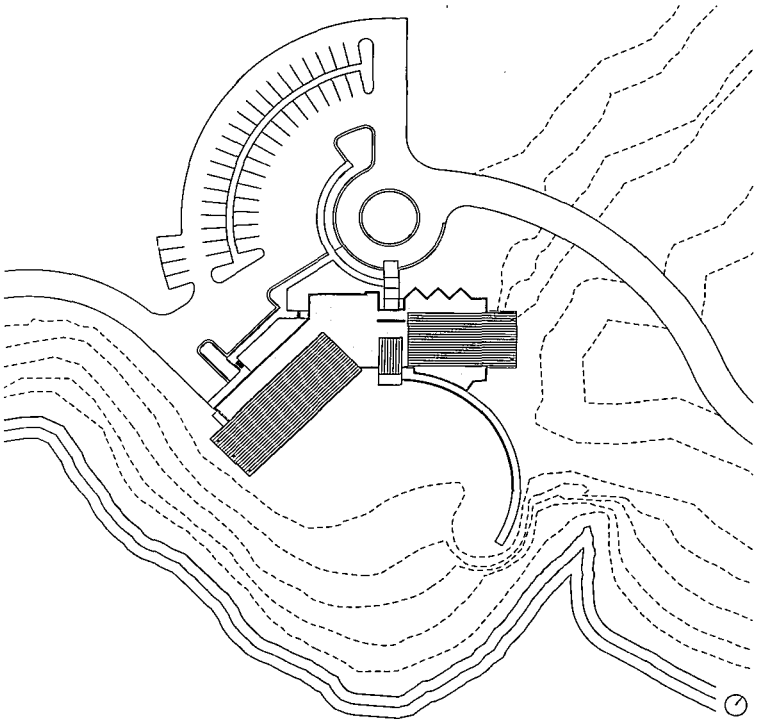
What is a community center? In Lawrenceville, Georgia, it is a dynamic, dual-winged building (above) where elderly citizens socialize, work with their hands, dine, and dance. In midtown Manhattan, it is a sleek new tower where the blind and visually impaired can buy a Braille book or hear a concert. Other communities reach out to a larger cross section of citizens by combining libraries, public meeting rooms, classrooms, and government offices in buildings that are part educational, part social, part official. A successful example of this programmatic hybrid is Marquis Associates' library and community center in Albany, California, where citizens meet in a daylit lobby that serves as the building's hub.

Such a mix of functions, however, can hamper an architect. Baltimore-based Cho, Wilks & Benn saw great potential for human interaction in combining Carroll County's library and senior center and designed a two-story lobby to unite the two groups. However, the wishes of two very different clients prevailed, and the design's potential became a lost opportunity: Users of the library and senior center remain separate within the same building.

Whatever their constituency and function, community centers are examples of the few truly public places our society offers where people of the same neighborhood or culture can meet. Their variety of programs and diversity of clients attest to architects' ingenuity at designing civic places that are as different as the communities they serve.

Youthful Spirit

Lawrenceville Senior Center • Lawrenceville, Georgia • Stanley Beaman & Sears, Architect



The Lawrenceville Senior Center treats aging as an integral, honorable part of living. Set in a park and surrounded by ball fields and pavilions, the center is designed to house a wealth of activities to sustain the independence and enrich the lives of Gwinnett County's older citizens.

The 12,000-square-foot building was the first institutional design for Stanley Beaman & Sears. Self-designated as a "strong idea" practice dedicated to consensus building and collaboration, the firm's three partners met with 12-person user groups, asking them to rethink stereotypes of senior centers—with their drab institutional plans and dowdy furnishings. Seniors responded by reversing the question, "What would you want?" The older citizens suggested that the building's young designers consider the well-being of future generations.

CLIENT/COMMUNITY: Gwinnett County is the most rapidly developing sector of metropolitan Atlanta, sought after for its schools, housing, and developable land. As a result, Lawrenceville, which had been a sleepy small town about 37 miles northeast of the city, is now being gobbled up by suburban sprawl.

Because the Lawrenceville center is located on county parkland, Gwinnett County's Department of Human Services, which maintains two other senior centers, teamed up with the county's parks and recreation department to serve as the client. The center's users are county residents over age 60 who range in physical abilities from active joggers to those requiring wheelchairs. Thirty senior groups, including the American Association of Retired Persons, Gray Panthers, and the local Fun-time Club, have access to the center for meetings and social gatherings. At noon, volunteers for the county's Meals on Wheels program arrive to deliver meals prepared in the center's commercial kitchen.

Approximately 50 individual seniors visit the center each day during the program hours of 9 am to 1 pm. They participate in activities such as card games, cake walks, exercise programs, and educational presentations. "Happy and Healthy Sexuality for Seniors" was a recent seminar. Evening dances and social functions draw as many as 120 participants.

An additional seven to 10 seniors require day-care assistance. A registered nurse supervises medical and rehabilitative services, meals, and transportation for these elders.

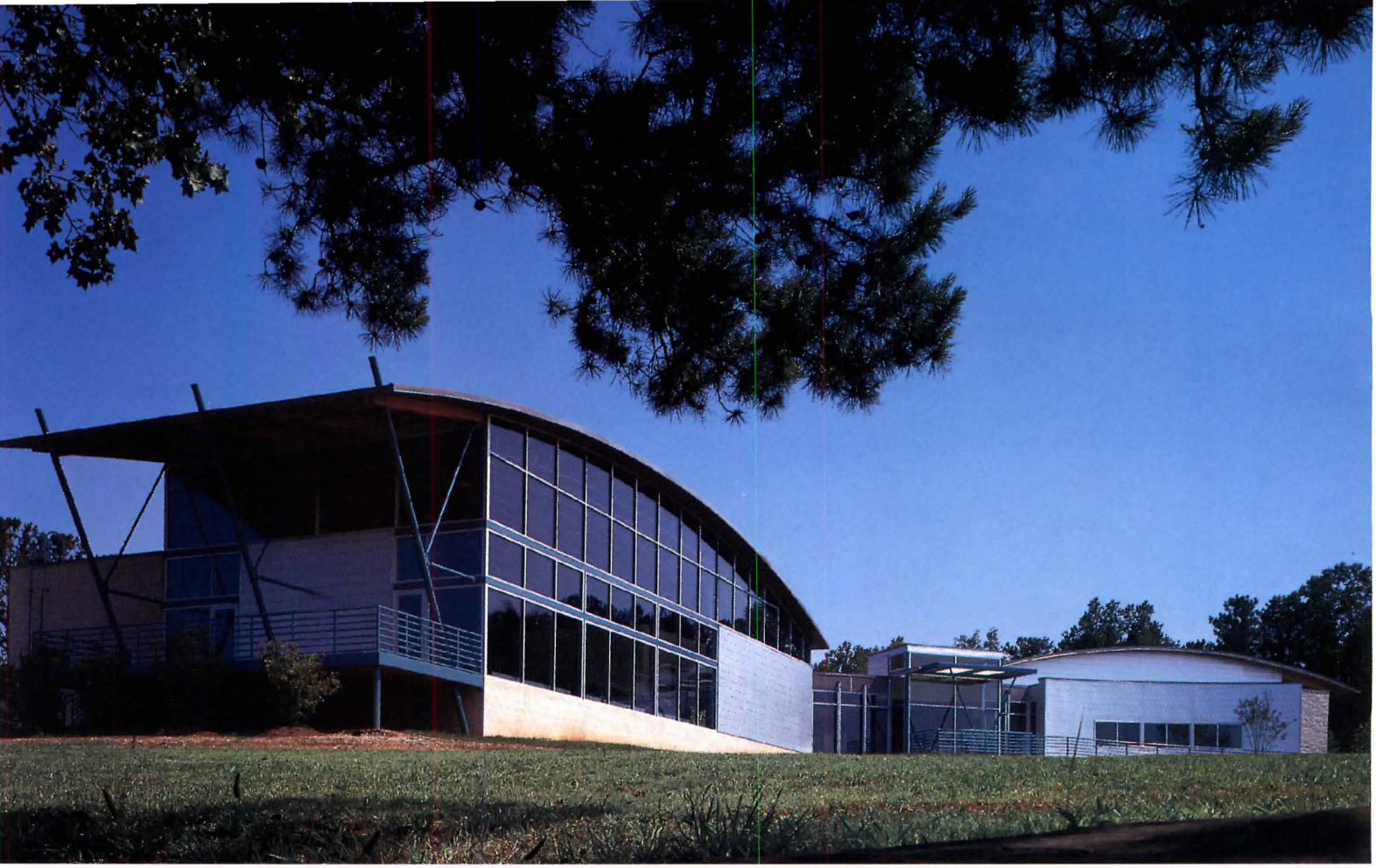
Unlike senior centers in more affluent neighborhoods, the Lawrenceville center had a modest $1 million budget. Seventy-five percent of total funding came from a Community Development Block Grant, and 25 percent came from local sources.

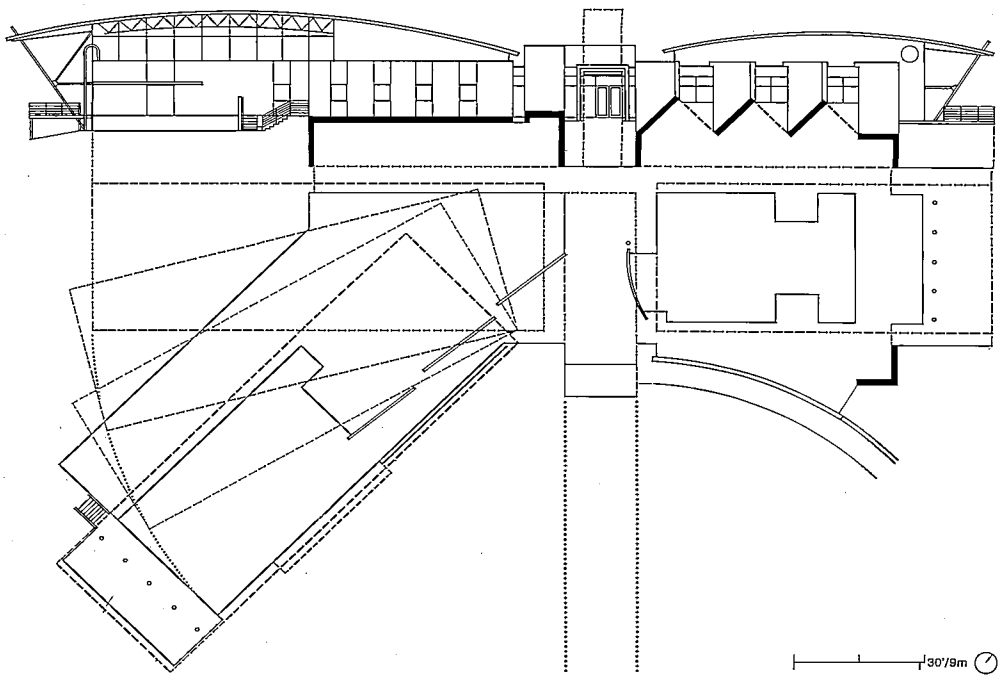
SITE: Despite its proximity to Atlanta and high growth rate (Gwinnett County is one of the fastest growing in the nation), country air and open spaces still surround Lawrenceville. Ninety-two-acre Rhodes Jordan Park is located less than a mile from Lawrenceville's town square, in Georgia Piedmont country. A single road dips along low hills, skimming past tennis courts and baseball fields, stands of pine trees, and clusters of park pavilions.

SITE PLAN: New entrance drive replaces original country road, placing senior center near lake's edge. Crafts suites are anchored in the park (right), while dining area is angled toward lake, as if to set sail (left).

FACING PAGE, TOP: Lawrenceville Senior Center is located within county-run Rhodes Jordan Park. Dining hall (left) offers views of lake.

FACING PAGE, BOTTOM: Gently bowed, prefinished aluminum standing-seam roof and entry canopy set active tone at Lawrenceville center.





FACING PAGE, TOP: Full-height, low-emissivity glazing distinguishes southeast elevation (left). Adult day-care wing (right) is low-scaled.
FACING PAGE, BOTTOM: Preformed metal shingles, resembling scales, cover exterior walls. Ramps sweep up from the lake to lobby entrance.
SECTION/PLAN: Dining wing (left) cants toward lake, emphasizing movement. Lobby divides quieter elder-care suite (lower right) from activity.

The park's dominant feature is a dam that creates a 24-acre lake in its southwest quadrant. The Lawrenceville Senior Center crowns a rise overlooking the lake. It faces south/southeast and is set back from the water by a sweep of lawn. A ramp from the building joins a paved walk that curves in an arc toward the lake. A walking path circles the lake and connects to the larger park.

Most seniors arrive at the center by van. Because an existing road would have intervened between the new building and the lake, the architects relocated the road further north. It proved to be an expensive decision, but a critical one to the project's success. The main road now curves behind the building to its north-facing entry, and access to the water is unimpeded. On the northwest side of the building, a parking lot acts as a buffer between the building and an active railroad track, which is screened by thick vegetation.

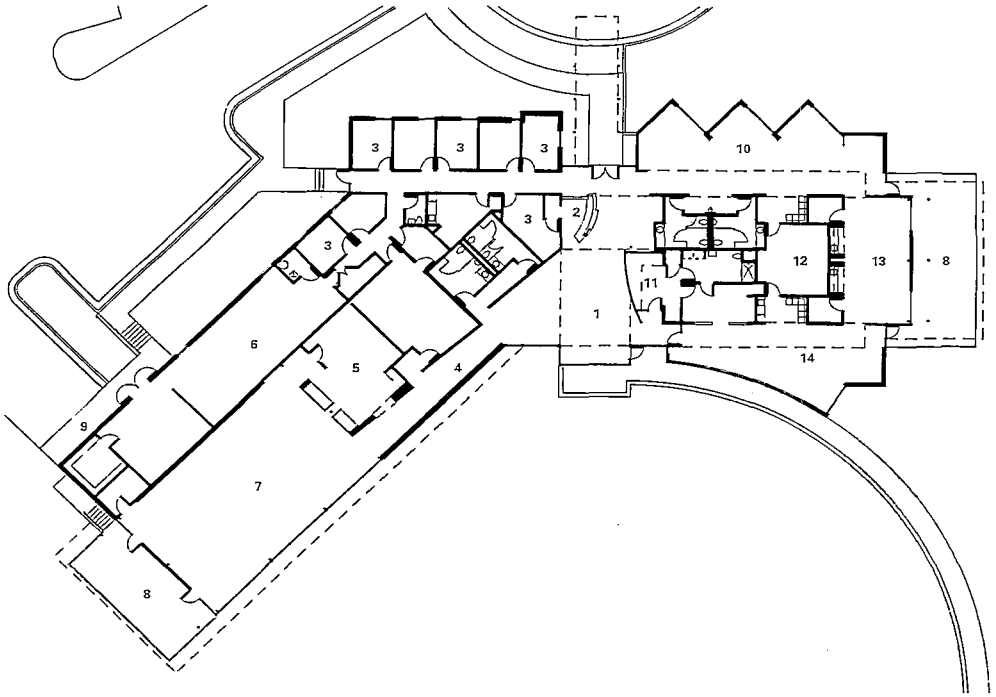
PROGRAM: A spine of administrative offices serving the center and the county opens off the lobby, yet few doors separate activities for clients. Friends gather to chat in comfortable sofas and chairs within the central lobby, overlooking the lake. Social spaces include a library and television room, with pool tables set into alcoves. This area is adjacent to an exercise room, which doubles as a movie screening room, and a crafts suite, which includes a 20-foot-high space for ceramics and model-building and smaller rooms for storage and a kiln. A terrace off the crafts area offers a northeast view of the pines and the lake.

The southwest wing focuses on a broad, double-height dining area, which faces southeast. At night, the chairs are stacked and the dining room becomes a Georgia version of Roseland, as seniors dance to Big Band or boogie. A cafeteria-style buffet is screened from the full dining room, and a full commercial kitchen runs behind them both.

DESIGN CONCEPT: In discussing what the center might become, the architects challenged traditional notions of aging. "When are you old?" wonders Partner Kimberly Stanley, who suggests that aging is a continuum, a dynamic process without easy classification. Her firm's free-flying, contemporary design avoids conventional, conservative architectural cliché—often in the form of Neo-Georgian symmetry—associated with institutions for aging populations. "The seniors we talked to often mentioned taking a cruise as one of their goals," notes Stanley, who responded by incorporating the imagery of a voyage or journey into the design.

Two billowing, prefinished aluminum standing-seam roofs appear sail-like, a nautical metaphor. The building seems to both rise up above the park, its vaulted roofs dramatized by the project's high elevation above the lake, and settle on the ground, anchored by heavier split-faced concrete block walls. Preformed metal shingles, which cover exterior walls, are both a familiar local building tradition and reminiscent of fish scales.

The reception area and lobby divide the building into two activity zones. The noisier



FIRST FLOOR PLAN

1 LOBBY
2 RECEPTION
3 OFFICE
4 GALLERY
5 SERVING AREA
6 KITCHEN
7 DINING HALL
8 DECK
9 LOADING DOCK
10 TV/GAME ROOM
11 CLINIC
12 FITNESS ROOM
13 CLASSROOM
14 SITTING/DINING AREA

dining area occupies the wing canted toward the water. Day-care activities, crafts, and the library are grounded in a lower wing running parallel with the lake.

In a departure from typical senior center design, which segregates frail persons, Lawrenceville's elder-care suite flows into the lobby and crafts room, adjacent to the primary gathering area used by all. Day-care participants are thus able to watch the comings and goings of the more active community members. The decision to integrate clients requiring focused supervision and attention more closely with the entire center was the result of discussions with the more active seniors. Today, elder-care clients eat in the primary dining room and attend other functions whenever possible.

The users were clear about what they did not want—no pastel colors and no Queen Anne furnishings. As a direct response to their wishes, the center is saturated with intense colors. Indigo blue walls in the lobby, intense reds in the cafeteria, and buttery yellow in the day-care spaces enliven and energize the interiors. A palette of materials and colors demanded by the park included blue-green for accent metals and split-faced block.

SUCCESSES: The Lawrenceville Senior Center has been thoughtfully designed for its inhabitants. Counters are placed just below windows, to allow seniors in wheelchairs to set a glass down easily or dine with a view of the lake. Colorful upholstered furnishings contribute to a residential feel, even in the supervised day-care area. The lakeside ramp is highly successful, allowing interaction among more active visitors and elder-care clients.

The building combines powerful form with thoughtful consideration for the men and women who enjoy it. By integrating the frail with the active, younger with older, it proposes a holistic, healthy view of aging.

FAILURES: Dining room walls lack chair-rail protection and have already begun to show scarring. Television, reading, and conversation may occasionally be at odds with pool tournaments in the recreational area. The specific formal design of the center could prove difficult to enlarge.

CLIENT/COMMUNITY REACTION: "If it wasn't for this place, I done been dead or crazy," asserts Celia Britt, who arrives when the center opens at 7:30 am and leaves after the other seniors have gone home, when the center closes at 5 pm. "This place keeps me young."

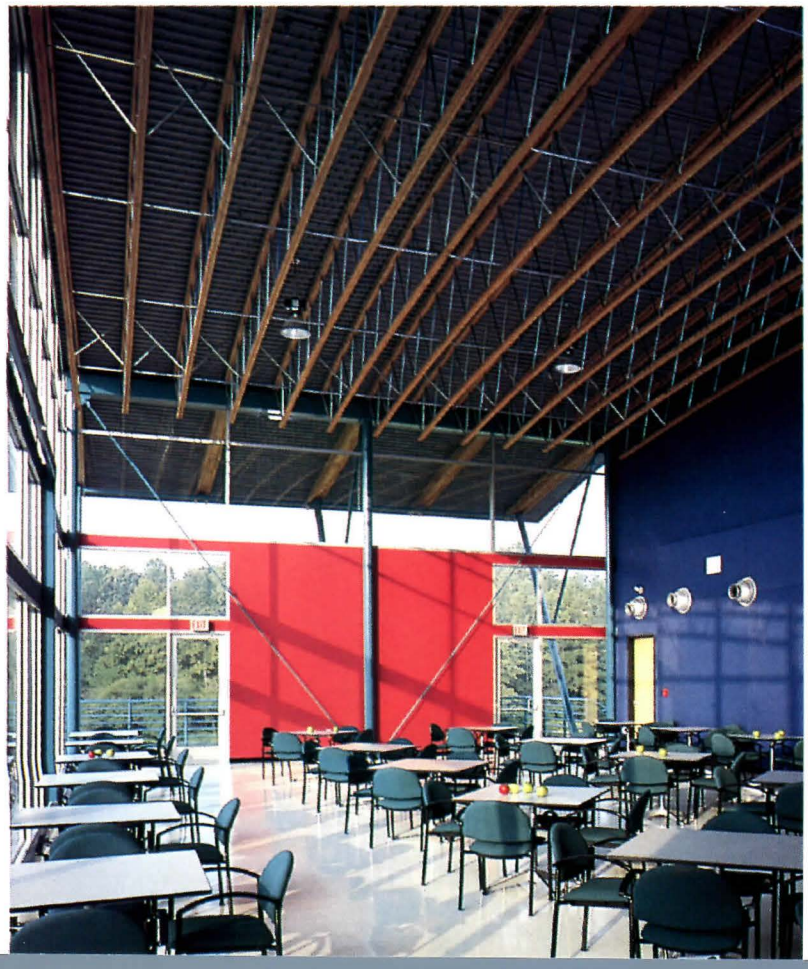
"We can keep creating things," adds Arlene Williams, director of adult day-care services. "This building gives seniors an option, keeping them from nursing homes. It relieves the isolation. There is no limit."

Rather than inhibit its users with preconceptions, the bright, open-plan building challenges seniors to activity, communication, and personal growth. And by designing such a lively structure in an active county park, Stanley Beaman & Sears has not only incorporated seniors into our larger culture, but challenged accepted views of aging as well.—*Robert A. Ivy, Jr.*

PLAN: Lobby opens to TV/game room (top right) with alcoves housing pool tables. Ramp arcs south toward lake, passing adult day-care and rehabilitation (bottom right).
FACING PAGE,TOP: Main lobby faces south toward lake. Steel-framed canopy with corrugated-panel roof shades concrete-slab balcony.
FACING PAGE, BOTTOM LEFT: Bowed truss-joists are exposed below metal deck in dining room/dance hall.
FACING PAGE, BOTTOM RIGHT: Comfortable upholstered furnishings predominate, bringing residential scale to institutional setting.

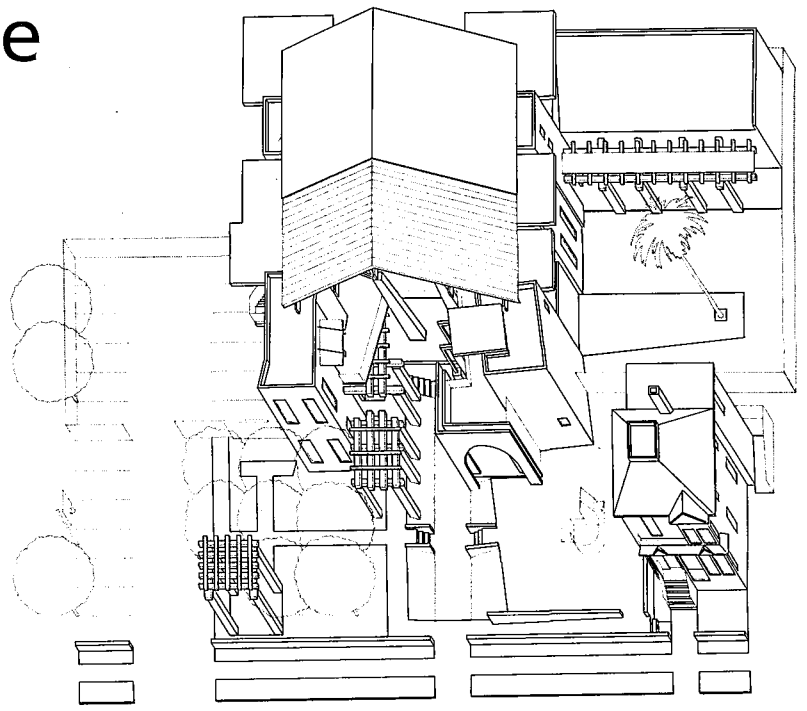
LAWRENCEVILLE SENIOR CENTER
LAWRENCEVILLE, GEORGIA

ARCHITECT: Stanley Beaman & Sears Architecture, Atlanta—Kimberly N. Stanley, Betsy Beaman, Burn Sears, Jack Ferguson, Portia Gubatan, Nelson Weeks (project team)
LANDSCAPE ARCHITECT: Lose & Associates
ENGINEERS: Brittingham & Associates (structural); Environmental Design International (mechanical/electrical); Travis Pruitt & Associates (civil)
GENERAL CONTRACTOR: Marathon Construction
COST: $1 million ($68 per square foot)
PHOTOGRAPHER: Jonathan Hillyer



Neighborhood Hope

Sherman Heights Community Center • San Diego, California •
Rob Wellington Quigley, Architect



AXONOMETRIC: Site combines new 12,500-square-foot center (top) and existing Victorian (right), converted into offices and caretaker's apartment.
FACING PAGE: Community room roof extends over entry (left), patio (center), and porch (right) to unify complex.

The Sherman Heights Community Center is a tidy, handsome project that amplifies community spirit through expressive contextual architecture. Rob Wellington Quigley shaped the project through a series of community design workshops based on examples set by Charles Moore and Lawrence Halprin in the 1960s.

The community center exemplifies Quigley's belief that collective design and a respect for vernacular construction techniques enable architecture to achieve a proper fit in its community. In this case, that fit marries Hispanic building and social traditions to tilt-slab construction, a technique first practically applied by turn-of-the-century San Diego architect Irving Gill. It is a union embraced enthusiastically by community and architect for its expressive efficiency. Not only did the building come in on budget, but Quigley also asserts that he has never had "a more meaningful project."

CLIENT/COMMUNITY: The Sherman Heights Community Center serves 50,000 ethnically and culturally diverse residents of this once prosperous, now economically frayed neighborhood near downtown San Diego. Users range from a 120-child Head Start program, to gang intervention groups to seniors who just drop in to help out or pass the time.

SITE: The center occupies a small parcel between two multifamily houses in a predominantly residential section of downtown San Diego, across the street from a school with a heavily used playground. Surrounding buildings range from large Victorians that have been converted to apartments, to bungalows and a few commercial buildings.

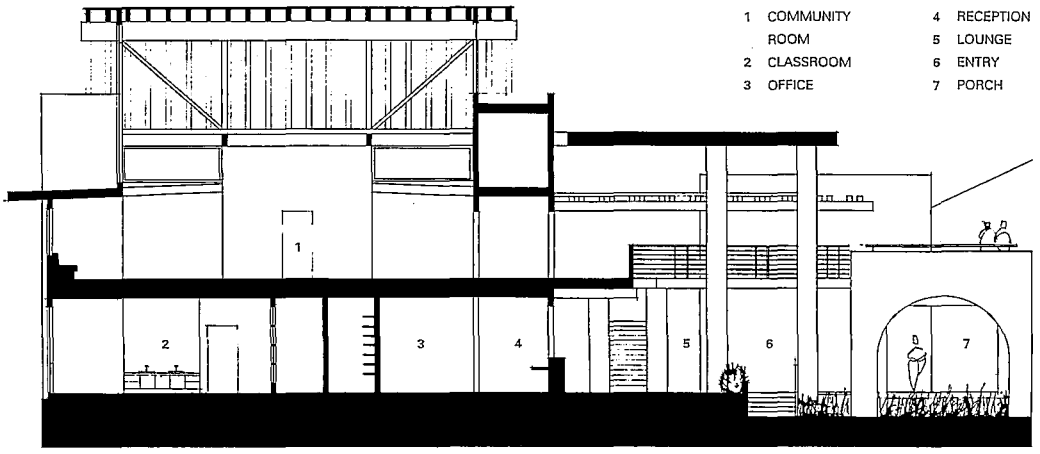
PROGRAM: The community center called for the restoration of an 1890 Victorian house on the southeast corner of the site into administrative offices, a boardroom, and caretaker's quarters and the construction of a new 12,500-square-foot public facility containing small meeting and counseling rooms; a large second floor multipurpose community room; and a child-care center with four classrooms, a kitchen, and an outdoor play area.

Critically important to residents was the relocation and redesign of an existing pocket park on the west side of the site. The small size of the original park made it difficult to patrol and consequently invited gang and drug activity. Project supporters arranged the zoning modifications necessary for the multiuse building and park relocation and instructed Quigley to utilize the new, frontal location of the park to form a "seamless transition" from the street to the center. Finally, the new complex required parking for 17, relegated to the former location of the park.

DESIGN CONCEPT: Sherman Heights presented Quigley and project designer Catherine Herbst with a series of contradictory goals. For example, through community design charettes, Quigley was charged with creating a building that demonstrated "civic domesticity"—a dichotomous term calling for a structure that gave its community a recognizable public center, yet respected the residential scale and character of the neighborhood.


Centro Comunitario de
SHERMAN HEIGHTS
Community Center


SUNMAN HEIGHTS



NORTH-SOUTH SECTION

FACING PAGE, TOP: Front porch overlooks playground carved out of new pocket park. Deck above porch is used for weightlifting.
FACING PAGE, BOTTOM: Western service area of center displays tongue-and-groove siding as well as concrete walls and metal eave cladding.
NORTH-SOUTH SECTION: Double-height community room is situated above classrooms and offices.

Quigley also wanted to "ennoble the vernacular building traditions" of stick framing and tilt-wall construction by demonstrating their fitness for civic architecture. Yet in pursuing that agenda, he was not interested in creating "signature" architecture. "If the building is only a statement by the architect, then it is superficial," Quigley believes. "But if it is only a container for community functions, then it has no personality, no power or presence for the community."

His solution borders on the oxymoronic: strong background architecture. Quigley and Herbst wanted the building to disappear —literally behind a coat of ivy, and figuratively behind the strength of its community functions. But they also employed a bold, familiar vocabulary of arches and gabled roofs, intended as identifiable with the image of this San Diego community.

SUCCESSES: Pitched roofs, wood siding, and porches give the building the residential qualities sought by the community. Furthermore, the relocated park was configured to look like and serve as a "front yard" to the center. At the same time, the simple power of unadorned cast concrete and a scale grander than surrounding buildings engenders in the new center a formality that is easily interpreted as civic.

Quigley achieved the community demand for references to both Hispanic and Victorian building traditions by combining tilt-up concrete walls with a more delicate texture of tongue-and-groove siding at several places on the exterior. Vandalism and maintenance costs were also concerns, both addressed through graffiti-resistant surface materials in unsecured areas, coupled with the architect's intention that the building ultimately be encased in ivy, which he calls "a natural—and beautiful—graffiti shield."

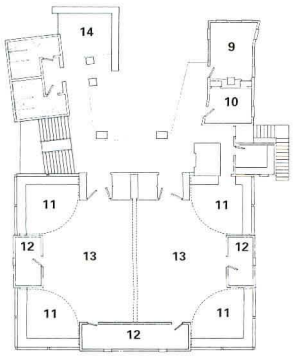
Most impressive is the light-filled, treetop community room on the second floor. A soaring space, the room can be easily subdivided into smaller units, yet loses none of its character in doing so. With views of the neighborhood and San Diego landmarks, the community room takes on geographical as well as social meanings and offers a strong focus for the center and its users.

FAILURES: Pigeons also find the complex homey. Those roosting along the building's exposed beams and trusses have become an annoyance and a health hazard. Reception areas open to the exterior initially took in rain, but the problem has been corrected.

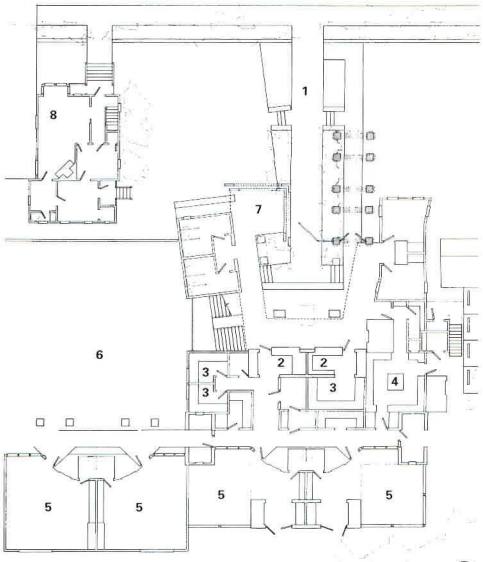
CLIENT/COMMUNITY REACTION: "It is the central focal point for neighborhood activities—a beautiful place to be," claims Executive Director Alfredo Velasco. "It's very inviting, extending its arms out into the community. ... It's magnificent," adds Estela Rubalcaba Klink, associate director of the center. The Sherman Heights Community Center is an eloquent gesture to a neighborhood that both needs and appreciates it.—*Reed Kroloff*

Reed Kroloff is an assistant professor of architecture at Arizona State University.

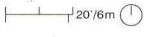
1 ENTRY
2 RECEPTION
3 OFFICE
4 KITCHEN
5 CLASSROOM
6 PLAYGROUND
7 PORCH
8 CARETAKER'S HOUSE
9 CONFERENCE
10 COUNSELING
11 MEETING
12 STORAGE
13 COMMUNITY ROOM
14 DECK



SECOND FLOOR PLAN



FIRST FLOOR PLAN



PLAN: Classrooms are arranged on southern perimeter; upper level community room can be subdivided.
TOP LEFT: Balcony connects second floor functions.
BOTTOM LEFT: Community space is configured for a single function.
FACING PAGE: Sheltered entrance patio is used for dining, games, and meetings.

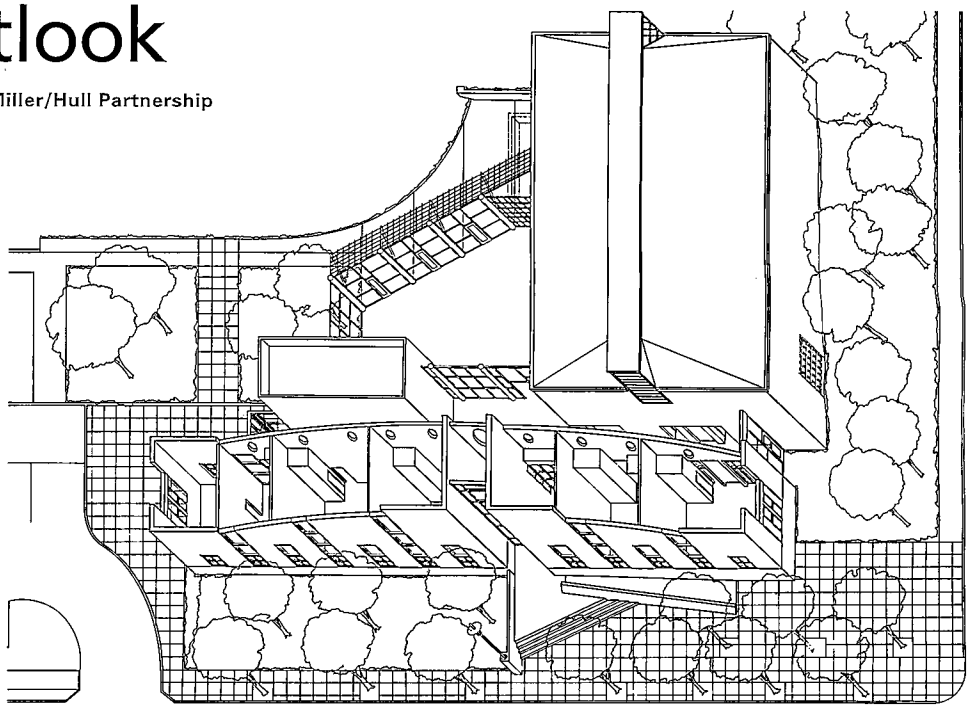
SHERMAN HEIGHTS COMMUNITY CENTER
SAN DIEGO, CALIFORNIA

ARCHITECT: Rob Wellington Quigley, San Diego—Rob Quigley (principal); Catherine Herbst (project architect); Maryanne Welton (project manager); B. Dickens, J. Clinton (project team)
LANDSCAPE ARCHITECT: Andrew Spurlock Martin Poirier Landscape Architecture
ENGINEERS: AMS Engineering (structural); Mann & Associates (mechanical); J-Rad Engineers (electrical); Flores Consulting Group (civil)
CONSULTANTS: P. Quigley & Associates (lighting); Jim Gibson (preservation)
GENERAL CONTRACTORS: D.M. Erickson Construction Company (community center); Cal Star Construction (house)
COST: $1.8 million
PHOTOGRAPHER: Hewitt/Garrison


If you want peace,
work for justice

New Public Outlook

Garfield Community Center • Seattle, Washington • Miller/Hull Partnership



In the 1970s, the City of Seattle built an indoor swimming pool in the Central District, a low-income residential neighborhood. With its steeply battered concrete walls and concealed entrance, the pool's enclosure resembles a World War II bunker, as if the city viewed the district as a community under siege. Now, two decades later and several hundred feet away, Seattle has opened a community center that displays a distinctly more humane attitude toward the neighborhood. Designed by the Miller/Hull Partnership of Seattle, the Garfield Community Center firmly but gently anchors the intersection of two major thoroughfares. Through its civic presence, the new building demonstrates how to restore a sense of public realm to a neighborhood that has suffered from neglect, disinvestment, and social strife.

CLIENT/COMMUNITY: The City of Seattle Parks and Recreation Department owns and operates Garfield Community Center and is building five community centers funded by the 1991 passage of an $18 million levy. For this project, located in a low-income area east of downtown that has a high proportion of minorities, the city allocated $3.1 million.

SITE: The new community center is located on a 2.3-acre site to the north of a public high school and swimming pool. Across the street from the building is a cluster of shops and a service station. The surrounding area largely comprises single-family, low- and middle-income houses built in the early 1900s. The south side of the center faces a park containing ball fields. To the east is a children's play area that was constructed as part of the site improvements for the community center.

PROGRAM: Garfield Center provides 20,000 square feet of recreational and social space, including a gymnasium, a multipurpose room, meeting rooms, staff offices, and a serving kitchen. A small plaza at the northwest corner addresses the intersection, and a courtyard faces the park to the south.

DESIGN CONCEPT: Miller/Hull designed the center to be open both to the street and to the park behind it. According to Partner Robert Hull, the concept was to "design a bold public structure right on the corner that would be a landmark for the neighborhood."

The architect organized the building into two sets of volumes with a shared circulation spine. On the north side of this main corridor, a row of small rooms serves a multitude of purposes: evening and after-school classes, hands-on workshops, and group and family counseling. To the south, a gymnasium and multipurpose room accommodate larger groups. In the glass-enclosed multipurpose room, served by a catering kitchen, large roll-up garage doors open onto a courtyard, allowing public events and receptions to spill outside. A canopy shields the multipurpose room's south-facing windows on Seattle's relatively rare sunny days. The building is flanked by an entry plaza on the north and a plaza that wraps its south and east sides.

SUCCESSES: Miller/Hull gave the building a civic dignity by using simple forms and materials

AXONOMETRIC: Garfield Community Center's offices are separated from larger community room and gym by narrow corridor.
FACING PAGE, TOP: Front facade heightens sense of civic drama in one of Seattle's poorer neighborhoods.
FACING PAGE, BOTTOM: Bulk of gymnasium is tempered by hipped roof.
FOLLOWING PAGES: Garfield Community Center constitutes an island of modernity amidst a neighborhood of houses and a former Catholic church.

in bold ways. Block-sized structural bricks form the street-facing walls, while the more pastoral, park-facing side of the building features a smaller masonry unit with a finer texture. Oversized and brightly colored brackets support a sunscreen and give the plaza a sense of enclosure. Gutters and downspouts are also exaggerated to reflect their important purpose in this rainy climate. Visually, they strongly cap the roof line.

The center also incorporates a wide range of features that reflect environmentally sustainable guidelines recently adopted by the city. Recycled materials are incorporated into paving, insulation, acoustical tile, countertops, painting, planting, and even artworks. Other "green" features include natural ventilation, water-conserving plumbing fixtures, and sensors that dim the lighting in the gymnasium when it is not in use.

Garfield Community Center exhibits fanciful touches that are not often found in a building type frequently constrained by tight municipal budgets. Two columns in the lobby that mark the intersection of the center's two hallways are crowned by a burst of natural light from a pyramidal skylight. In the southwest quadrant, the gymnasium, typically a space with little or no natural light, incorporates two large fixed windows with rolling doors on the interior side that can be lowered to reduce glare during basketball games and to protect the glass. The lightness and transparency of this building engages the neighborhood, inviting residents to use its facilities. Its delicate presence generates respect; there are no signs of vandalism or even graffiti.

FAILURES: The rather Spartan corner plaza could have been a more lively public space containing seating, landscaping, and art. And there is an inelegant structure enclosing trash bins next to the public driveway.

The long, curved roof form that animates the north wall is expressed in the ceilings of the interior spaces. But due to its height, some of these relatively small rooms have somewhat awkward proportions—their longest dimension is the vertical one. Additionally, the acoustics in the multipurpose room are poor due to the overabundance of hard surfaces.

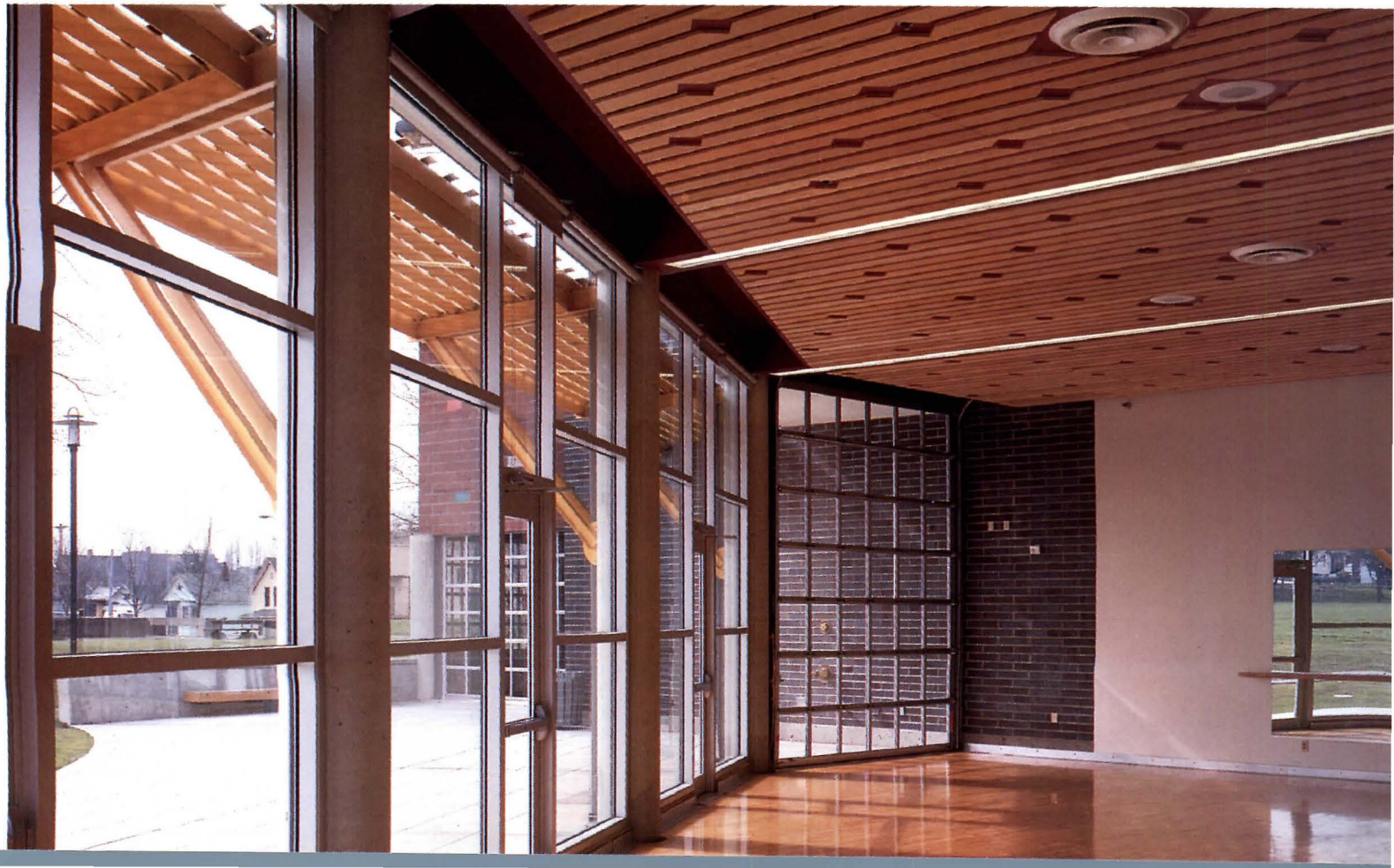
CLIENT/COMMUNITY REACTION: According to the center's coordinator, Shari Watts, the building's design was directly influenced by the community through numerous public meetings held during the programming phase. In contrast to some previous city projects, there were no surprises for the community. The building incorporates several pieces of public art that are symbolically important to the community: an entry window with a decorative tapestrylike screen, a collection of folk-wisdom phrases cast into the risers of the entry steps, and two huge iconlike works mounted into the wall of the main corridor. Watts is pleased with the building's friendliness and only wishes it were larger.—*Mark Hinshaw*

Mark Hinshaw, FAIA, is a Seattle-based urban designer and writes about architecture and urban design for The Seattle Times.

ABOVE LEFT: Gym is punctuated by glass bricks that cause the walls to sparkle with little points of light.
ABOVE: Meeting rooms are vertically proportioned and flooded with natural light from large windows.
FACING PAGE, TOP: Central lobby, punctuated by concrete columns and round windows, leads to multipurpose room.
FACING PAGE, BOTTOM: Glass-enclosed multipurpose room, with roll-up door, faces courtyard.

GARFIELD COMMUNITY CENTER
SEATTLE, WASHINGTON

ARCHITECT: Miller/Hull Partnership, Seattle—Robert Hull (partner-in-charge of design); Norman Strong (partner-in-charge of quality control); Steve Tatge, Philip Christofides (project architects); Amy Lelyveld, Christine Arthur (project team)
LANDSCAPE ARCHITECT: Murase Associates
ENGINEERS: H.K. Kim Engineers (structural); Greenbusch Group (mechanical); Atkinson/Reichard (electrical); SvR Design Company (civil)
CONSULTANTS: Makers (planning); C3MG (cost)
GENERAL CONTRACTOR: Lamb Longo
COST: $3.1 million ($115 per square foot)
PHOTOGRAPHER: Strode/Eckert



Double Duty

Carroll County Library and Senior Center • Mt. Airy, Maryland • Cho, Wilks & Benn

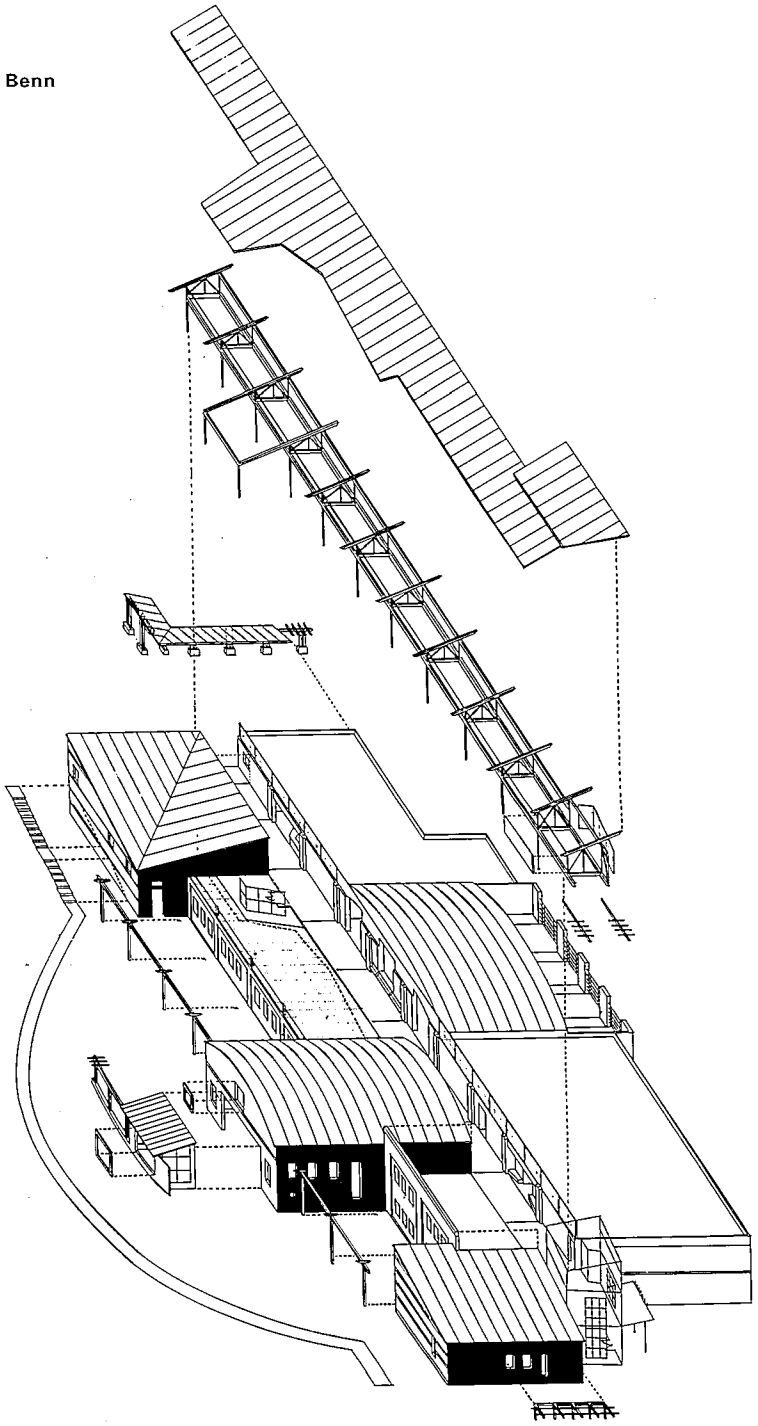
Pressured by the sprawl of nearby Baltimore and Washington, D.C., the town of Mt. Airy, Maryland, is struggling to retain a semblance of its rural heritage. Turn-of-the-century frame houses and quaint shops set a tone that architect Cho, Wilks & Benn strove to preserve in the design for the Carroll County Library and Senior Center. The two functions were combined by the county to economize design and construction and to simplify maintenance.

CLIENT/COMMUNITY: Overseeing the project was a three-member client group—Carroll County Public Library, the county's Bureau of Aging, and its Department of Building Construction. Formerly shoehorned into 4,300 square feet in a Neo-Classical bank, the library needed more space for collections, reference books, and computer terminals. Likewise, the Bureau of Aging operated its subsidized lunch program out of a small church that was often unavailable for other activities.

SITE: When the building was commissioned, its 3.9-acre parcel was bordered by cornfields and a stand of mature hardwoods. "We had to design knowing that eventually it would be surrounded by suburban development," notes Principal Diane Cho, who configured the parking lot behind the building to allow access from a future residential street.

PROGRAM: Special needs for the 17,000-square-foot library included a children's library, book stacks, periodicals reading room, reference room, staff offices, and suite of study rooms. Requirements for the 10,000-square-foot senior center were a reception area; administrative suite; dining hall; and game, TV, crafts, and sewing rooms. The clients wanted the library and senior center to be completely separate and requested an 800-square-foot meeting room for nighttime community use, as well as parking for 200 cars.

DESIGN CONCEPT: The need for parking led to a stacked concept with a library below and senior center above, each with separate entrances and no internal connection. The sloped site allows library patrons to enter at



FACING PAGE, TOP: South facade contains library entrance and nighttime access to community meeting room.
FACING PAGE, BOTTOM: On west-facing facade, center's mass is broken into smaller parts inspired by farm buildings. Children's library is housed in barrel-vaulted volume (right).
AXONOMETRIC: In kit-of-parts concept, major program elements are attached to circulation spine: reading/reference room, dining room, children's library, and community meeting room.

grade on the lower level and seniors to enter at grade on the upper level. The architect attached each of the four large spaces—community meeting room, children's library, reading and reference room, and dining room—to a central circulation spine.

SUCCESSES: Cho, Wilks & Benn reduced the building's scale by expressing major program elements as discrete volumes with barnlike metal roofs. The stacked building concept saved a row of mature trees along the street and screens the rear parking lot. Inside, the library's major spaces have a grand scale that is fitting for a civic building, graced by natural light and views.

FAILURES: Lighting in the reference room was too dim at first, but new fixtures corrected the problem; other imbalances still persist. Noise levels in the reading area and stacks are too loud. Senior Center Director Debra Shindle notes the hard surfaces produce similar poor acoustics for people with hearing aids.

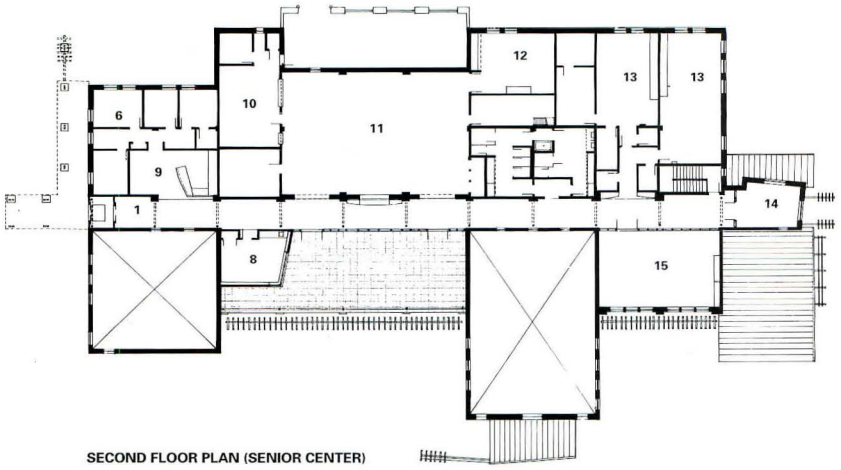
Cho bemoans the missed opportunity of a proposed two-story space at the south end of the circulation spine that would have served the building's two constituencies. Thus, the dollarwise combination of functions does little to foster a community spirit.

CLIENT/COMMUNITY REACTION: Librarian Greg Becker praises the readable signage and the building's clear organization. Shindle remarks the new center has allowed the county to expand its counseling and recreational activities for seniors. Adds senior Hilda Smith, "It's a nice place to get together."—*Vernon Mays*

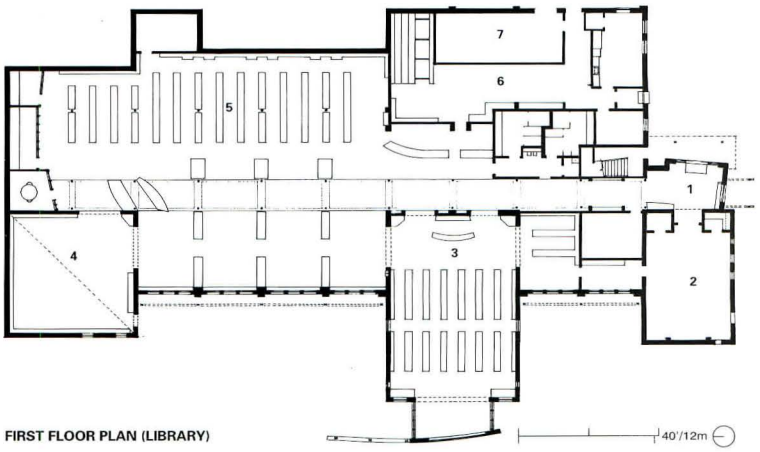
TOP RIGHT: Sloped site allows for stacked functions. Circulation spine is lit by fiberglass clerestory.
PLANS: On first floor, windowless stack area and offices (top) abut hillside. Second floor senior center focuses on dining hall (center).
FACING PAGE, TOP LEFT: Children's library incorporates nook that projects as bay.
FACING PAGE, TOP RIGHT: Catalog terminals on architect-designed tables are located along circulation spine.
FACING PAGE, BOTTOM LEFT: Central corridor in senior center opens to terrace.
FACING PAGE, BOTTOM RIGHT: Senior center dining hall doubles as meeting space.

CARROLL COUNTY LIBRARY AND SENIOR CENTER
MT. AIRY, MARYLAND

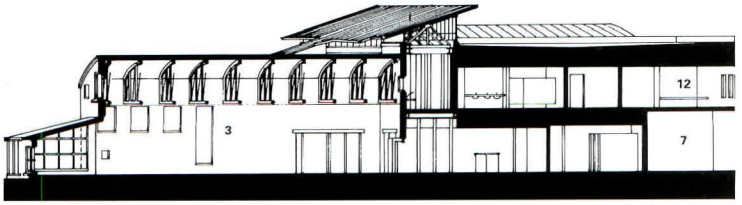
ARCHITECT: Cho, Wilks & Benn Architects, Baltimore, Maryland—Diane Cho (principal-in-charge); Royce Earnest (project architect); Dianne Rohrer (interior designer); Peter Choi (designer)
LANDSCAPE ARCHITECT: Farrand & English
ENGINEERS: LPJ (structural/civil); Spears/Votta (mechanical/electrical)
GENERAL CONTRACTOR: P.J. Scarpulla
COST: $3.1 million ($114 per square foot)
PHOTOGRAPHER: Erik Kvalsvik



SECOND FLOOR PLAN (SENIOR CENTER)

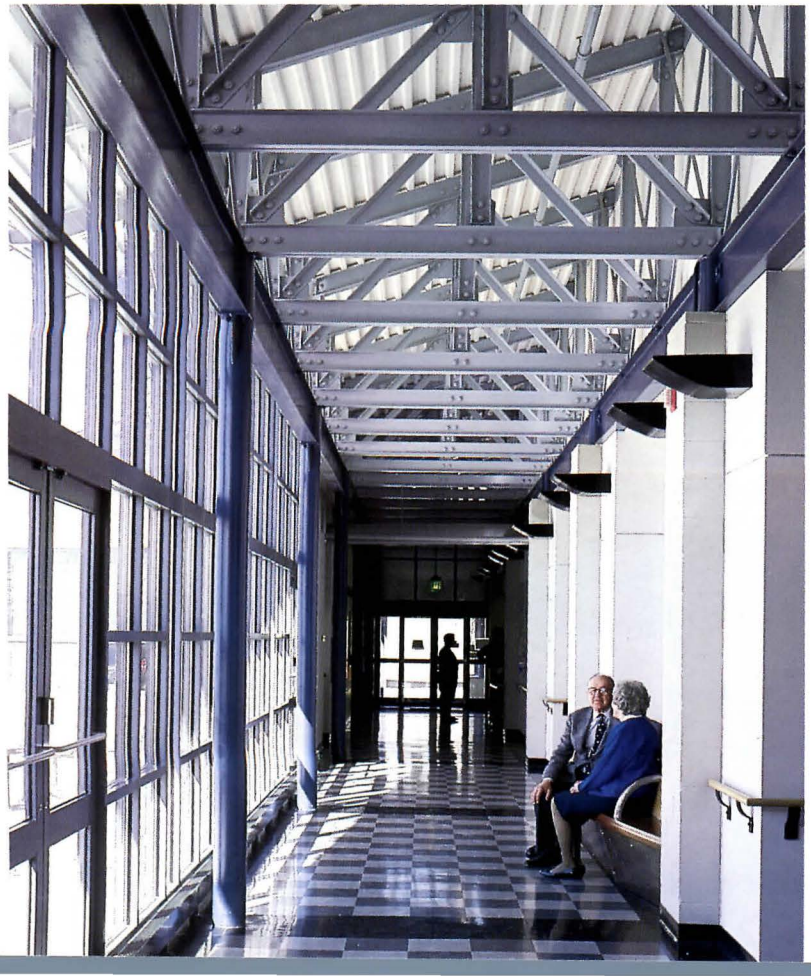


FIRST FLOOR PLAN (LIBRARY)



SECTION THROUGH CHILDREN'S LIBRARY

1	VESTIBULE	5	LIBRARY STACKS	9	ADMINISTRATION	13	CRAFTS
2	MEETING ROOM	6	OFFICE	10	KITCHEN	14	LOUNGE
3	CHILDREN'S LIBRARY	7	MECHANICAL	11	DINING HALL	15	RECREATION
4	REFERENCE ROOM	8	CONFERENCE	12	T.V. ROOM		




ALBANY LIBRARY AND COMMUNITY CENTER

Civic Appeal

Albany Library and Community Center • Albany, California • Marquis Associates

Due to its small lots and proximity to San Francisco, blue-collar Albany is one of California's densest towns, with virtually no undeveloped land. Over the past few decades, the city's growth as a Bay Area bedroom community has produced a closely knit town with many public activities. The Albany Library and Community Center, designed by San Francisco-based Marquis Associates, is Albany's first civic building to provide space for public events. It is the last building founding Principal Robert Marquis completed before he died in January. "We plan to continue Bob's commitment to socially relevant design," maintains Partner Gita Dev.

CLIENT/COMMUNITY: A 1988 state bond for library construction and renovation motivated a library advisory committee to investigate sites that would accommodate a new building. When Albany's City Council purchased one of the few large parcels in the city, the city planning department proposed a single building with a dual program that included a library and offices for the city's parks and recreation department. Until that time, community events had been held in neighboring cities and a Julia Morgan-designed veterans' hall. As proposed, the library complex would also house a large multipurpose room for community events and classrooms for after-school and summer activities.

In 1989, the advisory committee, comprising representatives of the library, city council, planning commission, parks and recreation department, and the Albany Arts Committee, commissioned Marquis Associates to design the new building, based on the firm's experience with similar structures.

SITE: The new building occupies a major intersection traversed overhead by commuter trains, in a neighborhood of stucco houses. The library was situated on the quieter west portion of the site, away from the trains.

PROGRAM: In addition to stacks and reading alcoves, the 12,000-square-foot library incorporates conference rooms, a children's area, and computer rooms. On the eastern half of the

FACING PAGE: Skylit stair tower marks entrance to Albany Library and Community Center. Colors echo stucco houses in neighborhood.
ABOVE: Pergola supports climbing wisteria and shields courtyard outside center's multipurpose room.
FOLLOWING PAGES: Located on a busy thoroughfare, the new building's front facade expresses its dual program —library (left of stair tower) and community center (right).


ALBANY LIBRARY AND COMMUNITY CENTER

site, the 14,000-square-foot community center comprises a large multipurpose room with a kitchen and courtyard. Classrooms and conference rooms are located adjacent to the parks and recreation department offices in the northeast quadrant of the building.

DESIGN CONCEPT: Although designed to be Albany's major civic building, the complex could not overwhelm its residential context. Marquis Associates avoided large masses and expressed the center's major activities with compact, one-story volumes. Different roof shapes draw natural light and accentuate program areas. A central lobby serves as a fulcrum for the building's different functions.

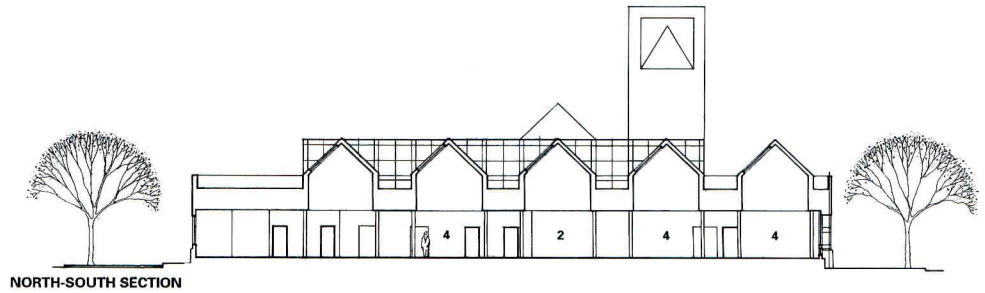
Because of the noisy site, Marquis protected each major activity space with computer-controlled lighting and HVAC systems, which provide background noise. Sound panels and wall insulation further mask traffic sounds. Energy-efficient mechanical systems and glazing, natural lighting, and occupancy sensors reflect the trend toward sustainable buildings encouraged by California codes.

SUCCESSES: The $5 million center has won state awards for design and energy conservation. Librarian Richard Russo explains, "The building is successful because the city, architect, and users worked together closely."

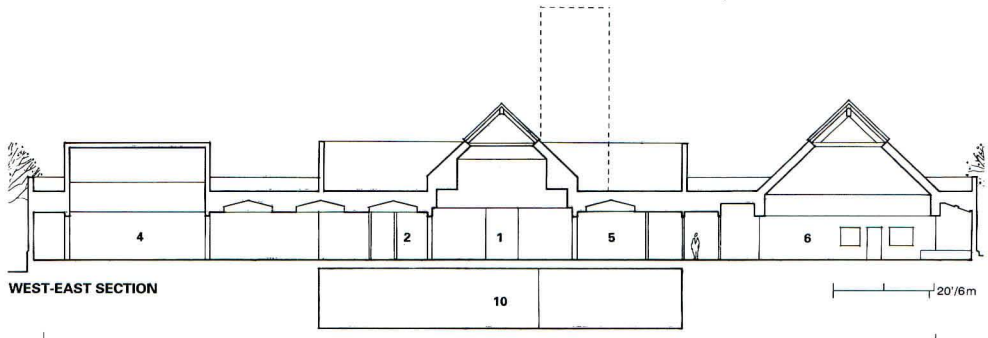
FAILURES: The building's street presence is enhanced by its pergola-covered courtyard, but the building's overall massing appears boxy from the car. Both site and budget could have been doubled to accommodate the community's needs—the original program called for a second floor with a child-care center.

CLIENT/COMMUNITY REACTION: Albany's citizens like their new public building; the library is one of the busiest in the county. But operating budgets are now smaller than they were in the 1980s, and according to Library Manager Ronnie Davis, "People are disappointed that the reduced budget won't allow more services. They expect more from a good building."—*Jerri Holan*

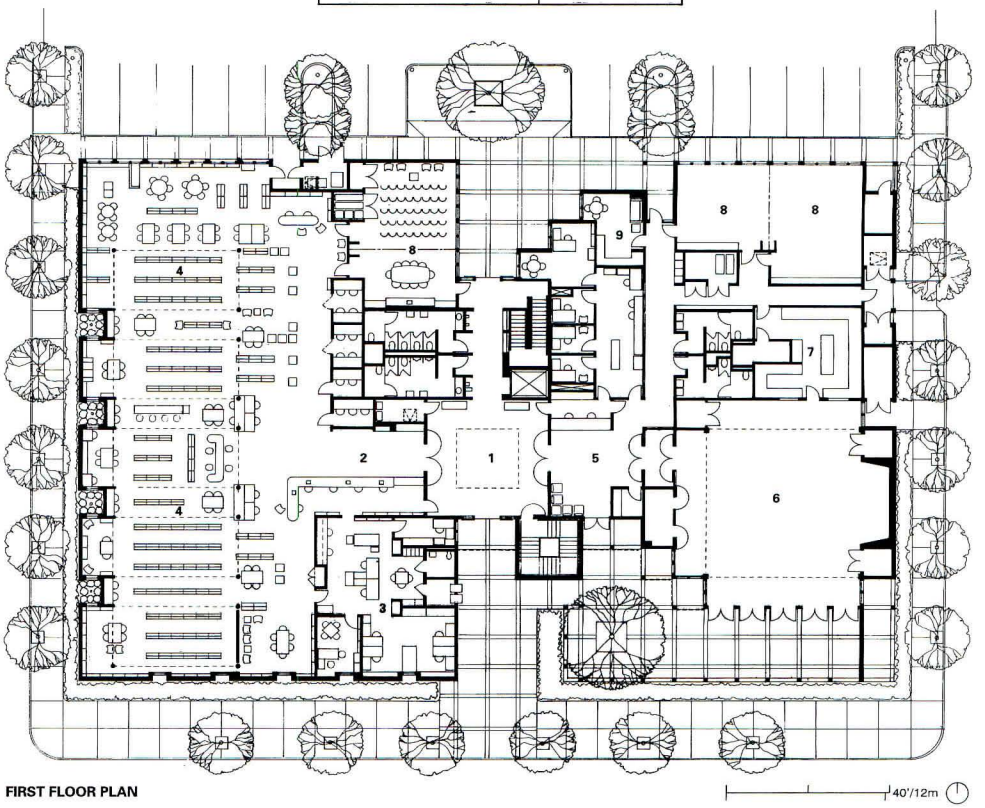
Jerri Holan is an Albany-based architect.



NORTH-SOUTH SECTION



WEST-EAST SECTION



FIRST FLOOR PLAN

PLAN: Central lobby, shared by all functions, is entered from street on south side of building and from parking lot on north.

FACING PAGE, TOP LEFT: Multipurpose room is crowned by pyramidal skylight.

FACING PAGE, TOP RIGHT: North-facing monitor casts daylight on library information desk. Cove lighting and custom-designed brushed aluminum light fixtures are incorporated throughout library.

FACING PAGE, BOTTOM LEFT: Skylight illuminates main hallway, detailed with exposed metal trusses.

FACING PAGE, BOTTOM RIGHT: Terrazzo-floored lobby doubles as gallery for local arts committee.

1 ENTRANCE LOBBY
2 LIBRARY LOBBY
3 STAFF AREA
4 LIBRARY
5 COMMUNITY CENTER LOBBY
6 MULTIPURPOSE ROOM
7 KITCHEN
8 MEETING/CLASSROOM
9 LOUNGE
10 BASEMENT

ALBANY LIBRARY AND COMMUNITY CENTER
ALBANY, CALIFORNIA

ARCHITECT: Marquis Associates, San Francisco—Hal Brandes (principal-in-charge), Robert B. Marquis, Andre Pierce, Bharati Brandes, Lena Ch'en, Jim Lyons (project team)
LANDSCAPE ARCHITECT: Richard Vignolo
ENGINEERS: Forell/Elsesser Engineers (structural); Marion Cerbatos Tomasi (mechanical/electrical); Sandis Humber Jones (civil)
CONSULTANTS: Adamson Associates (cost); Marquis Associates & Zone SF (interiors); Architectural Lighting Design (lighting); Charles M. Salter Associates (acoustics)
GENERAL CONTRACTOR: Dickman-Nourse
COST: $5 million ($165 per square foot)
PHOTOGRAPHER: Sharon Risedorph Photography

Community Beacon

The Lighthouse • New York City • Mitchell/Giurgola Architects

Many New Yorkers have heard of the 90-year-old Lighthouse. As President William Howard Taft declared in 1911 when the first Lighthouse cornerstone was laid, it is "the first settlement house for the blind in the world." Not so many, however, are aware that the organization's most public purpose is no longer the administration of a handicraft industry that makes pot holders and brooms.

Today, the Lighthouse is the world's leading organization for people who are visually impaired. The nonprofit organization's primary mission is to enable this community to function independently in mainstream society. All of its activities encourage achievement, opportunity, quality of life, and hope, fostered in a new headquarters designed by New York City-based Mitchell/Giurgola Architects.

CLIENT/COMMUNITY: The Lighthouse provides a full range of rehabilitation services; offers public and professional education; and applies research to benefit people with significant vision deficit. Eighty-five percent of the Lighthouse's constituents are partially sighted, possessing what is clinically known as "low vision." The remaining 15 percent are blind, but possess light perception. The Lighthouse serves visually impaired people from infants to older adults; about 55 percent of the approximately 200 persons being helped at any one time by the organization's 490 employees and 1,000 volunteers are over age 65.

SITE: Located on a prime midtown Manhattan site, the new Lighthouse is actually a rehab of a 14-story tower completed in 1964. The existing tower was extended to the front and rear after demolishing a complex that had grown on the midblock East 59th Street site since the Lighthouse's 1907 beginnings in a five-story brownstone. By 1930, the institution had extended its property to 60th Street, adding a six-story building there in 1950. By 1991, because of greatly increased use, new HVAC requirements, and the need to remove asbestos and expand elevator capacity, the Lighthouse decided to replace the 59th Street

FACING PAGE: The Lighthouse, which spans a mid-Manhattan block, consists of a 1964 structural frame sheathed in a new brick-veneered skin. The redesigned facades have increased window surface, thereby maximizing the level of daylight within. New two-story base fills a former plaza on 59th Street. **ABOVE:** Base of north facade replaces a demolished six-story building added to the headquarters in 1950.

and 60th Street buildings with a single 16-story tower, reusing the structural frame of the 1964 tower and adding a floor at its base and top. The first two floors of the new tower extend to the 59th Street property line, filling the former 16-foot-deep plaza once required by zoning regulations. The 1950 building on 60th Street was demolished.

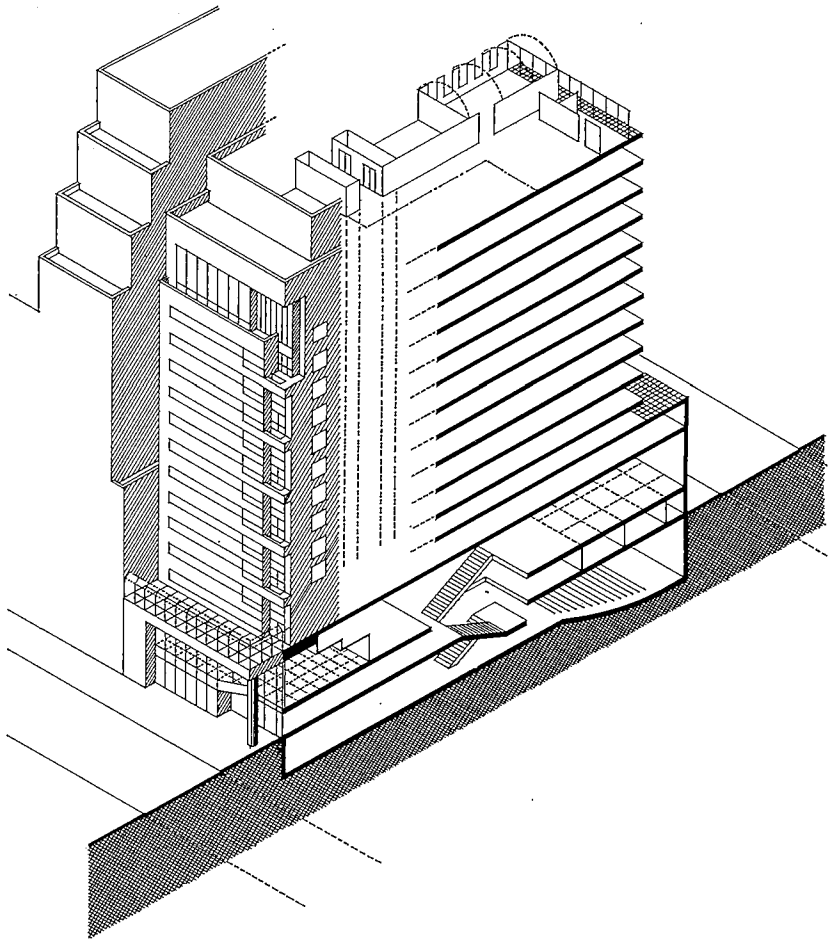
PROGRAM: The *goals and functions* of the Lighthouse called for a multifaceted building that includes a street-level store; a performing arts and conference center; a child development center; a low-vision clinic; computer technology and employment training facilities; a music school and library; vision and research labs; and administrative and office space.

Mitchell/Giurgola Partners Steven M. Goldberg and Jan Keane note that no precedent existed for a facility of this type. "Meetings with the Lighthouse researchers, staff, and users helped us and our consultants formulate design guidelines to deal with the major requirements for those in treatment," Goldberg reports. These requirements included meeting or exceeding the Americans With Disabilities Act standards for clarity of circulation, ease of orientation and mobility, quality of lighting, effective color and contrast, audible communication, and life safety. Users of the proposed facility were assembled in groups to test the effectiveness of signage mock-ups and tactile maps. Because many users were visually impaired, the architects developed tactile floor plans and a textured building model to allow them as much participation as possible in the design process.

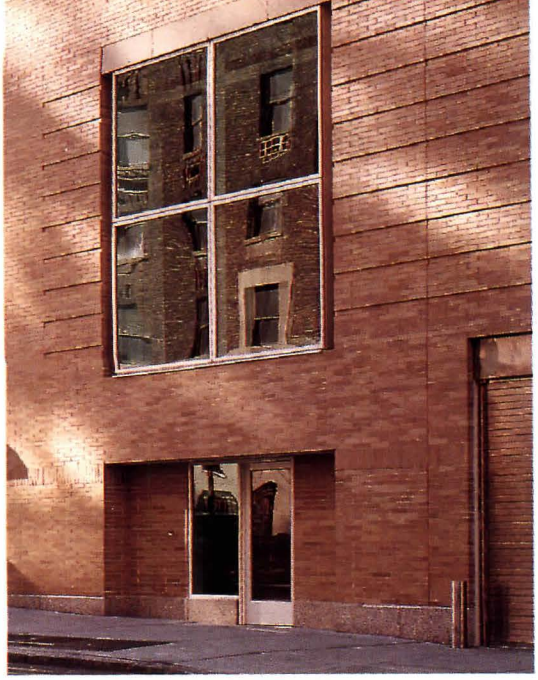
DESIGN CONCEPT: Although the new Lighthouse building's profiles and overall mass were essentially shaped by the structural frame of the existing 1964 tower, Mitchell/Giurgola Architects wanted a strong new esthetic presence on both 59th and 60th streets. The architect's exterior design effort focused upon devising and detailing the building's handsome new brick-veneered skin and white-trimmed, metal-framed windows and creating three terraced setbacks.

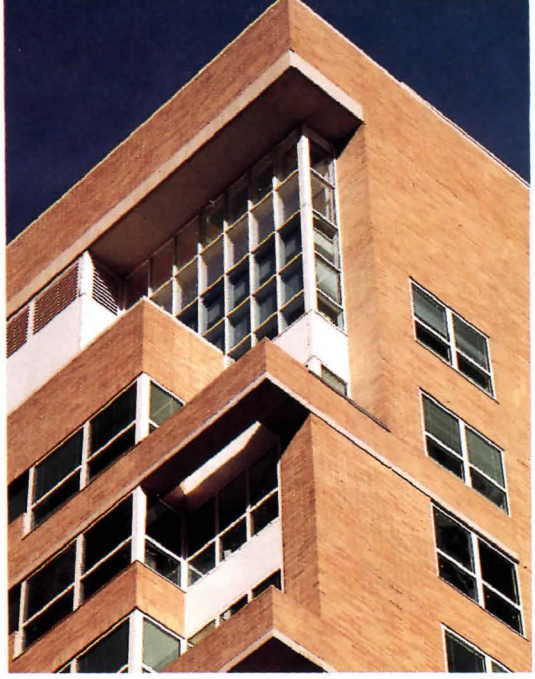
For the interiors, the principal endeavor was to meet the Lighthouse President Barbara Silverstone's mandate to create community spaces that work as well for the sighted as for the visually impaired. This goal was accomplished through a palette of color, materials, and texture that provides the necessary glare-free contrast and tactile clues to orient the partially sighted or blind, yet esthetically satisfies the sighted.

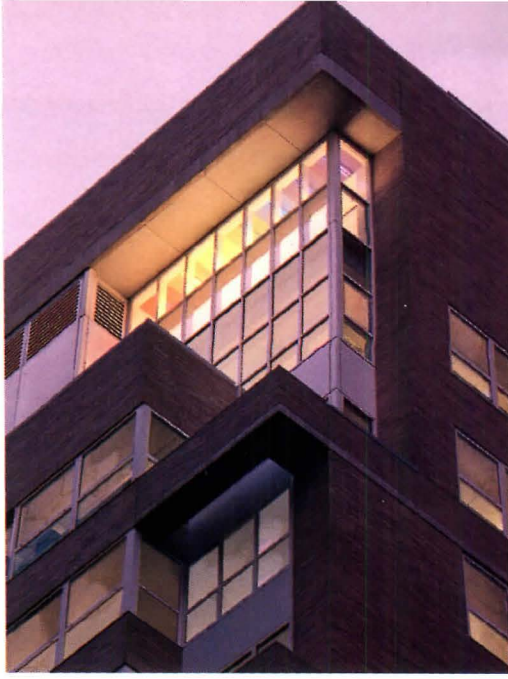
Public functions—lobby, store, cafeteria, auditorium, and music rehearsal space—are



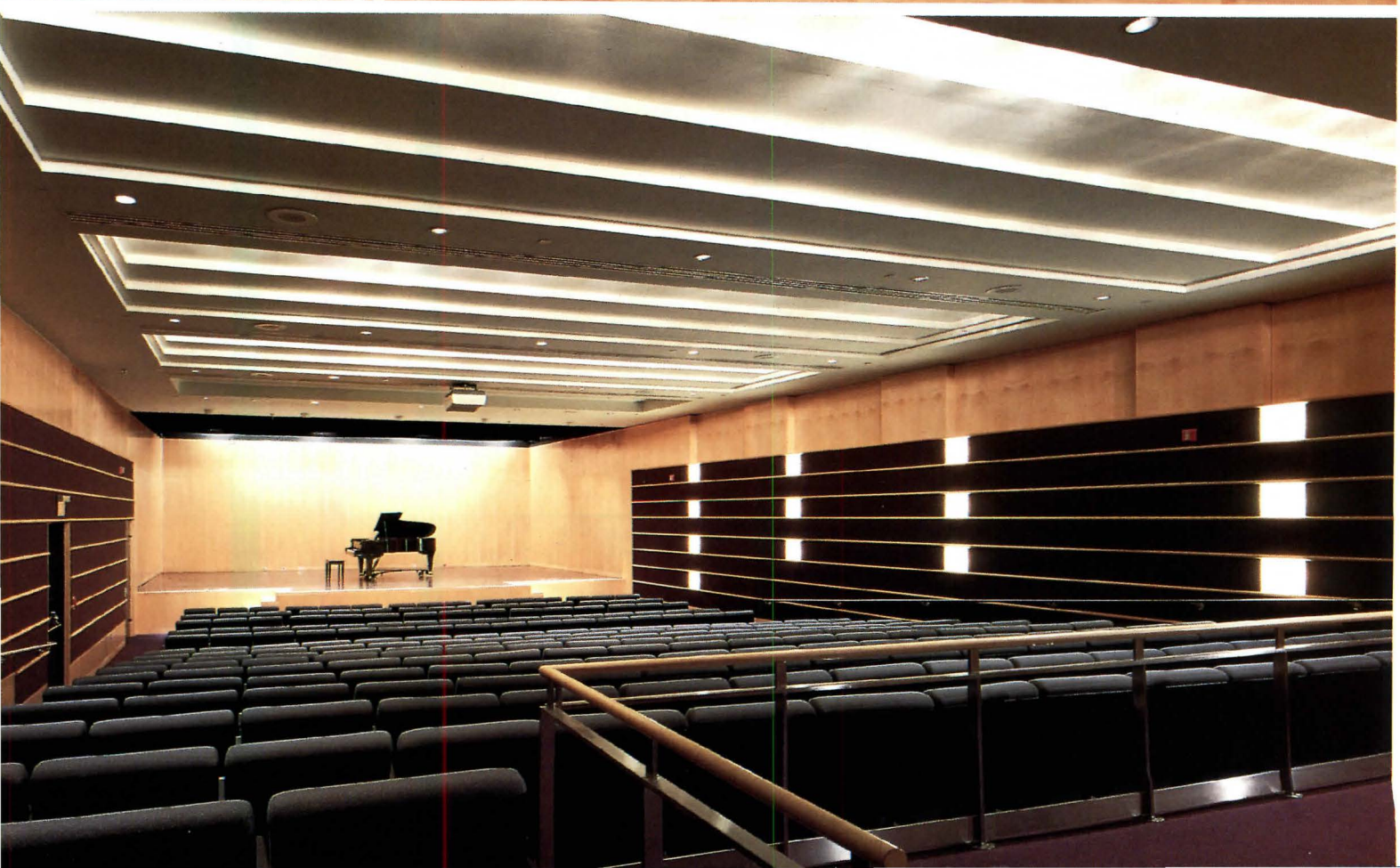
AXONOMETRIC: Original tower's base is rebuilt to include an auditorium at the basement level; entrance lobby, store, conference rooms, and service entrance on street level; and a cafeteria and multipurpose meeting and music school rehearsal space on the second level. New level at top contains executive offices and boardroom.
FACING PAGE, TOP LEFT: Window over delivery entrance is detailed with masonry recesses at window frames.
FACING PAGE, TOP CENTER: Two-story glass-enclosed balcony accents highly visible southeast corner. Spandrel extensions at corner cover frame of reused 1964 tower structure.
FACING PAGE, TOP RIGHT: At night, colorfully painted, illuminated top floor ceiling serves as a beacon.
FACING PAGE, BOTTOM: Next to entrance, ground-level store sells products for the visually disadvantaged. Two-story cafeteria is at the second level, roofed by a children's play terrace.
FOLLOWING PAGES, TOP LEFT: Room doubles as rehearsal and meeting space.
FOLLOWING PAGES, BOTTOM LEFT: Auditorium has strongly contrasted lighting.
FOLLOWING PAGES, TOP RIGHT: Curved seating in lobby is wide enough for seeing-eye dogs to tuck under.
FOLLOWING PAGES, BOTTOM RIGHT: Boardroom features vaulted ceiling.








Spectrum: The Lighthouse Store



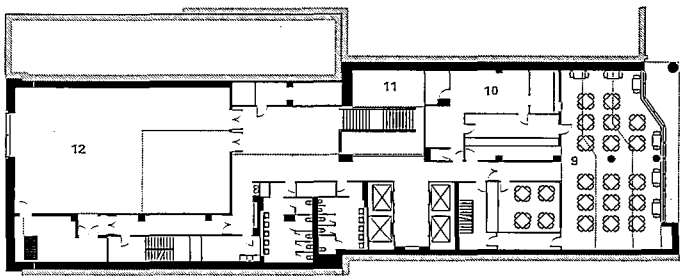
organized within the three-story base. Teaching, child care, research, and administration are located in the tower.

SUCCESSES: Given the constraints of the existing structure, the Lighthouse works exceedingly well for the sighted. On the exterior, it is bright and spirited. Within, the public spaces have the kind of clean elegance that one is happy to find in any place the community gathers for educational and cultural pursuits. Special provisions for the visually impaired are comprehensive, including notched railings to indicate forthcoming changes in level; high contrast at door frames, elevator door frames, wall base and floor intersections, and stair treads; tactile and color-contrast warning strips in the floor adjoining the main staircase; tactile and visual wayfinding maps, which are tilted for easier viewing by people in wheelchairs; and a number of other lighting, color, contrast, text, and signage aids.

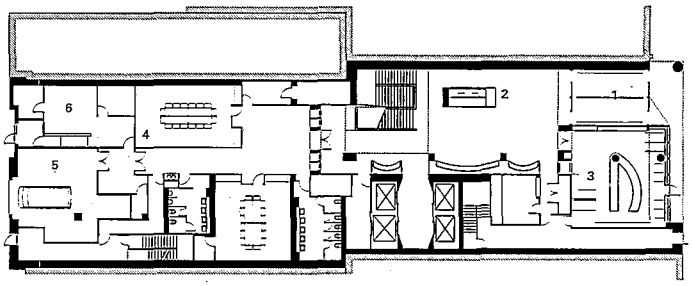
FAILURES: Because of the wide range of types of visual impairment afflicting the Lighthouse users, a building feature satisfactory to some can fail others. An example is the exterior concrete column at the southeast corner near the entrance. For dog- or cane-users, it is a landmark, a signal to turn right and enter. For others, some with peripheral vision, it is an unseen obstacle that they must learn to avoid. The column and sidewalk are the same color. One solution may be to paint the column in a bright color.

Such unsuccessful building elements are now under study. Architect Keane notes that "over time, the users are being interviewed on a regular basis by the architects and the Lighthouse staff about all the devices developed to facilitate the use of the building by the visually impaired, and adjustments are made as needed."

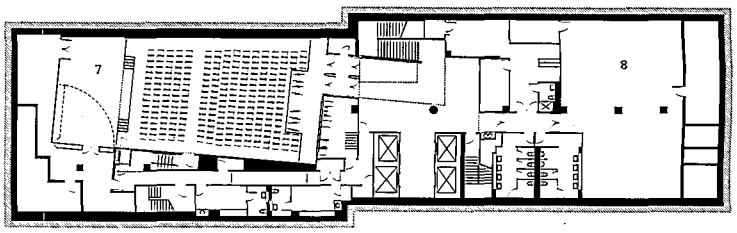
CLIENT/COMMUNITY REACTION: Journalist Peter Slatin, a former client of the Lighthouse familiar with its older quarters, compares the new facility favorably with the narrow, crowded complex he recalls. For Slatin, most of the orientation and circulation strategies work. President Silverstone is also pleased. "We wanted a handsome building without gold-knobbing it. Why should we have a tacky headquarters for people with poor vision? Why should the disabled get the leftovers? We are saying to them, 'You are not second-class citizens.' We didn't want the place to be too homey, and it isn't. We want to make the visually impaired part of the sighted world. We want to say goodbye, come back when you need us."—*Mildred F. Schmertz*



SECOND FLOOR PLAN



FIRST FLOOR PLAN



BASEMENT FLOOR PLAN

30'/9m

1 ENTRANCE LOBBY
2 RECEPTION
3 RETAIL
4 CONFERENCE
5 DELIVERIES
6 MAIL ROOM
7 AUDITORIUM
8 MECHANICAL
9 CAFETERIA
10 KITCHEN
11 OPEN TO BELOW
12 MULTIPURPOSE ROOM

PLANS: Lobby, store, and conference rooms occupy first floor, while cafeteria and multipurpose room are situated on second floor. Auditorium is located in basement.

FACING PAGE, TOP LEFT: Lobby floor is patterned with contrasting colors to define precise location of elevators. Color contrast at intersections of wall and floor indicates spatial limits.

FACING PAGE, TOP CENTER: Ceiling and base of telephone booths are detailed with vertical maple slats.

FACING PAGE, TOP RIGHT: Glass-screened terrace extends child development center and preschool.

FACING PAGE, BOTTOM: Light-filled cafeteria is an attractive gathering place for the Lighthouse community.

THE LIGHTHOUSE
NEW YORK CITY

ARCHITECT: Mitchell/Giurgola Architects, New York City—Steven M. Goldberg, Jan Keane (principals-in-charge); John Kurtz, Mark Markiewicz (project principals); Kathy Achepohl, Sergei Bischak, David Bogle, Niall Cain, Stuart Crawford, Margaret DeBolt, David Fratianne, Tony Hartin, Roisin Heneghan, Stefano Paci, Frank Rascoe, Miguel Rivera, Kelly Shannon, Susan Stando (project team)
ENGINEERS: Severud Associates (structural); Cosentini Associates (mechanical/electrical/plumbing)
CONSULTANTS: Robert A. Hansen Associates (acoustics); H.M. Brandston & Partners (lighting); Jules Fisher/Joshua Dachs Associates (theater); Whitehouse & Company (graphics); Grid Properties (development); John A. Van Duesen & Associates (elevator); Romano/Gatland (kitchen)
CONSTRUCTION MANAGER: Barr & Barr
COST: Withheld at owner's request
PHOTOGRAPHER: Jeff Goldberg/Esto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10


1423
Exit
Do Not Enter
Public P
THIS STRUCTU
1431

Downtown Vitality

Second Street Center • Santa Monica, California • Frederick Fisher, Architect

The city of Santa Monica follows a development model very different from that of its sprawling neighbor, Los Angeles: the notion of community. At the core of this socially conscious city by the Pacific is an old-fashioned downtown. In a region where the car characteristically bypasses and obviates older city centers, Santa Monica's downtown has a pedestrian-friendly approach to urbanism, including parking requirements that serve the old pattern of party-wall buildings. Second Street Center, a mixed-use building, includes 44 small units designed to respond to the city's social, urban, and architectural context.

The mixed-use solution of housing above retail and office space allows for low-income housing close to jobs. The project reinforces the urban qualities that make downtown Santa Monica a haven for those seeking a pedestrian-oriented alternative in Southern California.

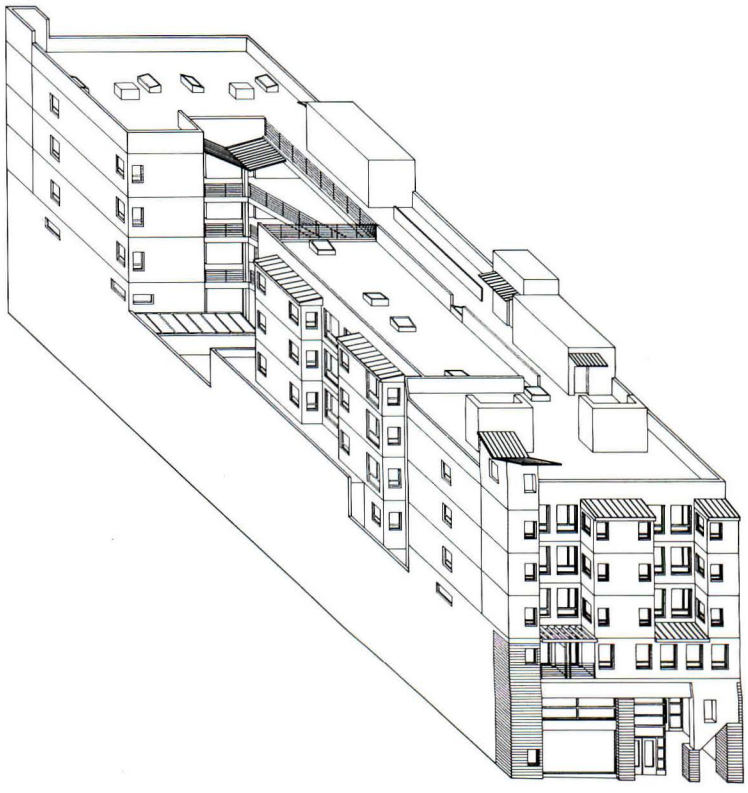
CLIENT/COMMUNITY: To keep the community diversified, Santa Monica cultivates a resident population downtown that is not dependent on cars. One of the few building types for carless occupants is the single-room-occupancy hotel (SRO), and the city has encouraged building SROs, along with social centers for seniors and hostels for students.

The project was developed by the Community Corporation of Santa Monica (CCSM) with assistance from the City of Santa Monica. CCSM provides affordable housing in Santa Monica by developing new properties in addition to rehabilitating existing buildings.

SITE: The project turns a midblock parking lot into an infill building, helping to activate a portion of Second Street in the heart of downtown Santa Monica that had lost its vitality. The SRO apartments serve a mix of elderly and young people who can work, shop, and be entertained within a couple of blocks.

PROGRAM: The Second Street Center has a complex program for its relatively small site. The first floor consists of a 3,000-square-foot loft-type office, serving CCSM, in addition to a 2,500-square-foot retail space. Dwellings

UNDINE PRÖHL



FACING PAGE: Second Street Center carries the existing pattern of the streetscape, with retail space on the first floor and apartments above. Tower at left contains bays of end units and is topped by lookout.
TOP: View of long north facade reveals a miniature skyline of small towers. Many windows capture ocean views.

AXONOMETRIC: Except for a courtyard carved within the volume, the long, narrow, mixed-use building fully occupies its 50-foot-by-150-foot site.

above the commercial spaces share circulation, outdoor courts and decks, a community room, and laundry. Each 225-square-foot unit has a large bay—for a desk, table, or bed—with a corner window.

DESIGN CONCEPT: Local architect Frederick Fisher organized the building to confirm existing street patterns outside, while creating a sense of community within. A lofty store, still vacant, addresses the thoroughfare, and offices face the alley. Four stories of apartments are arranged in a vertical court where open-air corridors and terraces overlook a patio bordered by a community room, laundry, and manager's apartment. The roof offers a sun deck with a panorama of Santa Monica Bay.

Fisher organized the units ingeniously. The corridor into each living space is double-loaded, with a kitchen on one side and library or storage area on the other. Many units have been adapted to local circumstances: Top floor apartments have skylights; those on the lowest levels have terraces.

To break down the bulk of the 28,000-square-foot building, Fisher stacked the bays for each apartment facing Second Street so that they project beyond the base facade. He colored the bays white and the recessed facade terra-cotta and applied ochre to a campanile lookout that rises above the parapet. The conceit is that the facade is an urban skyline of intimately scaled buildings.

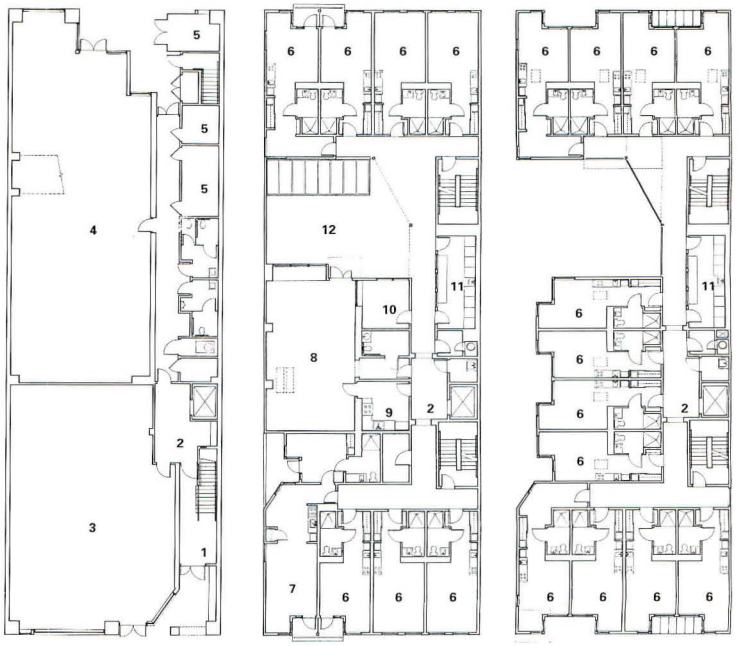
SUCCESSES: The design achieves complexity through a combination of simple forms and materials. Fisher's particular gift is the touch of modesty that he brings to a building that in other hands might look as big as it really is. Within a basically simple construction system of stucco walls over wood studs and block, the architect diversifies the materials into a collage that unites the articulated parts. Exposed block, some of it split and rusticated, anchors a base in which metal spandrels express structure. On a highly restrictive budget, Fisher has made deft use of common materials and construction techniques.

FAILURES: City and client had hoped to include a theater or cinema as the commercial use of the building, but the costs associated with these uses proved prohibitive.

CLIENT/COMMUNITY REACTION: Even before construction had begun, Second Street Center had a waiting list, and tenants' reactions have been positive. "The building is really put together well," reports one resident, a young waiter. "The bathroom tile has more of a matte finish and dries faster than normal bathroom tile. It's little things like that you appreciate."—*Joseph Giovannini*

URDINE PRÖHL

1 RESIDENTIAL ENTRANCE
2 LOBBY
3 RETAIL
4 OFFICE
5 UTILITIES
6 LIVING UNIT
7 MANAGER'S UNIT
8 COMMUNITY ROOM
9 COMMUNITY KITCHEN
10 MANAGER'S OFFICE
11 LAUNDRY
12 EXTERIOR COURT



FIRST FLOOR PLAN SECOND FLOOR PLAN THIRD–FIFTH FLOOR PLAN

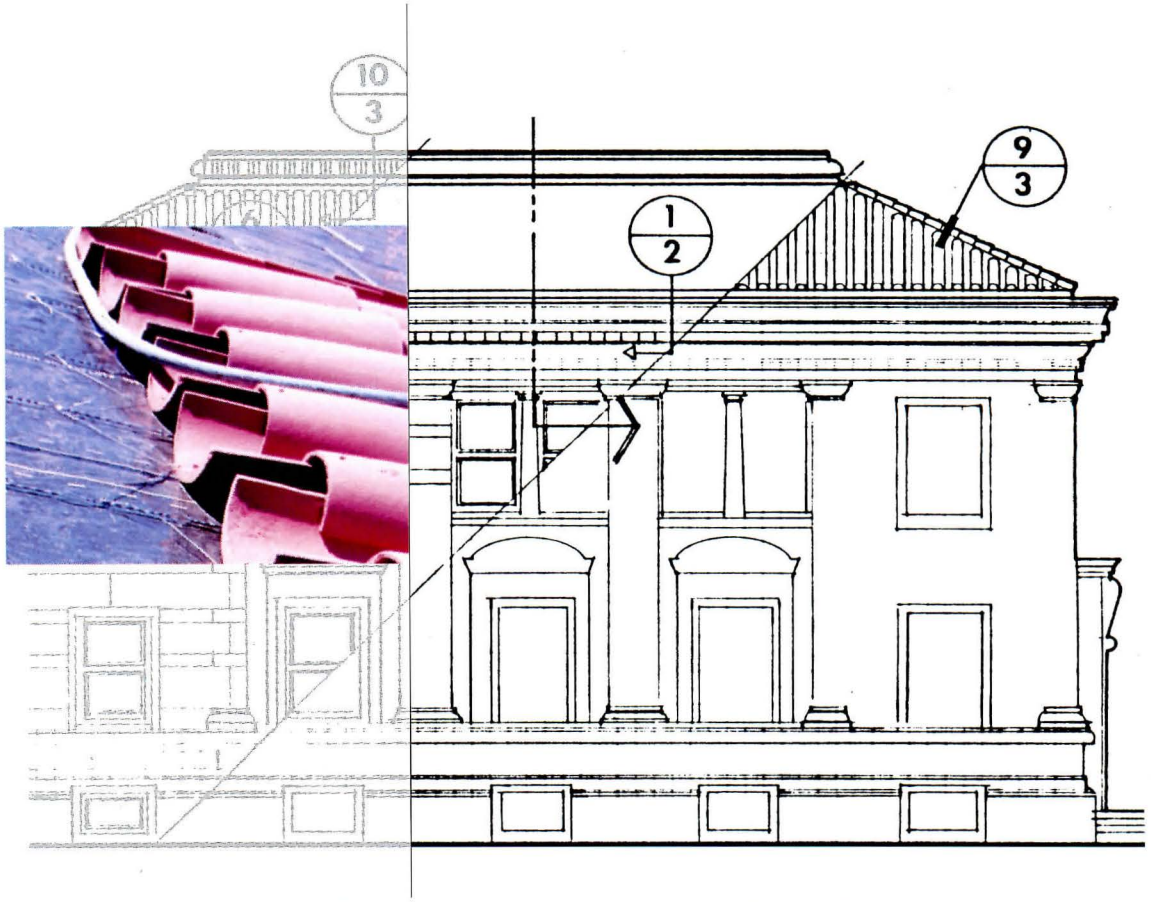
20'/6m

TOP: Typical apartment accommodates a sleeping or study alcove (left).
PLANS: Common facilities such as community room and laundry are grouped around courtyard; one-room units are configured to capture light and views.
FACING PAGE: Rear elevation serves as the building's second facade fronting an alley, typically used in downtown Santa Monica as a mews.

SECOND STREET CENTER
SANTA MONICA, CALIFORNIA

ARCHITECT: Frederick Fisher, Architect, Santa Monica—Joseph Coriaty (associate-in-charge); Todd Pilgreen (project architect); Frazier Golding, Mario Madayag, Teresa Ross (project team)
ENGINEERS: Brian Cochran Associates (structural); Marc Savelle Associates (mechanical/electrical)
CONSULTANTS: Marshall Long Acoustics (acoustics); Pat Martellino (specs)
GENERAL CONTRACTOR: Ellias Construction
COST: $2.85 million
PHOTOGRAPHER: Tom Bonner, except as noted

Technology & Practice



Planning for the unexpected—for nature's fury and technology's revenge—is the theme of this month's Technology & Practice section. Our feature on earthquake-resistant roofing, for example (above), reveals how architects are detailing roof assemblies to withstand seismic loads, even as typical codes presume that seismically engineered structures will secure the roof as well.

Withstanding nature's forces is also the basis for a house designed by Charlottesville, Virginia, architects W.G. Clark and Charles Menefee for the most rugged reaches of Appalachia. Their details for this concrete block structure defy the wind; the gentle curve of the roof supports heavy loads of snow.

Faulty building systems and components create unpleasant surprises, but these can be prevented through a new form of service known as building commissioning. Our practice article describes how architects use this new method to troubleshoot building systems from programming through occupancy, viewing the building as a whole organism rather than an aggregate of disparate parts.

Unforeseen glitches in computer technology can be minimized through careful systems planning. Our computer feature this month offers methodical advice on how to develop the most efficient system for the office by adding power and peripherals as changing workloads demand.

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Earthquake-Resistant Roofs

New wire-tie systems improve the seismic safety of tile roofs.

ABOVE RIGHT: Roof of Moore Ruble Yudell's new business school at the University of California, Berkeley is clad in concrete tiles that are anchored with stainless steel wire ties.

Ask any architect or structural engineer what special precautions they take in detailing roof assemblies in seismic areas, and they'll likely tell you, "None." "You consider wind loads and waterproofing, but virtually no one designs a roof specifically for seismic resistance," explains roofing consultant Phil Dregger of Pleasant Hill, California-based Technical Roof Services. Not even Building Officials and Code Administrators (BOCA) guidelines nor the Uniform Building Code (UBC) address how to specify roofing for buildings that are located in seismic zones. Since a building's roof is linked to its structural system, the codes assume, a structure that is engineered for seismic resistance should lend enough earthquake resistance to the roof. Design guidelines for wind loads also ensure a roof's lateral stability, although in seismically active areas, earthquake loads are greater than wind loads.

An increasing number of architects designing buildings in such areas, however, are selecting roofing materials and details to minimize structural damage and risk of injury during a quake. Some types of roof cladding are inherently better at resisting earthquakes, notes Jim McGowan of Roof Industry Consultants, based in Dublin, California. Asphalt and wood shingles, for example, are lighter than concrete or clay tiles, making them safer if they fall during a quake. But given California's vernacular of clay tile roofs, it's important that architects know how to detail even the heaviest roofing materials for seismic safety.

Practitioners are increasingly turning to stainless steel wire-tie systems, which anchor clay or concrete tiles to a roof's substructure while allowing them to flex independently of the building structure during an earthquake. Unlike older copper ties, which can stretch and fail during a quake, steel doesn't become brittle with age. Both copper and steel tie systems have been installed throughout West Coast buildings in the past. But the UBC doesn't require all tiles to be fastened to the roof substructure or to each other. The code mandates that only a 36-inch perimeter zone of tiles be fastened where they border eaves, rakes, ridges,

and hips; the remaining tiles may be held in place by the tiles' own weight or anchored by wire ties, depending on the type of tile specified.

Steel wind clips can also add seismic stability to tile roofs. These clips are typically fastened to the bottom edge of downward-facing barrel tiles to prevent the tiles from being lifted up by strong winds; they can also be anchored to a wire-tie system to keep tiles from falling during an earthquake.

The seismic performance of tile roofs was most recently tested in the 1994 Northridge quake in Los Angeles, prompting mixed reviews as to the success of particular details. The leading cause of damage to such roofs was inappropriate tile fasteners, according to the Raleigh, North Carolina-based Roof Consultants Institute, whose experts found that most roof damage resulted from sloppy installation of fasteners rather than inadequate detailing and specifications. In a number of buildings, straw nails—6-inch-long nails that anchor tiles to roof decking—bent during the quake, allowing heavy tiles to slide off.

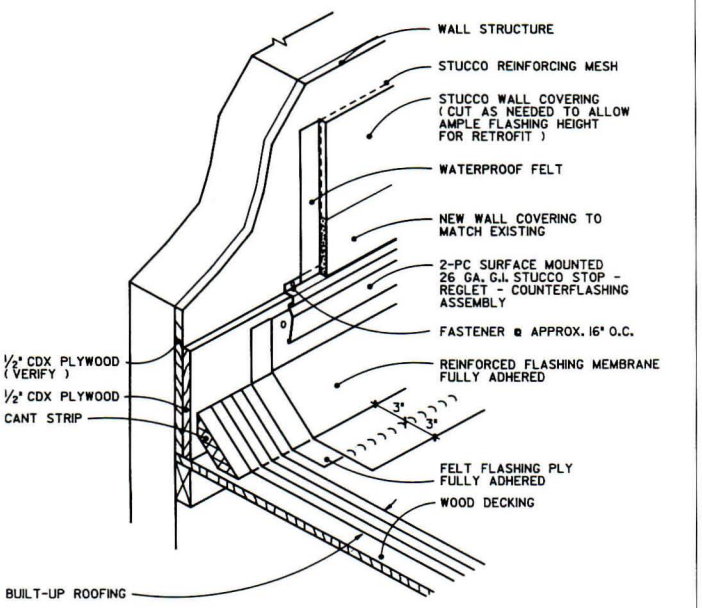
Low-slope roofs (also known by the misnomer "flat" roofs) present different seismic concerns. While such roofs aren't typically clad in heavy, potentially hazardous tiles, their waterproof membranes can rip during an earthquake, as a roof deck tends to move independently of walls during a quake. Asphalt membranes are inherently stronger than other membrane types, including elastomeric sheet membranes, but their rigidity doesn't allow them to flex as easily in an earthquake. Although these sheet membranes are more flexible, they can lose their elasticity over time, becoming brittle and more likely to fail in an earthquake.

A roof's seismic performance also depends on the specific type of motion generated by an earthquake, according to Technical Roof Services consultant John Goveia. If an earthquake produces a rolling motion, for example, the membrane can more easily delaminate from parapet walls. Sometimes, however, membrane damage can go undetected, since subtle stresses caused by an earthquake don't appear for weeks or even years after a quake.

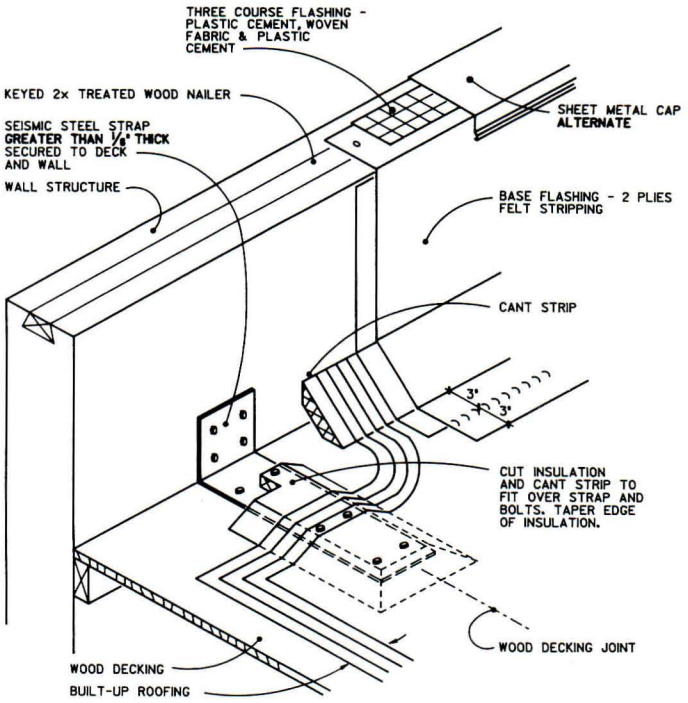
One safety measure is an L-shaped steel plate, called a seismic strap (detail drawings, facing page), that ties roof decks and walls together while allowing them to flex independently. The straps can be bolted to the parapet wall structure and the roof decking, beneath the waterproofing membrane and other layers of the built-up roofing assembly. Goveia reports that some roofs incorporating such straps performed well in the Northridge quake; but in a number of other buildings, seismic straps were ripped out of walls or severely bent.

Although these types of seismic-resistance details are not required by building codes, a growing number of architects are incorporating them into newly constructed and existing roofs. Seattle's public school system, for example, recently launched a seismic retrofit program to upgrade a number of the city's school buildings to withstand an earthquake like the one that rocked the city in 1949; the architects are paying close attention to the design of roof-wall connections.

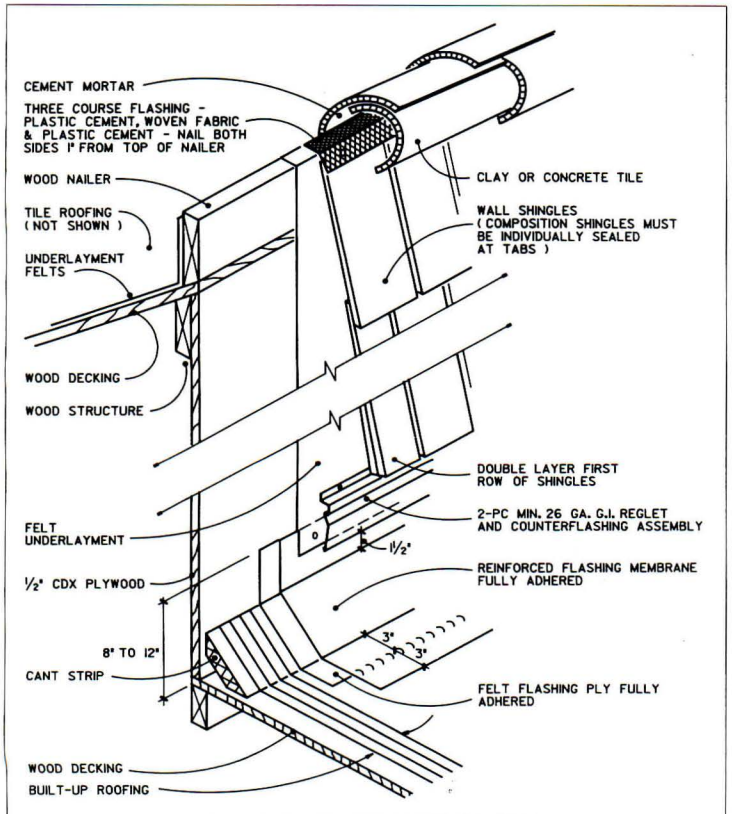
For more information, contact the National Roofing Contractors Association (NRCA) and the Roof Consultants Institute (RCI); both periodically offer seminars and publish reports on the seismic performance of roofs. The Western Roofing Contractors Association has published a collection of recommended roof details for buildings in Seismic Zones 3 and 4. Contact the NRCA at (708) 299-9070 or the RCI at (800) 828-1902.—*Raul A. Barreneche*



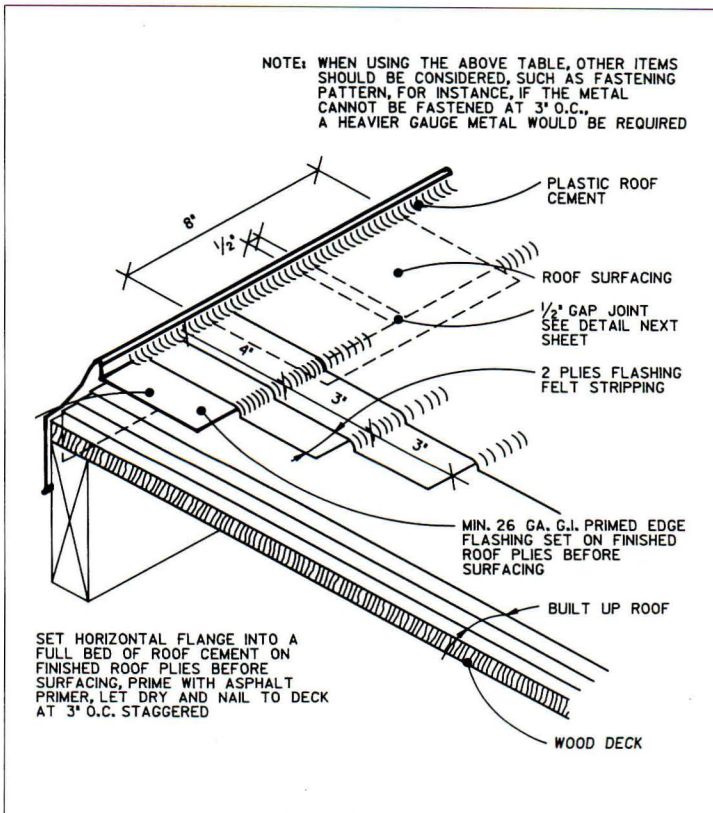
FLASHING AT STUCCO OR
OTHER COVERED WALLS



HEAVYWEIGHT SEISMIC STRAP



FLASHING AT HIGH MANSARD WALL



EDGE FLASHING

BELOW: MRY's new business school on Berkeley campus is located near seismically active Hayward fault.
BOTTOM LEFT: Movement of slatelike concrete tiles is isolated from roof structure during an earthquake.
BOTTOM RIGHT: Haas school roof is constructed of lightweight steel decking supported by steel beams.

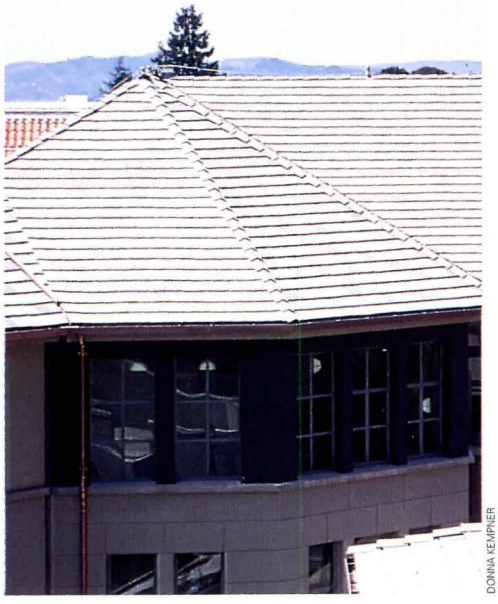
Walter A. Haas School of Business
University of California, Berkeley
Moore Ruble Yudell
with VBN Architects

The trio of buildings comprising Berkeley's recently constructed Haas business school—one of the last buildings designed by Charles Moore—lies 1/2 mile west of the Hayward fault, which runs north-south through the campus. Santa Monica-based Moore Ruble Yudell (MRY) connected separate classroom, administration, and faculty buildings under a steeply pitched, concrete tile-clad roof, which features an innovative stainless steel wire-tie system to anchor its heavy tile cladding to the roof structure.

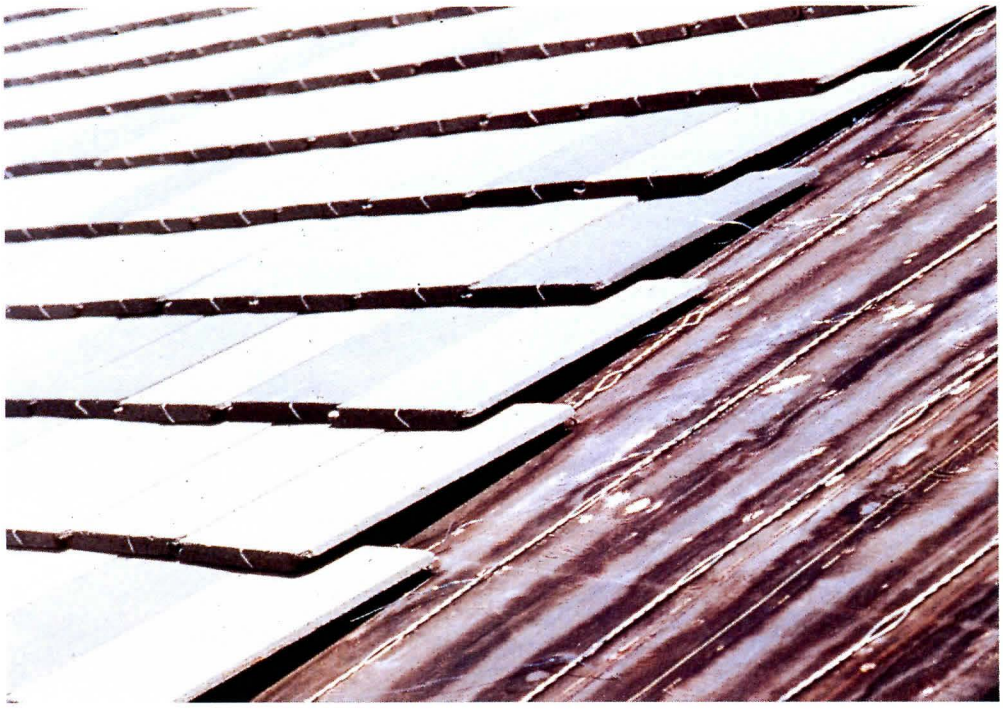
MRY and Oakland, California-based VBN Architects considered several systems, including a metal roof and a composite deck, before selecting flat concrete tiles that resemble slate. The challenge for the architects was how to detail a support system for such heavy tiles—a departure from the lighter red clay tiles typical of other buildings on the Berkeley campus.

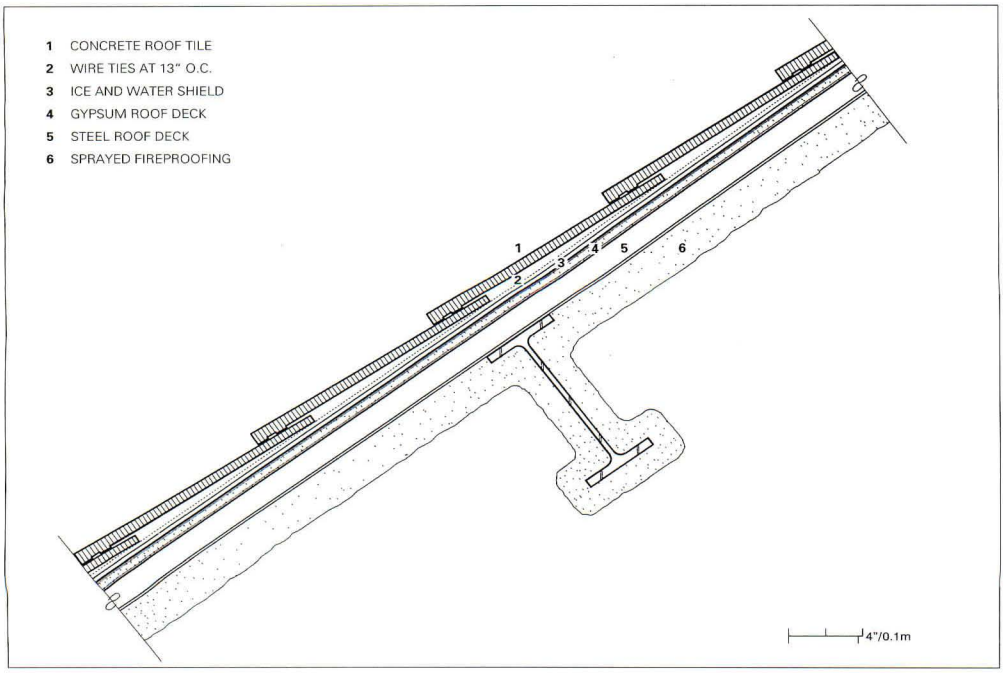
The concrete-framed buildings of the Haas school are topped with lightweight steel framing supported by steel beams, with fireproofing sprayed on the underside of the deck. A layer of gypsum deck insulation and a waterproof membrane are laid between the steel and the concrete tiles, which are manufactured with interlocking lips that snap individual tiles together. Wires are inserted into two small holes drilled into each tile, through the gypsum underlayer, and attached to steel cables. (To speed up the construction process, workers tied the wires to individual tiles on the ground and then hoisted them onto the roof.) The cables are spaced 13 inches apart along the steel decking and extend from the roof's ridge line down to the eaves. They are

DONNA KEMPNER


DONNA KEMPNER

BELOW: Concrete tiles are anchored to grid of steel cables extending from roof's ridge line to eaves.
DETAIL: Gypsum insulation and waterproof membrane are laid between steel deck and concrete tiles.





bolted to the deck at 8-foot intervals and sealed with mastic joints.

For added seismic stability, the architects anchored the tiles with custom stainless steel nose clips—also known as wind locks or tile locks. These clips are fastened to the bottom edge of each tile and secured to the wire-tie system. In addition to keeping tiles in place during an earthquake, the nose clips help protect against wind uplift and also keep the units from vibrating.

Similar systems have been specified for projects incorporating curved clay or concrete tile, but the Haas school is one of the first buildings to incorporate the wire ties with flat concrete tiles. This system effectively separates the dead load of the tiles from the building structure; because the tiles interlock, the roof acts as a continuous concrete surface. But tiles can flex independently during an earthquake, moving with an earthquake's forces rather than resisting them. If the tiles were nailed directly to the roof deck, seismic energy could be transferred up through the roof deck and destroy the concrete tiles.

Older methods of attachment, where tiles are nailed directly to wood battens, for example, are much less flexible and also less fire-resistant. As an added benefit, the wire-tie system boosts the watertightness of the roof, since there are fewer holes drilled into the waterproofing membrane than with other traditional nailing systems.

The school's anchoring system also facilitates maintenance and replacement of tiles in the event of a quake. Damaged tiles can be removed without disturbing adjacent tiles by clipping their supporting wires and fastening a new tile to the wire grid. In the past, architects have been limited to curved clay roof tiles; successful performance of the Haas roof could strengthen the case for specifying flat tiles.

BELOW LEFT: Durant Hall restoration revealed seismic roof damage.
BELOW RIGHT: Architect replaced membrane and installed new clay tiles.
CENTER LEFT: Tiles are anchored with stainless steel wire ties for seismic safety.
CENTER RIGHT: Steel cables are bolted to concrete roof slab.
DETAIL: Steel wind locks at base of each tile add seismic resistance to roof.

Durant Hall
University of California, Berkeley
Berkeley, California
Robert MacDonald Architect

Oakland architect Robert MacDonald and consultant Technical Roof Services were contracted to restore the leaking roof of the 1910 Durant Hall on the Berkeley campus. When the team dismantled the existing roof tiles, they discovered bulges in the copper gutters that suggested seismic damage. Consultant Technical Roof Services (TRS) recommended anchoring new clay tiles with stainless steel wire ties. TRS Principal John Goveia originally specified a copper tie system, but changed to stainless steel, since steel is stronger, is less elastic, and won't weaken during an earthquake.

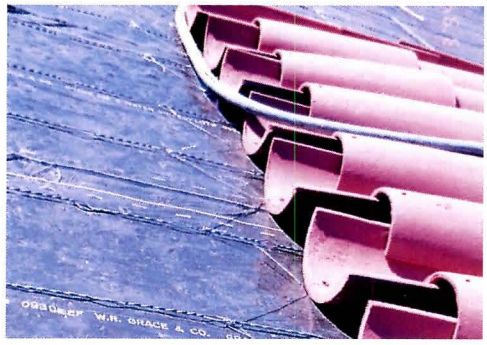
In the original structure, wooden beams extending from the ridge down to the gutters were nailed into the cast-in-place concrete roof slab below. Pan tiles were attached to the wooden beams with copper wires, while the downward-facing barrel tiles were fastened to the wood with copper nails.

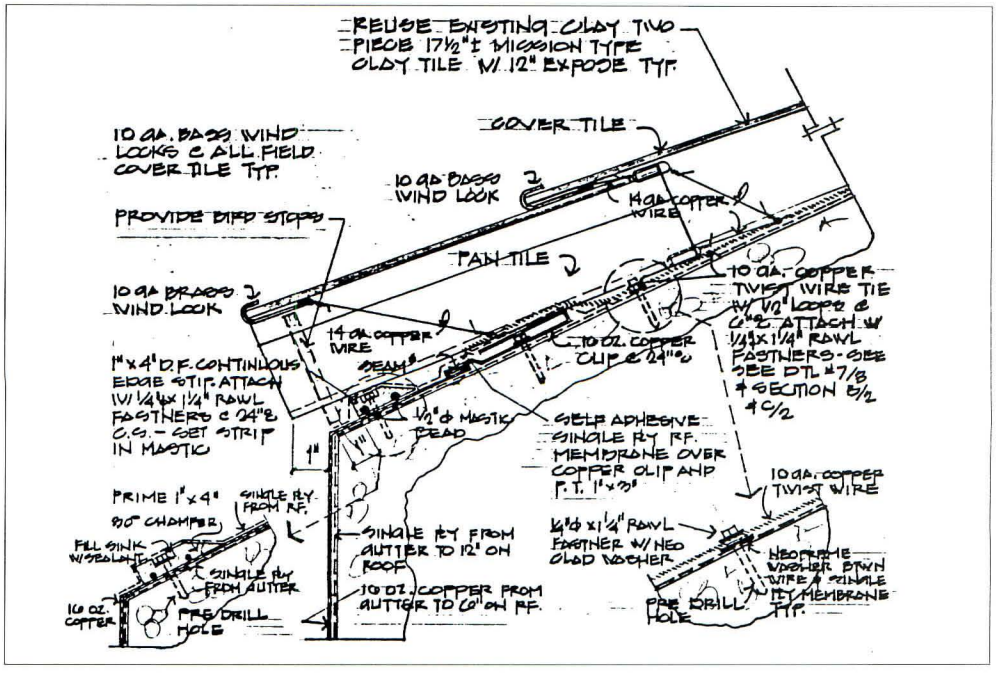
In the replacement system, a series of tie wires extends from the ridge to the gutter—similar to the previous roof's wooden beams—at 16-inch intervals. The wires are attached to the roof slab below with four concrete fasteners spaced equidistant across the roof and sealed with waterproof joints. Threading small sections of steel wires into the sides of each barrel tile, workers attached both barrel and pan tiles to the wire web. For additional seismic resistance, stainless steel wind clips lock the bottom edge of the barrel tiles to the wires.

Although the San Francisco Bay area hasn't experienced a major earthquake since the project's 1994 completion, the new roof successfully resisted strong winds during last winter's storms.


DONNA KEMPNER

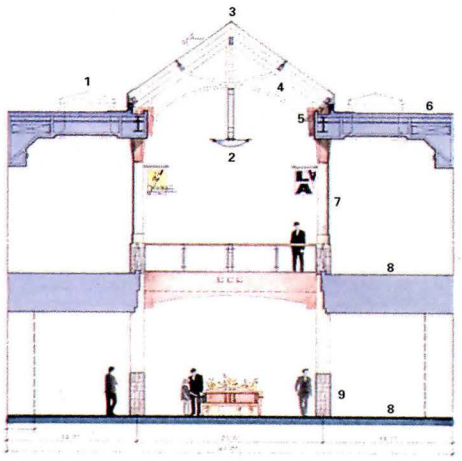

DONNA KEMPNER



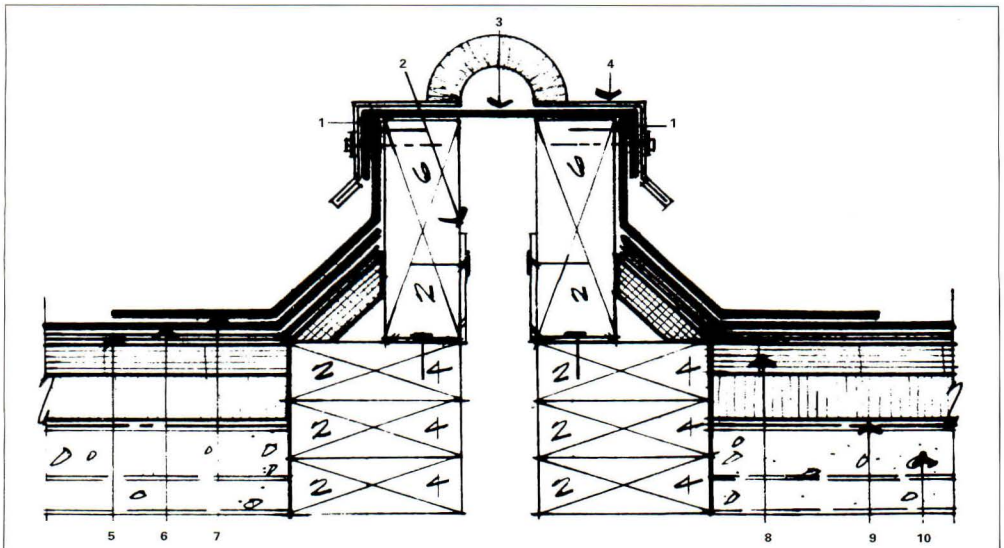


BELOW LEFT: Existing roof atop shopping mall was replaced with skylight.
SECTION: Seismic bracing for roof was installed on skylight exterior.
DETAIL: Roof expansion joint accommodates seismic movement.

PETER MALINOWSKI / INSITE



1 SMOKE VENT
2 PENDANT LIGHT FIXTURE AT EACH TRUSS
3 GABLE SKYLIGHT W/ FRITTED GLASS
4 PAINTED STEEL TUBE TRUSSES
5 LIGHT COVE
6 BUILT-UP ROOFING
7 COLUMN COVER OVER EXISTING STEEL
8 MARBLE FLOOR
9 HIGH-POLISHED MARBLE TILE BASE OVER CONCRETE



1 FLASHING W/ ROOF MASTIC
2 NEW 2x6 BLOCKING W/ CLIPS
3 EPDM FLASHING
4 EXPANSION JOINT COVER W/ NEOPRENE WASHERS
5 FELT W/ HOT ASPHALT
6 MODIFIED BITUMEN ROOF MEMBRANE
7 FLASHING MEMBRANE
8 3/4-INCH INSULATION
9 VENTED BASE SHEET
10 CONCRETE FILL OVER METAL DECK

Topanga Plaza
Topanga, California
Callison Partnership, Architect

Seattle-based Callison Partnership renovated the 1962 Topanga Plaza mall near Los Angeles to increase the structure's seismic stability. As part of this seismic upgrade, Callison replaced the existing solid roof with a large skylight, extending the entire width of the mall's main corridors. The challenge for project architect Phillip Goodman, therefore, was how to detail an all-glass roof in an earthquake-prone area.

The existing mall comprised eight structurally independent blocks of stores, connected by a flat roof with a continuous expansion joint extending down its center. When Goodman inserted the new skylight, however, he had to place the expansion joint to one side of the glazed roof. He chose to insert the joint on the east side of the mall, bridging between the curb at the skylight's base and a second roof curb located 20 feet from the skylight.

To increase the building's lateral and seismic stability, the architect also had to connect each building mass with a rigid structure. The client, however, didn't want the structure to obscure views out through the skylight. Goodman created a custom tubular steel truss with a similar profile as the skylight, which he placed on the building's exterior. The truss members are cleverly concealed behind the frames and mullions of the skylight.

The skylight's individual panes are composed of laminated glass fitted into the skylight frames with a structural silicone sealant. The sealant is flexible enough to accommodate lateral movement during a quake. According to Goodman, the mall's skylight performed extremely well during the Northridge quake. "Not a single pane of glass fell out of the skylight," he reports.

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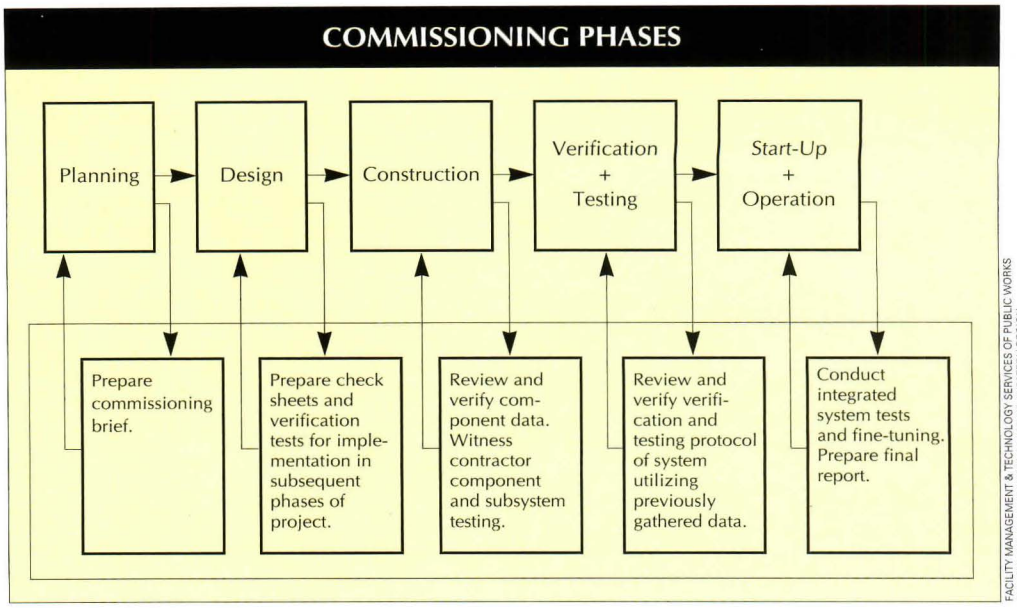
Building Commissioning

A new delivery method for ensuring successful building performance gains ground.



FACILITY MANAGEMENT & TECHNOLOGY SERVICES OF PUBLIC WORKS AND GOVERNMENT SERVICES CANADA'S WESTERN REGION

ABOVE RIGHT: Commissioning process should begin in programming phase and continue one year beyond occupancy, during which time systems are monitored and fine-tuned.

From Washington state to Florida, large institutional and government owners have grown disenchanted with their new buildings. Complaints over unexpectedly high energy costs, poor indoor air quality, and faulty lighting sensors are just a few of the operational problems that commonly surface after tenants move in. Correcting these deficiencies, however minor, becomes a much more complicated and costly task once the walls have been sealed, the occupants settled, and the design and construction teams paid and focused on other jobs. Realizing that an ounce of prevention is worth a pound of cure, many seasoned clients and practitioners have embarked on a project delivery process called "building commissioning." The term, borrowed from naval jargon to describe the thorough preparation of a ship for battle, describes a still-evolving methodology that ensures a new building will function as well as intended.

Essentially, building commissioning refers to a methodical process in which the owner clearly stipulates the goals of the project in a written program of requirements; the architect describes how these will be met in a statement of design intent; and all aspects of a building are designed, installed, reviewed, operated, and maintained according to a thorough, written plan. The basic methodology first appeared in the construction industry during the 1980s with HVAC systems because most start-up problems are associated with this equipment. More recently, in recognition of the integrated nature of today's architecture, the method has evolved into whole-building commissioning, in which virtually all specified components and systems are tested, from a mock-up of the building envelope to mechanical, lighting, elevator, and fire-safety systems.

Building commissioning tries to replicate in the architectural profession what total quality management achieves in the automotive industry, where a systematic program of development and testing ensures that a car runs well the first time it rolls off the lot, and the owners are equipped with a maintenance manual to keep it that way. One big difference between a car and a building, of course, is that the car is mass-produced from a single prototype, while each building is a prototype unto itself. A building commissioning program, therefore, must be

Parameters established during programming become the framework for the commissioning plan, which orchestrates the entire process. The plan spells out the intentions, becoming more detailed as the project develops.

custom-tailored to a specific project to reflect the needs of the client, site, program, design, and other unique conditions.

Proponents argue that such a rigorous process of quality assurance has become necessary because architecture has become so technically complex. Today's buildings, explains Bertrand Ward, manager of technical services at the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) in Atlanta, "have more wiring and ductwork than a spacecraft." Sophisticated computer systems and sensors must be precisely tuned, in conjunction with the building's envelope, to achieve the energy efficiency, air quality, and other performance criteria increasingly demanded by government regulations and educated clients.

But changes in technology, and how these systems interact dynamically with one another, are not the only driving forces behind building commissioning. In the design and construction industry, which suffers from increasingly shorter delivery times, ever smaller profit margins, and a generally litigious atmosphere, any project will gain from better communications between project team members, one of the hallmarks of building commissioning.

Commissioning agent

Building commissioning spans the entire life of a project. Its recommended tasks and documentation are divided into several phases: programming, design, construction, acceptance, and occupancy. In the programming phase, the client must make clear the intentions to have the new building commissioned, understanding its associated financial ramifications and scheduling demands.

A commissioning agent is then designated to coordinate the process. This agent can be appointed from the client's own facilities management staff or the architect's design team, or be hired as an outside consultant. The coordinator can even change during the project, with a member of the design team functioning as the commissioning agent during programming and design and the general contractor taking over during construction. Because a mechanical system is the most frequently tested building component, professionals trained in mechanical engineering have historically served this function. But as whole-building commissioning increases, a handful of architects are beginning to shoulder the responsibility.

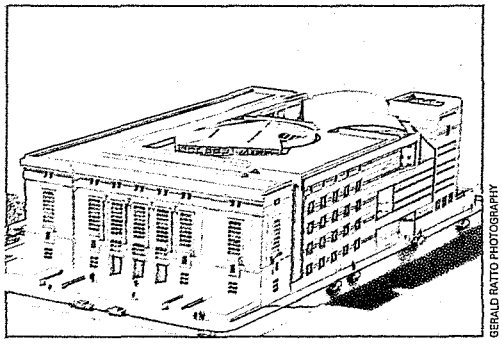
At this stage, the owner puts in writing the program requirements based on a realistic budget; the design team defines the project's basic criteria, such as quality of materials or environmental goals, and proposes how these will be met; and the commissioning agent begins to sketch out the scope, responsibilities, and schedule—for example, which building components and systems will be tested; who will write the specifications for such tests; in what sequence the tests will be undertaken and by whom; who will witness and verify the testing process; and how the test results should be reported.

Plan as living document

By setting criteria up front, explains Elia M. Sterling, president of Theodor D. Sterling and Associates, an interdisciplinary research and design firm in Vancouver, "the client and the design team understand the ground rules." It is against these specific requirements that the building will ultimately be tested.

The parameters established during programming become the framework for the commissioning plan, which orchestrates the entire process. "The plan is a living document," explains architect and engineer Charles Eley, president of Eley Associates, an architecture and engineering firm in San Francisco. It spells out the intentions of the project from the beginning, but becomes more detailed as the project develops.

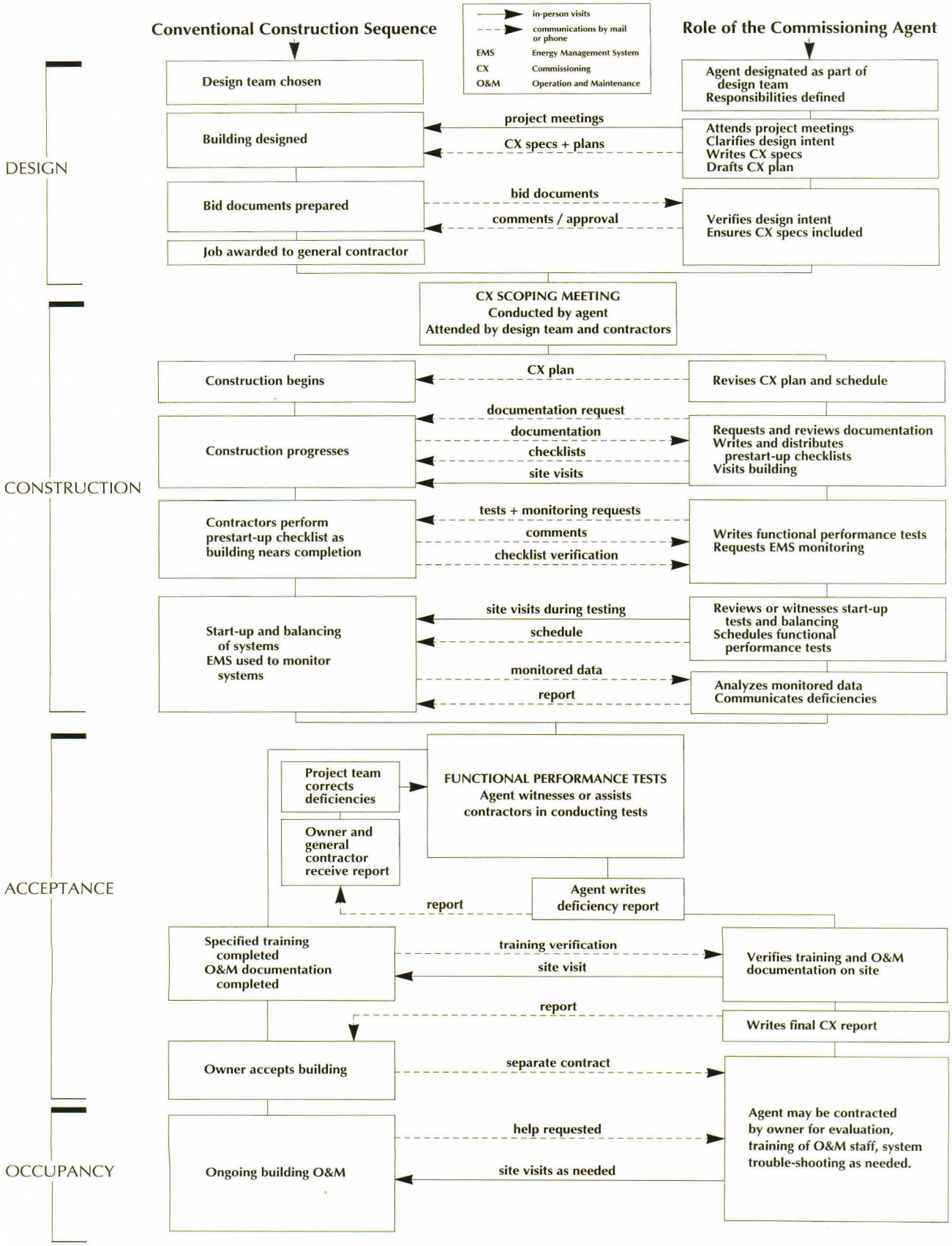
During the next phase, the design is developed and construction documents are prepared. Architect and consultants further elaborate on the criteria—specifying, for example, the exact R-value for an exterior wall,



GERALD RATTO PHOTOGRAPHY

ABOVE: Indoor air quality concerns motivated commissioning of the San Francisco Main Library, designed by Pei Cobb Freed & Partners and Simon Martin-Vegue Winkelstein Moris, Associated Architects. The project is now under construction.
FACING PAGE: Activities associated with commissioning are integrated into the conventional sequence of construction. The commissioning agent may be a member of the client's staff, part of the design team, or an outside consultant.

COMMISSIONING TASKS



PORTLAND ENERGY CONSERVATION, INC.

Functional testing is a critical aspect of building commissioning, setting it apart from conventional practices. It can catch problems missed in an equipment inspection or in the testing of a building component.

the foot-candles in an open office plan, or the average ambient temperature. The design is reviewed against the client's original requirements and the architect's initial proposal to meet these needs. Inherent conflicts may be discovered at this stage. For example, explains Sterling, "one may not be able to achieve both the energy and lighting goals at the same time." At this point, the team must decide whether to adjust the criteria or the design.

Once the design is accepted, the architect and consultants expand upon the commissioning plan by describing every building component and system: why they were selected; how they will operate; and how they should be tested. The designers even prepare the forms and checklists on which the results of the verification tests must be recorded.

The final document is therefore excruciatingly detailed. Lighting engineer Pete G. Samaras of engineers Flack + Kurtz reports that the lighting portion of the commissioning plan for California State Automobile Association's (CSAA's) new building in Antioch, California, exceeded 100 pages.

Testing procedures

The heart of the commissioning process—the actual testing of components and systems—begins during the construction phase. For some projects, the first level of testing occurs in the factory, where project team members observe standard factory tests and check factory settings of equipment. Once installed, the equipment is inspected to verify the appropriate type, size, location, and number of items match the construction documents. Performance tests are then undertaken to ensure that individual components are operating properly.

During the acceptance phase, the project team determines how systems operate as an integrated whole through a series of tests designed to measure overall conditions, whether it be ambient temperature, volatile organic compounds in the air, or total energy use. Functional testing is a critical aspect of commissioning, setting it apart from conventional practices. It can catch problems missed in a standard equipment inspection or in the testing of an individual component.

The commissioning plan allocates a period of time to check the integrated systems and a period of time to correct any flaws. All project members, from architect to subcontractors, understand at the start of the job that such corrections are a necessary part of the process and that they must be available to resolve any problems uncovered at this time.

Testing can be done by an independent commissioning agent or by the general contractor and subcontractors who observe the protocol outlined by the design team. The test procedures are very specific. For example, included in the test plan of CSAA's skylight louvers is a description of the direction to turn the adjustment knob and the angle to set the window blinds.

The acceptance phase is incomplete until the design team hands over all appropriate documents to the owner, including detailed operation and maintenance manuals and equipment warranties, so that the building's staff knows how to run and care for all the systems. Very often, the design team trains the operation and maintenance staff and videotapes these sessions for future reference.

Although the building is now occupied and functioning during the occupancy phase, it has yet to be tested for all seasons. A complete commissioning project requires monitoring of the building throughout the year to ensure that it continues to meet the criteria established at the onset of the project.

Increased costs

Undoubtedly, the additional effort required of commissioning increases up-front costs, but not by much, according to several practitioners involved in the process. Architect Teresa Coady, principal of Bunting Coady Architects in Vancouver, predicts an increase of 1 to 2 percent for all the environmental measures, including commissioning, to the

ABOVE: Chemistry Building at the University of Washington in Seattle, by Moore Ruble Yudell and Loschky Marquardt & Nesholm, was the first structure on its campus to be fully commissioned from the beginning of design. The university now requires the process for all of its new buildings.
FACING PAGE: An excerpt from consulting engineers Flack + Kurtz's lighting portion of the commissioning plan for California State Automobile Association's new building in Antioch, California, illustrates the detailed information that should be recorded and communicated to appropriate members of the design team or independent commissioning agent.

COMMISSIONING PLAN FOR A LIGHTING SYSTEM

Table of Contents

Lighting System Overview

Skylight Louver Operation

The LCM 3000 has a three-position switch on the face, marked Photo, Summer, and Winter.

Photocell mode
When the system is in the photocell mode of operation, the position of the skylight louvers is continuously adjusted to maintain the maximum daylight illumination criteria of 75 fc. When daylight illumination level falls below 75 fc average on the work surface, the louvers will be fully open to allow the maximum amount of daylight into the space.
The skylight louvers automatically go into the photocell mode from the following signals:
a. Time of day signal from building management system.
b. After-hours use of the HVAC system.
c. Occupancy sensor signal within any skylight daylit area.

Summer mode
The summer mode is not used in this building because the skylight louver system is tied to the occupancy sensors to automatically close the louvers after hours. As such, the summer mode has been deactivated; the switch defaults to the photocell mode of operation when placed in this position.

Optional winter setting
When the switch is set in the winter position, the louvers will go to the fully open position if the building management system signals the LCM 3000 that the outside air temperature is low enough to keep the building cooled with outside air only.

Installation Inspection Plan

Equipment Inspection

Description of inspection
This inspection will visually verify that the skylights and their accompanying louver controls are installed.

Skylight size, quantity, and location
- (27) 4.5′ x 3.5′ in open office, managers' offices, lunchroom, reception area, and cashier's area.
- (2) 4.5′ x 1.75′ in open office against back wall.
- (4) 2′ x 8′ in outdoor carport and bathrooms.

Skylight construction type
- Pyramid shaped, clear acrylic glazing (triple pane with smooth outer lite and two prismatic inner lites).
- Aluminum mill finish.

Louvers
- 29 skylights include 6-in.-wide louvers mounted directly below the skylight. Verify that louvers are located in all skylights except the 2 in the bathrooms and the 2 in the carport.

Dampers
- The 29 skylights with light control louvers also include barometric dampers for exhaust air. From the roof, verify the presence of the dampers, which are mounted on access panels on the skylight frame.

Controls
- Verify presence of two LCM 3000 skylight louver control panels at top of roof access stairs.
- Identify 2 daylight sensors, suspended in the skylight well about 1 foot below the skylight louvers. One is located in one of the managers' offices, and the other is located in one of the open office skylight wells.

Functional Performance Test Plan

Louver Photocell Calibration

1. On a cloudless day between 10 am and 2 pm, turn the adjustment knob clockwise to fully open the louvers.
2. Make sure the 2′ x 4′ fluorescent lights in the open office area are off.
3. In the open office zone, take four light readings at desk height as shown on verification form. Take the average and find a spot between the points where the light level equals that average. Use the reading at that point to calibrate the daylight level.
4. In managers' offices and reception zone, take one measurement on the desk of the assistant manager's office that has the photocell in the skylight well. Adjust window blinds to an angle of 15° with no direct sun entering the office.
5. Read the light meter at the selected location while the knob on the face of the LCM 3000 is gradually turned counterclockwise. Louvers will move in a closing direction. Stop turning the knob when the illuminance is reduced to the desired level, at which time the green LED on the LCM 3000 will go dark. Temporarily mark this point on the face plate with a pencil.
6. To increase the illuminance, turn the knob slowly clockwise to open the louvers until the desired illuminance is achieved. If there is sufficient daylight and the louvers are not stopped against the limit switch, the red LED will go dark. Temporarily mark this position.
7. When the desired illuminance is reached and neither LED is on, mark the face plate with a punch mark halfway between the two points. This will be the calibration setpoint.

Skylight Installation Checklist

_____ (27) 4.5′ x 3.5′ skylights in:
- ___ Open office area (20)
- ___ Managers' offices (2)
- ___ Lunchroom (1)
- ___ Reception area (2)
- ___ Cashier's area (2)

_____ (2) 4.5′ x 1.75′ skylights in the open office

_____ (4) 2′ x 8′ skylights in:
- ___ Carport (2)
- ___ Bathrooms (2)

_____ Skylight louvers

_____ Dampers

_____ Controls
- ___ LCM 3000 controllers (2)
- ___ Daylight photosensors (2)

Comments: _____

_____

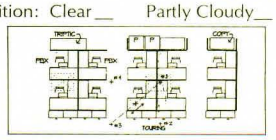
_____

Verifier name Signature Date

Skylight Louver Calibration - Open Office Zone 1

Date:_____ Time:__ Outdoor Light Level: __fc

Sky Condition: Clear__ Partly Cloudy__ Other__



	Initial Reading (fc)	Adjustment 1	2	3
Point 1				
Point 2				
Point 3				
Point 4				
Total				
Avrg.				

Take initial readings and obtain average value. Find a point along diagonal with same value. Use this point for calibration. Tune system and record final setting above. Final average value should be between 60 and 75 fc.

Comments: _____

_____

_____

Verifier name Signature Date

Supporters of building commissioning contend that the benefits outweigh the added expense. Change orders are reduced, and energy is saved. Cost/benefit analyses that everyone can agree on have yet to be developed.

cost of an office building her firm is designing as part of Canada's C-2000 Program for Advanced Commercial Buildings. Mechanical engineer Jeff Blaevoet, principal of San Francisco-based Flack + Kurtz, believes commissioning typically costs 1 to 3 percent of the total cost of the electrical and mechanical systems. And Anthony Bernheim, senior associate of Simon Martin-Vegue Winkelstein Moris (SMWM), estimates that it will cost $65,000 to commission the San Francisco Main Library, which had a construction budget of about $87 million at bid time.

Bernheim explains that the cost of commissioning is relatively low because much of the testing associated with it is standard for most large-scale projects. "It's not really a lot more construction work; it's just more formalized," he notes. "There is a checklist and more meetings so problems don't fester."

The costs cited by both Coady and Bernheim in their respective projects assume that the basic coordination and responsibilities of building commissioning—throughout all phases—are distributed among the members of the design team, who are already familiar with the project. They believe that the cost increases if an independent, third-party commissioning agent is obtained.

Third party recommended

Assigning the individual responsible for commissioning has become a controversial issue. Nancy Benner, director of Portland, Oregon-based Portland Energy Conservation, Inc. (PECI), reports that costs—and savings—are a function of building type and size, system complexity, and rigor of the process rather than agent selected. In addition, a PECI survey of speakers at the organization's 1994 national conference on building commissioning, representing a variety of utility and building-related professions, indicates that the majority believe commissioning should be undertaken by an independent third party, preferably a professional engineer, to avoid any conflict of interest.

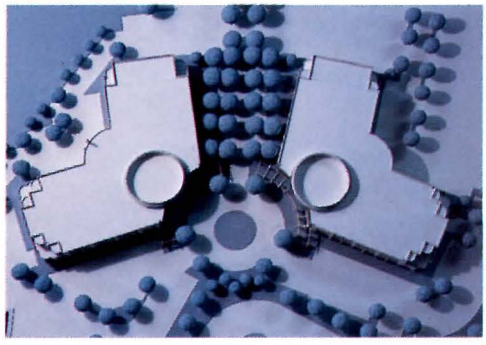
Supporters of building commissioning contend that the benefits far outweigh the added expense. Change orders and litigious claims are reduced during construction, energy is saved, and productivity of building occupants improves. Although their arguments are intuitively sound, researchers in the field have yet to develop cost/benefit analyses that everyone can agree on. Reasons for this include the fact that the process is in its infancy, and its scope and procedures vary among practitioners. According to PECI, even data collection and reporting methods differ among researchers.

Quantifying benefits

Nonetheless, many researchers, particularly in utility companies, are trying to quantify the costs and savings. They believe commissioning is one way of ensuring that energy-efficiency measures are installed correctly so that energy savings are realized.

In one such ongoing energy study by Southern California Edison (SCE) of seven existing Southern California buildings, researchers in the Technical and Design Services Department are trying to determine what the scope of commissioning should be—which tests and corrections yield a significant payback and which approach the point of diminishing returns (facing page). To date, they have found the payback period for correcting sample deficiencies, such as fixing economizer and pump controls, range from one year to just over four years. Christie Kjellman, project engineer at SCE, is quick to note that savings estimates will be greater once the other repairs are included in their calculations. Kjellman explains that other nonenergy benefits, such as extending equipment life and improving air quality, were not tallied into these numbers.

Although building commissioning is still in its infancy and a definitive approach has yet to be codified, several resources are available. For more information, call PECI at (503) 248-4636.—*Nancy B. Solomon*



TOP: Designed by Bunting Coady Architects, spec office buildings in Richmond, British Columbia, offer a comparison of conventional and innovative practices. Building 7 (left) was built according to traditional standards. Building 8 (right) will feature resource-efficient technologies and rely on commissioning.
ABOVE: Building 7 was completed in 1994; Building 8, by 1996.
FACING PAGE: Southern California Edison is currently conducting a study of energy-related systems in seven Southern California buildings. Although the study is of existing buildings, researchers believe that 39 percent of the deficiencies found in the newer buildings would have been eliminated before occupancy if commissioning had been applied during design and construction.

SOUTHERN CALIFORNIA EDISON'S BUILDING COMMISSIONING STUDY

Building Type	Building Area (sq. ft.)	Building Age (years)	Baseline Energy Use Intensity (kWh/sq. ft.)	Primary HVAC System	Primary Controls	Operation & Maintenance Structure	Operation & Maintenance Deficiencies	HVAC Equipment Deficiencies	Control System Deficiencies	Total Deficiencies	Sample Repairs Undertaken
Large clothing retail	146,000	2	20.9	Chiller with cooling tower	Energy Management Control System	Owner's staff roving multiple buildings	1	13	7	21	Improved evaporative cooler maintenance
Large office building	152,000	3	16.4	Rooftop unit with evaporative-cooled condensor	Energy Management Control System	Third-party contractor dedicated to one building	0	5	2	7	Fixed economizer control
Large clothing retail	170,000	4	22.6	Rooftop unit with air-cooled condensor	Energy Management Control System	Owner's staff roving multiple buildings	0	10	11	21	Fixed 2 economizers; Fixed 4 enthalpy controllers
Small office building	48,000	36	12.5	Chillers with cooling towers	Energy Management Control System and Pneumatic	Owner's staff dedicated to two buildings	8	42	15	65	Repaired 1 economizer; Calibrated thermostats
Small office building	50,000	16	18.2	Chiller with air-cooled condensor	Pneumatic	Owner's staff and service contract combined	11	28	46	85	Fixed CHW pump control; Repaired 2 economizers
Small office building	120,000	23	14.5	Rooftop unit with evaporative-cooled condensor	Pneumatic	Service contract for 100 percent of the work	1	6	9	16	Replaced receiver controller
Grocery retail	30,000	11	49.2	Rooftop unit with evaporative-cooled condensor	Energy Management Control System	Owner's staff roving multiple buildings	0	7	6	13	Not yet available

COST / BENEFIT ANALYSIS

Commissioning Costs ($/sq. ft.)	Estimated Energy Saved From Sample Repairs Noted Above * ($/sq. ft./year)	Approximate Payback Period (years)
0.28	0.15	1.9
0.30	0.08	3.8
0.30	0.25	1.2
0.34	0.34	1.0
0.43	0.22	2.0
0.13	0.03	4.3
0.30	Not yet available	Not yet available

* Assumes $0.10 electric rate.

The estimated payback period for repairing selected deficiencies ranges from one year to just over four years. Savings will be greater once the repairs for other energy-related deficiencies are included in the calculations. Researchers are currently applying DOE-2, a popular energy-estimating software, to generate a more detailed analysis of the study.

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Tough as the Wilderness

Clark & Menefee details a vacation house to withstand nature's unpredictable forces.

From hurricane-force winds to sudden wildfires, nature defied Clark & Menefee to build a house as tough as the mountaintop on which it stands. But the architect met the challenge with a vacation cabin that holds its own against the virtual wilderness.

"This office has always taken cues from the site—for both design of spaces and means of construction," explains Partner Charles Menefee III. "So we hope this house responds by being as tough as the place."

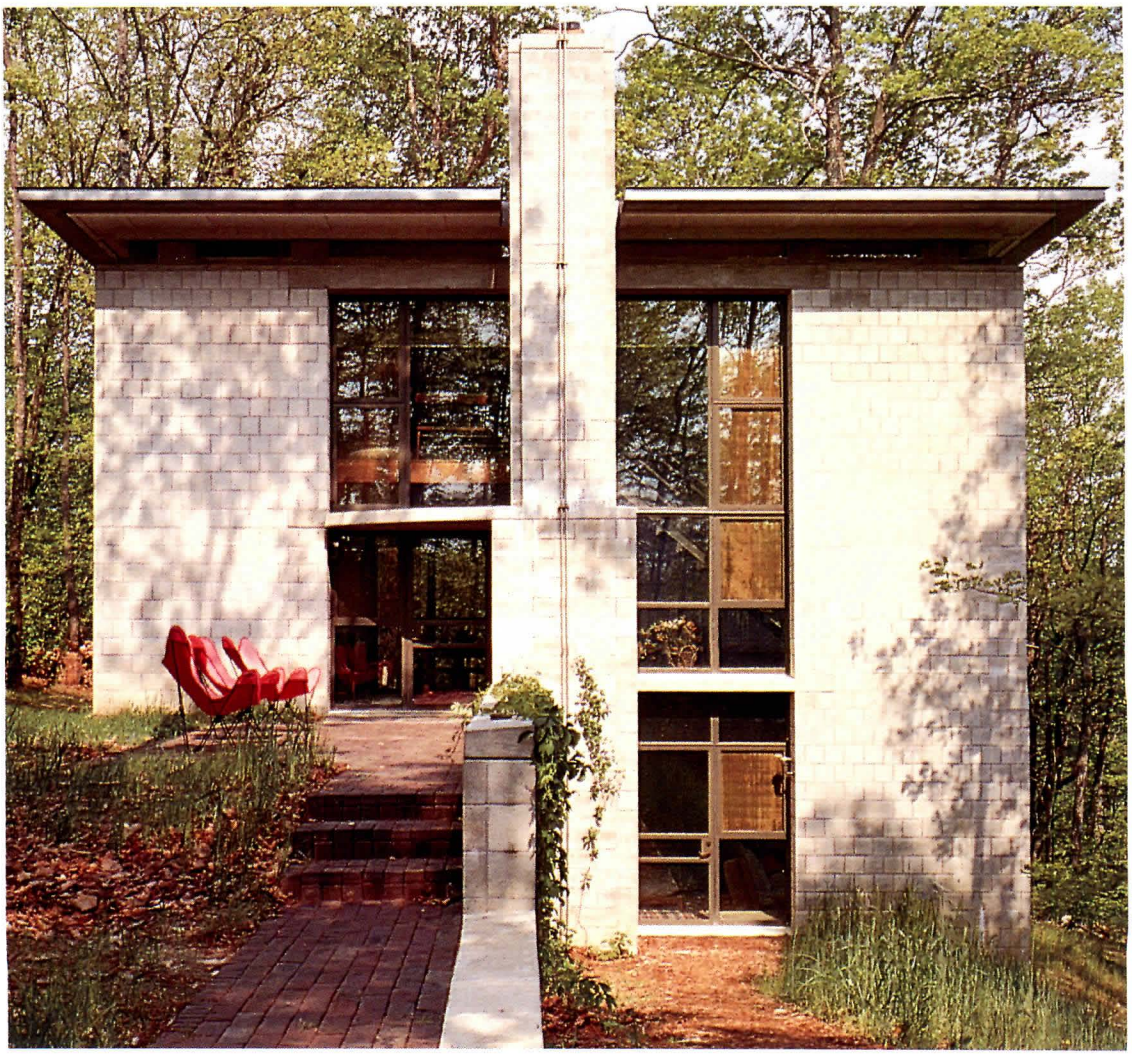
Rising three stories tall near a 3,000-foot-high crest in southwestern North Carolina, the house for Menefee's parents draws inspiration from the site's verticality. Its simple rectangular shell with an overhanging curved roof strikes a delicate balance between impenetrable masonry walls and generously scaled openings. A concrete block chimney visually anchors the entry facade and forms the linchpin around which living spaces revolve. Inside, a two-story-high volume contains a living, dining, and kitchen area with a bedroom loft above. A lower floor, with its own entrance, houses a guest room and mechanical equipment.

Menefee and his partner, W.G. Clark, oriented the 1,440-square-foot building southward to fill it with natural light. On the north side, they burrowed the lower level into the mountain to reduce its exposure to winter winds. On the west, they opened the wall with 23-foot-high steel-framed windows to reveal the stepped section of the house as it follows the sloping site.

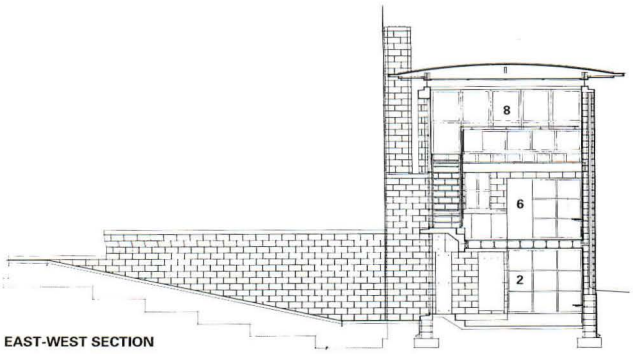
The pair designed a large roof with a shallow curve to protect the exterior of the house from falling branches and to bear up under heavy snow. Esthetically, they wanted the ceiling plane to hover overhead, separated from the walls by a narrow band of glass. Technically, the roof had to be anchored firmly to resist wind uplift.

They resolved these contradictory desires by concealing the two primary wooden roof beams inside the roof "sandwich" layered with a plywood ceiling, laminated joists, insulation, plywood roof decking, and stainless steel roofing. Clark and Menefee connected the beams to the east and west walls with steel ties in concrete boots at only eight points. Each boot is a raised section of a collar beam that runs continuously along the top of the walls. The architects filled the space between the roof and walls with glass to create a clerestory. The curved roof is formed by laminated rafters cut into identical profiles and spanned between the two beams.

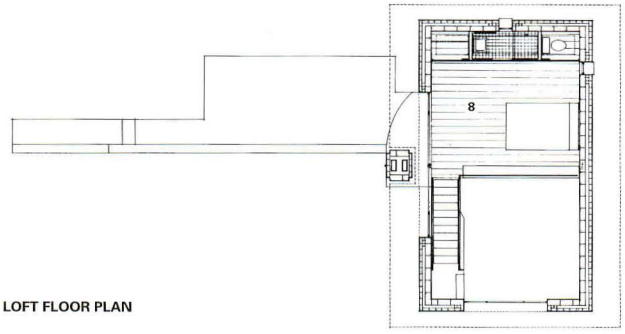
Someday, Menefee predicts, the exterior walls will be covered by the Virginia creeper planted around its edge. "The house will be returned to the landscape, and the only visible evidence of man will be the building's roof."—*Vernon Mays*



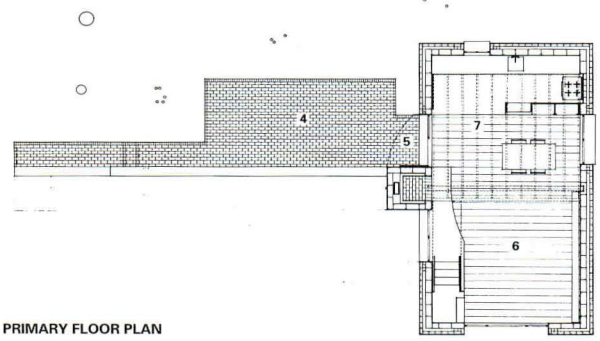
RIGHT: West-facing entrance elevation is divided by chimney and custom-fabricated steel-framed windows. Lightning rods on chimney anticipate frequent electrical storms.



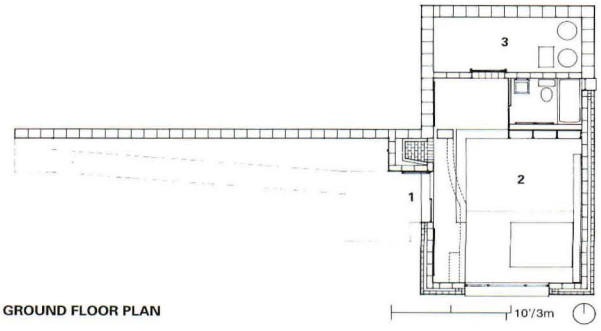
EAST-WEST SECTION



LOFT FLOOR PLAN



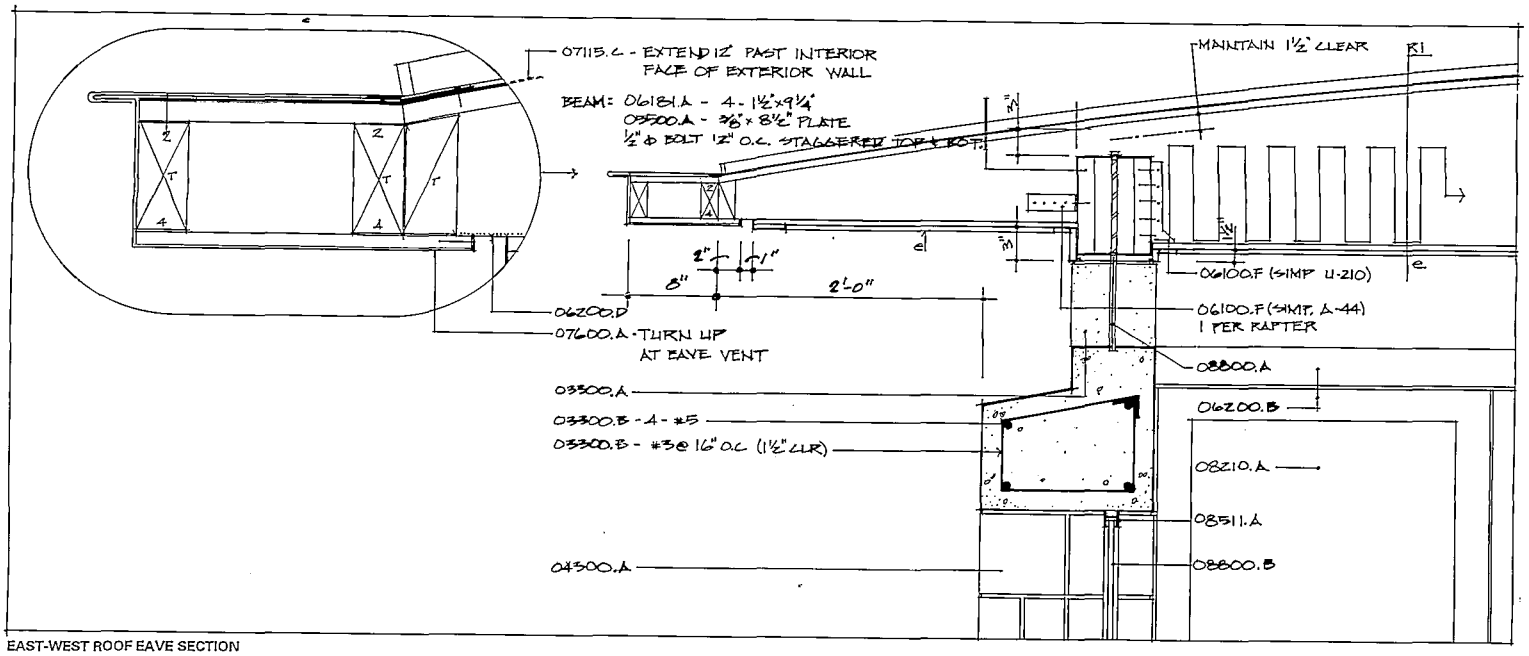
PRIMARY FLOOR PLAN



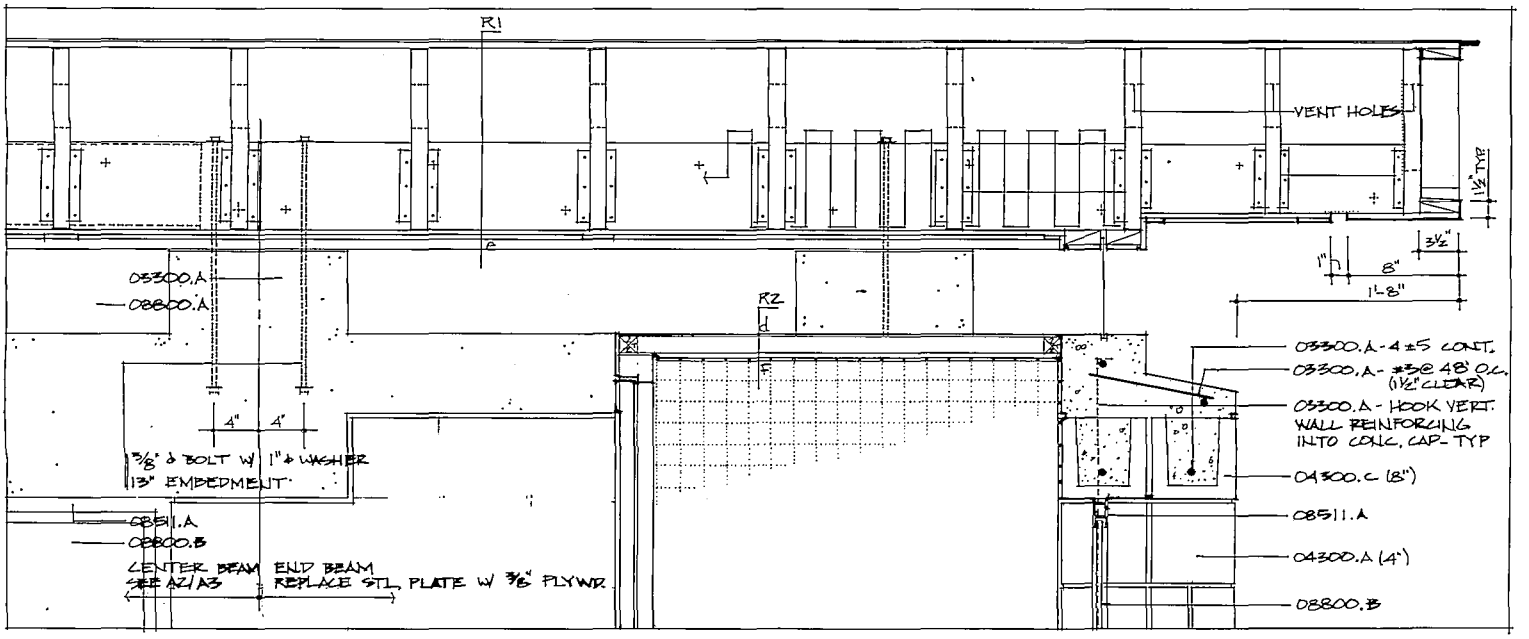
GROUND FLOOR PLAN

1 LOWER ENTRANCE
2 GUEST ROOM
3 MECHANICAL/ STORAGE
4 TERRACE
5 ENTRANCE
6 LIVING ROOM
7 DINING/KITCHEN
8 LOFT BEDROOM

FACING PAGE: Overhanging roof is framed in wood, sheathed in plywood, and topped with outer covering of terne-coated stainless steel. Operable windows allow free ventilation.
SECTION: Middle level living area is located between sleeping quarters. Walkway to lower level entrance abuts concrete block retaining wall.
PLANS: Dining/kitchen to north of double-height living room is topped by sleeping loft. Services are tucked against north side of house.
TOP: Building dimensions were governed by the size of 8-inch-by-8-inch concrete block module, avoiding the need to cut blocks.
ABOVE: North facade of house has small openings for protection against prevailing winter winds.



EAST-WEST ROOF EAVE SECTION



NORTH-SOUTH ROOF EAVE SECTION

DETAIL, TOP: Laminated rafters cantilever beyond timber beam, which is anchored to wall with steel rod. Standing-seam, terne-coated steel roof extends beyond fascia to accentuate shadow line.

DETAIL, ABOVE: Continuous steel-reinforced collar beam sits on top of concrete masonry cavity wall. Glass fits into groove on top of collar beam, held in place by wood trim.

FACING PAGE, TOP LEFT: Concrete boots that support roof are visible in loft. Ceiling is battened plywood applied to underside of rafters.

FACING PAGE, TOP RIGHT: Heart pine floors in living area were salvaged from old cotton mill. Tempered glass in windows acts as precaution against flying debris in wind storms.

FACING PAGE, BOTTOM LEFT: Concrete hearth in living area widens to make room for child in sleeping bag. Steel stair leads to sleeping loft.

FACING PAGE, BOTTOM RIGHT: Lower level guest room has concrete floors.

ARCHITECT: Clark & Menefee Architects, Charlottesville, Virginia—W.G. Clark, Charles Menefee III, Francisco Gomes, James Rounsevell, William Vukovich (design team)

LANDSCAPE ARCHITECT: Gregg Bleam

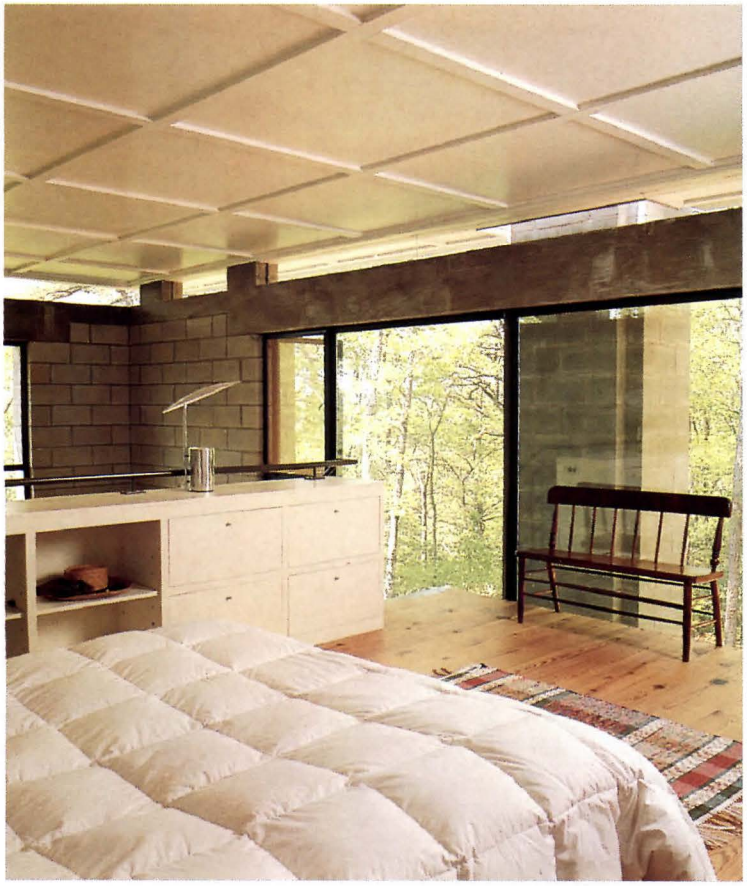
ENGINEERS: Shoolbred Engineers (structural); 2rw (mechanical)

CONSULTANTS: Dian Boone (interiors)

GENERAL CONTRACTOR: Barry Tetreault

COST: Withheld at owner's request

PHOTOGRAPHER: James Rounsevell



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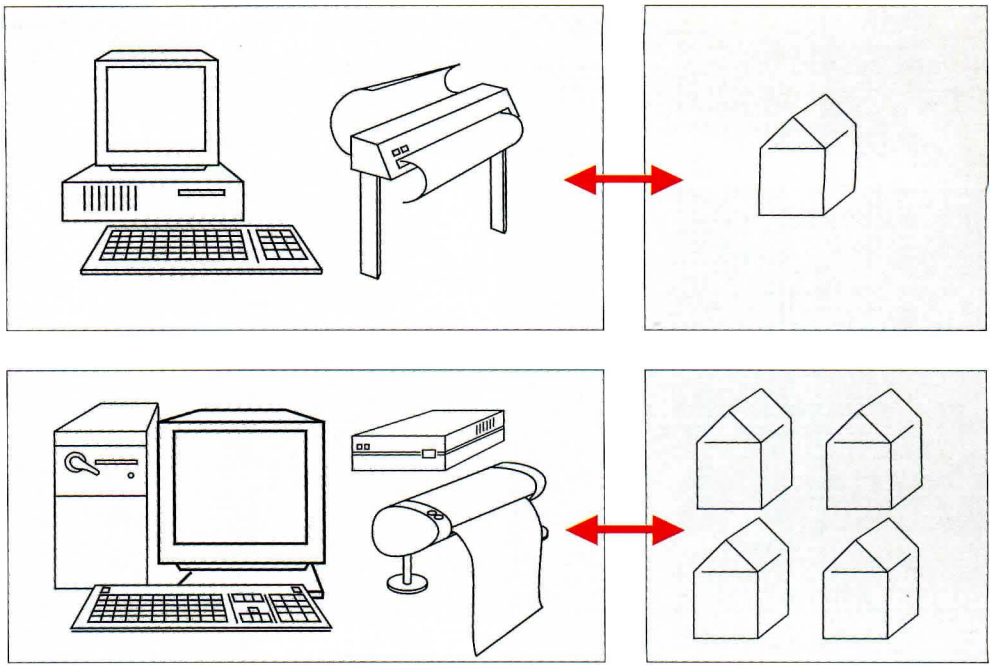
Matching Computers to Practice

To get the most out of office technology, architects should update equipment, consult experts, and network.



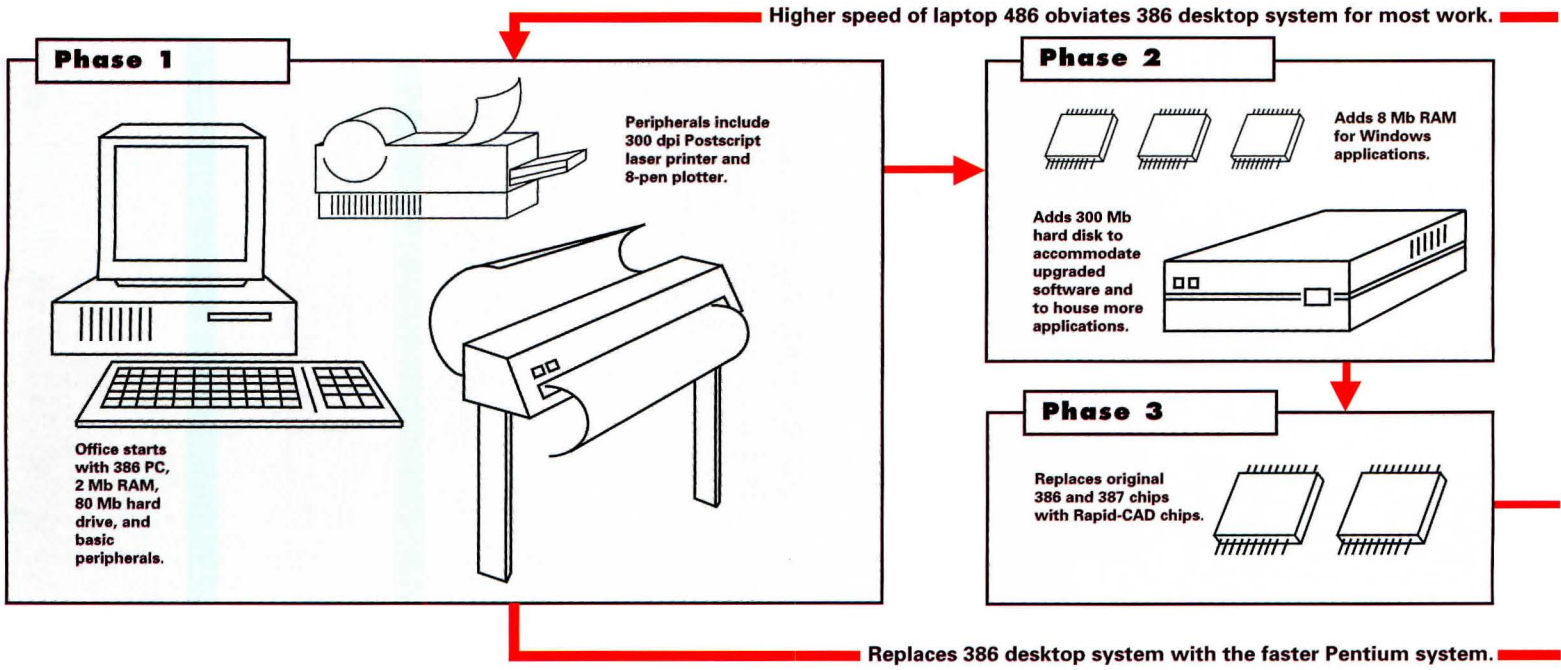
ABOVE RIGHT: A simple, smaller computer system serves a smaller practice; as one's business grows, so do the computer systems that support it.

Many architects constantly debate the merits of establishing, upgrading, or reordering their computer systems. When is the right time to buy a system? How much technology is enough? Who decides? How much do you have to know? Can you afford it? What about the old stuff?

Principals can feel overwhelmed by the conflicting claims of salespeople and brochures and by the demands of younger, computer-literate employees. But there is no need to panic. "Technology is so overhyped," insists Ken Sanders, associate partner of Zimmer Gunsul Frasca Partnership in Portland, Oregon. The hype makes architects think they must have hardware or software they may not really need. Upgrading a system should be undertaken in a methodical way, and there are several reasonable steps to take.

A computer system exists for one purpose—to help your office get projects done. The strategy you set for your particular system depends on the tasks your firm wants it to handle: design, field supervision, brochure publishing, facilities management, and so on. Many practices that focus on design have computerized slowly, partly because drawing on computers is not intuitive, and speed is not normally an issue for these architects. For Tuck Hinton in Nashville, Tennessee, a 21-person firm, computers have always been secondary to the objective of good design. Principals Seaborn Tuck and Kem Hinton still don't use computers except for simple word processing. When they added CADD stations in 1987, they chose four UNIX stations running AutoCAD strictly for drafting. Although employees grew adept at CADD, the principals remained skeptical about what computers could do: "We watched firms back in the early '80s invest huge sums of money into fire-breathing computers," Hinton recalls, "and I don't know that it ever improved their design work." Tuck and Hinton now keep an eye on whether computers' design capabilities are worth the expense.

Larger firms, on the other hand, need fast networks and huge storage for high-volume institutional work and facilities management. These practices



ABOVE AND FACING PAGE: Diagram traces development of sole practitioner Edward Wolfstein's computer system. The architect purchased 486 laptop for mobility, but its speed prompted replacement of 386 desktop model, which will become server for new inkjet plotter and a workstation.

should try to purchase a computer for every member of the firm and network all of the computers and peripherals.

Sole practitioners may find they need powerful machines that enable them to work quickly. Edward Wolfstein in Burlington, Vermont, designs renovation projects requiring measured drawings. When large drawings and 3D renderings started slowing his machine down considerably, he knew he had to go to a faster chip. But instead of buying a desktop machine, Wolfstein opted for a 486 laptop. With software that synchronizes the office machine with the laptop, he can gather dimensions on site, draw, and show a client a solution for the project. When Wolfstein upgraded his office machine to the Pentium chip, partly because it allowed him to flip back and forth from 2D to 3D views, the laptop remained his field notebook.

Capitalize on outside advice

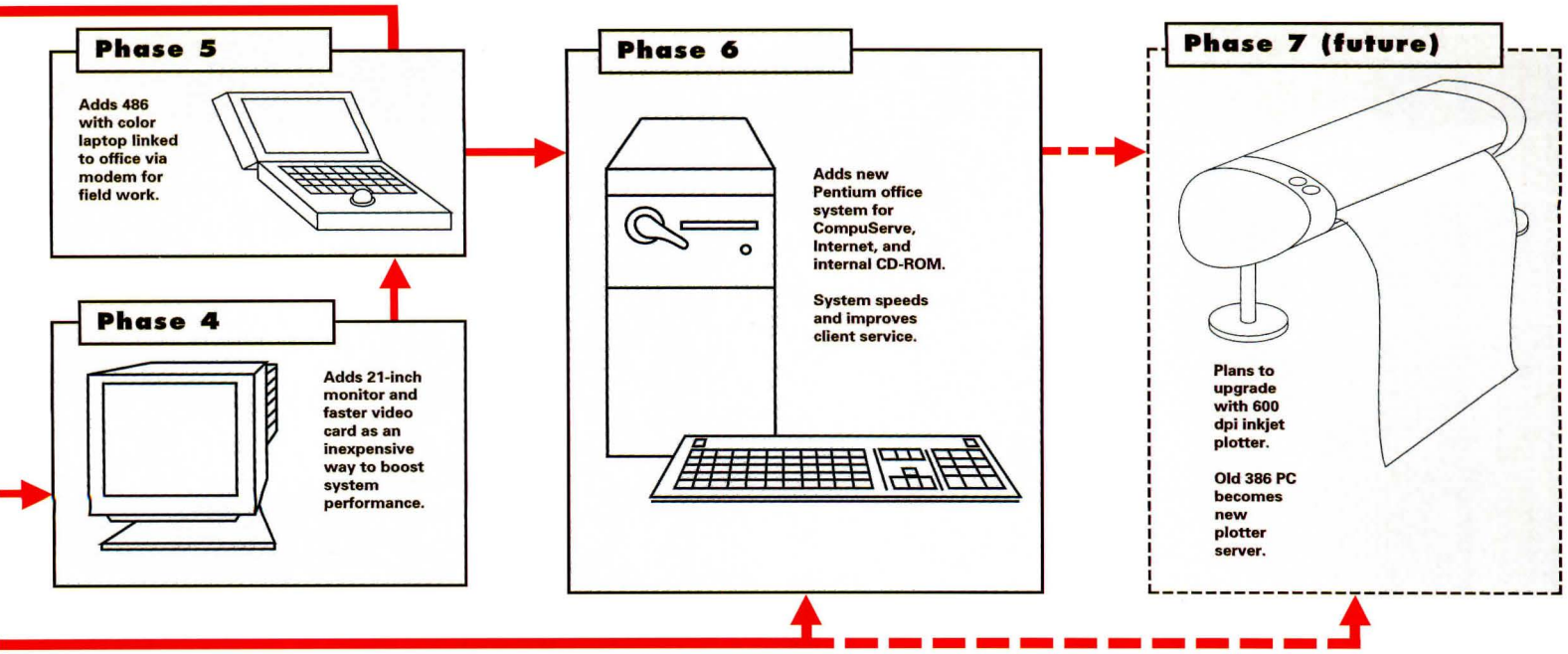
Many firms seek consultants' advice both on setting their strategy and on purchasing technology. In general, advice should be sought from an expert whose main work is consulting, not reselling equipment or software. New or upgraded technology should serve a new kind of client, offer more services to a client, or increase business efficiency without costing more than it will bring in.

Finding a consultant may take a little research, such as attending technical meetings of local AIA chapters or users groups for PCs and Macs (often listed in the phone book, or at computer software stores). Many are finding free advice from on-line services like CompuServe, America Online, and the Internet and through computer magazines.

Upgrade technology as the firm grows

Most smaller to midsized offices upgrade when a major project demands it. For example, when Dallas-based F&S Architects first computerized in the mid-1980s, the firm used UNIX workstations running Intergraph CAD software. In 1990, the firm was awarded a big hospital project by the Veterans Administration, a commission that demanded more computers because it was a joint venture. The experience with that project taught the firm that having a few people working with computers and others drawing by hand was inefficient. That encouraged a new goal of a computer on every desk—more feasible now because F&S has decided on a Macintosh network at far less cost than its original UNIX machines.

Similarly, Stuart Royalty, an associate in the firm of Barton Myers, Los Angeles, found more demanding projects required better machines on the firm's Macintosh network. Barton Myers has 15 on staff, and when the firm took on the New Jersey Performing Arts Center three years ago, it was using Mac Quadra 700s—very fast machines at the time. "It was a vast job, and the files just kept growing," Royalty says. The network—a Localtalk network without a server—slowed, renderings took hours to do,



and the in-house publishing of brochures and proposals was slowing the network down. Realizing that things would only grow more complex, Royalty started purchasing Power Macs—extremely fast machines capable of handling huge files—and upgraded to an Ethernet network.

Keep an eye on the cutting edge

New upgrades and additions to a basic computer system or network are constantly appearing. However, some of these technologies are too far ahead of their time to be either useful or cost-effective now. "The computer allows you to do more," insists Tuck, "but at the same time, it opens up a lot more than you may be able to afford the time to explore." Interestingly, the smaller offices are often on the leading edge, but there is a line between that and what technologists call the "bleeding edge."

For example, CD-ROM technology is currently on the leading edge, and virtual reality is on the bleeding edge—too expensive and too complicated to pay back the investment that would be required now. Linda Joy Weinstein, an Oakland, California-based practitioner, takes photographs that can be developed by Kodak onto a CD and then incorporated into brochures and presentations. Similarly, for a restoration project, Weinstein captured a close-up image of brickwork that needed several repairs. With a raster graphics program, she annotated the image and put it all on a detail sheet. This way, architect and contractor know they're talking about the same thing. "Where a drawing doesn't get it, the photo and notes provide all the information clearly," Weinstein asserts.

Old project files can also be stored on CD, as Weinstein does, for a very reasonable price. (A number of quick printers offer a CD-recording service.) Many firms are now creating their own CDs, as the cost of that technology comes down. The other CD technology that interests architects is the "jukebox," which can load and access up to 12 discs at a time, each of which appears to the computer to be a separate hard drive.

Other technology-aware firms are interested in portable projection screens that allow one to carry a multimedia presentation in a box about the size of a briefcase. At $5,000, projection screens are coming within reach of midsized and smaller offices.

Recycle old equipment

Firms should upgrade machines as much as possible before buying completely new replacements. Upgrades can be as simple as a faster hard drive, more memory, a faster chip, a fast graphics card, a new motherboard, a CD drive, a bigger monitor, and so on. But such improvements can only take one so far. When Ed Wolfstein had outgrown his 386 machine, he bought a faster 486 notebook and eventually a PC with a Pentium chip (diagram above). But he did not throw out the old one. "I still use it as a plotter server and a CAD workstation."

Other firms that upgrade toward the goal of a computer on every desk push down the old machines, often to administrative uses, until they simply cannot be used anymore. A cycle of usefulness for a computer's primary function seems to be about three years.

There does come a point where the computer can't be used at all. Partner Robert Shaw of F&S Architects laughs about the end of the firm's three VAX machines, which had originally cost $250,000 each: "I wish I could have had a picture of the company president's face when we paid a guy $50 to take our system away." One other possibility is to donate used equipment through the National Cristina Foundation (203-622-6000), which finds suitable homes for computers in educational and charitable settings.

Wolfstein's advice is to wait as long as you can before investing in new equipment. When files become too big, when plots take an agonizingly long time, when the software offers promise but requires more horsepower, then upgrade. And when you do, buy the most advanced version of the computer system you can, because it will last longer without needing an upgrade.

Architects are like business people in any field when it comes to upgrading. The simplest guide is balancing the functions you want performed, the skills of your staff, and the demands of clients.—*Ripley Hotch*

Ripley Hotch is a freelance writer based in Sarasota, Florida.

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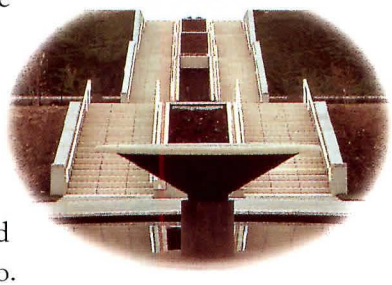

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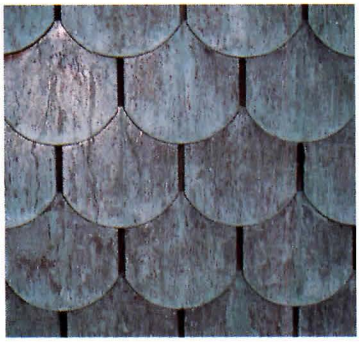
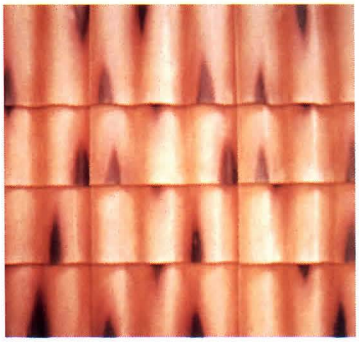
Products

New roofing tiles complement historicist architecture.





TOP: Elegance shingles, available in four colors, are designed to resemble slate roofing tiles. Manufactured by BPCO, the tiles' three-tab construction and alignment guides are designed for easy installation. Elegance weighs 285 pounds per 100 square feet and is one of the heaviest nonlaminated shingles offered. BPCO extends a 30-year warranty on the line.
Circle 401 on information card.

ABOVE: A thin layer of copper is bonded to fiberglass-reinforced asphalt units to form Prestige shingles from Tegola Canadese. Appropriate for residential and commercial installations, the shingles will gradually develop a green patina after a period of six months to three years. Lightweight Prestige shingles are fastened with copper nails—the same procedure used to attach standard wood or asphalt shingles—and an adhesive. The shingles are available with squared edges or rounded-bottom profiles.
Circle 402 on information card.

ABOVE: To achieve a rusticated appearance, MaxiTile applies a random rust-colored finish to its Flashed Clay roofing panel, the newest addition to the manufacturer's line of lightweight roofing tiles. Measuring 36 inches by 24 inches, the rigid sections purportedly will not rot, twist, or bend. MaxiTile's panels are composed of cellulose fibers, cement, and silica-sand.
Circle 403 on information card.

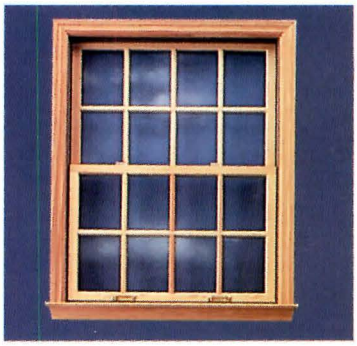
TOP RIGHT: Designed for disaster-resistance, Met-Tile's panel roofing systems are capable of withstanding wind velocities greater than 225 miles per hour, according to recent wind-uplift testing. The company's 3-foot-wide Zincalume coated-steel sections are designed to resemble individual clay tiles. Lightweight and weather-resistant, the panels weigh only 125 pounds per 100 square feet, one-tenth the weight of some concrete and clay tiles. They are applied vertically in one piece from eave to ridge.
Circle 404 on information card.

ABOVE CENTER: Featuring a profile that measures less than 1 inch above the ridge of a roof, Shinglevent II-7 from Air Vent provides 18 square inches of net-free ventilation for each linear foot. Shinglevent incorporates an external wind baffle system that draws air evenly from the attic; a filter prohibits insect and precipitation infiltration. The tile can be applied on roof pitches ranging from $^{3}/_{12}$ to $^{12}/_{12}$. Air Vent is a subsidiary of CertainTeed Corporation, manufacturer of many types of building materials.
Circle 405 on information card.

ABOVE: Composed of Portland cement, recycled fly-ash, and wood fiber, Nature Guard fiber cement shakes from Louisiana-Pacific resemble cedar shingles while incorporating greater strength, weather-resistance, and fire protection. The tapered shakes measure 22 inches long and 5, 7, or 12 inches wide and are available in dark gray, dark brown, and light brown.
Circle 406 on information card.

Products

Reflective glass
The 160,000-square-foot expansion and renovation of Syracuse Hancock International Airport by HNTB Corporation incorporates Libbey-OwensFord's Eclipse reflective glass (above). Selected by the architect for its energy efficiency and flexibility, Eclipse minimizes glare. A pyrolytic coating enables the glass to be heat-processed and bent after production into a radius as small as 20 feet.
Circle 409 on information card.



Double-hung window
The Westport quick-tilt, double-hung window (above) from Peachtree features a removable sash liner and 7/8-inch-wide muntins. A new latch system requires only one finger to operate it. Interior surfaces are constructed of pine. The weather-resistant extruded aluminum exterior is available in white, light brown, or dark brown.
Circle 407 on information card.

Wood-clad window
Milgard's new line of WoodClad windows (above) comprises picture windows, sliders, single-hungs, casements, awnings, and radius shapes. The interior frames of the windows are constructed of Douglas fir, while the exterior consists of pultruded fiberglass, designed to resemble painted wood. Optional grids in standard and custom configurations may be selected.
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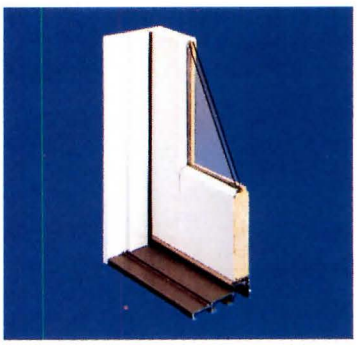

Patio door
To reduce its use of timber resources, the Eliminator swinging patio door from Wenco, a division of Jeld-Wen, is constructed of urethane composites and engineered wood by-products, with aluminum cladding on the exterior (above). An embossed oak-grain finish on interior rails and door stiles may be stained or painted.
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Cedar alternative
Siding from the Eternit Group combines the maintenance-free performance of fiber cement construction with the appearance of cedar. Noncombustible and moisture-resistant, Eternit siding is available in 12-foot lengths and 7 1/2-, 8-, or 9 1/2-inch widths. The siding may be painted or stained. Four styles offer a range of textures.
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Attic ventilation
The Roll Vent (above) from Benjamin Obdyke provides a constant flow of air under roof decks and into attic spaces. Situated on the ridge of a roof, hidden beneath shingles, its nylon screen and polyester fabric construction prevents insects and precipitation from entering the house. Pennsylvania-based Benjamin Obdyke manufactures roof trim and accessories.
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Garden box
CertainTeed Corporation's new line of garden windows (above) features the company's Thermaflect glazing, designed to provide thermal protection without tinted glass, while allowing beneficial blue and red radiation to penetrate. Solid vinyl frames and sashes resist rotting and chipping. Predrilled holes in the counterboard and a vinyl drip cap facilitate installation.
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Translucent panels
Polygal U.S.A. manufactures lightweight polycarbonate sheets that offer long-span capabilities, high-impact resistance, and low frame spread. Suitable for constructing roofing systems and walkway canopies, the structured sheets provide natural light during the day and glow with backlit lighting in the evening.
Circle 414 on information card.

Slatelike roofing
To duplicate the appearance of slate shingles without the expense, James Hardie Building Products offers Hardislate, a fiber-cement roofing product. Durable and noncombustible, Hardislate shingles measure 8 inches by 18 inches. The company plans to introduce a 10-inch by 18-inch size this year. Shingles are available in gray, olive green, and light brown shades.
Circle 415 on information card.

Acoustical panels
Tectum and Wilhelmi Werke GmbH & Company have announced an agreement naming Tectum the exclusive distributor of Wilhelmi acoustical products in North America. Wilhelmi panels feature a flame spread rate of zero. Tectum's full line of high-sound-absorption tiles (above) is available in a range of custom colors and shapes.
Circle 416 on information card.

Skylight guidelines
Velux-America, manufacturer of roof windows and skylights, offers free information on installing skylights. The company outlines a simple and economical procedure to construct a skylight shaft through an attic space that involves cutting roof and ceiling openings and then finishing the tapered shaft with gypsum wallboard (above).
Circle 417 on information card.

Advertisers Index

Circle number		*Page number*
95	ACI Distribution	49
133	Acme Architectural Walls	136
37	Advance Lifts, Inc.	28
—	AIA Documents	150
—	AIA Finland	108
—	AIA Handbook	30
—	AIA Membership	154
—	AIA Online	154
69	American Olean Tile	14
—	Andersen Windows	48A-H
51	Anthony Forest Products	40
—	Apple Computer, Inc.	60
53	Armstrong World Industries	C2, p.1
—	A-T-I	112A-D
159	AT&T	C3
—	Autodesk	46-47
111	Belden Brick Co. (East, Midwest reg.)	62
139	Bentley Systems	140
49	Bergerson	55
103	Bobrick Washroom Equipment	56
113	Bonneville Power Administration (West reg.)	62
99	Bradley Corp.	52
73	Calcomp	17
27	Calcomp	25
39	Calcomp	29
127	Certainteed Corp.	114
153	Certainteed Corp. (regional)	156
41	Cold Spring Granite	31
151	Cosmit	155
29	CRSI	57
157	Dataprint Corporation	159
—	Design Intelligence	145
121	Dover Elevators	109
67	DuPont Antron	12-13
115	EFCO/RotoSwing Div.	63
85	Elf Atochem North America	44
149	Eternit, Inc.	151
125	Follansbee Steel	113
135	Georgia-Pacific	137
75	Homasote Company	20
147	Intergraph Corp.	148
91	International Masonry Institute (Midwest reg.)	48
33	Kalwall Corp.	27
57	Kim Lighting	5
31	LCN Closers	26
65	Levolor Corporation	10
93	Lifetile/Rialto (West reg.)	48
55	Louisiana-Pacific	2-3
117	Mannington Commercial	64
77	Marvin Windows & Doors	32-33
97	Mitsubishi Chemical America, Inc.	50
43	Musson Rubber Co.	40
83	Nemetschek	42-43
15	Nixalite of America	4
23	NT Hartmann Sanders	24
63	Oce USA	9
25	Patina Finishes & Copper	24
107	Pella Corporation	59
—	Pittsburgh Cultural Trust	41
19	Polygal, USA	19
143	Portland Cement Association	146
129	Pozzi Window Co.	122
81	PPG Industries, Inc.	38
131	Roppe Corporation	130
105	Schlage Lock Co.	58
17	Schuller Roofing Systems	18
101	Siedle Communication	54
—	Simons	26
21	Sloan Valve Co.	16A-H
79	Softdesk, Inc.	34
3	Spacesaver Corp.	112
5	Spacesaver Corp.	112
7	Spacesaver Corp.	112
9	Spacesaver Corp.	112
11	Spacesaver Corp.	112
13	Spacesaver Corp.	112
109	SPI Lighting Inc.	61
89	Stuart Dean (East reg.)	48
35	Stylemark, Inc.	28
71	Supradur Mfg. Co.	16
155	Tamko Roofing Products Inc.	158
61	Technical Glass	8
47	Trimco	53
123	Unicor	110
161	USG Interiors, Inc.	C4
145	Versico Incorporated	147
119	Von Duprin, Inc.	106-107
59	Vulcraft	6-7
141	Wausau Tile	144
137	Wood Products Promotion Council	139
45	Xerox Engineering Systems	41

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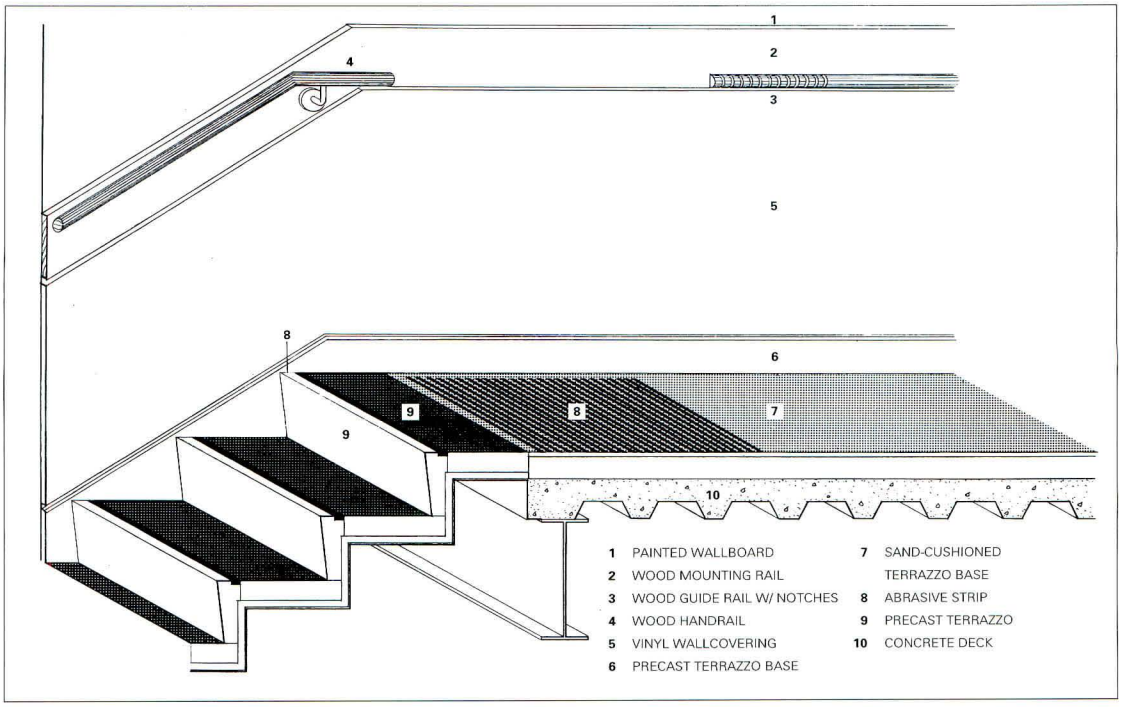
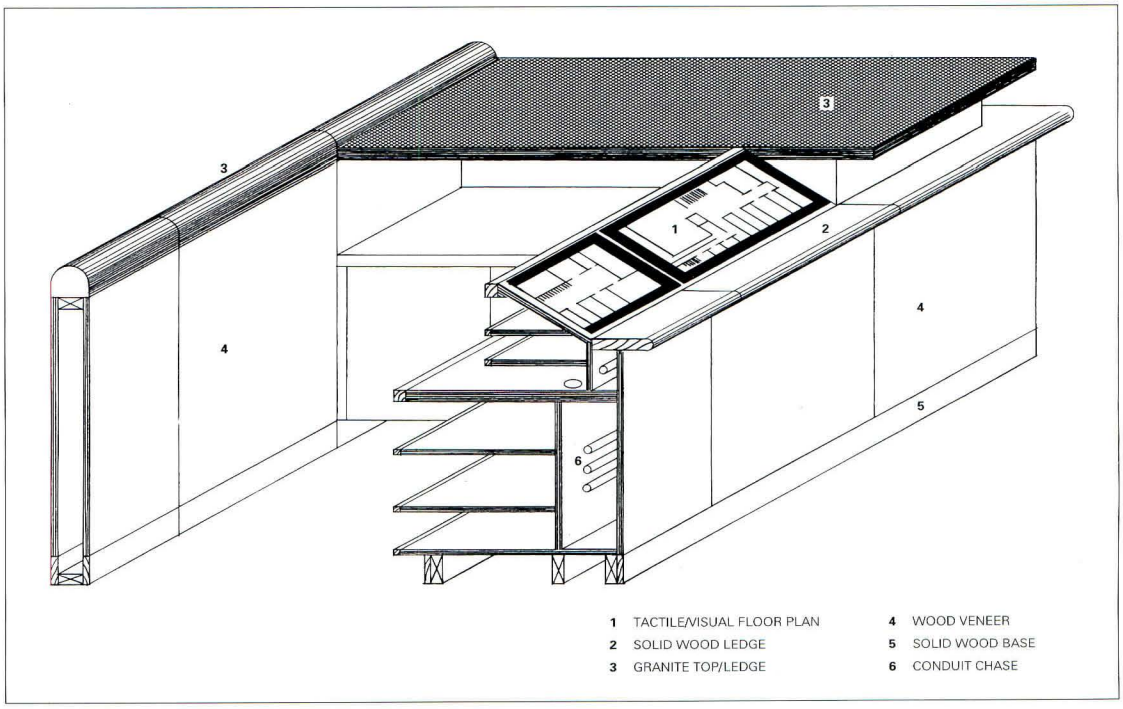
Details

A community center for the visually impaired incorporates tactile and visual contrasts.





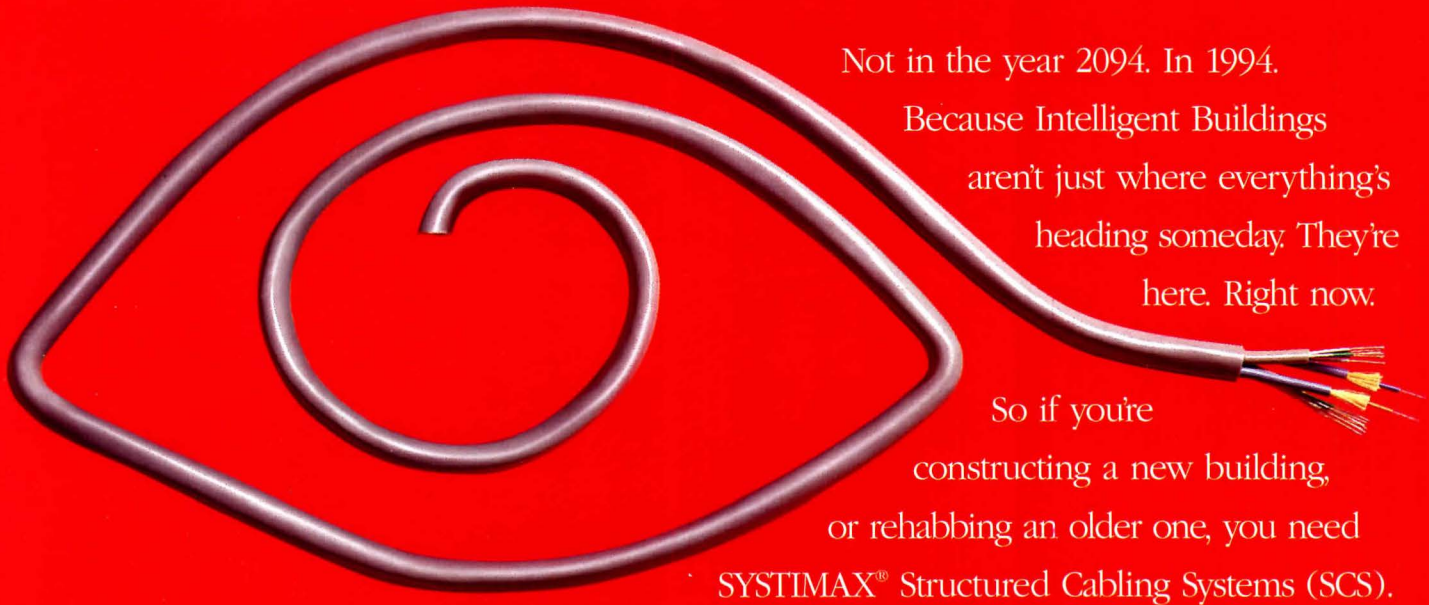
The Lighthouse
New York City
Mitchell/Giurgola Architects

In renovating and adding onto a community center for the visually impaired (pages 94-101), architect Mitchell/Giurgola inserted tactile and visual cues that orient both blind and sighted visitors, while meeting handicapped accessibility guidelines. For example, the center's reception desk is fitted with a raised floor plan of the building with room descriptions in both Braille and raised lettering (above). The map, which is angled to allow visitors in wheelchairs to read comfortably, is mounted on a 14-foot-long wooden ledge.

The Lighthouse's main public staircase (top) alerts users of level changes with variations in floor colors and textures. To supplement ADA codes, 1-inch-wide abrasive strips are laid atop terrazzo landings; the ends of wooden wall-mounted handrails are also notched.

Stair treads are constructed of black precast terrazzo with abrasive strips attached to the edge of each tread; the risers are constructed of white terrazzo, to provide visual contrast between the vertical and horizontal surfaces of the staircase.—*Raul A. Barreneche*

Imagine a building where the doors have eyes, the walls have ears, and the thermostat knows you get a little chilly around 4 p.m.



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