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Next month

Building Types Study 715 Houses

RECORD's annual Houses issue presents houses by architects Antoine Predock, Simon Ungers, Carlos Jimenez, Carlos Zapata, Fernau/Hartman, Lubowicki Lanier, Machado Silvetti, and Joan Hallberg.

Also in April

- Portfolio of residential window details.
- Software reviews.
- Indicators page charting industry trends.

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Circle 4 on inquiry card

Briefs

Winners

- Kevin Roche has been elected president of the American Academy of Arts and Letters.
- The AIA has presented the 1994 Thomas Jefferson Award for Public Architecture to architects M. J. Brodie of RTKL, and Richard Dattner; and to Mayor Joseph P. Riley, Jr., Hon. AIA, of Charleston, South Carolina, cofounder of the National Endowment for the Arts' Mayors' Institute for City Design.
- The James Marston Fitch Charitable Trust has awarded grants to Frazier Associates to study the impact of design guidelines on historic districts; to Linda Laird to do photo study of Midwestern grain elevators; and to the Medicine Wheel Coalition for Sacred Sites to fund travel to meetings.
- Terrence M. McDermott succeeds James P. Cramer as executive vice president/ chief executive officer of the American Institute of Architects. McDermott comes from Cahners Publishing, where he was a publishing executive with building and design magazines.

Budget Axes Police Academy

To help close its budget gap, New York City is scrapping plans for a \$247-million police academy/community center. Its Ellerbe Beckett/Michael Fieldman design had been chosen through international competition. The existing academy will be renovated.

Levittown Founder Dies at 86

William J. Levitt, the building contractor who devised the prototypical moderate-cost suburban housing development that changed the face of America, died in January two weeks short of his 87th birthday. His first Levittown, begun in 1947 on New York's Long Island, grew within four years to 17,000 identical 800-sq-ft two-bedroom houses. Designed by his brother Alfred Levitt, they used prefabricated components and assembly-line methods. Another 120,000 homes followed in Maryland, New Jersey and Pennsylvania. Reviled by some at the time as "cracker boxes" in a depressingly uniform landscape, they were welcomed by urban workers as an escape from cold-water flats and doubled-up living conditions. Levittowns and their imitators quickly sprang up outside most U. S. cities and became a major root of the nuclear family, the baby boom, suburban sprawl, and the withering away of the traditional city. Over time, the houses have been altered beyond recognition, but current residents say the original Levitt components require the least repairs. ■

Après les Grands Projets

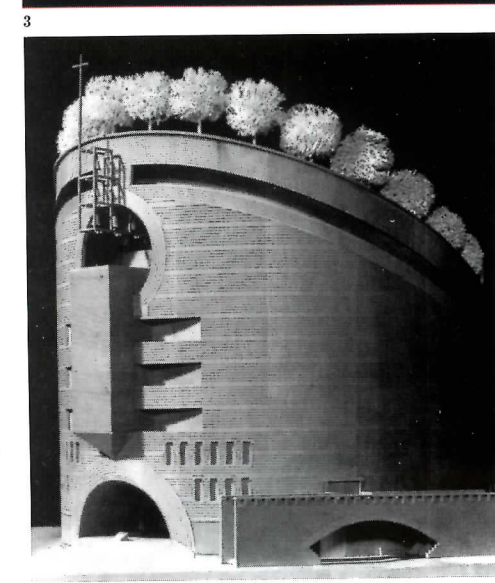
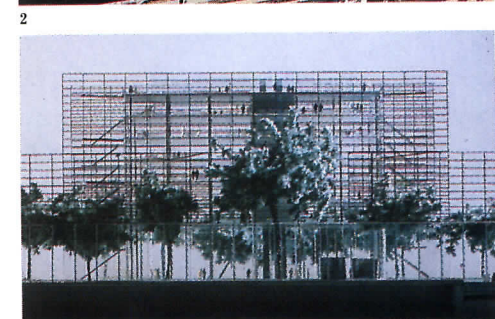
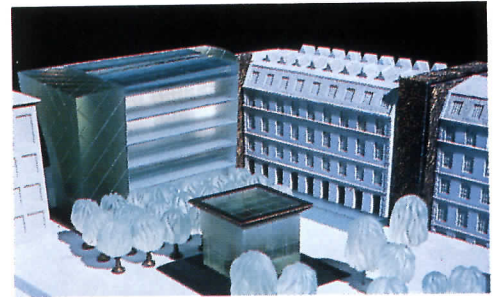
The last word is not yet in on Paris' ambitious program of *Grands Projets*. The once-contested Pyramid now has an inverted partner, part of the Grand Louvre's I. M. Pei-designed commercial center. The four open-book towers of the Library of France (2), by Dominique Perrault, are up, albeit with extensive design changes. No longer transparent, they will be lined with adjustable wood shutters to protect the books. The giant podium has been scaled down, and the entries have been oriented to Metro stops. Neighboring apartment blocks are just beginning as part of the immense Seine Rive Gauche plan to create life around the isolated library and the river front, today blocked by train tracks. This is the next wave of Paris architecture: scaled down, focused on housing, culture and the city.

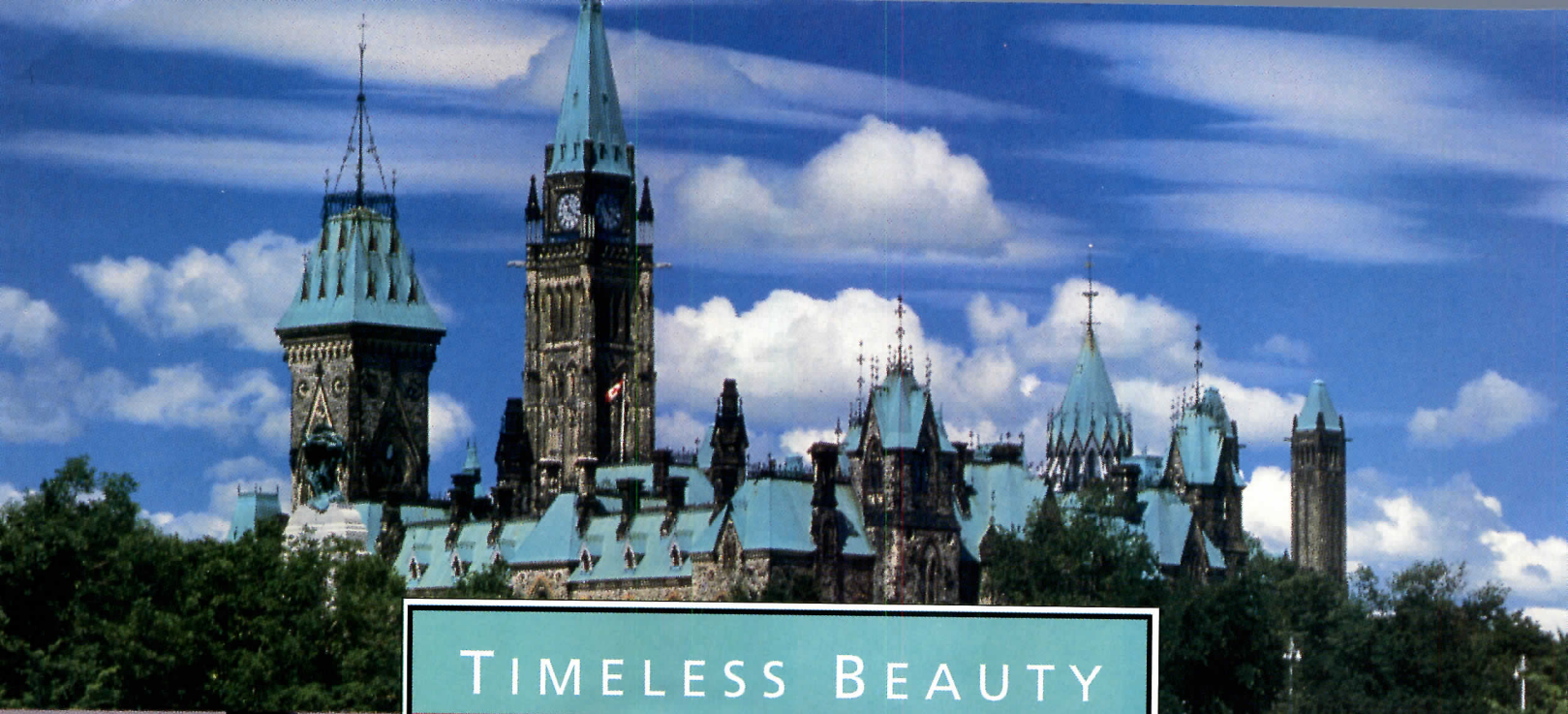
Across the Seine, Frank Gehry's new American Center is up and scheduled to open in May. The walled-in-park site of the old Center on Boulevard Raspail will become home to the Fondation Cartier (3), a transparent/reflective box by Jean Nouvel housing a 26-ft-high ground-floor exhibition space surrounded by sliding glass panels, open to the trees, sculptures, and the city. Nouvel is also co-winner with Rem Koolhaas of a competition for a library and restoration of the Sorbonne's Jussieu campus; on hold, the project would create a pedestrian corridor behind Nouvel's Institut du Monde Arabe.

Further departures from monumental grandstand architecture to a shared urban stage include Philippe Starck and Luc Arsene-Henry's redesign of the Ecole des Arts Decoratifs (1) and Mario Botta's Evry Cathedral (4), a sliced 120-ft-diameter cylinder designed as a "House of Man" topped by a crown of trees, scheduled to open Easter 1995. Where Botta seeks a place of serenity in the heart of a modern new town, Starck creates a translucent-green two-way filter between city and student. His filter, like Botta's, aims to transmit the positive energy of the city while blocking the negative. Where the *Grands Projets* embraced transparency, new projects reflect a more layered, dense, and introspective Paris.

Claire Downey

Journalist Claire Downey lives in Paris.





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Letters

(Continued from page 4)

Florida where I have my private practice now; I would not know how to design in an Afrocentric mode if I tried.

Sure, the African-American architects' longing for a connection with Africa is understandable and legitimate. However, architecture is commonly a multiple function of climatic, economic, social, and cultural conditions, involving "the act of making places for ritual use" (in the words of the late Spiro Kostof). To transpose to the United States bodies of architecture from Africa, where rituals are different, would only deepen the illusion of an identity crisis of nobody's making but our own.

In fact, the challenge to any architect anywhere is to make good architecture which, while climatically, socially and economically on the mark, is conscious of its [potential impact] outside its general confines of ethnicity and regionalism. If we can meet that challenge, Afrocentric architecture will be of little value to us.

Cheikh T. Sylla
President

SYLLA
Architects/Planners/Engineers
Tampa, Florida

More Credits

Your recent article on the Los Angeles Convention Center was admirable in summarizing the special challenges posed by the project, and comprehensive in all respects but one. It is important, I think, to credit the special contributions of Thomas Baker, Associate Partner/Design and Robert Milburn, Senior Associate Management at Pei Cobb Freed & Partners as it was largely due to their daily efforts that the building materialized as it did.

James Ingo Freed
Partner-in-Charge/Design
New York City

Olmsted Redux

In regard to Suzanne Stephens' "For the Record: Schuyler at the 1893 World's Fair" [RECORD, June, 1993, page 36], Frederick Law Olmsted and Henry Codman did not "landscape" the World's Columbian Exposition. Frederick Law Olmsted and Henry Codman, consulting landscape architects, were hired by the World's Columbian Commission to examine and evaluate several possible site locations. Along with Daniel Burnham and John Root, consulting architects, they harmoniously and successfully

collaborated to persuade the commission on the Olmsted-Codman recommended site and to complete the adopted master site plan which was based upon the original scheme prepared by Olmsted; they also generated detailed site development plans for the exposition grounds.

This unjust writing unfairly perpetuates the misunderstanding that landscape architects only "landscape" a project.

John Geiger
Landscape Architect
Decatur, Georgia

Suzanne Stephens replies:
I should have been clearer about the site selection, planning, and development roles of Olmsted and Codman at the 1893 exposition. I had no intention of being "unjust" or "unfair" in referring to their achievements as "landscaping." I gather from your tone that is a derogatory term.

#1

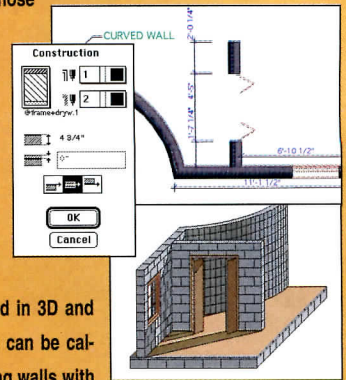
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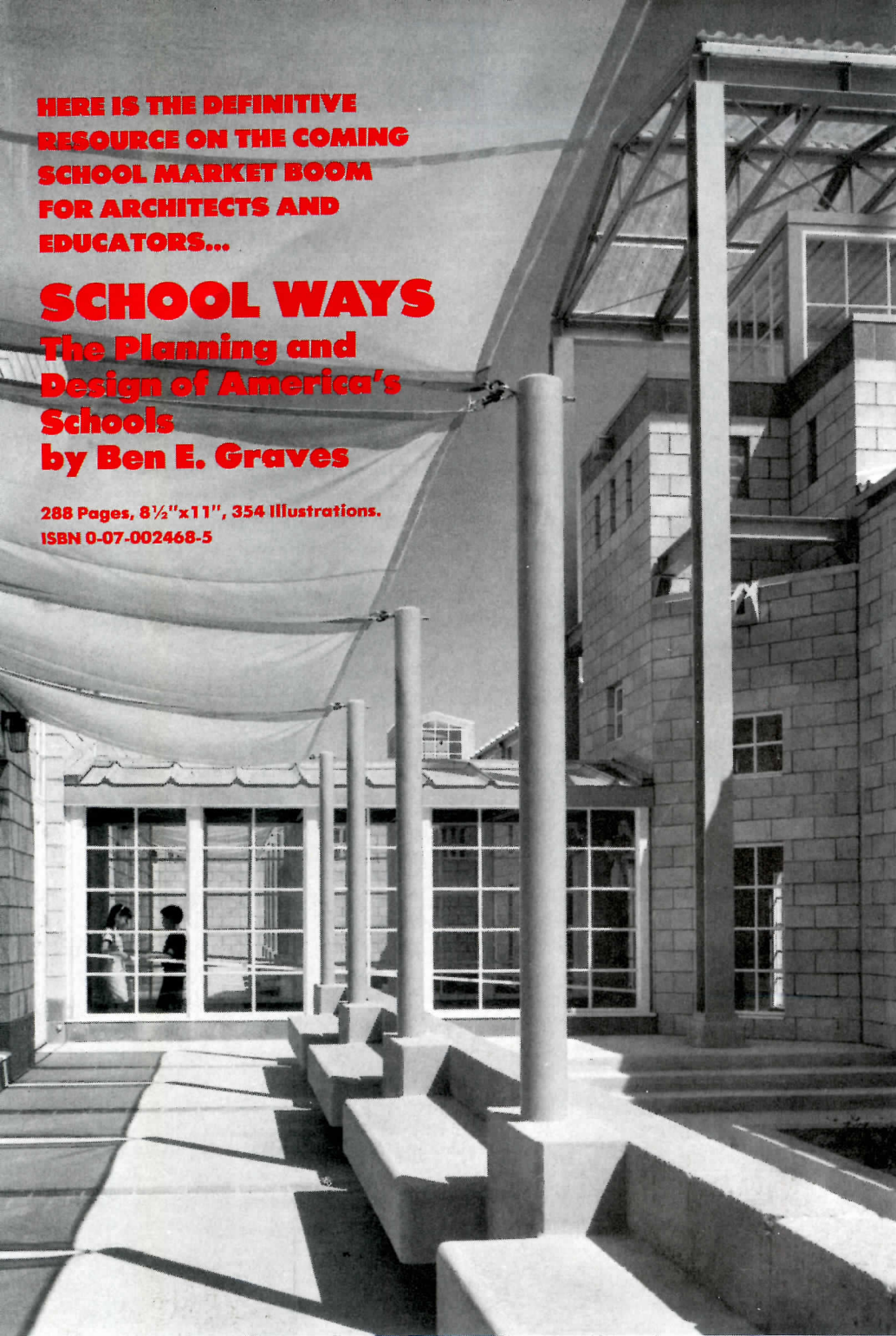
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Modernism: The Battles and the Glories

No Place Like Utopia: Modern Architecture and the Company We Kept, by Peter Blake. New York: Knopf, 1993, 347 pages, \$28.

Reviewed by Felix Drury

Imagine yourself slouched in a Barcelona chair in the down-lighting of a steel-and-glass house, listening to one of the apostles of Modern architecture tell it as it was. These days the religiosity of the Modern Movement, its definition of newness, its sense of mission have been forgotten or scoffed at. Its manifestos—like Corbu's *Modulor* or Giedion's *Space, Time and Architecture*—have been replaced. It is time for Peter Blake to remind us of battles fought and glories achieved and of those who did them, to validate, in his words, the efforts "of young architects who, like myself, came out of World War II. . . determined to change the world, nothing less."

Blake tells this story in *No Place Like Utopia*, an engaging and clever monolog that ranges from plain reportage to inside gossip on most of the stars of Modern architecture and art. A theme of the book, he says, is "telling the truth" with the emphasis on personal friendship, which pretty well covers the field because Blake was, by his own account, "close to most of the players."

Like Modern architecture itself, Blake's family was expelled from Germany by the Nazis. Relocated to England, Peter found himself poor and in a Quaker school with a social agenda. These experiences set the values on which Blake based his career, and which are at the root of his disgust with what he sees as the corruption of American architecture under Postmodernism.

Blake began his career in London, as an office boy for Serge Chermayeff. We learn that the elegant Chermayeff had won the world tango competition in 1927. It is this kind of tale that runs the course of the book. Relocated to New York, Blake plugged himself into the architectural scene by working at the *Architectural Forum* and hanging out in Greenwich Village.

Felix Drury is an architect in Connecticut.

In 1940 he went off to study architecture at the University of Pennsylvania, where he met Lou Kahn, the planner Willo von Moltke, and, of all people, Bertrand Russell. World War II intervened and Blake was off to Europe as a combat intelligence officer.

Out of the army, Blake went on a cities survey for the *Forum*, stopping first in Chicago, where he had a long conversation with Mies and found a "boundlessly optimistic" Bucky Fuller living in a trailer in a parking lot. Then came the offer to become the head of the Department of Architecture and Industrial Design at the Museum of Modern Art. Blake was tickled to get the job, but found himself in conflict with director Alfred Barr, who saw architecture as an "art," while Blake replied "architecture is not primarily an art at all, but a discipline that is expected to provide housing, workshops, places to teach and learn and heal in."

Blake returned to the *Forum*, first as associate editor, then as managing editor. "We felt. . . that the *Architectural Forum* should be the voice for a new generation of young architects like ourselves. . . The *Forum*. . . stood for four things: a new architecture, a new kind of urbanism, a new building technology, and a new set of social and political priorities. . ." According to Blake, the *Forum* was clearly superior to the other, "mindless" U. S. architecture magazines.

Blake sandwiched in three other careers: his practice (largely with Julian Neski), of which he is rather self-effacing; his writings, most

notably *The Master Builders* (1960), *God's Own Junkyard* (1964), and *Form Follows Fiasco* (1977); and his administration of two schools of architecture.

Throughout *No Place Like Utopia*, Blake shares with us his thoughts on those responsible for the development of Modern art and architecture in America. He writes, for example, of Frank Lloyd Wright: "behind this ludicrous facade, this monumental arrogance, this overbearing ignorance, there was a talent simply unequalled in this century, and in much of the architecture of the past." Of Philip Johnson, Blake says, "He could be arrogant, insulting, cutting, bitchy, devastatingly nasty. . . but never boring." Of Kahn's famous line about a "wall wanting to be a wall," he says it's academic gobbledygook. Of Paul Rudolph, he speaks of "a staggering, incorruptible talent."

Of the enemy, the Postmodernists, Blake mentions only one architect by name—Robert Venturi, who he calls a "serious and thoughtful critic of the Modern movement." Venturi's idea that Main Street is almost all right is, Blake says, a pessimistic vision, accepting of mediocrity and schlock. In the world according to Blake, Postmodernism is just the latest example of American cultural inferiority, to say nothing of greed.

This rambling monolog is so richly textured, so engagingly spoken that we can forgive the stories that are repeated four or five times. Peter Blake has come to the defense of Modernism well armed and bravely. ■



Blake (right) designed a show for Jackson Pollock (left) in 1949.

Ben Schultz photo

Great Streets, by Allan B. Jacobs. Cambridge: MIT Press, 1993, 330 pages, \$50.

The Next American Metropolis: Ecology, Community, and the American Dream, by Peter Calthorpe. New York: Princeton Architectural Press, 1993, 176 pages, \$25 (paper).

American Town Plans: A Comparative Time Line, by Keller Easterling. New York: Princeton Architectural Press, 1993, 120 pages, \$20 (paper).

Reviewed by Herb McLaughlin

Civitas or community—along with the planning and architectural devices that promote it—is of vital interest to our profession. We live and practice in a society that is increasingly fragmented and disorganized both socially and physically. The old civic model of church, school, library, and town hall surrounding a town square has been supplanted by the tawdry sleazescapes of what author Joel Garreau calls “edge city” and what I refer to as “slopopolis.” Restoring clarity and order to our chaotic suburban settlements—and saving, if we can, some of the older ones—should be one of our highest priorities.

The three books reviewed here address these issues. The best, by far, is *Great Streets*. Looking through it, the reader is treated to great sketches and plans and excellent text on the importance of streets in the life of cities. The cumulative effect is to make one want to rush to the airport and head for Bath, Barcelona, or Bologna to experience the best streets firsthand. The book examines exactly what its title says it will. It describes streets in depth and with great insight. It analyzes the factors that make them work or not work. Most of the specific insights found in this book are not surprising, but taken together the collection of observations makes the reader think about the various ways streets can function.

One hopes that Jacobs will extend his focus and analysis in the future to the larger issue of creating civitas in modern America. Excellent streets—boulevards, alleys, mews,

Herb McLaughlin is a principal of Kaplan/McLaughlin/Diaz.

crescents, and even canals—certainly help, but they are not enough. The country needs large-scale planning and governmental action. How soon can you get that book out on the shelves, Allan?

In *The Next American Metropolis*, Peter Calthorpe outlines many of the key factors that have led to the chaotic development of modern towns and suburbs. His excellent text offers some useful advice about radically reducing the amount of subdivision land wasted on streets (many of which are so wide they seem to separate rather than connect people), while also providing useful guidelines on redesigning these streets.

Calthorpe focuses much of his book on transit-oriented suburban developments, in which residential clusters are within 2,000-foot walks from small retail and transit centers. This is a nice concept, but unrealistic. Modern suburbanites want a single-family house on a fifth of an acre and want it so badly that they will commute by car (and car only) as much as two hours to get it. They want to shop at the gigantic discount stores that are starting to dominate American retailing, two of which require an area the size of an entire transit-oriented development.

Instead of pages of the familiar transit talk, the book might have devoted more text to government solutions—decreasing and concentrating retail zoning, sharing retail tax revenues, creating greenbelts, and such.

American Town Plans is a small book and it deserves to be. Its introduction is laden with sophomoric statements such as “Suburbia does not want to have a history,” and “There are certainly rich and poor examples of the town, the poorest being driven by almost unalloyed speculative motives which are attended by their own factions.”

Most of the book is devoted to a presentation of various town plans. This certainly is a worthwhile endeavor. However, it is substantially lessened in value by the absence of facts on patterns of development, on density, and so forth. Nor does a lack of photographs and detailed discussions of the plans help the book. ■

Luis Barragán: The Architecture of Light, Color, and Form, by Armando Salas Portugal. New York: Rizzoli, 1992, 168 pages, \$45.

Reviewed by Naomi R. Pollock

Looking at *Luis Barragán: The Architecture of Light, Color, and Form*, one wonders if it is about architecture or photography? This is a difficult question to answer because this book is as much a chronicle of Armando Salas Portugal's photographs as a monograph of the buildings designed by one of Mexico's greatest architects, Pritzker Prize recipient Luis Barragán (1902-1988).

During the 40 years that the two worked together, Barragán's buildings influenced the photographer whose pictures, in turn, stimulated the architect and helped his work become more widely known. Says graphic designer Massimo Vignelli in an opening essay, “The dynamic interrelation between the work of these two great artists is such that one suspects reciprocal inspiration.”

Trained as a civil engineer, Barragán was a self-taught architect. Throughout his career he focused on residential work, starting with single-family houses and moving on to housing complexes built on land purchased with business partners. As both designer and developer, Barragán was able to realize his architecture in full. Though impressed by European buildings—from the Alhambra to International Style monuments—the greatest influences on his work were the ranches, villages, and convents of his native Mexico.

The book examines several of Barragán's most important works—such as El Pedregal, a residential development on 865 acres of desert land, his own home built in Mexico City in 1947, and one of his most spectacular projects, the San Cristobal Stable, Pools and House, completed in 1968.

In addition to the three projects described above, all of the architect's major commissions are well documented. Text and drawings provide detailed information, but it is Salas Portugal's photographs that dazzle the eye and preserve Barragán's vision in all its glory. ■

Briefly Noted

Alvaro Siza: Works & Projects 1954-1992, edited by José Paulo dos Santos. Barcelona: Gustavo Gili, 1994, 312 pages, \$65 (paper).

Winner of the 1992 Pritzker Prize and a favorite of a small band of architectural cognoscenti, Portuguese architect Alvaro Siza has not been widely published in America. This beautifully produced monograph changes all that and serves as an excellent introduction to Siza's deceptively simple, poetic architecture that includes housing projects, public swimming pools, schools, and private residences.

Architects on Architecture: New Directions in America, by Paul Heyer. New York: Van Nostrand Reinhold, 1993, 416 pages, \$30 (paper).

A reprint of the classic 1966 survey of American architects, this book provides a fascinating snapshot of Modernism at the peak of its cockiness, right before Venturi and company started yanking at its foundations.

Viva Las Vegas: After-Hours Architecture, by Alan Hess. San Francisco: Chronicle Books, 1993, 128 pages, \$19 (paper).

This lively and colorful book picks up where Venturi, Scott Brown, and Izenour's groundbreaking *Learning from Las Vegas* left off, and indeed begins with a short foreword by the three Philadelphia architects. Illustrated with vintage postcards and photographs, as well as new images, the book works as both a history and a thoughtful analysis of the Vegas phenomenon.

Pump and Circumstance: Glory Days of the Gas Station, by John Margolies. Boston: Little, Brown, 1993, 130 pages, \$30. Chock-full of snappy old photographs, picture postcards, and oil company propaganda—as well as Margolies's own color photos—this entertaining work is the author's latest ode to popular American culture. The book includes old road maps, oil company signs, drawings of old gas pumps, and a breezy text loaded with arcane facts.

Architecture Shapes, Architecture Counts, Architecture Colors, by Michael J. Crosbie and Steve Rosenthal. Washington, D.C.: Preservation Press, 1993, 18 pages, \$7 each.

This delightful set of three 6-in. by 6-in. books gives young people from the age of six or seven up a sense for shapes, numbers, and colors. Instead of associating these concepts with rather cute objects such as oranges and lilacs, the authors connect them with elements of architecture including domes, windows, porches, brick walls, and colonnades. The great merit of the set is its simplicity and its impact as a teaching tool, supported by Rosenthal's photographs and Viviane Silverman's design. S. A. K.

Color in the Office: Design Trends from 1950-1990 and Beyond, by Sara O. Marberry. New York: Van Nostrand Reinhold, 1994, 125 pages, \$50.

A handsomely produced guide to the changing ways of office design, this book looks at furniture and technology, as well as color.

Drawn for ARCHITECTURAL RECORD by Sidney Harris



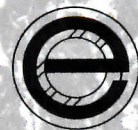
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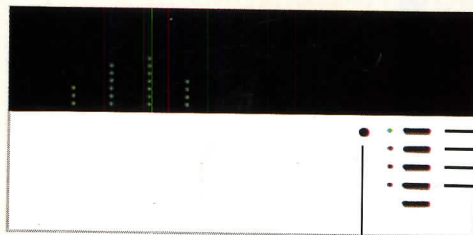
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- Master bedrooms, home theaters, great rooms and commercial and retail applications
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Gangs	2	3	4	4
Total Watts/VA	1200	1500	2000	2000

- 2000W power booster to expand each zone capacity

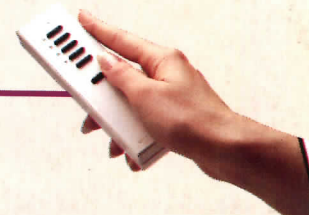
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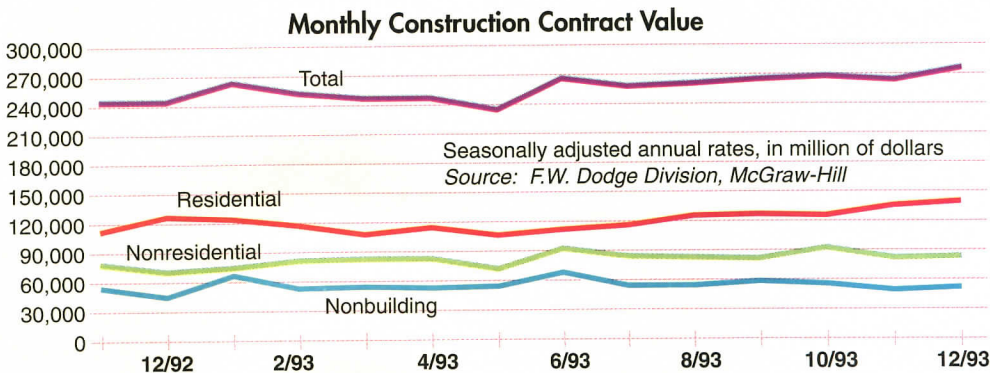
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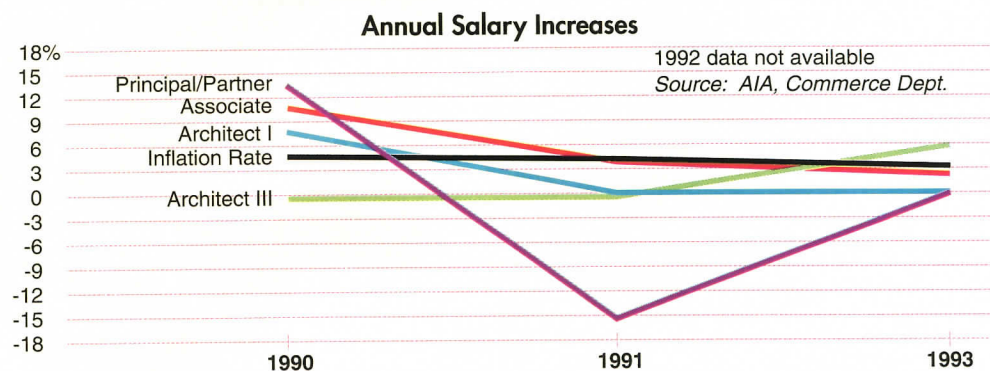
1993 upturn led by houses

For 1993, F. W. Dodge shows essentially flat activity in non-residential construction contracts (though a small uptick late in the year in commercial work is especially welcome) and non-building (which includes highways and other public works). Led by single-family housing, 1993 building volume was up some 5 percent over 1992, rising from a total of \$197 billion to \$206 billion. The chart total includes non-building construction, which was virtually unchanged—rising \$1 billion. ■



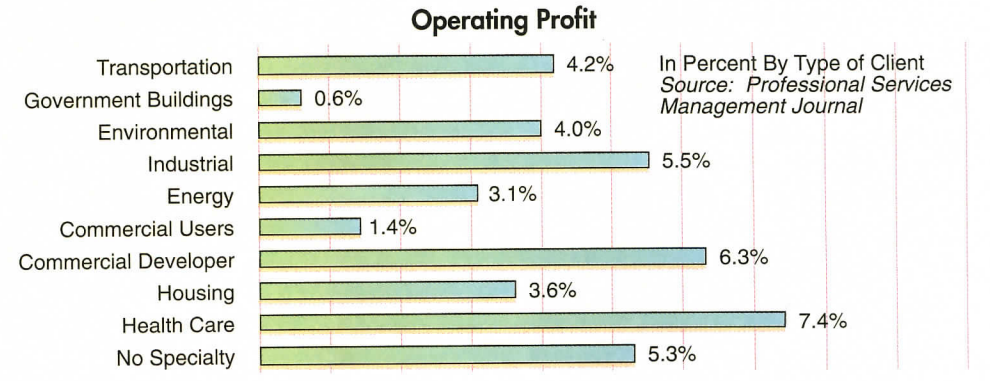
Salaries versus inflation

Salary surveys typically measure year-to-year changes in compensation, and usually show at least modest gains. When charted as percent increases compared to inflation, however, the grim toll of the construction recession becomes evident. Even as inflation moderated, most architects fell behind. Principals saw the largest drops, but architects with the least experience (I and III) had lower gains in the late 1980s. For more on salaries, see pages 32-35. ■



Looking to health-care

Clearly, those architectural firms specializing in health-care make the most profit. Those that could find a commercial developer, given the lean times in that field, did next best. What of experts who say specialization pays? Firms reporting “no specialty” did better than six out of nine categories of specialist firms. Environmental and industrial work—fields dominated by engineers—are in the middle. Woe to the firms seeking government work: they might have done better with a savings bond. ■



The Profession This Month

To specialize or to generalize? Experts in two stories this month differ.

- **It's Still a Design Firm—Or Is It?** As clients restructure, so do architects. Firms offering non-traditional services may lead in reinventing the profession. Their message: offer more. *Page 28*
- **What's an Architect Worth?** Three experts assess what it would take to improve staff compensation. Their message: specialize. *Page 32*

- **Freeing the Information Logjam:** Dennis Neeley, a long-term participant in the computerization of design, offers a vision of a bright, electronic future. RECORD plays devil's advocate. *Page 36*
- **Rx 4 RFPS:** Reviews of two packages that streamline proposal writing. *Page 38*
- **Products:** Lighting designed by the Master, Frank Lloyd Wright. *Page 40*

New Alliance Will Push Research

A new industry alliance hopes to speed innovative technologies to market housing. IBACOS, which stands for Integrated Building and Construction Solutions, is a consortium of Ryland Homes of Columbia, Md.; GE Plastics, Pittsfield, Mass.; MASCO Corporation of Detroit; U. S. Gypsum, Chicago; and architect Burt Hill Kosar Rittelmann Associates of Pittsburgh.

Besides examining the forces changing the industry, IBACOS will also research new building technologies. At its Innovation Center in Pittsburgh, IBACOS has constructed full-sized sections of a prototype house shell, kitchen, and bath. One new technology is a roof system developed at MIT that replaces conventional trusses with a combined rafter-and-sheathing system made of engineered wood (below).

Other technologies on IBACOS's agenda include using recycled computer cases for roofing shingles and combining computers with virtual reality to design and speed up the construction process for new homes. Under a grant from the Department of Energy, IBACOS has built two full-sized houses in a Pittsburgh suburb—one traditional, the other incorporating innovations—for comparison. They should be ready for tours this spring. By 1995, IBACOS plans to build a community of homes using these new technologies. *Randy Quinn, Pittsburgh*



IBACOS's roof system mockup

When AIDS Comes to the Office

By Peter D. Slatin

With AIDS, it's easy to think "it won't happen here," and "we'll handle it just like any other personnel problem,"—until AIDS strikes the office and brings its uniquely tragic fears, emotions, and consequences. Unfortunately, just as it is costlier to install a security system after a burglary, formulating a policy for dealing with employees who have contracted the HIV virus that causes AIDS will cost more in both financial and emotional terms if it is done only after the situation arises.

AIDS remains several steps ahead of efforts to come to grips with it. The numbers themselves quickly put an end to presumptions about where or whom the disease can strike: As of last September, according to the Gay Men's Health Crisis, a non-profit AIDS advocacy group, 340,000 cases of AIDS had been reported nationwide; 205,000 had died of the disease. The fastest-rising category: heterosexual women. Teenagers comprise 16 percent of those infected with the HIV virus. In 26 cities across the country, AIDS had become the leading cause of death for men between the ages of 25 and 44.

Compassion and running a business

The fears and questions are more immediate when AIDS comes to the office. Since most people get AIDS in the prime of life, the sense of rage and the recognition of promise unfulfilled can be debilitating. The reaction of colleagues may range from compassion to scorn. The enormity of the issues calls for a before-the-fact policy. "The challenge to firms is to strike a balance between humanitarian outreach and running a business," says Cheri Van Over, office administrator at Butler Rogers Baskett (BRB) and past president of the New York City chapter of the Society of Architectural Administrators. That means giving attention to a blend of issues, from health-care benefits and client needs to emotional support for an affected employee as well as for the rest of the staff.

Healthcare and disability benefits

Most firms don't need a special policy on AIDS in terms of insurance or disability. A person with AIDS may affect health-coverage costs, depending on the company. Some states allow companies to "punish" policy-

holders by dropping them when AIDS (or other high-cost) claims are made. AIDS is covered under the Americans with Disabilities Act. "Our firm manual was in line with the ADA, so our attorney didn't feel a separate AIDS statement was necessary," says Van Over. "Any disability benefit must be applied across-the-board to all employees." ADA mandates that firms make "reasonable accommodation" for disabled persons.

Coping with the emotional side

Mark Prendergast, marketing director for A/E Einhorn Yaffe Prescott, and founder of Build a Belief, an AIDS advocacy group working in the design industry, says only 20 percent of businesses nationwide have any kind of policy on HIV and AIDS. Increasingly, though, businesses seek guidance to deal with the fear and anxiety AIDS holds. Some have used counseling, but this may be too costly for most design firms. Butler Rogers Baskett held a daylong seminar with Laura Long, a specialist with the Employer Consulting Service of Gay Men's Health Crisis. (Many major cities have AIDS organizations that offer similar services—often led by volunteers—which can cost little.)

Along with providing background on AIDS transmission and treatment, Long discussed basic situations that arise with HIV-positive employees:

- *Disclosure and confidentiality.* If an infected employee tells a manager but asks for confidentiality, managers are legally required to respect the request. "The issue of disclosure versus non-disclosure gets very difficult," says Long. "You can't keep the fact that someone's not at work confidential, or that they've suffered significant weight loss."

Advice from experts like Long can help managers balance the rights of the person with AIDS with the needs of employees and clients. On the other hand, no one should assume that a person who has HIV will soon sicken. Many show no AIDS symptoms for years. And people diagnosed with AIDS are living longer, and staying productive longer.

- *Assigning workloads and informing clients.* Clients have no legal (or other) right to know if someone on staff has AIDS; they just need their job done as expected. If they ask that a person who has AIDS be written

A Look Ahead at '94 Federal Initiatives

into their contract, Long suggests that you say that you will include that person as part of a team. (You'll avoid disputes if the person can't complete the project.)

• *Job performance and progressive illness.* Eventually, says Long, "people with AIDS can't do their job; it's not a static condition. At some point a person is really no longer a 'qualified individual' in legal terms. Most managers have a difficult time telling someone they have to go on disability." This is one of the conversations managers need to prepare for, she says.

• *Overreacting.* "Most firms and people are genuinely compassionate," Long says. "Problems arise when people are overly compassionate. That's just as discriminatory as not being compassionate." Drawing that line is in large measure a subjective judgment, but it's important for managers to know that the line must be drawn.

Charles Baskett, a partner in BRB, is glad he brought Long in: "It was important for the understanding of the partners and the staff, and it tells a story of how we feel," says Baskett. "You have to know what you're talking about as an employer. We're concerned, confused, and sometimes we simply don't know what to do. The big answer that I have now is knowing where to seek help."

One solace is volunteering. In New York, Build a Belief rallied 250 people from design firms, organizations, and schools, and raised more than \$33,000 in last year's AIDS walk. Underscoring the impact of AIDS on the design professions, the group was the third largest in the march. *Peter D. Slatin*

Further information

- Business Responds to AIDS/Centers for Disease Control, BRTA Manager's Kit, \$25. CDC National AIDS Clearinghouse, BRTA Resource Service, P. O. Box 6002, Rockville, Md. 20849-5231
- National Leadership Coalition on AIDS. Workplace Resource Center, 1730 M Street, Suite 905, Washington, D. C. 20036 (202/429-0930).
- American Red Cross Workplace HIV/AIDS program. Contact local chapters or the ARC's Office of HIV/AIDS Education, 1709 New York Avenue, N. W., Washington, D. C. 20006 (202/434-4074). ■

Deficit-reduction commitments by Congress and the President are reflected in the Administration's FY 1995 budget proposal, which means most of what is new is tinkering around the edges. A dramatic addition is \$8.6 billion proposed for aid to victims of the Los Angeles earthquake. If the full amount is approved it would be a disaster-aid record.

Housing and urban development

HUD has released \$755.1 million to 26 public housing authorities to rehabilitate the most distressed projects—an unusually large amount. Long-criticized design standards have been relaxed. This may permit a better level of design than has been seen in years. [For more on housing policy, see RECORD, January 1994, pages 26-29]. The FY 1995 word, however, is "cut": new public housing is slashed by 75 percent, public-housing modernization by 18 percent, and new elderly public housing by 66 percent.

Transportation

Transportation appropriations in 1993 fell short of authorization. Still, transit capital funding rose a whopping 21 percent. Likely beneficiaries: the Bay Area, Washington, New York. The tilt to transit may increase as clean-air rules put non-complying urban areas in danger of losing highway funds. And the new budget proposes a 69 percent increase in capital grants to transit systems. Congress has failed to approve funding of

\$1.7 billion in airport grants, but local authorities are drawing more from passenger facilities charges (PFCs).

Health care

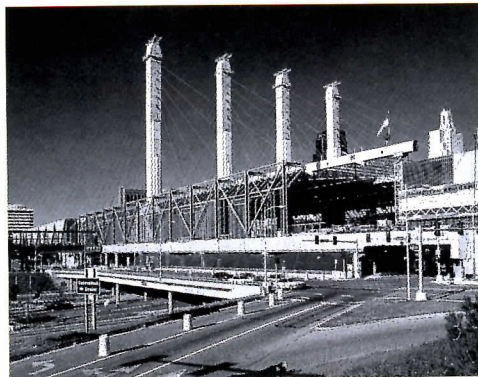
Some expected design and construction in health care to go on hold while details of the President's health plan are reworked in Congress. The consensus of experts, however, is that health-care spending will climb, primarily because the trend toward more ambulatory care and fewer hospital beds will continue no matter what form health-care legislation ultimately takes. If the plan serves those currently underserved, new facilities will be needed, which brightens the outlook for the next few years.

Other initiatives

With 130 military facilities scheduled for closure, the transfer of lands to local government may offer important local design and development opportunities [RECORD, October 1993, pages 96-107], though the AIA is concerned over lack of a defined planning process. Budget winners in FY 1995 include the National Institute of Standards and Technology and prison construction (assuming likely passage of a crime bill). With much GSA work still under review by budget cutters, courthouse and office-building construction programs may be compromised. *Lynn Nesmith and James S. Russell*

Kansas City

Cable Staying A Convention Center



The only way the Bartle Hall Convention Center could readily expand was over a freeway and flanking access ramps. A/E HNTB designed four pylons that rise 280 feet from a reconfigured median and suspend the entire 200,000-sq-ft addition through cable stays attached to 3-ft by 5-ft roof-stiffening box girders. A steel box-girder system at 30 ft centers supports the floor's 300-lb live loads. Mechanical systems are accommodated in an interstitial floor below the main level. (The photo was taken before enclosure last summer.) *J. S. R.*

It's Still a Design Firm—Or Is It?

By Norman Kaderlan

It was a dream assignment—the creation of five new theme parks, each of which will enable visitors to experience the earth as it was during the time of the dinosaurs. Richard Buday, partner of Archimage in Houston, Texas, devised the concept, designed the parks, and supervised their construction. But rather than going to the parks, visitors to 3D Dinosaur Adventure will experience them on CD-ROM disks.

After practicing architecture for 30 years, Robert Odermatt became a design and development consultant. As owner and sole employee of The Odermatt Group in Orinda, Calif., he assists corporations and institutions in determining the best use for their land and facilities.

Glen Garrison targets other architects for his “integrated architectural management”

Norman Kaderlan, Ph.D., is president of the Kaderlan Group, a management consultant firm based in Los Angeles that specializes in design practices.

consulting services. Drawing on 20 years of experience as a principal and project manager with major New York City architectural firms, he helps small- and medium-sized practices improve their design and production process.

Buday, Odermatt, and Garrison are among a growing number of architects who are pushing out the traditional envelope of architectural services—or even abandoning such services altogether. Their common conviction is that the process that is central to architecture—the design process—can be applied to a much larger set of problems and concerns. “We have expanded our definition to the extent that building design is only one subset of architecture,” says Buday.

Another common thread, however, is the extent to which the shrinkage in the market for traditional services drove these principals to try something new. While some have concluded that the traditional market will not return to its former size, others see the pace and scope of business change as an opportunity. By reinventing themselves,

they may be leading the way to a reinvention of the entire profession.

Designing virtual worlds

A five-person firm, Archimage did not set out to do computer imagery. Initially, it provided architectural renderings and animations for clients as an outgrowth of its CAD-based, building-design practice. Film producers and directors and corporate communications specialists began expressing interest in the firm’s electronic-imaging abilities. As California’s construction recession dragged on, Archimage saw a marketing opportunity, and in 1991 decided to pursue computer imagery as a strategic objective.

The decision paid off. Computer imaging now accounts for 80 percent of Archimage’s annual income. The principal’s architectural sensibilities and skills are highly valued. “The fact that we are architects and can create spaces and environments has gotten us jobs in preference to computer-animation firms,” Buday asserts. Archimage has done a fundraising video for a new University of Texas engineering center, an animated “fly

From Soup to Nuts: The Smith Group

Smith Hinchman & Grylls Associates, Inc.

Architecture, Engineering, Planning, Detroit, Mich. (Offices in Phoenix; Washington; and Ann Arbor, Mich.)

- Traditional Services:**
- Schematic Design
 - Design Development
 - Construction Documents
 - Bidding and Award
 - Administrative Supervision
 - Field Inspection

- Other Services:**
- Air and Water Quality Control Engineering
 - Airport Planning and Design

- Appraisals from Building Plans
- Communication Systems Engineering
- Building Systems Evaluations
- Computer Graphics and Design
- Construction Management
- Conveying Systems Engineering
- Cost Estimating
- CPM-PERT Project Control
- Drainage and Hydrology Engineering
- Economic and Feasibility Studies
- Energy Audits
- Energy Conservation Studies
- Engineering Consultation and Special Investigations

- Environmental Assessments
- Environmental Impact Statements
- Facility Economics
- Forensic Engineering
- Facilities Programming and Management
- Furnishings Design
- Grant Applications Development
- Graphic Design
- Group Technology
- Industrial Engineering
- Interior Design
- Illumination Design
- Land-Use Studies
- Landscape Architecture and Urban Design
- Life-Cycle Cost Studies
- Marine Engineering
- Manufacturing Studies
- Master Planning

- Materials Handling Systems Design
- Medical Systems Operation Analyses
- Metropolitan Planning
- Operations and Maintenance Manuals
- Pre-Planning Consultation
- Preservation Architecture
- Process Piping Engineering
- Program Management Services
- Real Estate and Financial Consulting Services
- Regional Planning
- Requirement Studies
- Security Planning and Design
- Sewer and Water System Design
- Signage Design

- Site Analysis and Selection
- Site Engineering
- Soils Engineering
- Solar Energy Systems
- Space Planning
- Special Transportation Equipment Design
- Transportation Engineering
- Value Engineering
- Waste Management Studies
- Water Resource Management
- Wetland Delineation

Johnson, Johnson & Roy

Landscape architecture, urban design, civil engineering, environmental services, Ann Arbor, Mich. (Offices in Dallas; Chicago; Madison, Wis.)

- Aquatic Resource Services
- Biological Assessments
- Campus Planning
- Commercial and Office Development
- Community Participation
- Computer-Aided Design and Drafting
- Corridor Analysis
- Downtown Revitalization
- Environmental

Some firms are pushing the boundaries of traditional design services. Others have all but abandoned them. Time will tell whether they're the wave of the future or just making do.

through" of a fairy-tale castle for Walt Disney, and a digital "neighborhood" that Nintendo will use as a video-game backdrop. Being a pioneer in a new field also has allowed Archimage to escape architecture's traditional fee structure, and enter an arena where the market price has yet to be firmly established. Even as costs go down to reflect the economies of PC-based technology, Archimage still earns more per hour than it could receive for traditional services.

An owner's advisor

One of Odermatt's current clients is the government of Greece, for which he is evaluating a group of existing, government-owned resort properties that will be turned over to the private sector. "Design is only one element in the process of getting buildings built," Odermatt asserts. "I'm involved early in the process. By identifying what the client's needs are, I can have more influence on the shape of the physical environment than the building designer." He is helping the government establish the value and state of repair of the properties, and will also prepare a request for proposals.

Odermatt has established a market niche that sets him apart from other design firms. He may assist owners in developing a scope of work, define the consultants that are needed, write an RFP, and assist in evaluating consultant responses. Indeed, he doesn't even call himself an architect because he doesn't want to be stereotyped. "Clients don't think architects help achieve their goals," says Odermatt. He sees himself as more respected and better compensated than he would be as a practicing architect.

An architect's architect

Garrison's extensive design and construction experience gives his firm an edge when design firms seek to improve their procedures. Architecture encompasses much more than design, Garrison feels, giving him the insights needed to compete with non-architect management consultants. "As an architect, clients see me coming from the inside rather than from the outside." Though Garrison refocused his firm to provide these services when the recession hit and the market for traditional design services dried up, he still feels he provides architectural services.

When clients reinvent themselves

The rapid pace of change in business has placed enormous pressures on facilities decision-makers: the universally flexible facility hasn't been invented, and linear design-and-construction processes don't bring new facilities on-line fast enough. Clients often want a single entity to solve a variety of broad needs, which has created opportunities for large practices. Firms such as NBBJ, a 450-person architecture and interiors practice based in Seattle, offer a comprehensive range of "front-end" (prior to design) and post-occupancy services. Gensler and Associates, a multi-office, 650-person firm, now competes with management and real-estate consultants (page 31), and expects staff to develop relevant expertise—from reading business journals to obtaining MBAs.

Though already a diversified practice, Smith, Hinchman & Grylls realigned itself through a 1992 long-range planning effort. The firm concluded that a number of trends pointed to a declining demand for traditional architectural services, at least through the end of

- Assessments
- Environmental Impact Statements
- Flood-Plain Analysis
- Golf-Course Design
- Historic Preservation Planning
- Land-Use Studies
- Marina/Harbor Design
- Master Planning
- Mixed-Use Development
- Natural Features Inventory
- New Town Planning
- Park Planning
- Permitting and Licensing Applications
- Plant Design
- Resort Planning
- Resource Conservation Management
- Road, Highway, and Street Planning
- Rooftop Plaza Design

- Shoreline Protection
- Site Structure Assessment
- Stormwater Management Plans
- Streetscape Development
- Technology Park Planning
- Threatened and Endangered Species Surveys
- Transportation and Pedestrian Studies
- Urban Design
- Utility Investigations
- Water-Quality Protection Plans

- Water Resource Management
- Waterfront Development
- Wetland Delineation/Wetland Mitigation/Wetland Monitoring

Premise Associates, Inc.

Integrated Real Estate Strategies, Detroit, Mich.

- Market Analysis
- Feasibility analysis
- Real Estate Development Strategies
- Facility/Site Location
- Asset Management
- Economic Benefit and Impact Assessment
- Economic Development
- Development Structuring
- Soundness of Loan Portfolios
- Litigation Support

Moyer Associates, Inc.

Criminal Justice Planning and Design, Northbrook, Ill.

Terra Development Corporation, Commercial and Residential development, Detroit, Mich.

Terra Investments, Inc., Commercial owner/manager, Detroit, Mich.

Market conditions prompted Smith, Hinchman & Grylls to examine comprehensively how they could apply the firm's skills as architects to a broader range of client needs in facilities and real estate. According to CEO Arnold Mikon, this permits the firm to offer not only the vast number of services listed, but a strategic approach to renovations, additions, and new buildings.

the century: overcapacity in certain building types or changing modes of operation that allow some businesses to substantially reduce their space needs.

On the other hand, some clients wanted more effective management of their building assets, but lacked the necessary skills. Smith, Hinchman & Grylls began to apply its design ability to this broader range of client needs. The firm is now part of the The Smith Group, a holding company that includes firms providing environmental and land-planning services, economic analysis, and real-estate and development consulting services (previous pages). According to CEO Arnold Mikon, this helps avoid being labeled "just an architect," and gives the firm greater credibility in marketing non-traditional services.

At NBBJ, clients for traditional architectural services pulled the firm into non-traditional areas. "Our more sophisticated clients started asking questions that neither we nor they could answer," says partner David Hoedemaker: deciding whether to build

new buildings or renovate old ones; determining the life cycle cost of various design alternatives; comparing one university's facilities to peer institutions. NBBJ added the research and planning capacity to respond.

For a new eye-care institute at Swedish Hospital in Seattle, the firm is evaluating the kinds of therapeutic and related tasks that could be included in the facility's program, which the firm will then write. NBBJ is examining current practices, workload, and trends in eye care. It will even analyze demographic trends. According to Don Audelman, a consultant who advises Swedish Hospital on its strategic plan, NBBJ was selected because they knew building design, facilities needs, and therapeutic strategies. The fact that NBBJ could develop the program and then design the building was also an important factor in the client's selection. "This isn't something that other, more specialized medical consultants could provide," he says.

Designing solutions to problems

These extended services are well within the purview of the architect, say those who pro-

vide them. "There's a lot more to what clients need than what we have traditionally sold," says Ken Bussard, of RDG Bussard Dikis in Des Moines, Iowa. Bussard recently created Foresight, a network of people and specialized firms that together can provide services ranging from strategic planning to facilities management. "This gives us the opportunity to take the architect's problem-solving methodology into other realms of the building world," he says. Robert Odermatt says that the underlying thought process remains the same—only the medium has changed. "I'm not doing anything different than what other architects do. I've just expanded my frame of reference from the building to the total package."

The realignment of these firms' services may prove merely opportunistic (they'll reverse course when times improve, critics say). Or they could be paving the way for the profession; only time will tell. At any rate, they've defined an alternative to the shrinking role that many see for architects in planning, design, and construction. ■

Reworking the Firm

Glen Garrison, Inc.

Integrated architectural management services, New York City

Management Planning:

- Office Structure and Practice Analysis
- Design and Production Improvement
- Procedures and Standards Handbook Development
- Financial, Fee, and Contract Analysis and Methods
- Office Management Plan Implementation

Project Management:

- RFP Management Plan, Proposal Preparation and Administration
- Special Project Liaison and Coordination for Joint Ventures
- Project Set-Up, Oversight, and Review
- Financial and Feasibility Status Reporting

- Owner/Project Team Project-Management Representation

Training and Instructional Programs:

- Project Management Methods
- Procedures and Standards Implementation
- Financial and Administrative Organization
- TQM Introduction

Quality Improvement Programming (QIP):

- Planning
- Strategy and Mentor Selection
- Implementation Coordination
- Sustaining Activity

Cyberspaces

Archimage

Computer-based design and visualization services, Houston

Architecture and Interiors:

- Architectural Design
- Space Programming and Analysis
- Site and Master Planning
- Feasibility Studies
- Interior Design
- Space Planning
- Lease-Space Documentation
- Furniture Design
- Component Selection
- Exhibit Design

Graphics:

- Graphic Design
- Computer Illustration
- 2D and 3D Digital Animation
- Multimedia Design and Production
- Photorealistic Rendering
- Computer Graphics
- Computer Programming

Computer Imagery Services:

- Animatics
- Broadcast Video
- Corporation Communications
- Direct-Marketing Videos
- Exhibit Design
- Graphic Design
- Medical Illustration
- Packaging Design
- Sales Promotion
- Television Station Identity
- Architectural Modeling
- Business Presentations
- Courtroom Illustrations
- Engineering Visualization
- Focus-Group Research
- Industrial Design
- Multimedia Production
- Photo-Realistic Rendering
- Technical Illustration
- Training

As the scope of business changes, some practices see a chance to reinvent themselves, and redefine conventional design thinking.

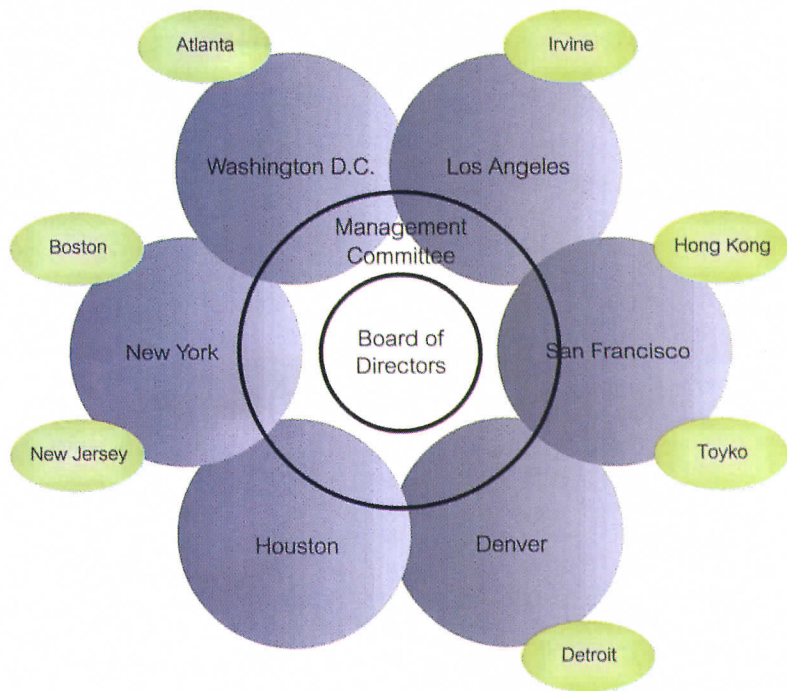
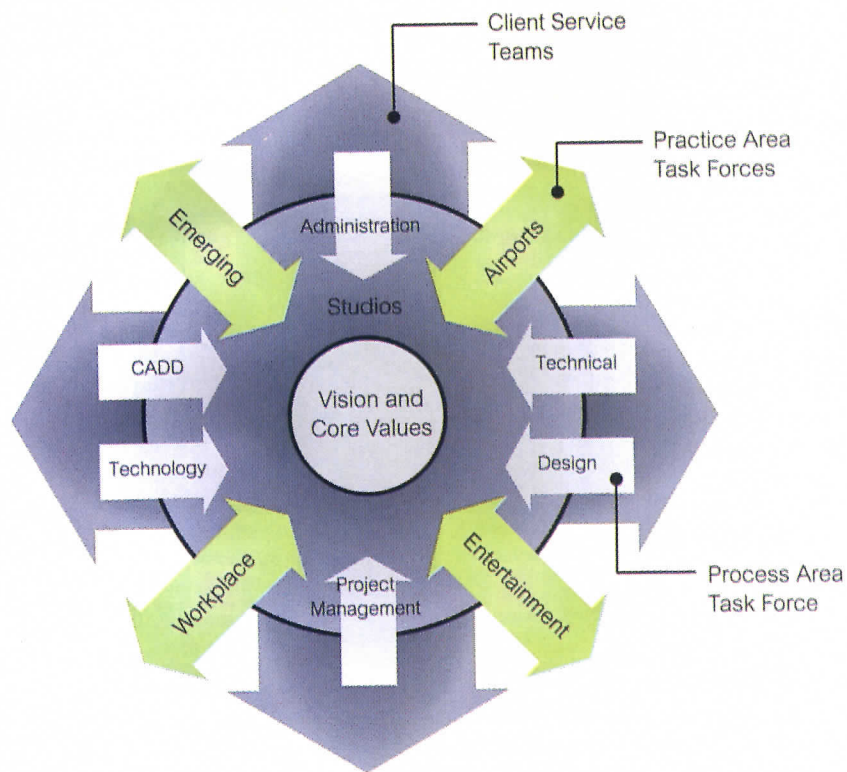
Strategic Design

Once 95 percent of Gensler and Associates' work was traditional architecture and interior design for speculative office buildings; now it's less than 10 percent of the Los Angeles office's work. The firm is reinventing itself from top to bottom. In a few years one might well ask, is this a design firm? According to Ed Friedrichs, managing principal of Gensler's Los Angeles office, only 50 percent of the firm's work will be in traditional architectural services by 1998.

Consistent with the "customer-driven" culture many businesses have adopted, Gensler's new purpose is to provide any facilities-related service clients seek. Before proceeding with renovating their San Francisco headquarters, for example, the McKesson Corporation sought a firm that could act as "a business strategist as well as a designer," as James "Skip" Law, vice president of real estate, put it. The company asked Gensler to study which functions should remain in-house and which could be contracted out; to recommend ways to improve operational productivity, and to quantify the savings from each recommendation—not only in cost per square foot, but in operating costs.

To meet these challenges, Gensler carries projects out using Client Service Teams. Their mission is to enhance the performance of the client's enterprise even if no building commission results. Each office has Practice Area Task Forces that are specifically charged with keeping up on research and ploughing into new work what the firm has learned doing key project types. The Los Angeles office has four (chart top right). Process Area Task Forces also look inward, attempting to improve office processes.

Clients see traditional architectural services as a commodity, and fees are tied to market rates, asserts Ed Friedrichs. The hourly rate Gensler charges for non-traditional services are one and one half to twice their normal billing rate. Clients perceive a payback with non-traditional services akin to that of accountants and attorneys, and are willing to pay similar rates. *N. K.*



What's an Architect Worth?

This overview of current pay issues puts our experts' views in context.

By Katherine Kai-sun Chia

In the extended construction slump, the "market value" of an employee has had less to do with education, experience, and responsibility than with supply and demand. The latest AIA firm survey (below) shows almost no real salary movement since 1988. For both staff and principals, knowing the going rate is more important than ever in today's cut-throat fee environment. Salary surveys offer benchmarks, but caveats apply. In architecture, there is a very large number of very small firms, which often pay much less than average. Compensation can be much higher than average in certain cities and regions, and in firms requiring specialized skills. (Page 101 lists sources for the AIA and other compensation surveys.)

A return to bonuses?

Staff has come to expect bonuses as partial compensation for the long hours often required as deadlines near. Even steadily employed staff have seen bonuses disappear and raises deferred. Most salary surveys don't measure bonuses, but a 1993 survey of California architectural firms by Management Design found that approximately 30 percent of principals, 32 percent of management, and 43 percent of staff received bonuses between June 1992 and June 1993. The median bonus distribution ranged from 15 percent of base pay for principals to four percent for staff.

To keep staff motivated in an uncertain economy, employers in many industries are looking at alternative forms of compensation, including individual and team bonuses, compensatory time off, and profit-sharing plans. In California, Management Design found that 44 percent of firms surveyed have some form of performance-based additional compensation. Of these, 75 percent provide annual incentive or bonus pay, 20 percent offered cash profit sharing. A few

Katherine Kai-sun Chia writes on architecture and practices with the Maya Lin Studio.

offered commissions, team incentives, spot awards, or technical-achievement awards. Such incentive programs need to be spelled out. One staff member of Portland, Ore.-based Zimmer Gunsul Frasca said the firm's profit-sharing plan works well "because the percentages are explicitly outlined for us. There's no second guessing because the firm is very good about keeping us informed about our profit margin." According to ZGF managing partner Bob Packard, "Our profit-sharing/bonus plan includes everyone from the receptionists to the partners." The firm also awards discretionary additional bonuses to high-performing staff.

Small firms and job-changers have been affected by the rapidly rising cost of an important benefit, health insurance. For now, many firms have changed to lower-cost plans that offer fewer services, and higher co-payments and deductibles. Firms of five or fewer people often have trouble finding coverage, and it frequently costs much more than for larger groups.

Hourly versus salaried

Rather than using bonuses or profit sharing, Management Design's George Schrohe says 60 percent of reporting firms provide compensatory time off or overtime pay to salaried employees. (Compensatory time off is usually calculated by dividing the number of overtime hours by a factor to determine the additional paid days off.)

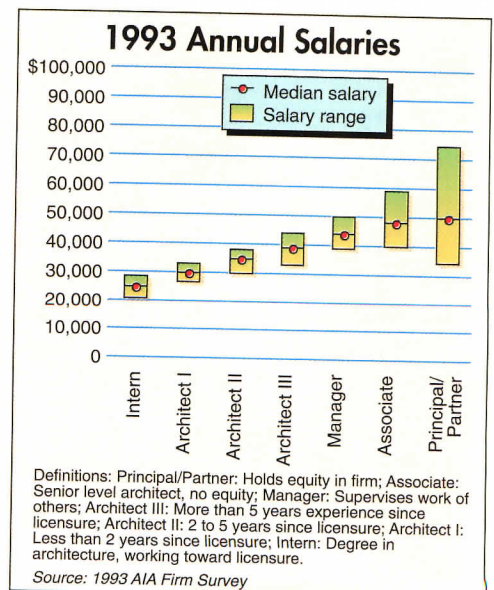
Comp time can get sticky in view of a Federal crackdown on abuse of "exempt" (certain categories of salaried) employees. Hourly employees, according to the federal Fair Labor Standards Act (FLSA) must be paid at least time-and-one-half for those hours worked over 40 in a week. One firm that docked pay for salaried employees who took partial days off, had, for FLSA purposes, transformed them to hourly. The firm was required to make restitution and pay a stiff fine. Says Schrohe, "While most staff, other than on-call employees, are on 'salary' for ease of payroll purposes, whether or not one is 'hourly' for overtime purposes is dependent on state and federal rules for classifying individuals as professional, management, and administrative exempt." (The Employment Standards Administration of

the U. S. Department of Labor, or state labor departments can answer questions on exempt status.)

An end to compensation abuses?

The downturn has increased architects' traditionally high job mobility, and many architects interviewed said they were forced to accept new positions at a lower salary. In other firms, though, management-level executives have accepted pay cuts in order to maintain staff salaries. Other practices are abusive. According to one disgruntled architect, a four-day work week meant, "our pay checks have been cut by 20 percent, but the work load and expectations haven't changed. 'Reduced hours' are just a myth."

Some firms maintain a revolving-door policy for entry level staff to avoid paying health benefits: they hire employees full-time with a three-month health-benefits waiting period, then fire them four to six months later (usually the day after construction documents have been completed for a particular project). Soon after, new employees are hired for similar positions. (Some such practices may draw the interest of the IRS as well as labor departments.) Victims of compensation abuse can attempt to censure AIA members under the Institute's code of ethics. More often, report interviewees, word gets around and job seekers avoid firms with bad reputations. ■



RECORD invited three experts to compare architects' compensation to that of other professionals with similar education and responsibility, then to suggest what architects should earn.

Value, Not Hours

By Weld Cox. Cox is a principal of The Cox Group, Inc., management consultants to architects and other design firms.

In the upper quartile of the salary range, architects are very well compensated for what they do, meaning that pay is adequate for the societal value and risk. Such firms include high-profile architects with value to sell and high-quality service and larger, (50-person-and-up), better-managed firms. Our executive-search people are filling slots for a director of health-care planning at \$90,000 plus. A director of design may come in at over \$100,000. These aren't average salaries, but we get requests regularly for people at these levels from firms that have learned the value of high capability. Obviously, not all architects do well; some don't negotiate an adequate fee and some spend all their fees doing the work.

A recent story in the *New York Times* reported an average salary for people with two years of graduate education at \$22 an hour, which is about \$40,000 annually. Architects are right in that range, which suggests that they are not particularly underpaid. In terms of the risks and responsibilities architects assume, however, they should make a lot more money.

Benefits

Compared to other professionals, architects typically have pretty good *health plans*, covering at least the employee. About half cover the employee's family.

Typically, junior people receive two weeks *vacation*; experienced staff and senior people can usually take three and four weeks. This is fairly typical of the professional world.

Among architects, group *life insurance* is very common, but not necessarily universal. Some professions are more generous, some less.

One of the major shortfalls of the profession is the lack of *pension plans*. Of comparable professionals, architects in private practice have probably been least committed to pen-

sions in any form. Firms have instead usually offered profit sharing.

Tax changes in the 1980s discriminate against firms that have many younger employees and offer pension plans, so many firms don't offer them. The other problem with pensions is that employee mobility is much higher in architectural firms than in the larger business world. Very few staff turn out to be "keepers" who can collect their pension. Some other professions have developed pension plans through professional organizations that move with the employee.

Why don't architects earn more?

Many architects have low self-worth, and

Architects work harder and longer hours for less reward than any other profession. This is partly self-imposed, however. There's an architectural work ethic that comes out of the studio charette process.

don't stand up for themselves. The firms that pay poorly are typically high-design architects where job applicants are beating down the door. Some see the office as a sort of graduate atelier—they're paying a stipend, not a salary. If you want a living wage, you shouldn't work for them. We've consulted with many of the star architecture firms over the years, and I can assure you that the number of firms that exploit labor is small.

Long hours

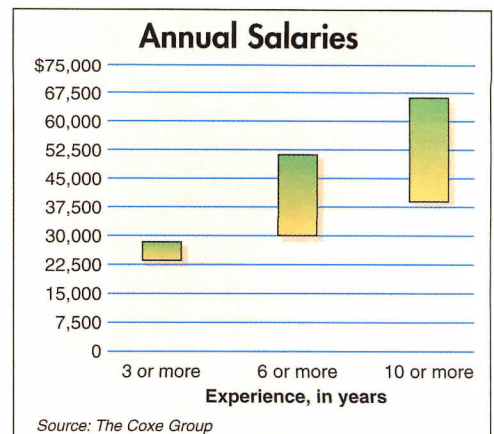
The hours architects work is another story. Architects work harder and longer hours for less reward than any other profession. This is to some extent self-imposed, however. There's an architectural work ethic that comes out of the studio charette process, so there is a great deal of work that is fundamentally volunteered. Firms are used to taking advantage of this.

I don't know of a firm that requires charettes without paying people bonuses or

additional pay at salary rates. That's at least partial compensation. Junior people can in some cases say they were forced to put in excessive hours, but the minute they work up to associate level, they expect the same of their successors. I don't pretend to deny that work hours are exploited; I just don't think this represents the mainstream, as oral tradition would have it.

Architecture as a creative endeavor is so qualitative and subjective that it's easy to put in 100 hours you didn't have to. If you have time, you come up with 14 schemes. Engineering is more analytical and quantitative, so you can know better what you get for an hour. For lawyers, billing every hour is ingrained. ■

Architects' median salaries at entry level are well below comparable fields (in the 20s and low 30s at five years). With more experience, the spread widens, based on capability. Associates get moved up to \$40,000 to \$50,000. Top firms will bump salaries up to the 70s, including bonuses, to keep valued staff. Figures used reflect a region in good economic shape (Washington State). W. C.



Clients Set Value

By Frederick D. White, Senior Vice President of Mark Zweig & Associates, Natick, Mass. Zweig is a management consultant and publisher of books and periodicals for design firms. Assistance by Jerry Guerra.

Architects, at least in the first 10 years of their careers, earn a lot less than engineers and attorneys. Compensation statistics in other professions are reported in different ways, however, making comparisons hard.

Median earnings (including bonuses and profit sharing) of an "Architect I" (less than two years experience since licensure) was \$30,000, according to 1993 AIA firm data. An "Architect II," who is licensed, with six to eight years' experience, earns a median

nearly \$96,000. Compare this to the median salary plus bonus for architectural firm principals, which is \$100,000, according to Mark Zweig & Associates' 1993 Principals' Survey.

Beating the averages

Some architecture firms can offer compensation at much higher than AIA survey averages. Pay is higher in some regions; larger firms usually pay better; and firms deriving significant income from "hot" specialties, such as research and development, pay better. A/E firms often offer better compensation than firms that provide only architectural-design services.

Though architects earn less than other professionals, one can argue that they're paid adequately for what they do. The salaries of

architects in private practice are set by their employers, who in turn are paid through fees owners find acceptable. Because architects generally budget their fees by estimating hourly labor rates, clients are telling them exactly what their time is worth.

Boosting fees is a must

The real question is: why are architects' fees so low? Some answers:

- Architects seek variety in their work; clients will pay more for specialized experience.
- Architects' aversion to risk has allowed other professionals to take away tasks that clients value highly.
- Architects don't pay enough attention to the business side of the business.
- Architects are *willing* to work for low fees because they like what they do.

Some practices offer superior compensation. Among them, larger firms and A/Es. Smaller offices that pay better usually derive significant income from "hot" specialties, such as research and development.

income of \$35,000. According to the Engineering Workforce Commission's 1993 report to the American Association of Engineering Societies, licensed engineers with masters degrees working in consulting firms earned salaries ranging from \$39,800 to \$46,200. The Bureau of Labor Statistics breaks down attorney compensation based on responsibility and degree of difficulty. An approximate comparison suggests the attorney equivalent of the Architect I earns \$45,000; the equivalent of the Architect II earns on average over \$79,000.

The AIA figures show that an associate—a senior-management architect who does not hold equity in the firm—earns a median income of \$45,000. "Supervisory" engineers, with at least eight years experience, earn more than \$59,000. A "high responsibility" lawyer (not a principal) earns on average

Scales (right) represent what national average compensation should be for three job categories. The higher figure in each scale is for a "hot" specialty. The lower figure is for the generalist architect working on a variety of project types—F. W.

Benefits

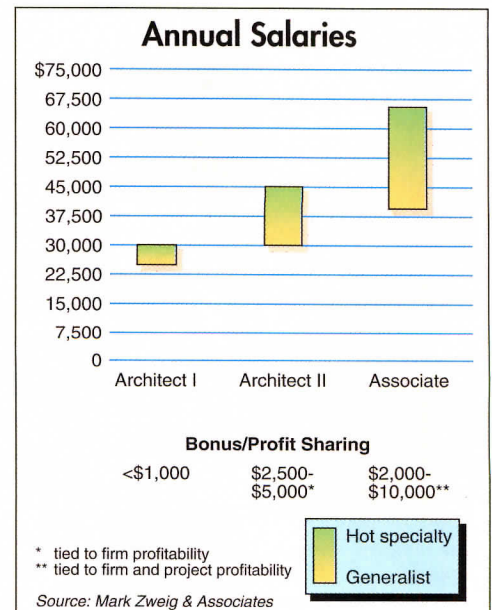
General: Eight paid holidays, two weeks vacation (Intern, Architect II); three weeks vacation (Associate).

Health Insurance: Company-paid for employee (all staff), plus a portion paid for dependents, plus a dental plan (all staff in large firms).

Other Insurance: A minimal life-insurance plan (all staff); long-term disability (Associate).

Retirement: A 401k plan (for all staff in large firm).

The chart below shows where compensation ought to be. Though nearly half of AIA firms pay overtime to salaried staff, we show instead recommended discretionary or performance-based bonuses. Given how hard they work, the liabilities they assume, and the level of responsibility they have, architects have a right to expect to earn more. However, firms will have to start by demanding and justifying high fees from their clients—and refusing to work for less. ■



Poverty Profession?

By Fred Stitt. Stitt is director of the San Francisco Institute of Architecture, and publishes *Guidelines practice aids*.

There are wide differences in pay among architectural employees, and the low end is very low indeed. Some entry-level employees are paid nothing or minimum wage in exchange for training or the privilege of working at well-known, high-style offices. Others who have made a point of understanding how offices work, and have prepared themselves to be productive, may start working at \$13 per hour.

Office size is the main determinant of pay scales. According to *Guidelines* fee and pay surveys, AIA and other professional firm

There are many in the profession who consider material concerns to be beneath them. The "dribble down" of that attitude, held by far too many, is that making money bespeaks greed and is somehow immoral.

surveys, and Bureau of Labor Statistics data, those fortunate enough to find paying jobs in the last year or two found average entry-level wages of eight to nine dollars per hour in small offices (about \$18,000 annually), up to \$12 to \$13 (about \$27,000) in the largest firms. By comparison, an entry level Justice Department attorney will earn \$25,000. Recent architecture graduates are notoriously underprepared for productive work.

Pay is 20- to 40-percent higher in large firms for the same job categories. And there are more benefits, such as health insurance, and profit sharing or bonuses. The small, two- to four-person firms pay the least because these practices traditionally take on the most marginal clients and are the least well-managed. Many owners of such firms only survive because of outside income or sup-

port from a spouse. Consulting engineers, landscape architects, interior designers, and other consultants who run smaller offices earn incomes that are very similar to architects'. The exception is engineers in larger practices, who earn about 20 percent more than comparably experienced architects.

Some professionals' pay is overstated

Everyone hears about new law-school graduates landing \$80,000 jobs. In reality, most attorneys have small practices and take home about \$60,000 to \$70,000—about the same as the median incomes of architect-owners of small firms with five to nine employees. Lawyers in private practice at the highest levels of experience earn \$92,000 to \$116,000 respectively, comparable to financially successful architects. Dentists do very well at \$130,000 net pretax personal in-

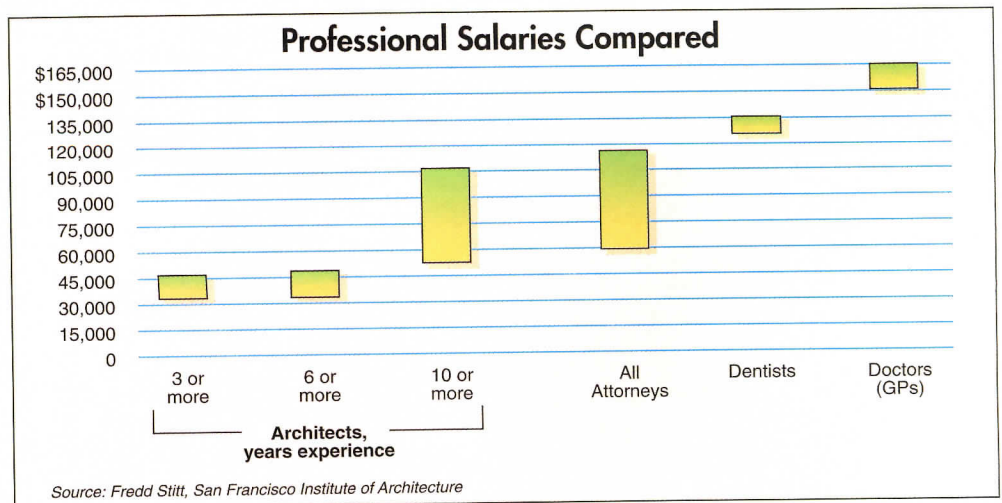
come. Income is high relative to the education required. Their careers are a good deal financially, but prestige and self-image are surprisingly low. Pre-tax personal income for doctors (general practitioner) has averaged between \$150,000 to \$165,000 annually for the past few years. It's the specialists—cardiologists, anesthesiologists—who earn the big bucks you hear about. And they expect to put in longer hours for less money if the Clinton health program passes.

Building income

The figures make it clear what design professionals should do to increase their personal incomes. If you want to reach the \$75,000-to-\$85,000 level, you have to run an extremely efficient small firm or become owner or partner in a well-managed office employing ten or so people. If you want to earn more, get into a larger firm and become a partner. If you don't want to do those things, plan on the simple life.

Too many employees consider low pay the price you pay to be an architect, an attitude often reinforced by educators. There are many in the profession who consider material concerns to be beneath them. Their opinion is that those who actually need to live off their income . . . well, they just don't "belong" in this most gentlemanly of professions. When they then claim to be poorly compensated for what they do, one would have to respond bluntly, "I'm not surprised." ■

National pay averages for architects are skewed downward by the numerical dominance of small, low-paying offices. —F. S.



Freeing the Information Logjam

Dennis Neeley: We are now deeply into the electronic-information era. Plunging costs will make enormously powerful electronic tools much more accessible. Not only will this dramatically enhance the delivery of services, it will redefine what "architect" means. Unlike other transformations in the field (professionalization at the end of the 19th century, or the increasing specialization of practice after World War II), the changes being wrought by electronic information are moving at blinding speed. Practitioners must embrace these tools, or others will be doing their job—by the year 2000.

Design is information

The long-heralded electronic-information revolution actually began in 1985 when inexpensive, computer-aided design software and hardware became sophisticated enough for the mass market of architects, engineers, contractors, and owners. Though the revolution in the design field is based on CAD, it's not limited to the automation of

Dennis Neeley is vice president of Industry Marketing for Softdesk ASG and wrote CAD and the Practice of Architecture.

For a new central library at the University of British Columbia, in Vancouver, Aitken Wreglesworth Associates (collaborating with Arthur Erickson) used Architron to take a design sketch (1) and turn it into a 3D model (2), within which individual elements are studied (3). Highly rendered versions help confirm materials choices and are used for presentations. From this database, the firm made 2D CAD working drawings (4).

drawing. CAD needs to be thought of as the core of a tool for the collection, analysis, and management of information.

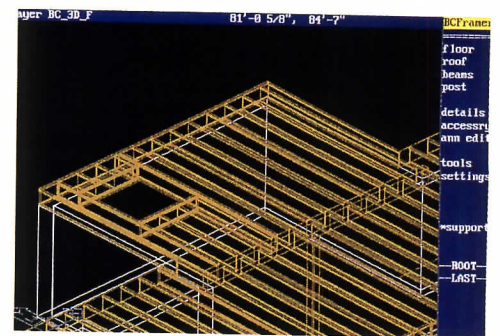
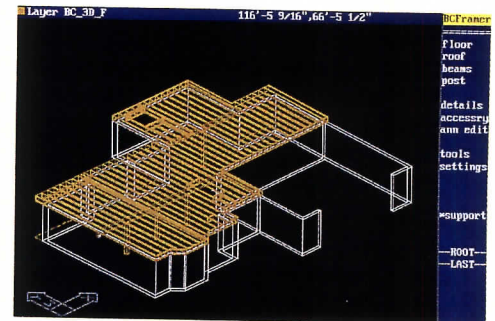
The tool will blur old distinctions, such as drawings and specifications. Software users and developers have learned to link the graphic entities of CAD to data, even to an external database. Such drawings are becoming "smarter," capable of changing data associated with an item as an item is changed. Now drawings generate schedules; soon they'll "write" specs. It is not unreasonable to expect that the software will also analyze specification sections to determine that they are consistent and free of conflicts. These ways of designing and communicating are so different it will make it much harder to work the traditional way. Work will flow to those who master the new tools.

You no longer need to know how to draft to make perfectly drawn drawings. Today software can make renderings, calculate duct sizes, draw framing plans (screen shots, right), calculate building-assembly U-values and energy use.

RECORD: Just because you can readily draw a floor plan, and easily place symbols for furniture on it, doesn't mean you have the analytical skills to tell whether the floor plan actually works . . .

DN: I know that talent and knowledge are necessary to make good designs and to create proper documents. Software developers, however, are embedding within application programs more data and more evaluation criteria and design methodology. Consider mechanical-systems analysis programs.

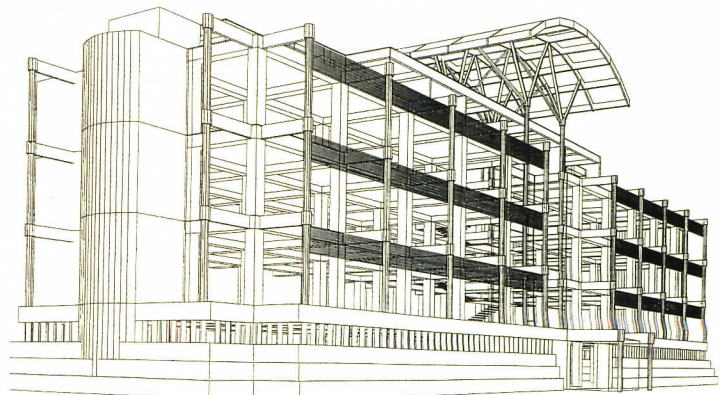
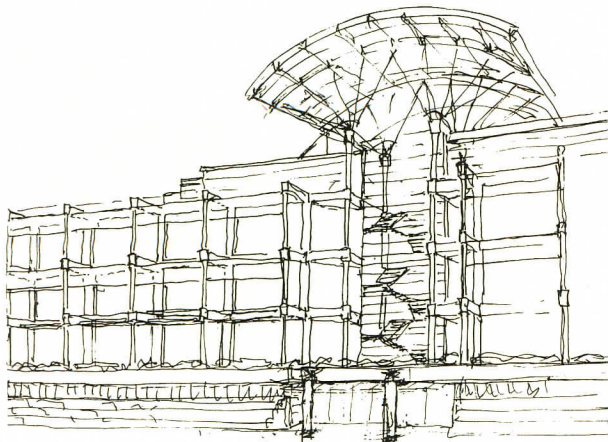
A CAD-based structural-analysis program evaluates a selected area to be spanned, then develops a materials schedule, chooses details, and draws wood framing in plan (or 3D, below).



Combining cooling criteria with data on room area from drawings, they can draw a ductwork layout with appropriate diffuser output. Similar tools exist for structural engineering. These programs can work with information from simple, diagrammatic drawings. They can feed information back to the CAD programs, which can then generate complete contract drawings and schedules of impressive complexity.

Automatic design

RECORD: Will this process drive us to only those low-effort, off-the-shelf solutions that can be readily analyzed by software, rather than stimulating unique or more creative schemes?



1.

2.

Dennis Neeley sees exciting new horizons opening for architects in fast-developing CAD-related applications. *RECORD's James S. Russell plays devil's advocate.*

DN: Not at all. Software captures expertise. Just because CAD generates a ventilating "design" doesn't mean the air flow is any good. Next year, or the year after, though, you will be able to look at a 3D animation of the air movement at different times of the year and with different occupancy loads. Won't that improve design?

RECORD: Does this mean that small firms can act like big firms, and big firms will disappear? Or will big firms use the fanciest technology to wipe out the small fry?

DN: I could make a convincing case either way. By the year 2000, however, the one-person office will have access to more information, more drawing and database power, and more analysis and visualization power than the biggest and most advanced firms have today. You won't need large, separate firms or entities to do a great deal of the analysis, documentation, take-offs, and management of the design and construction process. Yes, you should understand the criteria behind electronically generated material, but the power of the software and hardware engines is such that you don't have to know about air flow to calculate the size of a duct; you can create framing plans without knowing load paths. The tools are growing so powerful that architects can take a larger role in managing construction; contractors can move into design; owners can design and build.

Who is the architect?

RECORD: We're already seeing a blurring of boundaries as contractors, engineers, and interior designers try to expand their turf into areas once considered the sole province of

architects. The reverse holds true as well. Thus, the revolution, if it exists, is not necessarily tied to computers per se.

DN: The software and hardware tools we now have are helping to blur distinctions between disciplines, but these distinctions are artificial anyway. Legally, an architect has a certain definition, but is the *notion* of architect actually more fundamental? To some people, the architect creates and orchestrates; in this mode licensure is incidental. Many of us have seen contractors or interior designers who are just as good at this as architects.

RECORD: Blurring the traditional boundaries between disciplines also blurs responsibility. How can the owner be sure all the bases are covered?

DN: Architects are already regarded as less important in the process because many shed responsibility. Clients value firms that will accept responsibility. More importantly, why do so many things go wrong? In many cases it is because we haven't *known*—we haven't had access to key information. CAD and computers offer the opportunity to take more control. With control come fewer errors and more value to the client.

The interactive, "expert" help included in manufacturers' electronic product databases, for example, may prohibit a window selection if it can't be manufactured with a selected glass. Software can assess criteria and product choices entered by the architect, and generate a set of details and a specification that is suited to the project's unique needs.

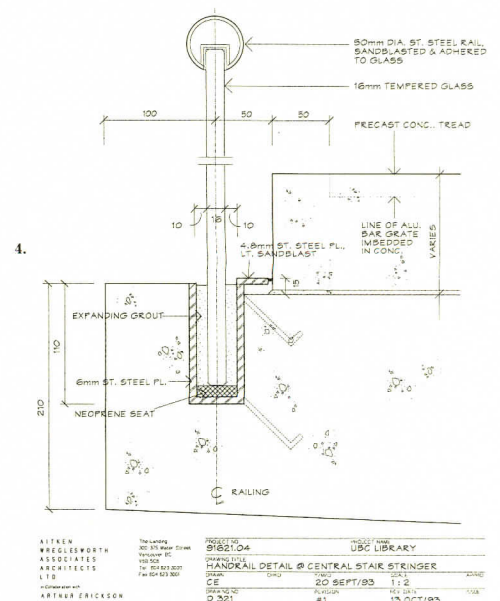
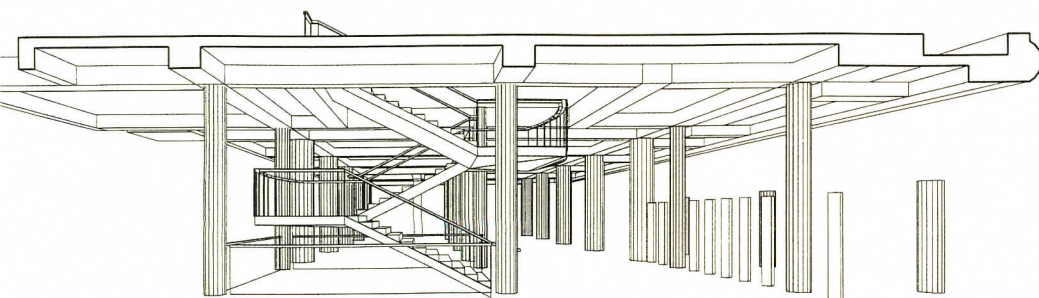
Presentations

DN: Whether you use wire-frame line drawings, simply shaded models, or photo-realistic renderings, CAD-generated presentations are allowing clients to share more thoroughly in the design process. You can look at nearly any element of the design (below).

RECORD: The down side is that it's so easy to make so much information available that it calls upon the client to make even more judgments than she already makes. Aren't too many clients already overwhelmed by the choices available on everything from the tint of the window glass to the hardware on the door? Isn't it true that, if anything, the power of new tools and data sources creates an even greater information logjam for the architect to untangle?

DN: Some futurists have predicted that clients will use electronic tools to eliminate architects and engineers. No doubt some will. But most clients do not want to be the designer and the contractor and the facilities manager. Clients do fear that designers don't understand what they need. If the designer has the tools to reassure the client on that score, he will be doing a better job. ■

3.



Rx 4 RFPs

INWORK 3.15

Vendor: Parallel Resource, Inc., 703 East Glenn Ave., P. O. Box 2488, Auburn, Ala. 36831 (205/821-9000, fax 205/821-9700).

Price: \$995; demo version: \$45, which is credited toward a full package.

Computer: Computer capable of running MS-DOS, PC-DOS, or DR DOS 5.0 or later.

System: Requires at least 550K of free memory plus 2MB of expanded or extended memory and a fixed disk with at least 7MB free. Needs a PostScript printer; we strongly recommend a mouse.

This software automates production of federal Standard Forms 254 and 255, but doesn't have the flexibility of RFP (opposite) for other marketing needs. We last looked at INWORK in March 1992, when it was called

SF/X. A trademark dispute forced the name change. Lots of other things have changed as well. There's a nicer interface, though it's still not what-you-see-is-what-you-get (WYSIWYG). It is easy to get around in, and excellent word-processing functions are built in. It's also easier to import and export text from other programs, and it's simpler to move data from one project file to another. The built-in Help is context-sensitive now.

Graphics can be imported as EPS (encapsulated PostScript) files; earlier versions imported graphics only with difficulty. The software doesn't limit the length of records; it adds pages as needed to accommodate long résumés or project lists.

As with earlier versions, you fill in the fields of the 254/255 forms by pulling information

you've already installed in linked databases. You select appropriate staff résumés, histories of relevant past projects, and so forth. The program prints the forms as well as the data, which is why you need a PostScript-compatible laser printer. Other laser printers need an auxiliary cartridge or an in-the-computer PostScript interpreter.

The underlying database engine is dBase III-compatible. Just about any database software can read and write this format as can most spreadsheets. This eases the import of data you may already have on-hand.

Any office that applies for more than one government project every two months or so should find INWORK useful. The biggest expense isn't the software, it's arranging and maintaining the qualifications, project data, and résumé files.

Manual: Large-format looseleaf with excellent practice tutorial.

Ease-of-use: Good. About the only improvement would be to make it WYSIWYG.

Error-trapping: Good. Saves each record automatically. Even a power failure would mean only a small inconvenience. *S. S. R.*
300 on Reader Service Card

Perspective

Automated Marketing

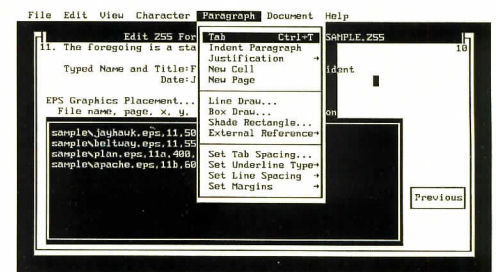
Over the nearly eight years this column has run, we've reviewed many packages designed to make it easier to produce proposal documents, particularly the SF 254/255 required for federal (and many state) projects. They have ranged in sophistication from simple templates that allow you to carve up text manually and move it around—the computer analog of scissors and paste—to programs (like those reviewed here) that use sophisticated methods for searching and linking data—even calculating average annual project size and projecting billing. The current crop are oriented to DOS computers, although software using the form-building capability of Aldus's PageMaker on the Apple Macintosh was sold for a time.

This month, we look at the latest versions of the two packages that have had staying power. Though INWORK has the handsomer interface and is perhaps a bit easier to use (for smaller practices, anyway), it is geared to SF 254/255, and lacks the flexibility to handle all of a firm's proposal-writing chores. RFP is a far more flexible and comprehensive solution. And, until this

April 15, the SF 254/255 module is very attractively priced.

Both require you to enter (or transfer) data on your personnel, projects, clients, and so forth into various databases. The programs link this information to appropriate locations in the proposal. You use query screens to select only the relevant information (a consultant's research-lab experience but not its office-building experience, for example).

Do you need a proposal-writing product? Vendors claim that big proposals can be produced in perhaps one-fourth the time needed by cutting and pasting. Our experience suggests this is about right. Critics say the time it takes to organize and input the information outweighs the time savings. Offices that do mainly one kind of work, say churches or schools, can usually get by with cutting and pasting text on a word processor. (Note that RFP also sells templates for WordPerfect.) If you're being overwhelmed by the detailed proposals requested by clients, though, you need a powerful tool like this. *Steven S. Ross*



INWORK's look isn't WYSIWYG, but you quickly learn how data will appear when printed. The menu-driven format is easy to follow as it steps you through SF 254s and SF 255 forms (shown).

Clients—especially government clients—seek ever more detailed proposals. Updated software, offering versatile methods of collecting and collating firm data, comes to the rescue.

RFP Gold 7.1

Vendor: A/E Management Services, Inc., 4251 Plymouth Rd., P. O. Box 986, Ann Arbor, Mich. 48106-0986 (313/761-9410, fax 313/761-9518).

Price: SF 254/255: \$1,050 (\$375 before April 15, 1994); custom proposal generator: \$1,050; relational report writer: \$1,050 (all three for \$2,795—\$2,120 before April 15). HP or PostScript driver is included. Network version: \$6,190 (\$5,515 before April 15); WordPerfect interface: \$750; Microsoft Word interface: \$450; text import (for other word-processing programs): \$300. Accounting-data interface: \$400; append/export utility: \$300; Annual maintenance: \$600 for single user, \$1,200 for network. Liberal site-license policy.

Computer: DOS-based computer (MS-DOS or PC-DOS 3.3 or higher; DR DOS 6.0 or higher should also work).

System: The application needs 640K RAM and about 4MB of fixed-disk space.

Output: HP LaserJet-compatible or PostScript printer is best. Daisy-wheel or dot-matrix printers do a poor form-printing job.

We last looked at RFP more than four years ago. It remains by far the most comprehensive software for keeping track of your office's qualifications, and for generating proposals, especially the federal government's Standard Forms 254 and 255. At about \$3,000 for all the modules a single user in a medium-size office would need, RFP isn't cheap (note the bargain prices until April 15), but there's a lot to it. The Gold version combines a report writer, the SF 254/255 generator, and a custom-proposal generator. The program will import nearly all formatting—even graphics—from WordPerfect; the Microsoft Word interface isn't quite so seamless. For other word-processing sources, you'll have to import as "text only." An append/export utility and accounting-data interface let you work with budgeting or billing programs.

The core of RFP is a series of databases into which you place firm qualifications, staff biographies, addresses, experience, billing rates, and so on. To prepare a proposal, you use this version's much-improved Lookup feature to browse or find specific records, bring them up, and modify them on-screen.

We found the import link nearly seamless with WordPerfect 5.1 and 6.0 for DOS and WordPerfect 5.2 for Windows. RFP files also export cleanly to WordPerfect, so that you can make use of that program's formatting and editing capabilities.

RFP offers electronic tags that solve a common database problem. You can give a company or part of a company (a specific office, for example) a unique tag so that duplicate company names can appear in the same database. You can also use a tag to dif-

ferentiate employees with the same name, or to mark different biographies of the same person (each emphasizing different skills).

ates customized access to DBF files. Clipper's machine requirements are modest, so you can run RFP on computers as small as an old IBM XT. You will get much more satisfactory performance with a computer that uses at least an 80386SX CPU chip. Like all database software, RFP frequently reads from and writes to the fixed disk. Thus, the more free disk space, the better.

Manuals: The main manual is bound as a bulky 8 1/2-by-11 softcover book that lies flat. The tutorials are simple and straight-

Consultants - All	
0001	: Transportation Consultants, Inc.
0002	: Cost-Estimating Consultants, Inc.
0003	: Acoustical Consultants, Inc.
0004	: Elevator Consultants
0005	: Costs Consolidated
0006	: Economic Associates
0007	: Fire-Protection Consultants
0008	: Structural Consultants, Inc.
0009	: A/E Structural Consultants, Ltd.
0010	: Flint Elevators
0011	: Mound Engineering
0012	: Landscape Engineers
.....	
.....	
Specialty:	ID:0008 Contact:Mr. Ronald James
	Firm Name:Structural Consultants, Inc.
	Address:507 Orange Drive
	Flint, WY 83002-1115
ENTER>Select ESC-Exit F1-Search Options	
Quick Find: []	

ferentiate employees with the same name, or to mark different biographies of the same person (each emphasizing different skills).

Other niceties: Pre-formatted fields are provided for standard forms; RFP also includes user-definable fields; a field is formatted for international zip codes. RFP conveniently updates changed information across all linked data tables—when, for example, a newly married employee changes her last name.

You can also use the underlying database to track ongoing projects—for promotional use, of course, but even for billing. RFP will monitor percent complete for both purposes.

RFP uses the popular dBase format (DBF), with a simple yet serviceable interface. The underlying software is Clipper, which cre-

ates customized access to DBF files. Clipper's machine requirements are modest, so you can run RFP on computers as small as an old IBM XT. You will get much more satisfactory performance with a computer that uses at least an 80386SX CPU chip. Like all database software, RFP frequently reads from and writes to the fixed disk. Thus, the more free disk space, the better.

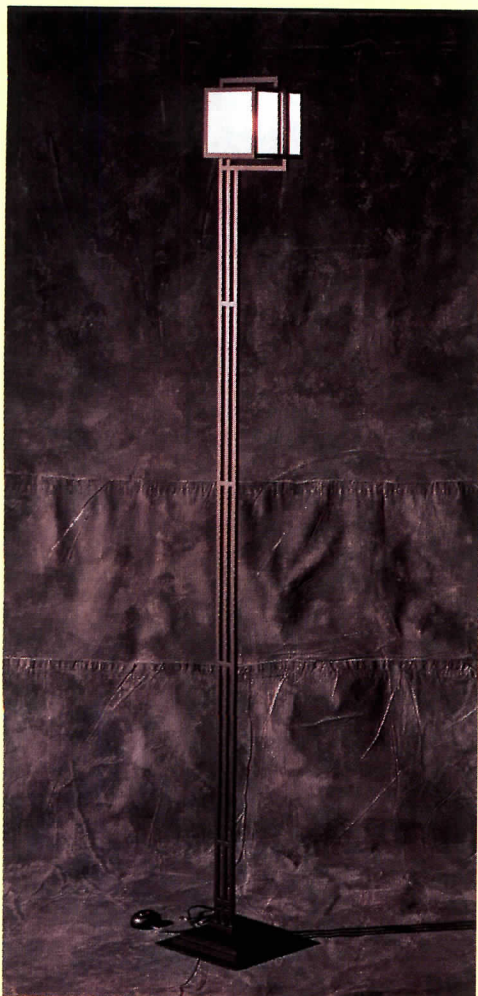
Ease-of-use: Good. The trick is to keep the database updated by using it for all project-tracking needs.

Error-trapping: You can modify the DBF files by exporting them to other software, such as spreadsheet or database packages like Paradox or dBase III or IV. When you send the files back to RFP, you get errors—as you might expect. *S. S. E.*

301 on Reader Service Card

You can find records in RFP using a mouse to highlight menu lists (center of screen image above) or you can type text and ask the software to search for matches (bottom of screen).

Wright Lights



1

300. A stunning collection of residential lighting, designed by Frank Lloyd Wright and completely faithful to Wright's concepts, will be introduced at this year's LightFair (New York City, May 4-6). A joint effort of Japan's Yamagiwa Corporation and the Frank Lloyd Wright Memorial Foundation, the fixtures are part of the Decorative Design Collection licensed by the Foundation as Wright's heir. Under the guidance of Bruce Brooks Pfeiffer, former Wright apprentice and director of archives for the Foundation, the Japanese lighting firm assiduously captured the exact dimensions, color values, and material characteristics of the original luminaires. While individual fixtures were initially designed for a particular space in a particular house, Wright himself liked most of them so much that many appear in later projects.

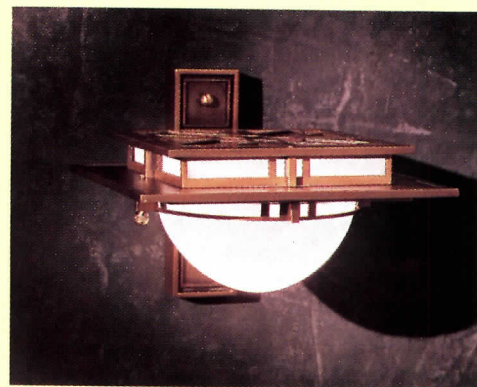


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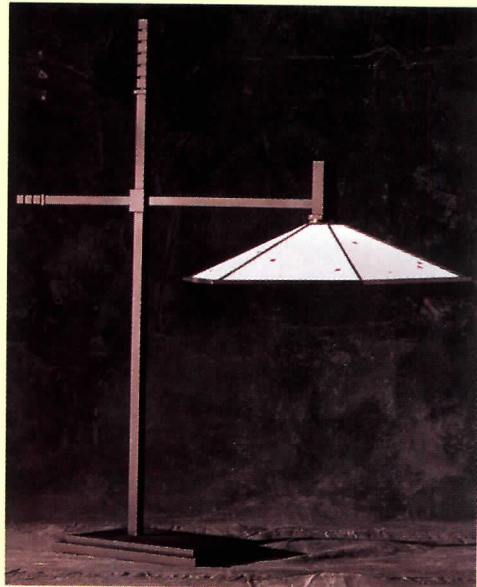
The Collection will be sold through the Museum of Modern Art Design Store (212/708-9888), currently exhibiting *Frank Lloyd Wright: Architect*. Yamagiwa Corporation, U. S. A., Seattle.

1. Originally intended for the living room of John Storer's Hollywood house, where it stands against the columns that separate large windows, the Storer lamp (1923) has a 76-in.-high painted-steel frame holding a white-glass shade only 8-in. wide. A 36-in.-high table lamp version of this piece is included in the collection.

2. Five of the fixtures selected for the new 13-piece collection were designed over 90 years ago for the massive Susan Lawrence Dana house (now Dana/Thomas; Springfield, Illinois, 1902), where sunlight streams



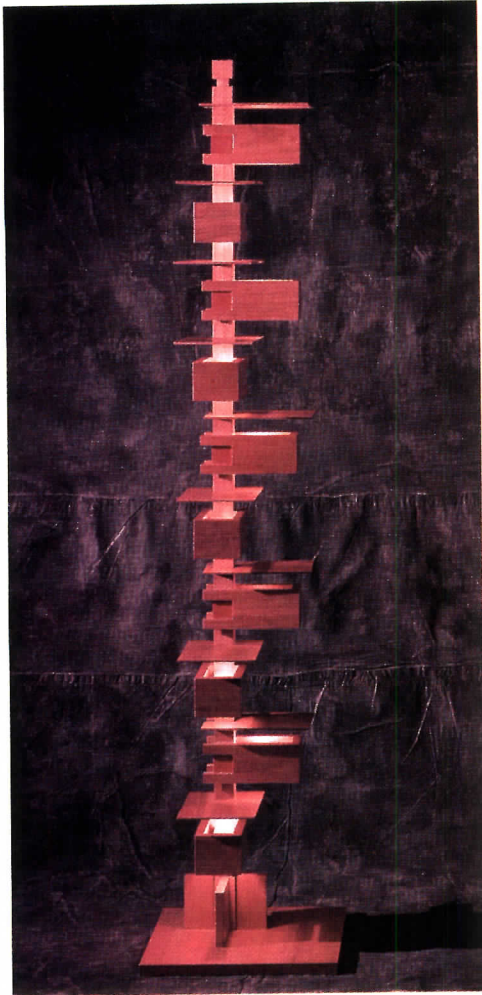
3



4

through large windows glazed with Wright's wonderful copper-camed colored glass patterned in leaf, butterfly, fern, and other motifs abstracted from nature [May 1991, pages 88-95]. The intricate, leaded-glass shades of the two Dana house fixtures featured on these pages echo the chevron-like motifs of the "sumac windows" of the home's breakfast alcove. Wright used the strongly vertical sconce, called Sumac 4, in the high spaces of the house, especially in the three-story entrance hall and in the clerestories of the open gallery. Materials are bronze and lustre glass; fixture is 14-in. high by 5-in. wide.

3. A familiar fixture, the wall light used extensively in the 1906 Frederick C. Robie house in Chicago is recreated in two versions: the original "sun lamp," a full sphere



5

of white glass that seems to float in a square wooden frame, and the Robie II sconce, pictured. Here, the globe is cut in half, and suspended from a framework of bronze bars that cast shadows in all directions.

4. A table lamp, created for the short-lived Midway Gardens entertainment complex in Chicago, 1913, has a 31-in.-high painted-aluminum stand supporting a six-panel white-glass shade flecked with Wright's distinctive red squares. List price: \$1,180.

5. One of three Taliesin lamps recreated by Yamagiwa, Taliesin 2 is the wood-block tower that lights large tables in the living room at Spring Green. In this replica, small incandescent bulbs placed within cherry-wood boxes climb an 80-in.-high central wooden column. Cherry-plywood baffles

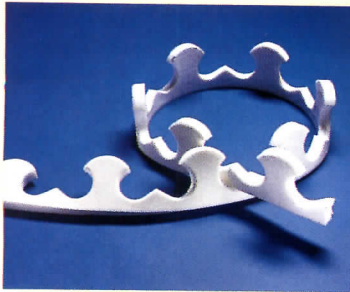


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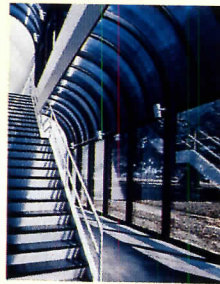
shield each light. The widest part of the lamp is its 17-in. base. Taliesin 1, not shown, is the small (20-in. high) table lamp designed by Wright for his own desk, with a roof-like shade hung from cherry-wood struts.

6. Another Dana House light, the Sumac 3 resembles a little house, with a "hipped roof" glass shade set on screen-like double-pedestal supports of bronze and lustre glass in warm yellows and autumn browns. The 23-in.-high by 28-in.-long table lamp is one of the most expensive of the recreated Wright fixtures, with a list price of \$12,500. (The most expensive light in the collection, also from the Dana house, is the splendid replica of the grand chandelier Wright hung from the vaulted ceiling of the dining room.)

- 1. Storer 1.** Standing lamp, John Storer house; painted steel and white glass (1923).
2. Sumac 4. Sconce, Dana/Thomas House; bronze and lustre glass (1902).
3. Robie 2. Sconce, Frederick Robie House; bronze and white glass (1906).
4. Midway. Table lamp, Midway Gardens; painted aluminum and white glass (1913).
5. Taliesin 2. Standing lamp, Taliesin, Spring Green, Wisconsin; natural-finish cherry (1925).
6. Sumac 3. Table lamp, Dana/Thomas House; bronze and lustre glass (1902).
For more information, circle item numbers on Reader Service Card



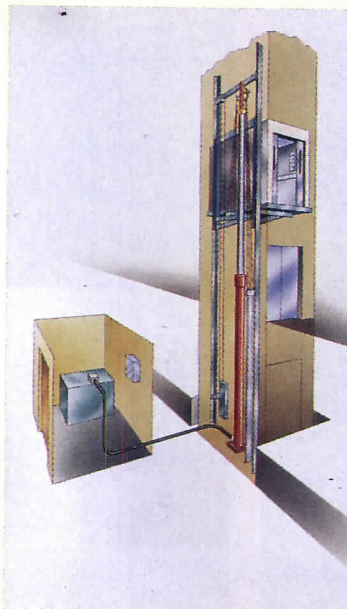
303. Polymer millwork
Exterior and interior architectural-trim elements, such as dentil moldings, are offered in a flexible composite capable of conforming to curves and bends without losing the original shape. Available in an integrally colored white material, trim pieces can be painted, cut with standard tools, and attached with fasteners or adhesive. FYPON, Inc., Stewartstown, Pa.



308. Architectural glazing
An abrasion- and chemical-resistant coating on one or both surfaces is said to greatly extend the "like new" appearance of Acrylite AR and Cyrolon AR sheet glazing. Cyrolon polycarbonate, with up to 250 times the impact-resistance of glass, is suggested for skylights and sloped glazing applications requiring extra strength. CYRO Industries, Arlington, N. J.



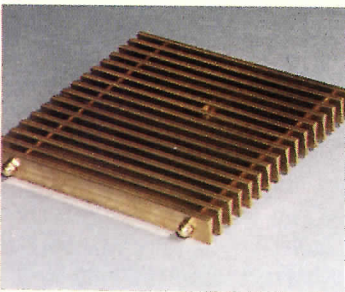
304. Fabric wallcovering
A new line, Natural Textures, includes over 40 patterns in linen, silk-like cotton/rayon blends, herringbone weaves, and botanical motifs, offered in colorways that permit almost 150 combinations of fabric and color. For contract application on walls and panels, wall-coverings come backed or unbacked, to list from \$18 to \$35 per yard. Carnegie, Rockville Center, N. Y.



309. LULA lift
A limited use/limited application (a proposed code designation under review by ASME) roped hydraulic elevator developed to allow people with physical disabilities access to multiple levels within existing facilities, the Flexi-Lift is said to offer several economical installation, cab, and hoistway improvements. Cabs offer automatic horizontal and bi-fold, and manual-swing door options; a choice of car finishes, including metal or wood panels, and recessed accessories. The steel hoistway structure is modular, to more easily accommodate uneven walls or other site problems. It can be placed within existing hoistways as well as in new construction. Maximum travel is 25 ft, with up to six stops. Operates on 208V or 230V power. Access Industries, Inc., New Berlin, Wis.



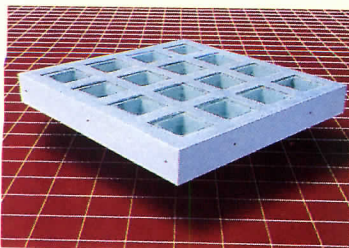
305. Life-cycle costing
A stand-alone module for Composer and MCaces estimating programs compares the costs of building-material alternatives over the entire life of a facility. Architects can input costs in current-year dollars and compute the net present worth of future expenses in several categories, such as routine maintenance, energy, and disposal costs. Building Systems Design, Inc., Atlanta.



306. Entrance grating
A new Clean Tread grating design, available in bronze bar as well as stainless steel, has evenly spaced 1/4-in. openings, large enough to trap dirt without catching shoe heels, wheelchairs, or canes. Standard units come as large as 4- by 8-ft, for level-bed installation; 50-percent free airflow permits use as ventilation grilles. Kadee Industries, Bedford, Ohio.



310. 2D/3D CAD for Mac
MiniCad+ 4, with upgraded 3D drafting and viewing features, comes with a built-in database and spreadsheet, Smart Cursor, and a programming language, as well as walkthrough/flyover capability, tolerancing, and automatic roof, wall, and floor tools. A demo kit, consisting of two disks, manual, and video, is \$19. 410/290-5114. Graphsoft, Columbia, Md.



307. Glass-paver system
Made of precast concrete, a structural grid incorporates Vistabrik 7 3/4-in.-square glass pavers to create traffic-bearing and light-transmitting walkways, stair treads and landings, and skylights. CastGlass panels can support a live load of 150 lb psf over a 6-ft clear span. Concrete can be integrally colored. Dura Art Stone, Fontana, Calif.



311. Versatile awning
Built for commercial as well as residential use, the Variette combines the movable-shade features of a lateral-arm retractable awning with the rain- and wind-resistant protection of a fixed shelter. Wrap-around trolleys carry Sunbrella fabric on rollers down over a slightly-pitched support structure. Operation can be motorized. The Astrup Co., Cleveland.

Two By Moore

Convinced that there's no finer way to pay tribute to the late Charles Moore than to let him speak through his architecture, RECORD this month brings you two of his most recent and in many respects most Moore-like completed projects—the upbeat cathedral for the Episcopal diocese of North Dakota in Fargo (page 60), and the engaging Palmer Museum at Pennsylvania State University (page 66). The cathedral is situated in the rugged northern Great Plains; the museum in the lush wooded hills of central Pennsylvania. But both show in their essence some of Moore's most endearing traits—creation of a powerful, almost magnetic sense of place; a celebration of the act of movement through space; minute attention to scale—that supplement to sheer size that in the hands of a masterful manipulator such as Moore can elevate movement into a stirring experience; the gift of sharing decision-making with the client and user during design so the building is in part *their* creation; and a simplicity of design and technical systems that is the ultimate emblem of genius.

Moore's spirit continues in the architectural offices and through the former students he influenced in his lifetime. Unlike other architects whose genius failed to survive them, Moore's heritage of humanism, self-effacement, and wry humor live on through those he affected so powerfully by his character and his architecture. *Stephen A. Kliment*

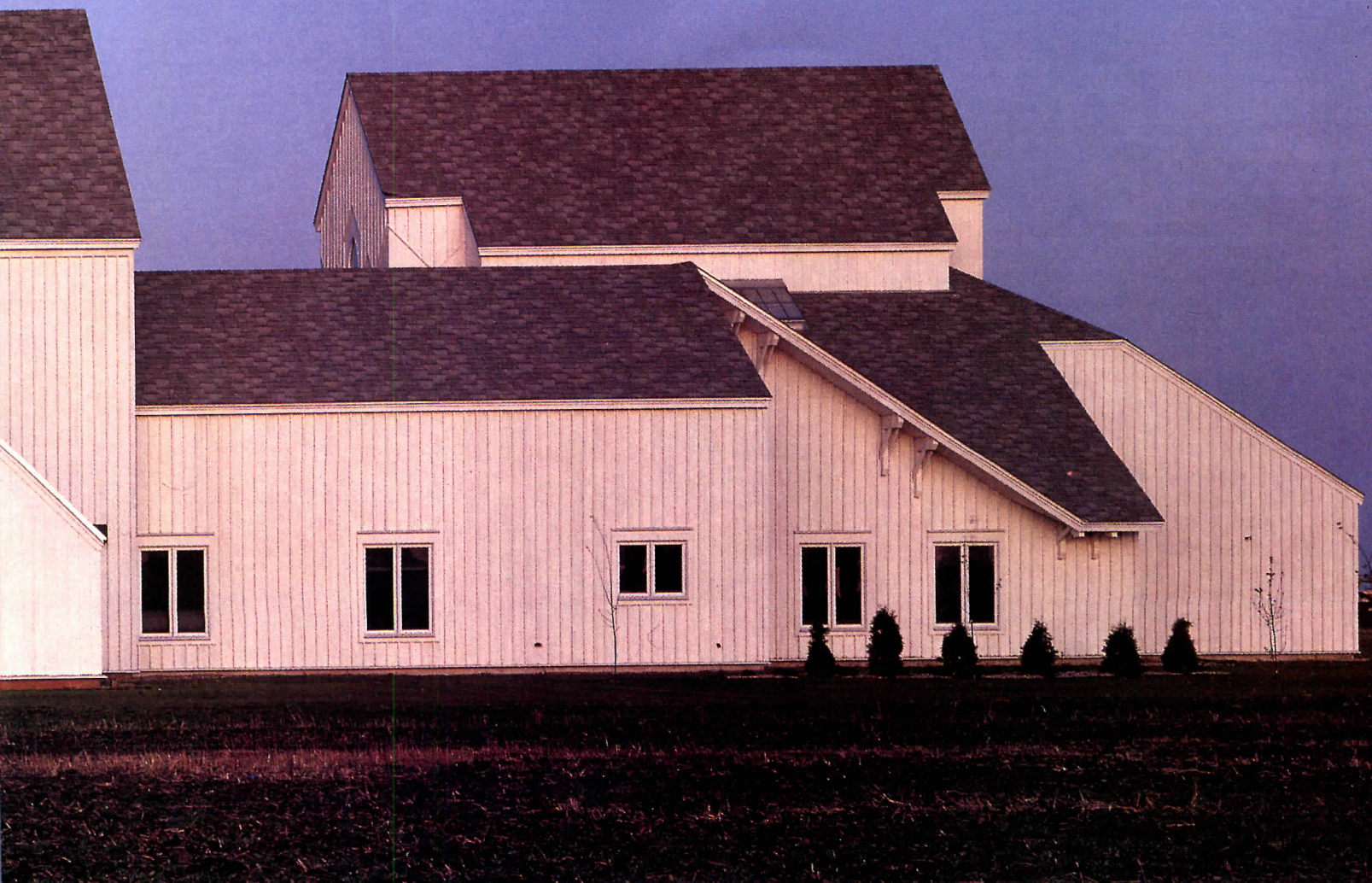
*Manufacturers' Sources
listed on page 103*

Prairie Cathedral



*In this modestly-scaled house of
worship, Moore/Andersson
capture the regional spirit of the
northern Great Plains.*

*Gethsemane Episcopal Cathedral
Fargo, North Dakota
Moore/Andersson Architects,
Architect
Yeater Hennings Ruff Shultz Rokke
Welch Architects & Planners,
Associate Architect*



Gethsemane Episcopal Church, the cathedral church of North Dakota, burned to the ground in the fall of 1989. The trauma this inflicted on the congregation led many of its members to a critical self-examination on how to rebuild, and caused those members to take an active and healing part in the process of building a new church. The site of the original church in downtown Fargo was an L-shaped landlocked one-acre lot with little chance for flexibility or expansion. Several liked the site because of its central location; others argued for moving to the *open prairie* south of town, a move that would signal a new beginning as well as serve expanding needs.

During a series of workshops, in which Charles Moore, Arthur Andersson and the design team played a vital role (the team was selected in part because of its experience with hands-on client workshops), the cathedral chapter, supported by the congregation, decided in favor of a 9-acre site on the open side of town at the edge of an expanding neighborhood. Over the next few months, there then emerged, under the architects' guidance, a new vision for the rebuilt church that took the form of a whitewashed board-and-batten cathedral on the prairie.

The sanctuary seats 350, and by using the Great Hall, double that number can attend special services, diocesan conventions, and occasional concerts. The scale of the other elements of the interconnected one-story floor plan is in harmony with the modest scale of the whole. There's a small chapel seating 40 that faces a cloistered courtyard; it's a more intimate place of worship away from the main sanctuary. After it is landscaped, the court will evolve into a metaphor of the Garden of Gethsemane from which the cathedral draws its name. The core is protected on the cold north side by a series of classrooms, library, youth facilities, and offices that serve the cathedral parish as well as providing for the diocesan needs of the Bishop. They are also a link to an expanding neighborhood.

Chief entry is from the south, through a white wooden portico surmounted by the bell tower (opposite). The entry is on the crossaxis, which joins the main axis at the narthex. Ahead is the cloister and small chapel; to the left the Great Hall, used for fellowship gatherings, and to the right the main sanctuary, arranged on a traditional central nave-and-transsept plan.

Interior materials too are simple in line with the austere history of the region. Walls are concrete block; the sanctuary floor is lightly colored and scored poured concrete with carpet inserts; the ceiling is made of prefabricated wooden scissors trusses spanning 34 feet that serve as backdrops for a series of large inverted ceiling "trays". These are made of painted gypsum wallboard and serve to reflect sound and define the space of the sanctuary.

A special feature Moore brought to the building is the Memory Palace at the west end of the Fellowship Hall. The memory palace is a device he has used to great effect in the past to establish continuity from past to future. Here, it consists of various pieces salvaged from the burned church and used in the new church. For example, the lower half of the triptych window comes from the old church and was restored with new stained glass to form a Memory Palace at the west end of the Great Hall. Other pieces saved and reused are the altar, the 1971 butcher-block pews, the bishop's and dean's chairs, and the eagle *lectern*, which serves the small chapel (overleaf).

To a small Episcopal enclave in what is at heart Lutheran country, Moore/Andersson have brought identity, tradition, continuity, and grace. *Stephen A. Kliment*

© Timothy Hursley photos



The Gothic profile and massing of the cathedral (top) has as backdrop the fast-developing neighborhoods on Fargo's south edge. To the right of the east front, with altar behind (above), are offices and classrooms.

Up Close

"The cathedral has all of the characteristics of a Gothic building, yet it looks like it belongs on the prairie," says Cathedral Dean Frank Clark. The process followed to arrive at this result is a key to the spirited acceptance of the building by the congregation. It began with the choice of architect. "We selected Moore/Andersson because they were strong designers, yet they didn't come to town with a lot of preconceived ideas," adds Father Clark. "We also valued their past experience with conducting workshops." This intense process spanned four months and allowed the congregation to develop a vision of the church and its role, which is to serve the community, with its strong academic component; provide spiritual uplift; and signal continuity from a tragic event. The vision also covered the choice of site, which symbolically is in the path of a growing residential neighborhood. The altar, pews, and other appointments are all movable; "We realized," says Father Clark, "that the next generation's needs may differ from ours."





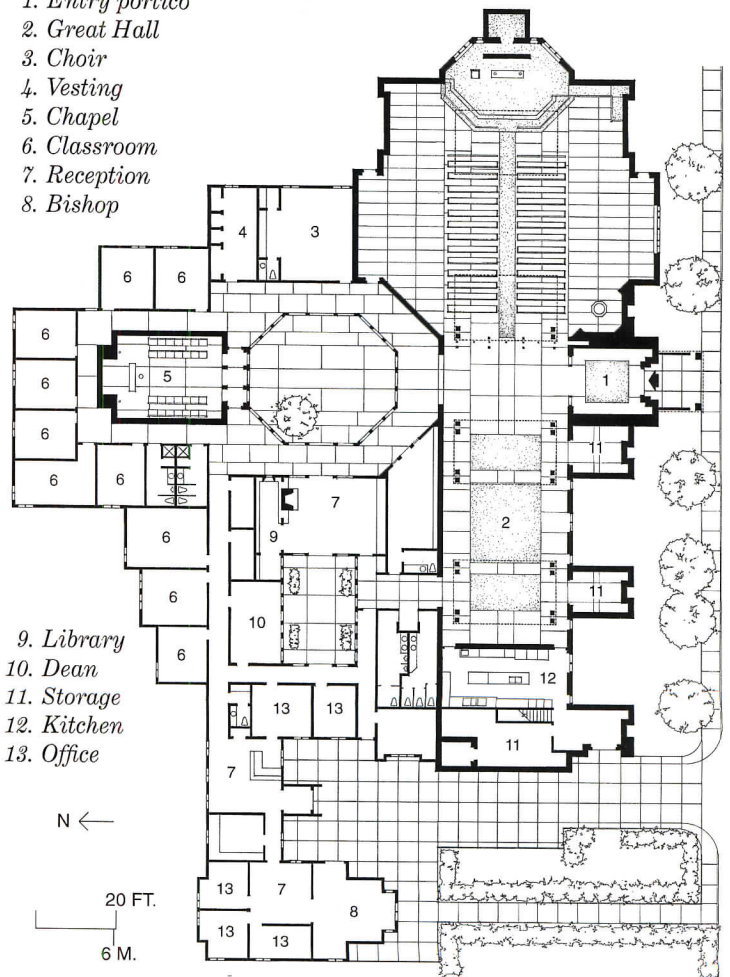
A chapel seating 40 (left) provides an intimate setting for worship. The south end of the chapel (bottom left) faces a cloister that serves as a source of daylight for surrounding spaces. The eagle lectern was rescued from the old cathedral. The view east along the nave towards the cathedral altar (opposite) shows prefabricated wood scissor trusses and ceiling “trays” made of painted gypsum wallboard. Doors can roll out to shut off the sanctuary.

The 21,000-square-foot project cost \$2.2 million. Walls are load-bearing 8-inch reinforced concrete block with 4-inch interior block facing. Exterior board-and-batten is backed up by wood studs. The floor is lightly colored and scored poured concrete. Parking accommodates 150 cars.

Credits
Gethsemane Cathedral
 Fargo, North Dakota
Owner: *Gethsemane Cathedral*
Architect: *Moore/Andersson Architects—Arthur Andersson, partner-in-charge; Charles Southall, project architect; Mercedes de la Garza, designer*
Associate Architect: *Yeater Hennings Ruff Shultz Rokke Welch Architects & Planners—Richard Hennings, David Shultz, Leslie Gooch, Margaret Kritzberger, project team*
Engineers: *Heyer Engineering (structural); Buth Engineering (mechanical); Laugtug Hanson Associates Engineers (electrical)*
Consultants: *Peters & Myer—Illumination Design Collaborative: Richard C. Peters, Jan P. Myer (lighting); Marion Hatchett (liturgical); Jim Burns (workshop administrator)*
Construction Manager: *Yeater Hennings Ruff Shultz Rokke Welch (D. Shultz, proj. manager)*



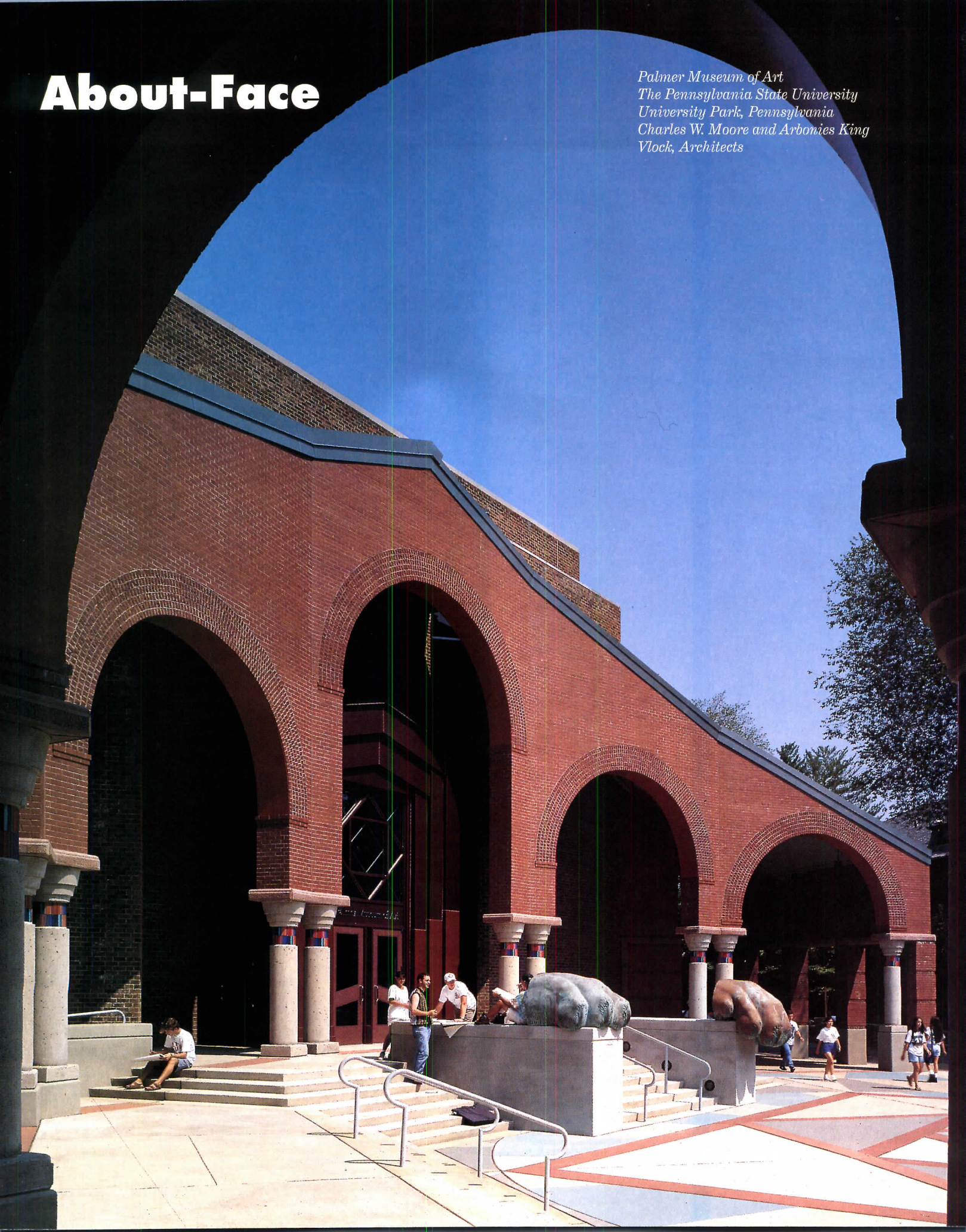
1. Entry portico
2. Great Hall
3. Choir
4. Vesting
5. Chapel
6. Classroom
7. Reception
8. Bishop





About-Face

*Palmer Museum of Art
The Pennsylvania State University
University Park, Pennsylvania
Charles W. Moore and Arbonies King
Vlock, Architects*



Once a wallflower hiding behind the skirts of its big sister, the Palmer Museum has been magically transformed by Charles Moore and the firm of Arbonies King Vlock into a star attraction on the Penn State University campus. Given a new public face and orientation, as well as a two-story gallery wing, the museum is now a favorite place for hanging out and meeting people.

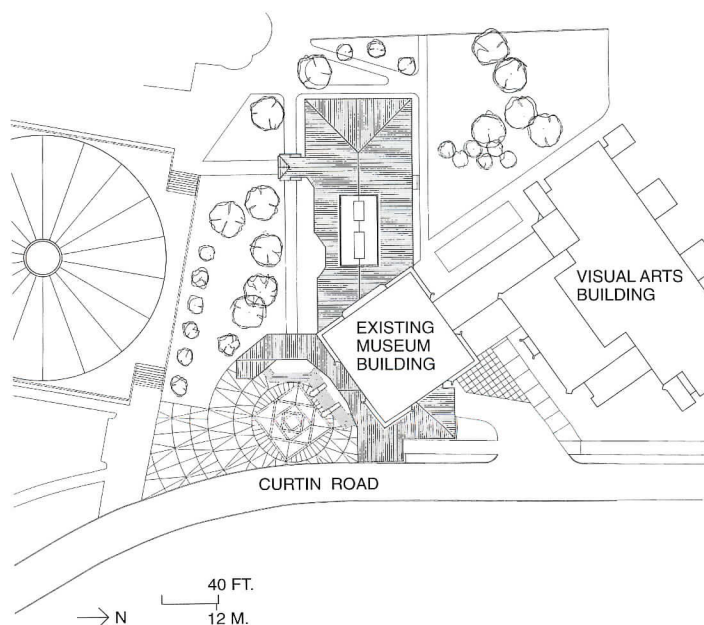
The original museum, a charmless brick box completed in 1972, was really just an appendage of the more prominent Visual Arts Building. A glass-enclosed breezeway connected the two buildings, making their dependent relationship clear. Entered through this glazed umbilical cord, the facility lacked its own identity and was an almost invisible presence in one of the busiest parts of campus. In hiring Moore, the first out-of-state architect to work at Penn State, the building committee and donors made it clear they wanted to create an institution with a much higher public profile. Moore immediately invited his old colleagues Glenn Arbonies, Richard King, and Sandra Vlock to work with him on the project (see *Up Close*, next page). As they like to do, the architects brought the clients and users into the design process. In a one-week public workshop held on campus, the architects worked with students, faculty members, museum staff, administrators, donors, and even save-the-trees advocates to develop schematic drawings and models for the new museum. The schematics were further developed later, but the key elements of the final building were all set at that workshop, states Arbonies. By engaging all of the important players at one time, the architects were able to get agreement on controversial issues such as adding a new component to the program: a front loggia that would act as a Romanesque billboard announcing the new building's presence on campus. "It was the workshop that changed the project from a museum addition to something much greater," explains Vlock. Commenting on the participatory design process, museum director Kahren Arbitman says, "The more people we could get excited about the building, the easier it would be for us down the line."

While the existing museum and Visual Arts Building turn their backs on Curtin Road, the main thoroughfare through the area, the new museum greets the road with its arched loggia and a plaza that serves as an outdoor lounge for the campus as a whole and a welcome mat for the museum in particular. "This is an embracing, place-making building," says Arbonies. Instead of trying to match the brick of the existing museum, the architects selected a warmer brick as a subtle contrast to the old building. The new brick also picks up the color of a small building across the street that charmed the architects and became the inspiration for the new museum's Romanesque vocabulary.

Like many of Moore's buildings, the Palmer Museum celebrates the act of moving through it—using giant corbeled projections that direct visitors from lobby to gallery wing and featuring projecting portals between the galleries themselves. As a reminder of the impact of old on new, the portals between galleries are angled to pick up lines from the existing museum. While the lobby is a tall, exuberant space with two-story-high windows facing a sculpture garden to the south, the galleries are windowless rooms that focus attention on the artwork, not the architecture. Cove ceilings and Classical proportions help establish a subdued setting, which is gently tweaked by projecting portals and an angled path between galleries. Taking advantage of the existing building, the architects used its ground floor for a 150-seat auditorium and its upper floors for offices and storage. Built for just \$5.6 million, the 25,000-square-foot addition makes the most of "brick, wallboards, and smoke and mirrors," says Arbitman proudly.

Clifford A. Pearson

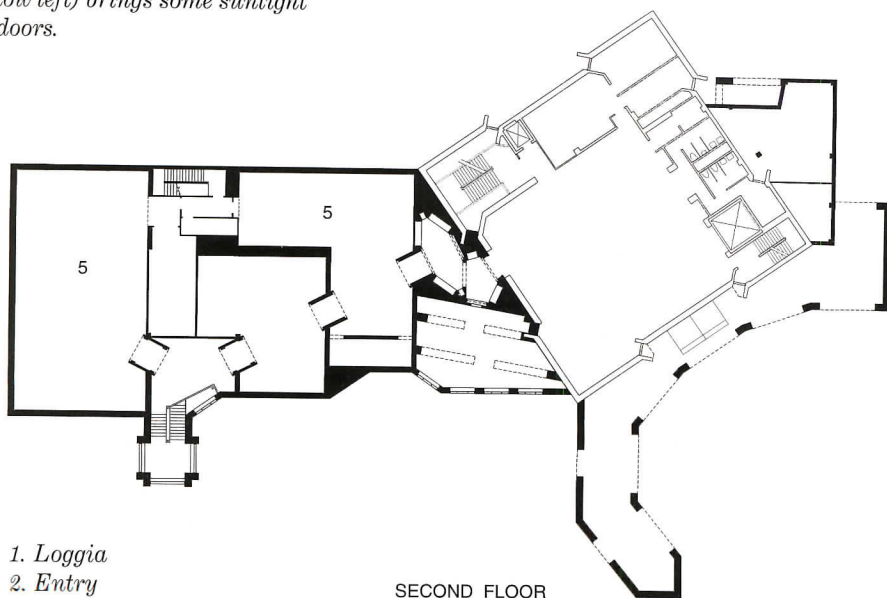
© Timothy Hursley photos



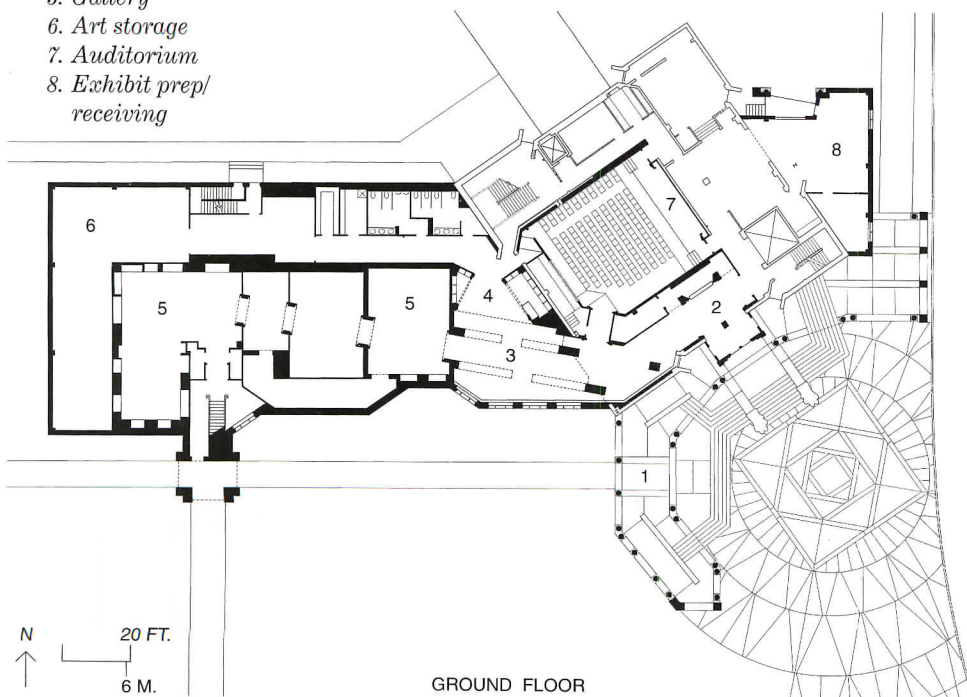
Lion paws by Paul Bowden add a whimsical touch to the museum's entry (opposite). Broken-brick arches of the

loggia (top) contrast with the old museum (background of photo above).

A steel-frame structure, the museum is clad in brick and heavily insulated for interior climate control. Cast-concrete columns are topped with glass tiles and precast trim (opposite top). The square-within-a-square design above the entry (below) is a recurring motif used in the plaza and the museum. Although the galleries have no windows, a stair tower (opposite below left) brings some sunlight indoors.



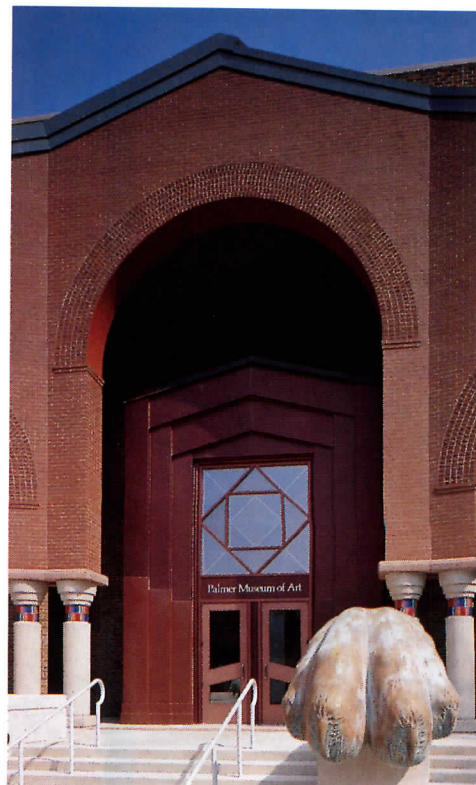
1. Loggia
2. Entry
3. Lobby
4. Museum shop
5. Gallery
6. Art storage
7. Auditorium
8. Exhibit prep/receiving

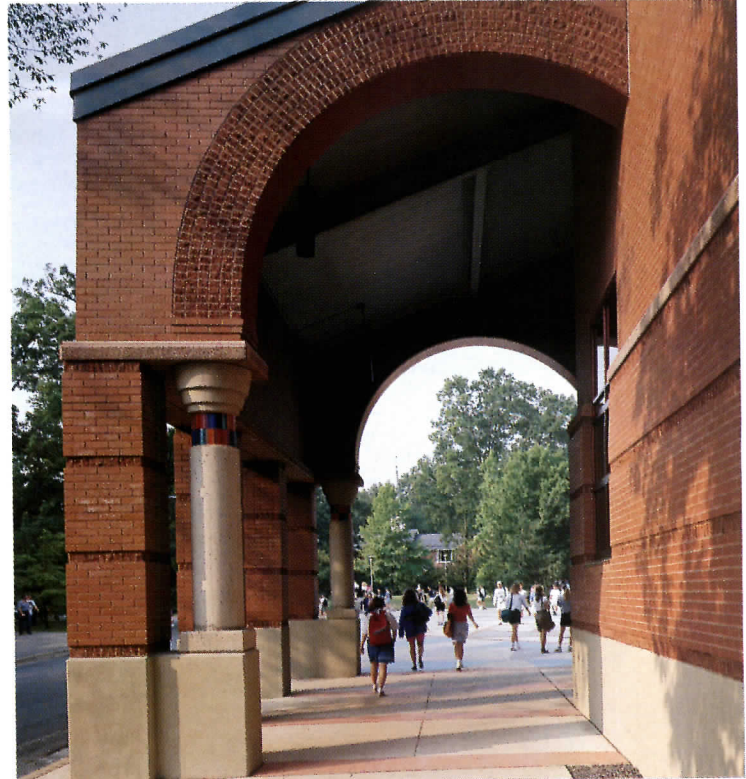


Up Close

One for all and all for one.

Collaborating with other architects was always Charles Moore's preferred work style. Famous for the many firms he spawned and careers he nurtured, Moore saw architecture as a group effort. His ties with Glenn Arbonies, Richard King, and Sandra Vlock went back to his years in Connecticut at Moore Grover Harper and Centerbrook Architects, where Arbonies was a partner, King was a senior associate, and Vlock a design consultant. Arbonies and King worked with Moore on three previous museum projects: the Hood Museum at Dartmouth College, the Williams College Art Museum, and the Cedar Rapids Museum of Art (on which Vlock also worked). Vlock (whose father, James, was chairman of the nonprofit organization that hired Moore to design the award-winning Tower One and Tower East elderly housing projects in New Haven) actually grew up in a house with a basement remodeled by Moore. Talking about the participatory design workshops that Moore used often during his career, Vlock explains, they are "choreographed but also spontaneous—like street theater." Moore's role in these workshops, says Arbonies, was as "band leader and pied piper." Looking back on Moore's illustrious career as a collaborating architect and educator, Vlock states, "Charles Moore had so many lives and so many progeny. We're all his children."







Because utility lines restricted the location of the bulk of the new building, the museum entrance is not particularly close to the start of the gallery wing. But the architects turned this liability into one of the strongest aspects of their design, creating a visual romp out of an extended walk from museum entry to gallery entry. As visitors enter the museum, they are greeted by a Lisa Scheer sculpture created especially for the space and a view of the great lobby windows in the distance (top left). The lobby itself is animated by corbeled projections leading toward the entrance to the gallery wing (opposite). The nonstructural projections, which approximate the form of great arches, were made of steel framing and plywood, then sprayed with fireproofing and deeply scored to look like huge blocks of stone. Galleries were designed as rooms for viewing art and so were kept simple and windowless (left bottom). Projecting portals between galleries act as transition spaces between rooms containing different periods of art (left middle).

Credits

Palmer Museum of Art
The Pennsylvania State University
University Park, Pennsylvania
Owner: The Pennsylvania State University

Architect: Charles W. Moore and Arbonies King Vlock—Charles W. Moore, Glenn W. Arbonies, Richard L. King, Sandra E. Vlock, design partners; Arthur Andersson, special consultant

Engineers: Besier Gibble Norden (structural); Gary Johnston & Associates (mechanical/electrical)

Consultant: Chapman Ducibella Associates (security)

General Contractor: Cumberland Contracting Group

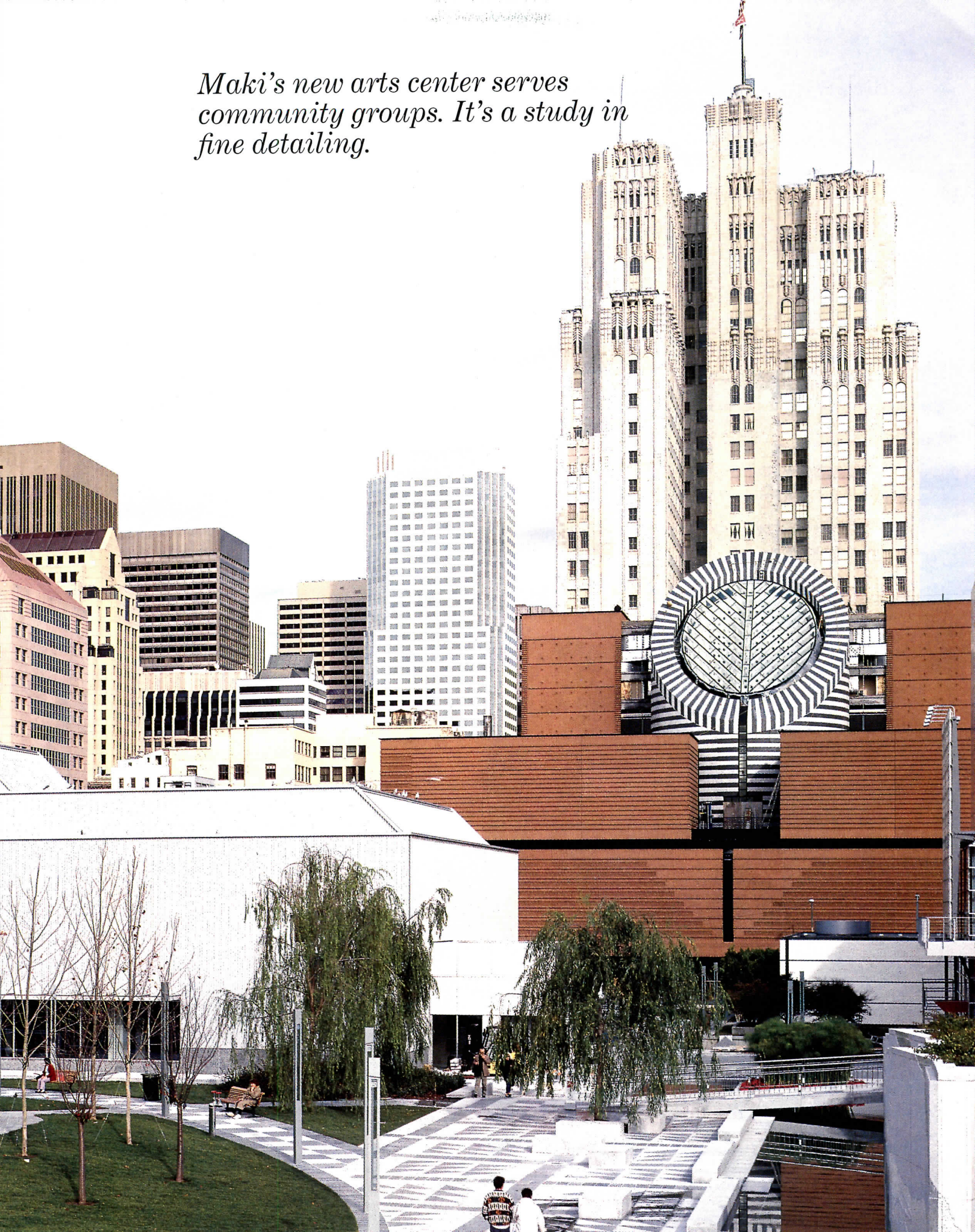


Silver Palette

*Center for the Arts, Yerba Buena
Gardens Galleries and Forum
San Francisco, California
Fumihiko Maki + Maki and
Associates, Design Architect
Robinson Mills + Williams,
Architect of Record*



*Maki's new arts center serves
community groups. It's a study in
fine detailing.*



San Francisco is a city that I have known and loved ever since my first visit in the mid 1950s," says Tokyo-based architect Fumihiko Maki. While he may not have left his heart there, the Pritzker Prize winner has graced the Golden Gate city with the Center for the Arts Yerba Buena Gardens Galleries and Forum, his first major American project.

A collaborative effort with Robinson Mills + Williams, the new building occupies an L-shaped lot within the Yerba Buena Center, a 25-acre arts and entertainment mecca just a stone's throw from the city's downtown. The Center, which replaced blighted residential hotels and rundown industrial buildings, is the product of a three-decade-long debate over the use of the site. Though the property was originally slated for commercial development with minimal arts facilities, the balance shifted in 1981 when the Moscone Convention Center was built underground, freeing up land at grade for cultural amenities. Designed independently by an all-star cast, the Center's components include a theater by James Stewart Polshek, Mario Botta's San Francisco Museum of Modern Art (under construction), as well as the landscaped Esplanade Gardens by Romaldo Giurgola. Additional facilities, such as the Mexican Art Museum and a mixed-use cinema complex, are planned.

Billed by Maki as a "kunsthalle," the 58,000-square-foot Galleries and Forum is not a museum per se since it does not have a permanent collection. Instead, it houses an array of flexible exhibition spaces that can be rented for a song by the 200-odd arts groups that call the Bay Area home. Equipped for all manner of visual and performing arts, the building includes three galleries of different size and character, a forum for theatrical and dance presentations as well as lectures and banquets, and an 84-seat state-of-the-art screening room—all linked by a double-height, glazed lobby overlooking the Esplanade.

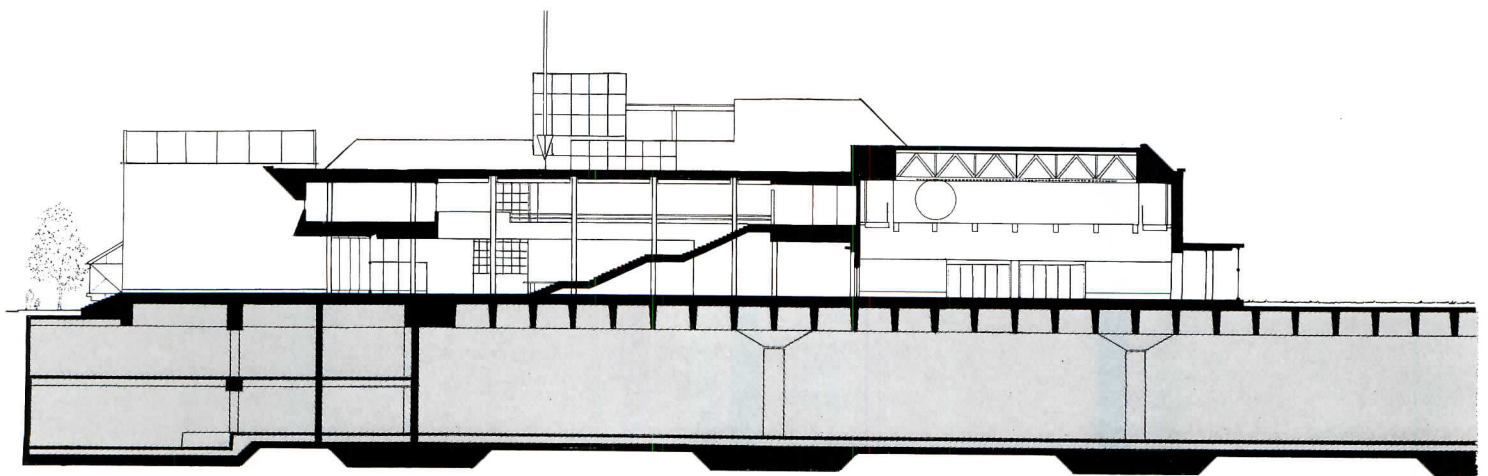
"My whole idea is that inside and out should not be completely closed or segregated," explains Maki. Indeed, floor-to-ceiling window walls and skylights blend the internal life of the building's primary spaces with the surrounding city. Even the glass-enclosed passageway linking the two first floor galleries, which doubles as an auxiliary display space, engages passersby with its views of artwork and

gallery-goers inside. The need to protect works of art, however, dictated the use of double-paned insulating glass with a suspended polyester, low-emissivity film to block harmful ultraviolet rays and control heat-gain throughout the building. Ceramic fritted glass provides additional shading for the upper lobby. And a host of sliding panels, motorized shades and louvers enable artists to tailor the flow of daylight into each space.

Maki's meticulous attention to detail not only contributes to the building's operation but also to its quality of construction. The architects painstakingly reviewed full scale mock-ups and models of everything from stair rail to curtain wall before allowing fabrication to proceed. Great care was taken even to locate switchplates and air grilles as artfully as possible. And by working closely with the U.S. manufacturer, the architects were able to create a close facsimile of Maki's signature aluminum panels. The panels' asymmetrical profile was custom designed to catch the brilliant California sun. Adherence to exacting standards is a Maki trademark, whether the project is in the U.S. or Japan. Even the courtyard's translucent glass block from Japan had to be scrutinized to ensure a consistent milky color.

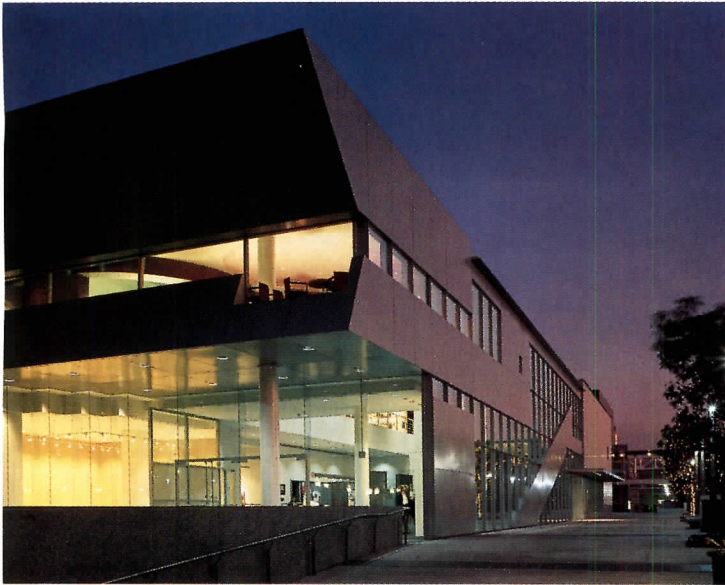
The aluminum panel system which clads the building was chosen in part for its lightness — the Galleries and Forum sits literally on top of the long span Moscone Center. Using pin connections, the new building's "ductile moment frame" transfers its load directly to the ribs of the convention hall's waffle slab below, without transmitting moment forces. To minimize point loads, the height of the structure was kept low and uniform. And because subterranean space was unavailable, all service and mechanical rooms had to be located on the ground floor and roof. Visible to the inhabitants of high-rise buildings nearby, the roof was as carefully composed as a fifth elevation. Covered with grey concrete pavers set at a 45 degree angle, the roof's surface is a striking contrast to the city's rectilinear grid.

By pushing existing technology to its limits, the architects have created a building that is, in Maki's words, "an expression of its time." By selecting a world-class architect such as Maki, San Francisco has drawn international attention to the Galleries and Forum. This too, is an expression of our time. *Naomi R. Pollock*

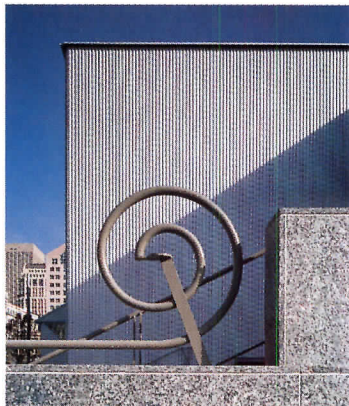


SECTION



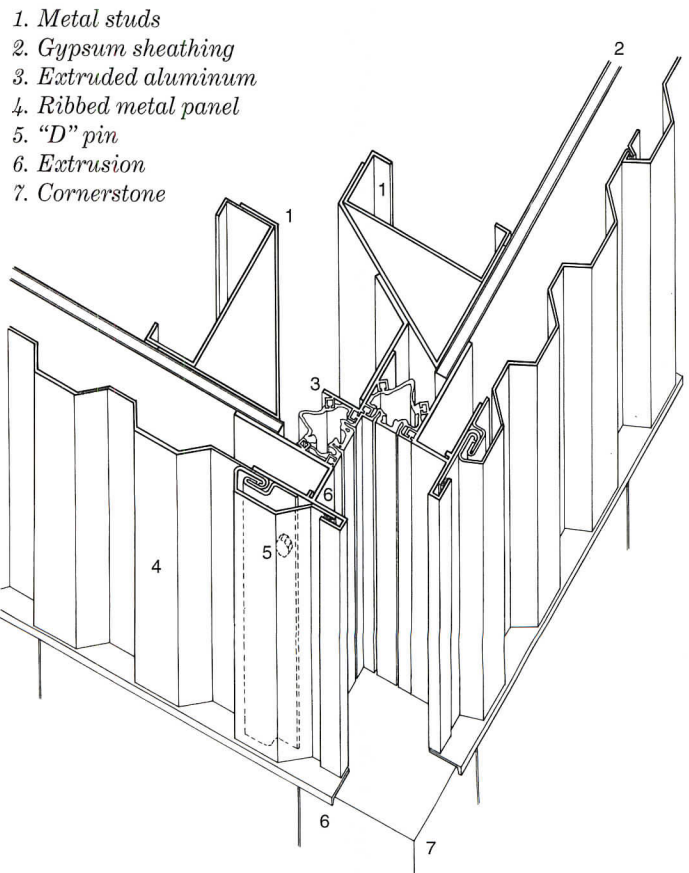


"I like Mies van der Rohe's museum in Berlin," says Maki. "While appreciating art, one is surrounded by the city." All of the primary spaces in the Galleries and Forum building were designed to link the inside and out, whether entrance foyer and second floor cafe (above top), large gallery with its adjustable louvers (above middle) or protruding passageway connecting the two first floor galleries. A snail-shaped metal rail (right) near the main entrance contrasts with the rectilinear aluminum panels.



Up Close

Prior to the construction of the Galleries and Forum, many art groups used nearby industrial buildings for exhibitions and performances. Taking this into account, Maki initially conceived of the building as an "elegant factory," clad with corrugated aluminum but detailed and finished in a refined manner: No stranger to the aluminum panel, Maki has used the material for several projects in Japan including the recently completed Hillside Terrace Complex Phase 6 and the YKK R+D Center. This time, the architects worked closely with a U.S. manufacturer to create 121, wide panels of continuous length that shimmer in the sun with their asymmetrical, ribbed profile. Made from roll formed .040-in. thick aluminum, the interlocking panels are joined with concealed fasteners that give the building's skin its seamless appearance. The entire surface was covered with a "Maki Silver" custom colored resinous metallic coating. While seismic constraints are less stringent in San Francisco than Tokyo, they still required the open corner joints that allow the panels to move independently in the event of an earthquake.



AXONOMETRIC OF RIBBED METAL PANEL SYSTEM



REGARDING AMERICA
Azte América



The L-shaped Galleries and Forum is organized so that the primary components of the program are oriented toward the Esplanade and Mission Street (plans) and connected by a glazed two-story lobby (above top). Designed for flexibility, the forum (opposite top) is crowned by a tensile grid made of steel net that accommodates all manner of lighting. A projection booth facilitates audio-visual presentations (above bottom). In the medium gallery, the ceiling soars to 25 feet. (opposite bottom).

Credits

Center for the Arts Yerba Buena Gardens Galleries and Forum, San Francisco, California

Owner: San Francisco Redevelopment Agency

Design Architect: Fumihiko Maki + Maki and Associates—Fumihiko Maki, principal; Gary Kamemoto, project architect, Jun Aoki, former project architect; Steve Dayton, Lawrence Mattot

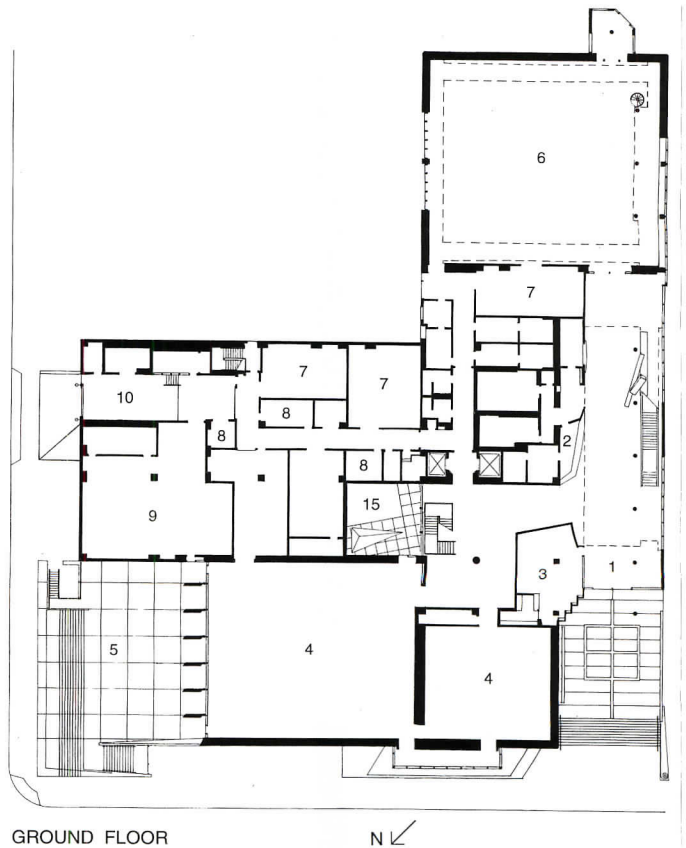
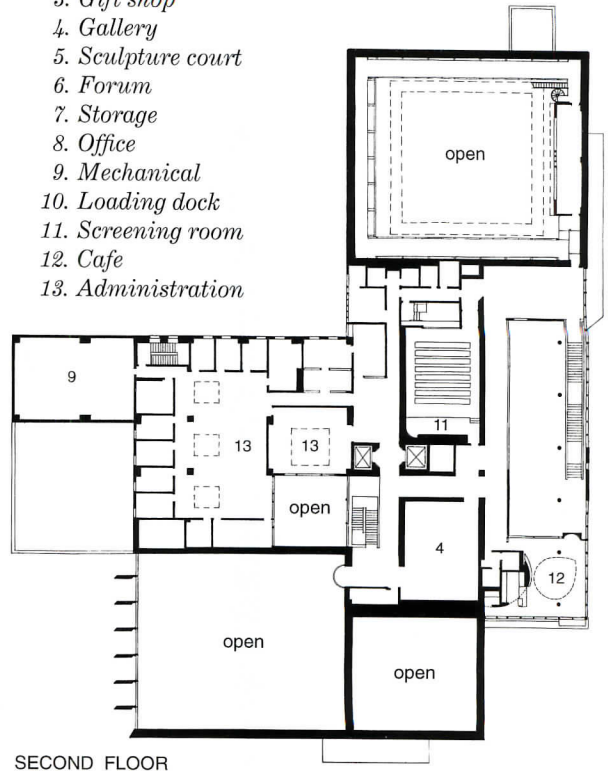
Architect of Record: Robinson Mills + Williams—Harish Shah, principal; Alan Kawasaki, project architect; Andrew Potter; Russ Nichols, James Aguila, technical managers; Ray Silverstein, Harshila Amin, Sam Hanna, Marcella Rodriguez, technical support, Felice Rosario

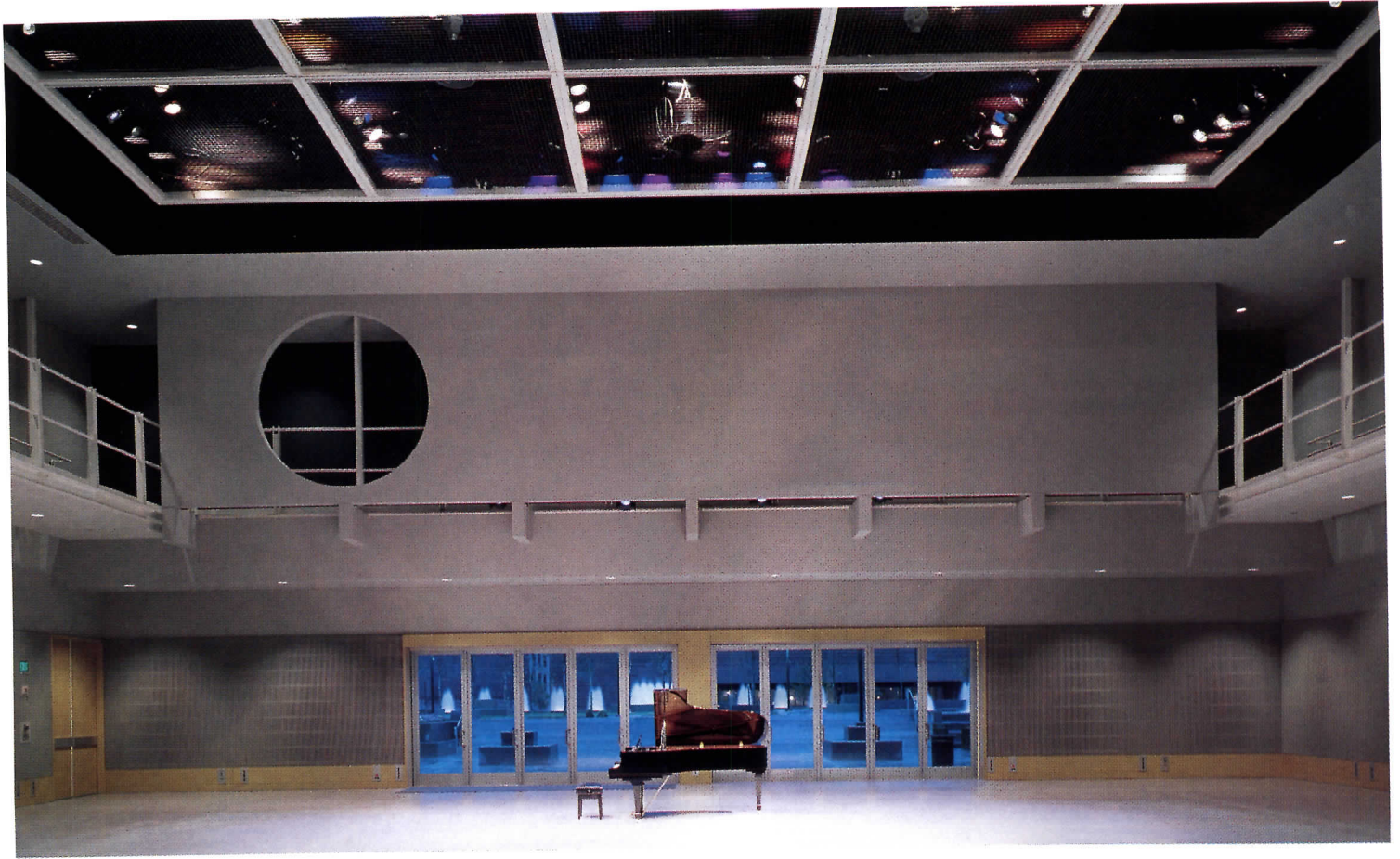
Consultants: Structural Design Engineers (structural); SJ Engineers (mechanical); FW Associates (electrical); S. Leonard Auerbach & Associates (theater/lighting); Laura Hogan Design (graphics); Hanscomb Associates (cost estimating); Kazuko Fujie Atelier (bench)

Construction Manager: Turner Construction Company

Contractor: Sumitomo Construction America, Inc.

1. Entrance
2. Reception
3. Gift shop
4. Gallery
5. Sculpture court
6. Forum
7. Storage
8. Office
9. Mechanical
10. Loading dock
11. Screening room
12. Cafe
13. Administration





Break-Out



*Perkins Eastman & Partners
turn a restrictive, routine
program into a community asset*

*New 107th Precinct Station House
Borough of Queens, New York City
Perkins Eastman & Partners Architects*



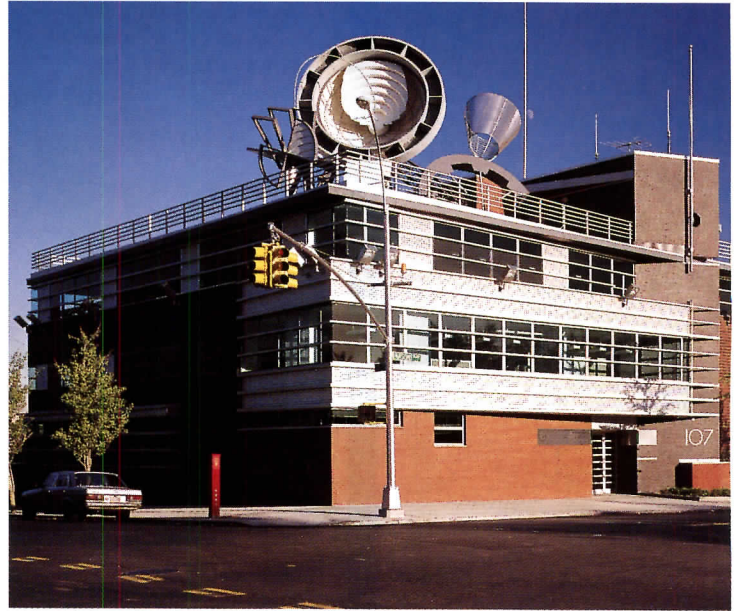
Police stations used to be civic monuments, recalls Perkins Eastman & Partners' Bradford Perkins. Designing them today, he says, means taking amorphous programs, which might as well be housed in box-like structures, and creating a building that's a positive influence on neighborhoods and users. It means breaking out of the box.

There are several suggestive givens in precinct-house design. Project designers Lucian Andrei and Alexander Vajda have exploited them to the maximum. First, explains principal-in-charge Mary-Jean Eastman, police stations need lots of parking—enough, in fact, for two whole shifts. (One cannot leave until the other arrives.) To accommodate so many cars, the designers pushed the new building tight up against the slightly skewed intersection of two main streets. The result is to put needed urban liveliness at a point where a strip shopping center meets rows of attached brick houses. Indeed, it is from these two contexts that the designers have taken their architectural expression, carried out in anodized aluminum panels and various patterns of iron-spot brick. "We looked around and used what was there," says Andrei.

Inside, requirements are strict in detail but fluid in organization. For instance, isolated access to cell-block utilities is provided for security and to lessen repair people's risk of exposure to tuberculosis (see plan). One requirement common to all police stations is a briefing room, which the architects revealed to the outside as a large open space to the right of the main entrance (top photo, right). To indicate a sense of impregnability, the architects placed a wall in front of the windows. On the second floor, offices for inspectors and clerical staff, and dormitories all gave opportunities for varied fenestration. The third floor contains functions unique to this facility—a command center for the entire Borough of Queens. Here, above a ring of exterior lights that can be turned up to near-blinding intensity, commandants from all precincts will meet during crises to coordinate operations. Here, too, is an example of just how fluid police-station programs can be: A large space built as a conference room, complete with french doors and special cabinetry, now houses rows of desks for a newly created crime task force. Lockers took up almost half a floor. The architects placed them in the basement.

Because functions were so different on each floor, the architects opted for a flat-plate concrete structure so that they could locate columns flexibly. Normally, says Eastman, steel construction was less expensive "in that location at that time," but needed transfer beams meant greater expense. A happy side benefit was that floor-to-floor heights could be reduced to 10 feet 4 inches from the normal 12 feet 6 inches for an office building. This cuts 6 feet 6 inches off the walk between basement and third floor. It also means that ceilings are as high as the undersides of slabs in areas where there is no need to conceal utilities. The architects used this feature to full effect around the building's perimeter, where high windows flood the interior with daylight. Indeed, the station has many unusual details inside and out.

This station house is successful in part because the architects kept a full-time representative on site during construction, despite the lack of reimbursement in city contracts. "It's the only way to get what you design," says Perkins. Also, there was a slow, competitive construction market. This meant that the building was finished for \$9 million—special details and all—well under the budget. A required arts-commission approval sometimes has held many city projects up for long periods. Tired of Postmodern schemes, the commission headed by architect James Freed passed this design in 30 minutes.
Charles K. Hoyt

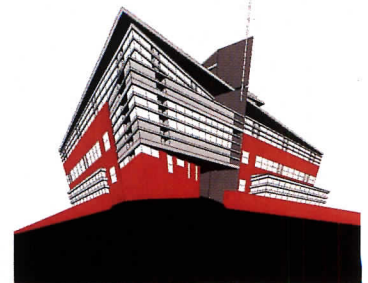


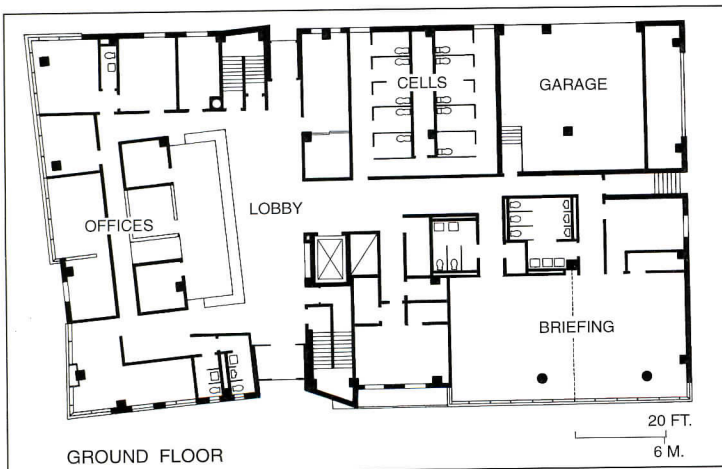
Stainless-steel trim on plastic-laminate-covered casework adds durability and refinement. Everyone entering and leaving the building must pass the duty officer's desk (opposite photo), so that first-floor public space must be a fire-rated exit for stairs from above and below.

Walls are glazed structural block. The undulating "equal-opportunity" booking rail only

passed client scrutiny when the architects explained that prisoners come in all heights. Cabinetry elsewhere takes on sculptural forms. The rooftop satellite dish is the result of the city's one-percent-for-art policy. The architects describe it as a happy collaboration. Some neighbors, taking it for real, complain about TV reception. "It's about communications," says sculptor Alice Aycock.

Designers' original concept.





Credits

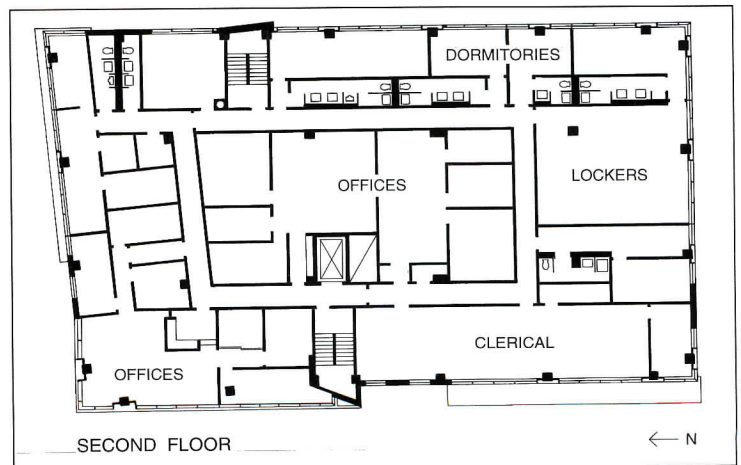
*New 107th Precinct
Station House
Borough of Queens,
New York City*

Owner: *New York City*

Developer: *New York City
Department of General Services*

Architect: *Perkins Eastman &*

*Partners—Mary-Jean
Eastman, partner-in-charge;
Bradford Perkins, resource
principal; Lucian Andrei and
Alexander Vajda, project
designers; Cono DiZeo, project
architect; Paolo Bertolotti, Mike
Ciemny, Herbert Dixon,
Anthony Hatzioiannou, Peter*



*Hughes, Mauricio Salazar;
project team*

Roof Sculpture: *Alice Aycock
Engineers: Severud Associates
(structural); Kallen & Lemelson
(M.E.P)*

Landscape Architect: *Coe Lee
Robinson Roesch*

Cost Estimator: *Amis, Inc.*

Construction Manager:

*York/Hunter City Services, Inc.
Contractors: Morris Park
Contracting Company, Inc.
(general); Northgate Electric
(electrical); L. G. Plumbing, Inc.
(plumbing); Thermo
Dynamics, Inc. (hvac)*

Rotterdam Redux



*The Netherlands Architecture
Institute knits together a cultural
quarter decimated 50 years ago.*

*Netherlands Architecture
Institute
Rotterdam, The Netherlands
Jo Coenen, Architect*



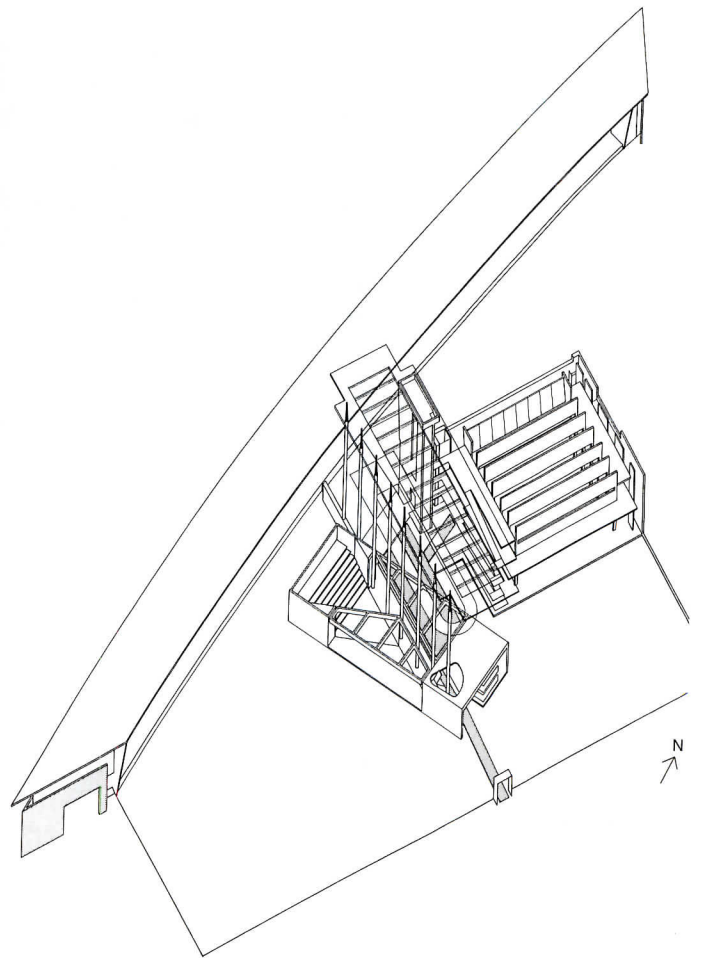
The new Netherlands Architecture Institute in Rotterdam is not meant to be just a solemn museum, but an informal and lively gathering place for professionals and the public alike. To this purpose, architect Jo Coenen did not design a building so much as a grouping of separate but interlocking parts, each an expression of the institute's various functions. The long, curving treasury containing the archives (among them those of Berlage and Oud) shields the ballroom (the exhibition space) from the street; above them towers the glass study, containing the library and offices. Angled under the glass tower is a two-story reception pavilion.

In 1988, more than 100 years of debate ended with a competition for the federally-funded complex. Coenen was chosen over the other five participants, among them fellow Dutchman Rem Koolhaas, and the Tessin Swiss Snozzi (one of Coenen's own mentors and the only foreign participant). Coenen champions a strongly contextual approach and a style in which Modernism is tempered by craftsmanship and tradition. "Architecture can easily be festive without becoming superficial," he says. "But the Dutch are inclined to dismiss it as empty rhetoric." Indeed, he is not averse to heightening the drama of this ensemble by the time-trusted technique of placing it in a pool of water.

The choice of materials underscores the institute's composite nature. In the glass study, the library is protected from excess daylight by enameled-glass panels, and topped by the robust steel pergola of the same height as the copper tower on the neighboring 1935 museum. The cube-like exhibition space is brick-clad, a nod in the same direction. The treasury is faced with dark-red corrugated metal panels (a compromise; Coenen would have preferred wood or copper). The exhibition hall, containing one large ground-floor space and three auxiliary galleries on the third and fourth levels, is entered by narrow ramps of rough blue- and yellow-washed concrete.

The walls of the reception pavilion are one of the building's technical innovations: structural double-glazing, an experiment by the Dutch firm, Octatube, with a subsidy from the Ministry of Affairs. The panels are joined by so-called "quattro-knots" and the double-height walls stiffened by cables. Under the treasury runs a concrete arcade which was originally designed open at both ends. As executed, however, the arcade has become a double dead-end, housing the offices of the institute's magazine, *Archis*, at one end, and a café at the other, making it more of a gallery than an urban passageway. A computerized show of colored lights by Peter Struysken is slotted into the arcade's pylons. The treasury and its arcade separate the busy Rochussenstraat with its stream of traffic on the one side from the tranquility of the building's pool and the Museumpark on the other. Coenen has taken the urban situation into account in other ways as well: one can walk from the Museumpark straight through the architecture institute. The entrance from the park is not quite convincing, however. The gangway across the pool is well-proportioned, but compared to the flamboyant whole, it is too scaled down.

The institute marks the near-completion of a new cultural quarter in downtown Rotterdam, with the Museumpark, designed by Koolhaas and the late landscaper Yves Brunier, at its heart. Surrounding the park are the museum Boymans-van Beuningen (1935), a new private museum for the local painter Bert Chabot in a 1930s white villa, a natural-history museum, and Koolhaas' own KunstHal [RECORD, March 1993, pages 66-73]. Slowly but surely Rotterdam is stitching back together the urban fabric torn apart by the German Blitzkrieg at the beginning of World War II. *Tracy Metz*



The Netherlands Architecture Institute's archives building (above) cradles the reception pavilion, glass library/office tower, and brick exhibition hall. Downtown Rotterdam (below) looking north, shows the

institute and Museumpark in the foreground. The gangway (opposite top) connects the Museumpark with the congestion of downtown Rotterdam. The curving, brick archives building is opposite bottom.





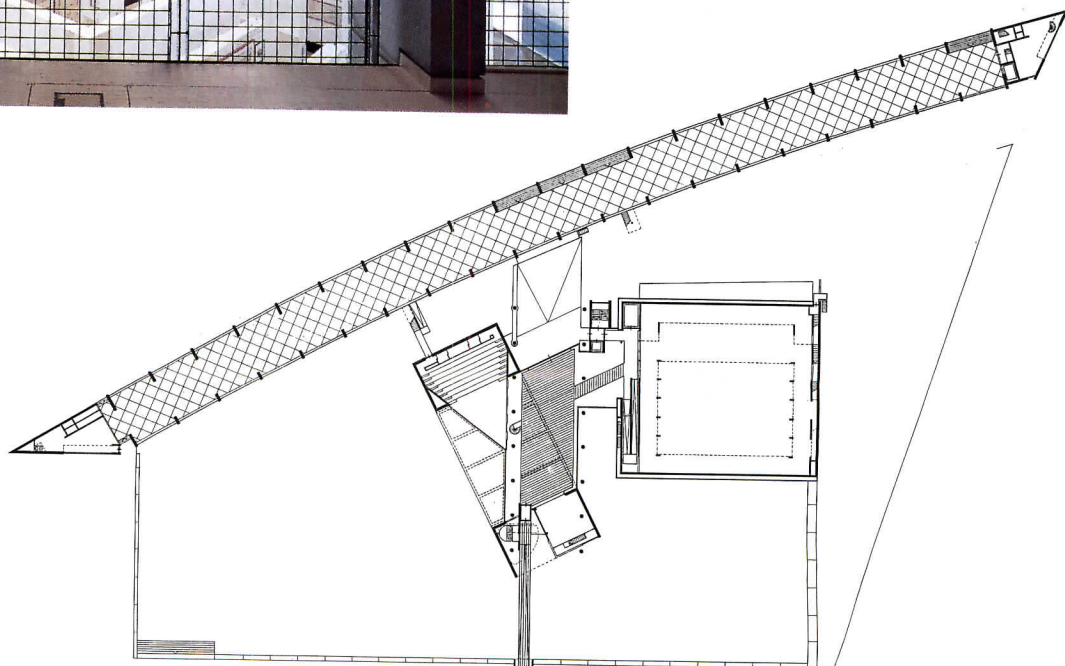


Yellow- and blue-washed ramps allow access to the four-level exhibition hall (top left); the glass-block walls and voids in the archives building (top right) are another unabashedly Modernist reference. The third level of the exhibition hall reveals the open metal-grid floors of the fourth-level gallery (bottom photo). Plan, bottom, is the footprint of the main floor with skyways connecting the reception area to the archives and the exhibition hall. Opposite, a view down a non-load-bearing concrete pylon into the exhibition hall.



Credits

*Netherlands Architecture Institute
Rotterdam, The Netherlands*
Architect: *prof. J. M. J. Coenen*
Consultants: *G. A. van Dijk en Zn (grounds and pool); Projekt-service Dynatherm Zuid (installations); Advies-en Ingenieursburo Van der Laar (construction); Adviesbureau Peutz & Associes (acoustics)*
Contractor: *Strukton Bouwprojecten*





Laboratories in Low-Tech Contexts

© Steve Rosenthal



Marine Resources Center

*Marine Biological Laboratory
Woods Hole, Massachusetts
Tsoi/Kobus & Associates, Inc.*

The Marine Resources Laboratory is located at water's edge of Eel Pond, a safe harbor at the historic fishing village of Woods Hole, not a locale where a new building would necessarily be welcome. Architect Edward Tsoi worked with a committee of the most vocal opponents of the building to help shape the lab's character, drawing on an abutting whaling structure made of granite (above), and shingle-

style and fenestration elements from other local structures. The purpose of the lab is to provide high-quality marine specimens for research purposes. Crab, shark, squid, and some 200 other species can be sustained by the facility's sophisticated recirculating seawater system (upper right), and tanks and mechanical support occupies a good deal of the building's area, as do laboratories (lower right), conference

The sleek, high-tech expressionism currently in vogue for lab buildings isn't appropriate for every context. Here are three laboratory buildings that strive for a low-key, low profile image.
Charles D. Linn



rooms, and offices. Despite early opposition, the laboratory has become a popular destination. Why? The architects located some of the largest tanks inside the building's big bay window. There, passersby can enjoy an occasional glimpse of a shark's snout breaking the water. "It's a great opportunity to share science in the raw," says Tsoi, "without intruding on this delicate environment."

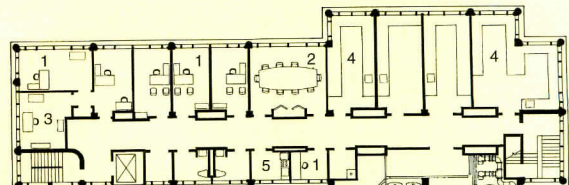
Credits

*Marine Resources Center
 Woods Hole, Massachusetts*

Owner: *Marine Biological
 Laboratory*

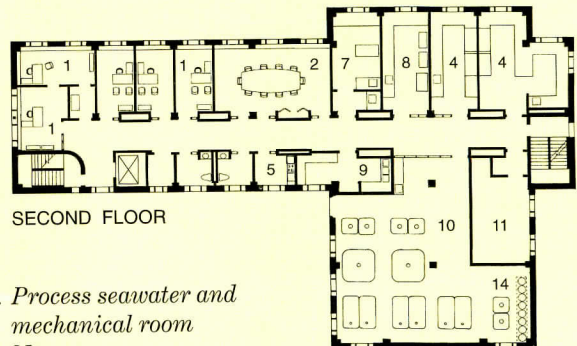
Architect: *Tsoi/Kobus &
 Associates—Edward T. M. Tsoi,
 principal*

Consultants: *Bard, Rao+
 Athanas/Sullivan Partnership
 (MEP); James Montgomery
 Consulting Engineers (life
 support)*



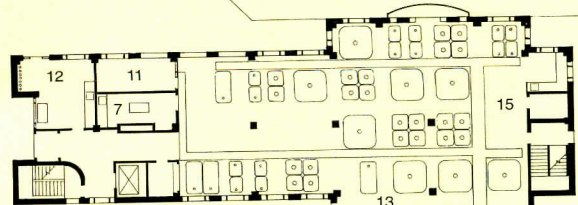
THIRD FLOOR

- 1. Office
- 2. Conference room
- 3. Records
- 4. Lab
- 5. Kitchenette



SECOND FLOOR

- 6. Process seawater and
 mechanical room
- 7. Necropsy
- 8. Lab support
- 9. Water Quality
- 10. Culture



GROUND FLOOR

- 11. Isolated holding
- 12. Shipping/receiving
- 13. Marine animal holding
- 14. Biofilter columns
- 15. Work area



Discovery Research Center

Dekalb Plant Genetics Corporation

Stonington, Connecticut

Centerbrook Architects and Planners

The Discovery Research Center is the site of research into methods for breeding varieties of drought- and insect-resistant corn. Centerbrook's designs for the building and its accompanying research greenhouse are surprisingly agricultural in appearance, taking on the proportions and gabled-roof structure typical of farm and other rural buildings. "The nearby communities are

very conscious of what buildings look like," says architect William Grover. "We try to make buildings that fit into the neighborhood, so they don't stand out. We also spent a lot of time with the community describing what was going to go on in this building, communicating what environmental precautions were being taken. Centerbrook believes in public participation." The build-

©Jeff Goldberg/Esto photos

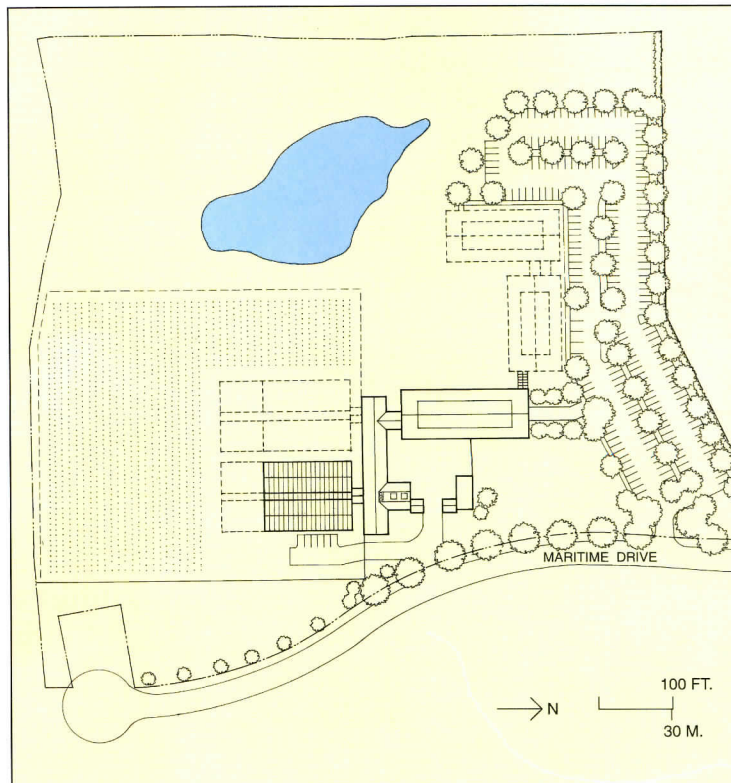


ing is broken down into three parts: labs, the headhouse, and the greenhouse. The first- and second-floor labs are organized around a "racetrack" corridor, with offices located on the west side of the building, cold and warm rooms, dark rooms and other lab-support rooms located in the center core, and labs located on the east. This gives the scientists access to windows

wherever they are working. Offices and laboratories are separated, encouraging chance meetings between scientists. The lab's skylit library is located between labs and offices also to enhance interaction. The barn-like solution worked out well because laboratories demand a great deal of mechanical space, which has been installed in the gabled attic. The headhouse

contains more mechanical equipment, and a service courtyard closed off by rolling gates conceals tractors, implements, and above-grade fuel tanks. The research greenhouse is constructed of a double-walled plastic skin, and is automatically ventilated by motorized ridge vents and fans when the temperature gets too high. Sections of the greenhouse are carefully

sealed to prevent pollen from one test plot from contaminating another. The building also plays a role in recruiting scientists, according to Grover. "Scientists don't always like high-tech buildings," concludes Grover. "When you're working with them, they always ask for some wood or wood cabinets. They want a window that opens. They live all day in a high-tech atmosphere,



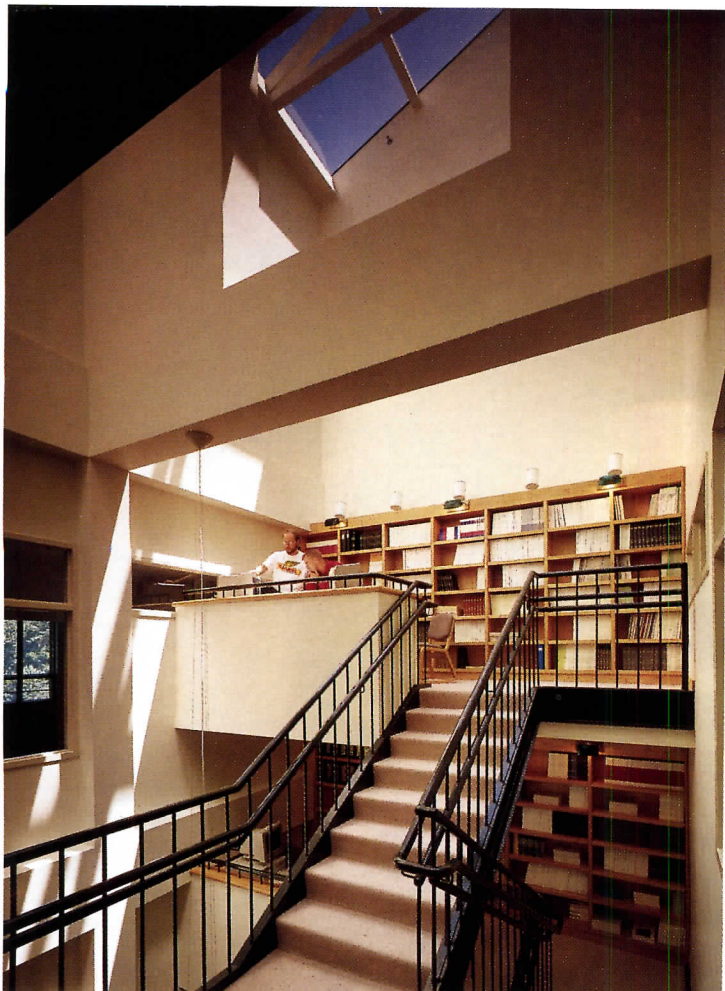
The picturesque structure of the Discovery Research Center is convincingly drawn from agricultural metaphors. It so cleverly conceals the usual stacks and ventilators, one might never suspect its high-tech purpose. The offices and laboratories are housed in the reddish section of the building (opposite below), while the green-colored headhouse contains mechanical equipment, lab support facilities, and room for future expansion. Tractors and implements are stored in the building and courtyards (left) and secured by tall rolling doors.

and they seek some relief from it. This place is a little more 'flannel shirt' than a lot of corporate laboratories. That can be very attractive to a scientist who is being recruited."

The Discovery Research Center's two-story-high, skylit library (below left, and plans opposite right) is centrally located between corridors of labs and offices to encourage interaction among scientists. Centerbrook countered the typical laboratory-storage problem of unused glassware and miscellaneous equipment stacking up in laboratory corridors by providing

glass-fronted storage cabinets there, and illuminating the contents with downlights in the ceiling (below right). An abstract pattern resembling ears of corn appears on the tiled corridor floor. The plastic-walled, state-of-the-art research greenhouse is located away from the other buildings so shadows aren't cast over plants. Automatic roof vents and fans operate when the

greenhouse gets too hot (bottom right and opposite). Cross-ventilation from one section of the greenhouse to another will contaminate one another. High-intensity discharge lighting allows experiments to continue when outside light levels are low.



Credits

*Discovery Research Center
Stonington, Connecticut*
Owner: *Dekalb Plant Genetics
Corporation*

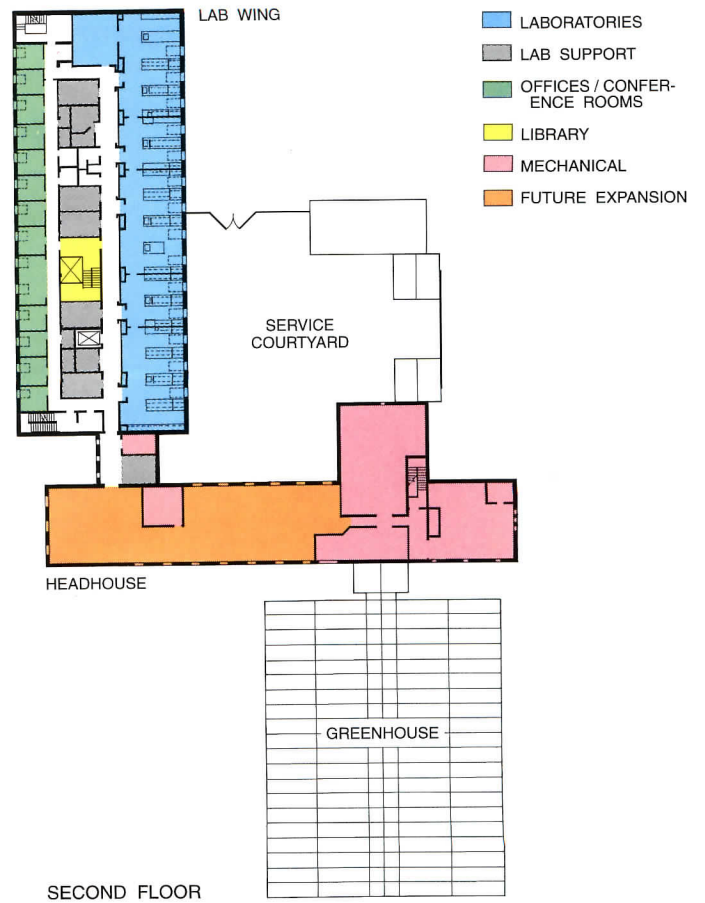
Architect: *Centerbrook
Architects and Planners—
William Grover; architect of
record; Sheri Bryant Lucero,
project manager*

Mechanical Engineer:
R.G. Vanderweil Engineers, Inc.

Structural Engineer: *Besier
Gibbel Norden Consulting
Engineers*

Civil Engineer: *Doane
Engineering*

Contractor: *The Atlas
Construction Company*



Founder's Research Center

Genentech, Inc.

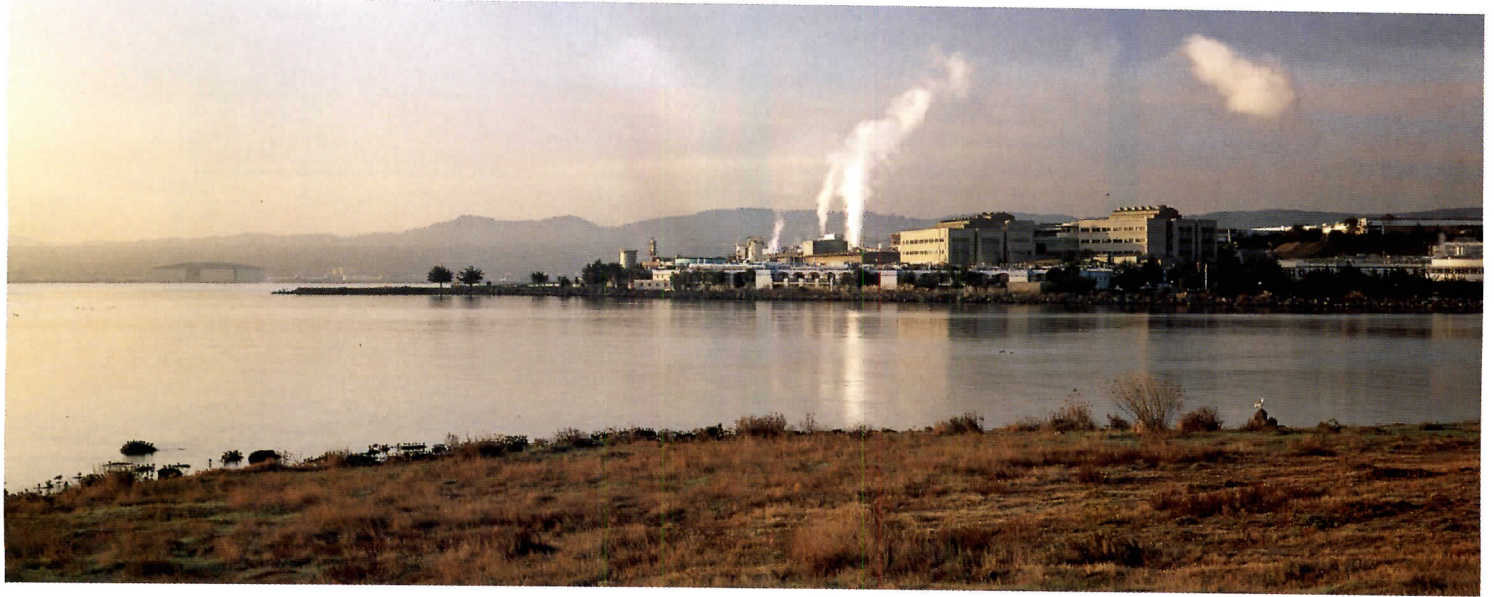
South San Francisco, California

SRG Partnership, Inc.

©Douglas Kahn photos

SRG Partnership's challenge in designing a new research laboratory for Genentech, a pharmaceutical manufacturer, was to establish architectural character worth imitating rather than to incorporate elements of the surrounding cut-and-filled-landscape of tilt-up concrete industrial buildings dropped into a sea of irrigated lawns. "Our intent was to restore the site, to put in a

building that wasn't harsh to its neighbors, that respected their blockiness and manufacturing character, but differed in the way it was landscaped, graded, and had a sense of pedestrian scale." The resulting building is low-rise, built in three wings around a central courtyard. The "lawn" is graded into gently rolling dunes, and seeded with native grasses and wildflowers. Each wing is



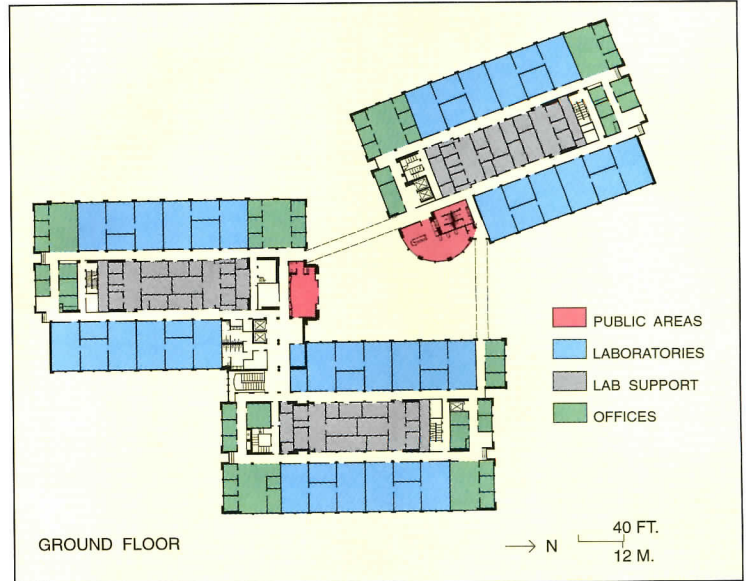
organized into two outer lab and office zones, and an inner core of lab support spaces. Concealed in the inner core is a system of braced steel frames that are double the Uniform Building Code's requirements for seismic bracing. The bracing also helps provide a vibration-free environment for the lab's most sensitive equipment. Piping and other utilities are housed within the

braced frames for protection, and are arranged to make crossing of supply and return lines minimal. Each section of the building is parallel to the site's slope so the end of each corridor has a view, thus giving occupants a sense of orientation. A compartmentalization system allowed one-hour corridors to be eliminated, so that glass in doors, sidelights, and transoms could be used.

Credits

*Founder's Research Center
Genentech, Inc.
South San Francisco, California*
Architect: SRG Partnership—*Jon Schleuning, design principal; Fred Gast, principal-in-charge; Gordon Williams, John Harrison, Timothy Evans, Mark Mikolavitch, project team; Laura Hill, Bonnie Bruce, project interior designers*

Engineers: *Affiliated Engineers (MEP); KPFF Consulting Engineers (Structural); MPA Design (landscape); Brian Kangas & Foulk (civil);*
Consultants: *Acentech (acoustical); URS Consultants (seismic); Richard R. Reitz (laboratory); VDK Architects (programming); ISEC (laboratory furnishings)*



Reacting to the Founder's Research Center's cut- and fill-industrial park context (opposite above) SRG Partnership set the new building into the hillside and gave the site dune-like grading, planting it with native grasses and wildflowers (opposite). Organizing the building into three wings and orienting them with the longitudinal axis parallel to the site's slope allows each corridor to have a view (plan, above). The courtyard (above left) accommodates Genentech's infamous Friday afternoon keg parties. A compartmentalization scheme allowed the typical one-hour corridors to be eliminated, allowing unusually large areas of glass to be used in lab entrances (left). A system of braced steel frames (right) installed in the service core of each wing provides seismic resistance, and protects ducts, utilities and piping.



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