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Progressive Architecture

A Penton Publication August 1994

Also in this issue

- Profile: Maya Lin
- Critique: Lloyd's
- Vive Le Corbusier!
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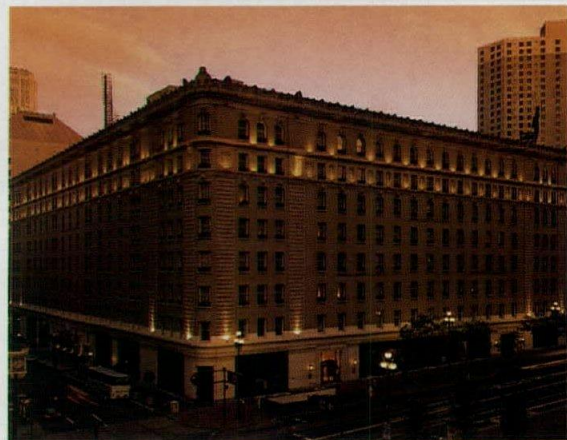
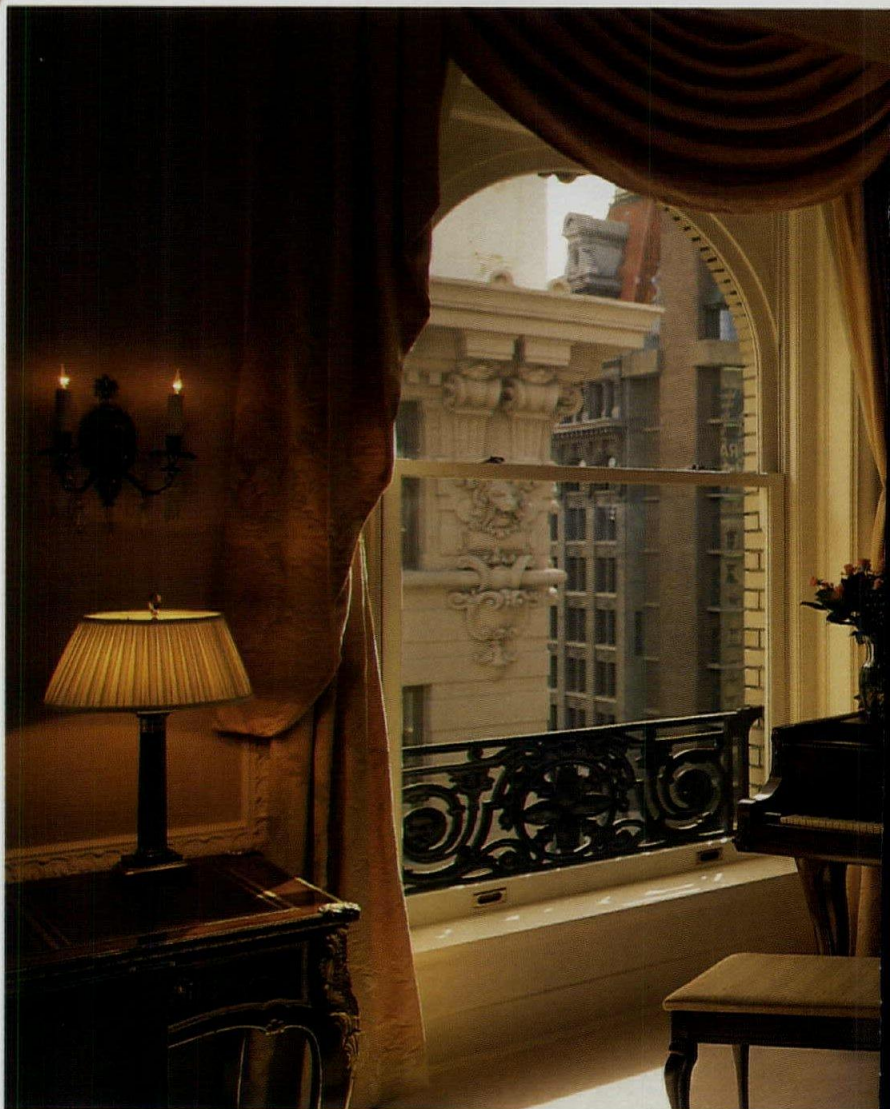
Since 1875, the Sheraton Palace Hotel has been one of San Francisco's most beloved institutions. So when its restoration was being planned in 1989, every effort was made to preserve the details of its original design. Among other things, that meant the replacement of nearly 600 windows. And because of their experience in such projects, Marvin

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- 9 **Editorial** Reality Check
- 12 **Views**
- 41 **P/A Awards** Call for Entries

News

- 15 **News Briefs**
 - Competition for Virtual Building
 - Commentary on ACSA European Conference
 - Winner of First Peter Rice Prize
- 16 **Books**
- 18 **Calendar**
- 19 **Practice Notes**
 - Principals' Salaries
 - Creative Pricing
- 19 **Technics Notes**
 - Architectural Antenna
 - Moisture Control Guide
- 20 **Projects**
 - UNLV Architecture School
 - Community Centers
 - Mixed-Use Building by Steven Holl
- 26 **Products**
- 29 **Computer Products**

Reports

- 33 **The White City Revisited**
An international conference in Tel Aviv offers an opportunity to examine the legacy of 1930s Modernism firsthand.
- 36 **Defining Gay Design**
Homosexual architects and designers, gathering in New York ask whether their work differs from that of straight colleagues.

COVER

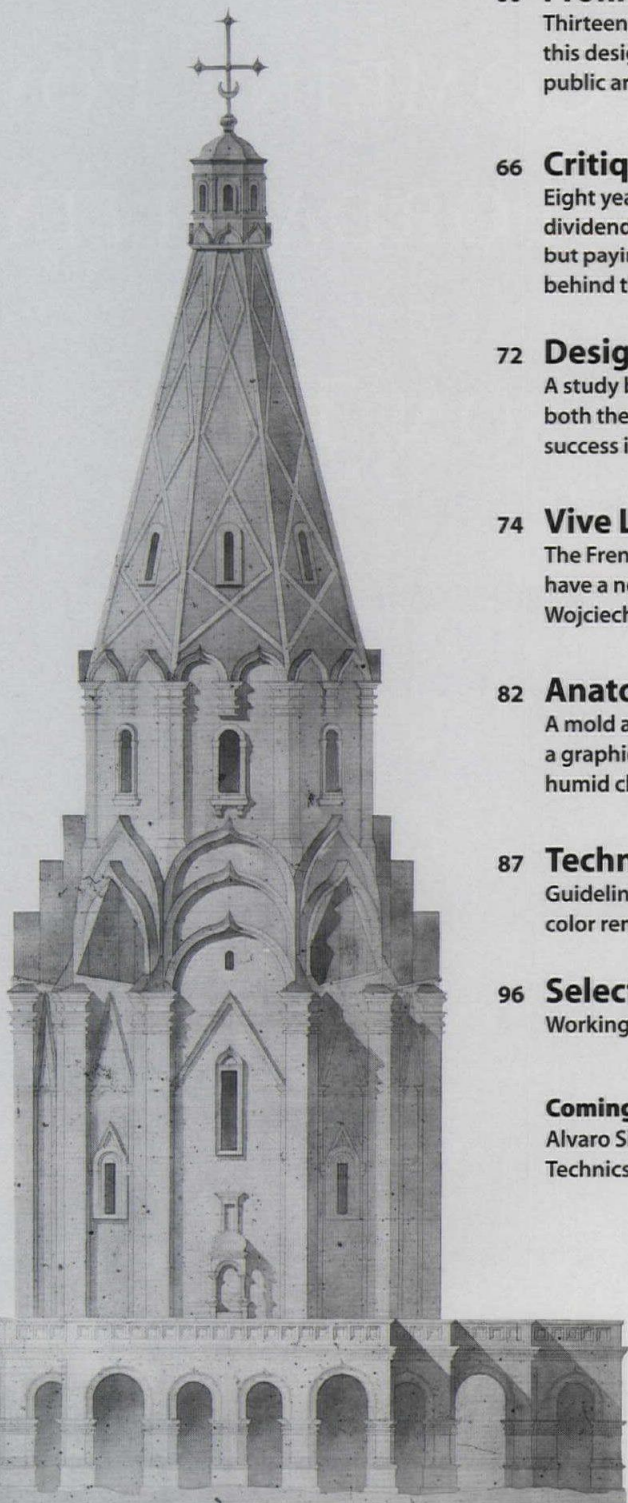
Photograph by Michael Hurd
Cover design by Julie Anne Yee

THIS PAGE

Student graphics exercise from the Novosibirsk Architectural Institute by first-year student M. Karpenko (p. 58).

Features

EDITOR IN CHARGE: Michael J. Crosbie



49 **The Americans Are Coming!** **АМЕРИКАНЦЫ ИДЕТ!**

Russia's new market has opened opportunities for American architects. But be prepared for a game of chance in a country amid dramatic flux.

58 **Educating the Russian Architect**

Russia's social convulsions are changing architectural education in that country.

60 **Profile: Maya Lin**

Thirteen years after she designed the Vietnam Memorial, this designer and artist is successfully making sculpture, public art, and architecture.

66 **Critique: Lloyd's of London**

Eight years later, Lloyd's of London is enjoying the dividends of its architecture's visionary aspects, but paying a hefty premium on the vainglory behind the design.

72 **Design-Build: Lessons from Japan**

A study by Weld Coxe and the late Mary Hayden shows both the relevance and the uniqueness of design-build's success in Japan.

74 **Vive Le Corbusier!**

The French, Le Corbusier's most trenchant critics, have a new generation of Corbusians in their midst. Wojciech Lesnikowski describes their milieu.

82 **Anatomy of a Sick Building**

A mold and mildew disaster in a Florida building provides a graphic example of how not to design and build in hot, humid climates.

87 **Technics Q+A**

Guidelines on selecting the fluorescent lights for proper color rendering.

96 **Selected Detail**

Working drawings abroad.

Coming Next Month: Design: Overcoming What Ails It Alvaro Siza • Critique: L.A. Library • Profile: Michael Pyatok Technics File: Computers

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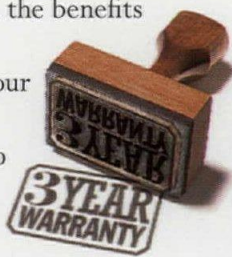
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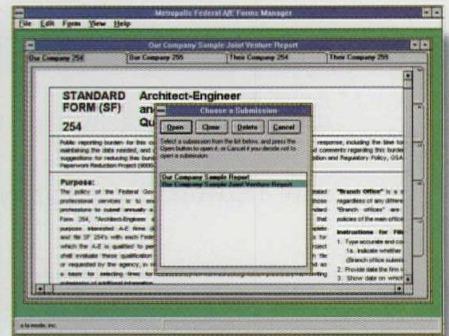
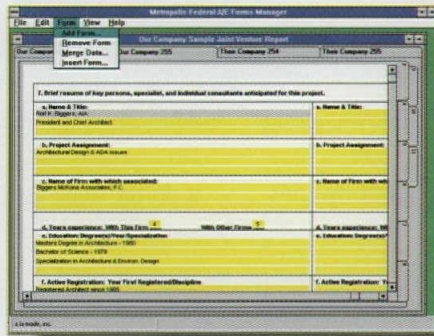
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Reality Check

We complain that students coming out of architecture school are ill-prepared: lacking in technical knowledge and ignorant of the back-and-forth of real-life practice. But are our graduates any better equipped with respect to the artistic stances they take? Are we fostering disciplined creativity in the schools, or merely being overindulgent?

These and related questions came to preoccupy me over the past academic year, during which I was fortunate to participate in six design juries at various East Coast schools.

Generally, I was encouraged by what I saw: students are working very hard; and a kind of bewilderment I had noticed in years past – a hesitance to “commit” to clear-cut architectural decisions – is diminished. Students are now creating identifiable buildings, with roofs, floors, walls, and glass lines. I was impressed, again and again, by the caliber and dedication of the faculty and enlightened by the nimble minds of my fellow jurors.

At the same time, I perceived a troubling imbalance between the creative freedom afforded students and the critical tests to which their *partis* were subjected. The abundance of conceptual models, accompanied by generally obscure and rarely challenged “presentation-speak,” clearly signaled that the metaphorical premises of the designs were the most privileged (if not inviolate) aspect of the work. Recently, I came across a similar observation voiced by a student: “Too often in our journey through the design studio and related classes, students become too narrowly focused on the metaphysics of creation for the sake of creative play,” wrote John Dineen of the University of Nebraska, in a 1993 issue of *Crit*, the journal of the American Institute of Architecture Students.

At the critiques I attended, instructors and visiting critics trod ever so carefully around the tender core of students’ ideas. A climate prevailed in which no one dreamed of suggesting that all ideas were not equal in value; that a particular departure was perhaps trivial, not likely to lead to much, or simply too “costly” in relation to its architectural yield. Out of cowardice, I suppose, I stifled my own pragmatism whenever it reared its unglamorous head.

But now, though I risk being branded a boor, I submit that the poetic license given in schools is too broad: while I respect

the pedagogical impulse to protect untrammelled intellectual exploration, we can’t afford to inculcate the notion that meta-physical design premises can ever be divorced from their organizational or economic consequences, or from the impact they will have on users. In the absence of a dialogue with clients, which inevitably checks the creative process (and forces lucid communication, at the very least), aren’t we handicapping students even further by not simulating more of that process of scrutiny and rationalization in school?

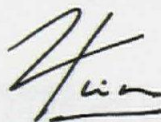
There is ample proof that the habits of mind formed at school endure beyond graduation. It’s one reason we can’t afford to teach students that the purity of ideas is paramount. Later, such vanities are carried over into a professional milieu that too often elevates intentions above results, and in which “compromise” is little more than a dirty word.

This ethos gives rise to the phenomena of certain star architects unabashedly proclaiming that users are extraneous to “pure architecture”; and the public is subjected to absurd columns in weekend newspaper supplements that, without a hint of skepticism, breathlessly report on an architect’s inspirations as derived from the morphology of potatoes.

A corollary to the exaggerated significance we attach to the conceptual metaphors students use is our overemphasis on solo performance. Of the dozens of student works I took part in reviewing none incorporated any kind of teamwork. Larry Keeley, president of the Dublin Group, who teaches at Chicago’s Institute of Design, raised the point most cogently at a “town meeting” held with students from three other Chicago schools: in devising projects for his students, Keeley explained, he made sure to present problems of such complexity that they would be compelled to team up, the better to master the required research and to generate commensurately sophisticated, genuinely synthetic responses.

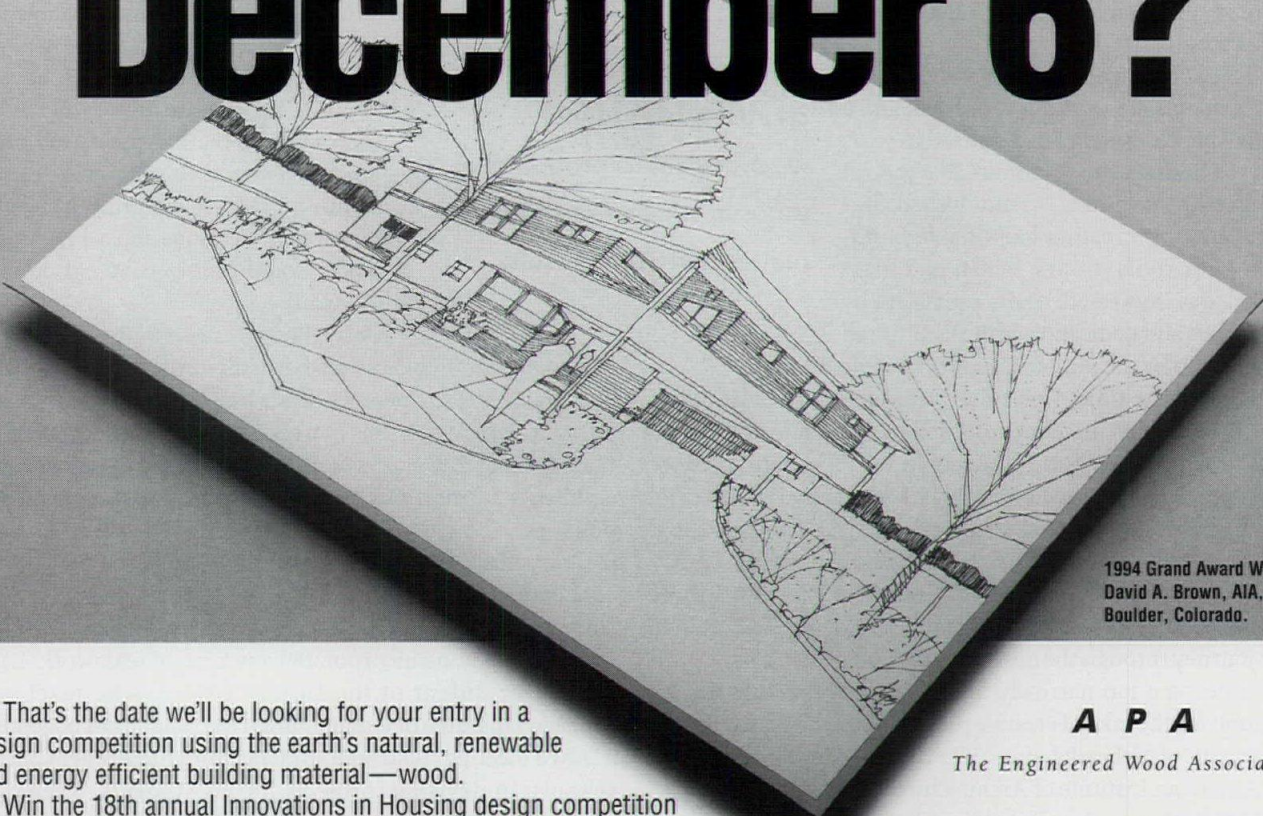
After all, isn’t the ability to synthesize complex problems one of the greatest boons of an architectural education? Many students enrolling nowadays will not be pursuing conventional practice (by intention or otherwise). We can increase their resilience, versatility, and inventiveness by teaching that truly worthy ideas are only strengthened in the tempering. □

In failing to discipline the creativity of students we propagate a professional ethos in which intentions matter more than results.



Ziva Freiman

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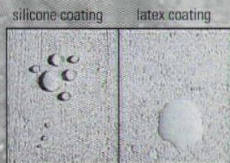
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Positive Feedback

I seldom find more than one article in any given issue of a monthly architecture magazine that I read all the way through and can recall more than a day later. But the July issue contains three: John Dixon's Peabody Terrace rehab article, Tom Fisher's "Lost in Chicago" evaluation, and Don Canty's piece about Jim Olson's evolution. This is by way of encouragement for the directions the staff are taking P/A.

What a pleasure to read a design magazine again that is about ideas, is willing to express a point of view, and takes risks. I do hope, however, that you will continue to work on the design of the magazine. Overall, it is still harsh and forced, with too much bold-face type that competes with the illustrations and a thoughtless approach to the use of white space, especially in the News section.

But thanks for the content. I hope you thrive.

Allen Freeman
Washington, D.C.

Empowering the Architect

Your subscription offer that includes a critical look at the AIA prompts me to accept your offer. I hope the offer is an indication that Progressive Architecture is progressive in fact. I hope this is an indication that you will use your resources to break the troika that has, in my opinion, been so damaging to the profession of architecture.

The troika, as I see it, is (1) an out of touch and misdirected professional organization, i.e., the AIA, (2) publications that are far more interested in exploiting perceptions for gain than in promoting the best interest of the profession and, (3) architectural offices that are far more interested in promoting images and profits than legitimate architecture.

It is painful to see individual architects who have gone through extensive preparation for architectural practice and find themselves unable to use their skills beneficially for economic rewards. These individual architects have the ability to contribute effectively to so much of what is needed, such as housing and communities, where truly human public spaces are the exception. I have long questioned the lack of economic reward for architects who create extraordinary value for others. Your publication could serve the profession and the public well by assuring that architects benefit in an economic system according to contributions made.

Joe Wallis
Mercer Island, Washington

Tomorrow's Schoolhouse

My associates and I enjoyed reading Mark Alden Branch's fine article, "Tomorrow's Schoolhouse: Making the Pieces Fit," (June 1994). We did, however, disagree with the article's implication that architects are providing little research or leadership in the realm of school design.

Our firm, for instance, has been funding major research in this area since 1990. What began as an 18-month project to clarify teachers' needs and expectations of their

facilities, has evolved into a design process we call the Schoolhouse of Qualitysm. This TQM-based process uses quantitative and qualitative research to build consensus, to set priorities, and to inspire innovation.

A representative example: our research for one public school district identified that the community placed considerable value on teaching the importance of managing natural resources. Working closely with a group representing all the school's stakeholders, we developed the concept of a dedicated recycling center that also serves as a teaching station.

This process and our other research clearly support Mr. Branch's key point that pedagogy is in a state of flux and educators are seeking flexible space to accommodate a myriad of teaching and learning styles. Some preliminary findings in our current national research program indicate that this is especially true in the sciences as interdisciplinary teaching rises in popularity. Of course, flexibility in the science classroom is especially challenging due to the need for sophisticated infrastructure and specialized equipment.

Given the dynamic nature of pedagogy and that it not only varies from region to region but district to district, school to school, and even classroom to classroom, our work is indeed cut out for us. However, we have every reason to believe that our profession's contributions to school design this go-around will take into consideration lessons learned and will thereby usher in a new era of cooperation and respect among architects, educators, and the other customers of our education system.

Gerald S. Hammond, FAIA
Cincinnati

Roofing Membranes

I am writing to correct and clarify some statements in my article "Keep a Lid on It," that appeared in the March 1994 issue of P/A.

The term "roof." My article is concerned only with roofing membrane system design. Except where I specifically use the term "roof structure," the term "roof" should be taken as referring only to the roofing membrane system.

Mean wind speed. Design is based on a reference mean wind speed ("fastest-mile" speed) averaged over the time required for

"I have long questioned the lack of economic reward for architects who create extraordinary value for others." Joe Wallis

a one-mile length of air to pass a point 10 meters above flat, open terrain.

ASCE. This refers, of course, to the American Society of Civil Engineers.

Terrain roughness classifications. Terrain roughness or exposure categories reflect the characteristics of ground surface irregularities in the vicinity of the site, but do not take into account large local variations in terrain, such as a hill site. Such variations require special consideration.

Wind loads. Wind loads on a structure are caused by the changes in pressure that result from changes in the direction and velocity of the air flow as it moves over and around the structure. These loads may be either negative (uplift or "suction") or positive. My use of the term "stalling" for this effect was misleading.

Wind direction. The use, for roof membrane design, of "smeared loads," calculated from the probability-weighted effects of wind flows from all directions, provides a method of taking into account the probable service life load history as a design parameter. Eventually, such information, considered together with the magnitude, duration, and frequency of peak loads, may offer opportunities for lightening of designs.

Perimeter loads. My discussion concerning the widths of corner and edge areas subject to increased design loads made reference to structural inflection points. This is a consideration only in isolated instances, where structural deflections are large enough to affect wind flow. Also, my statement that roof loads tend to be uniform over the general roof area away from corners and edges is intended to apply only to flat roofs.

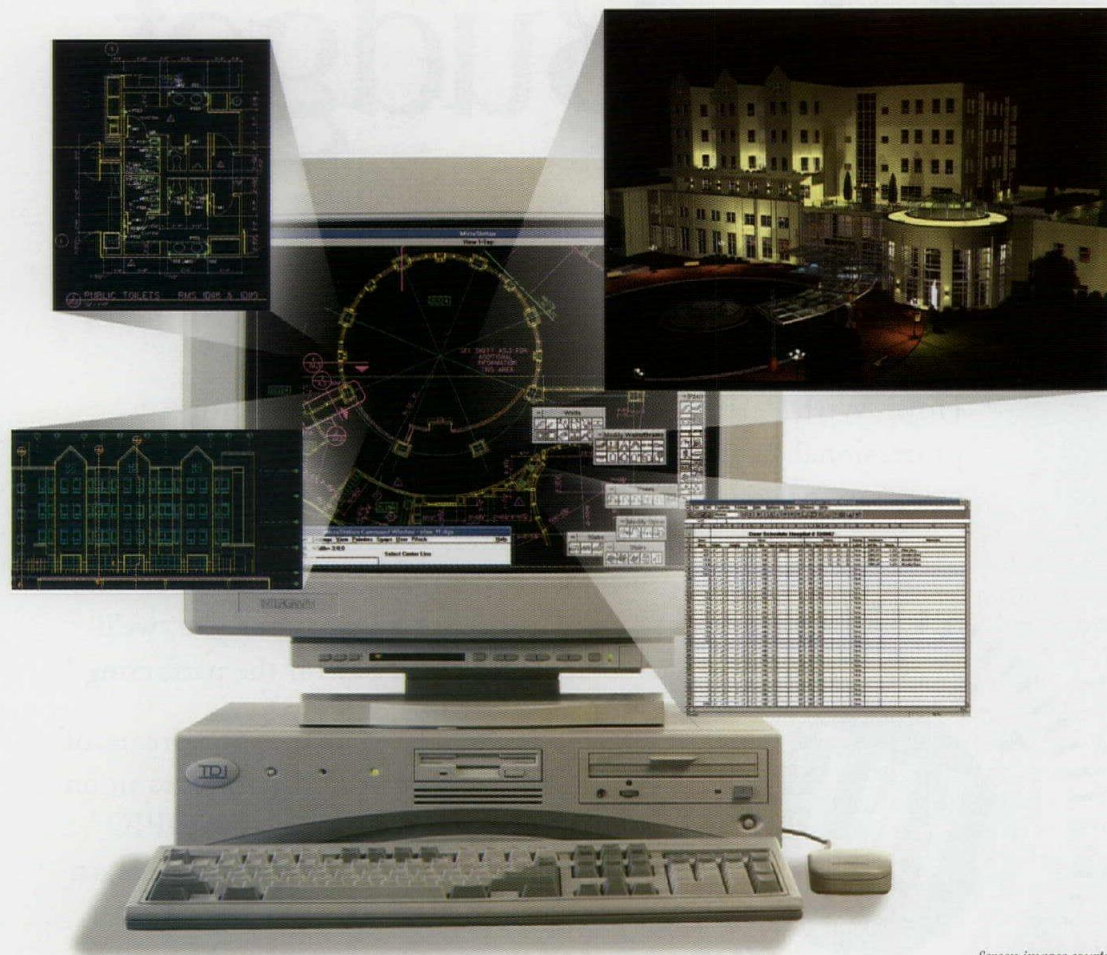
Recommended reading. Please add "Wind Loads" by Paul Nimitz, *Construction Specifier*, November 1992, to the list of recommended reading. This article is the source of my comments on current research.

Kevin B. Cash
Arlington, Massachusetts



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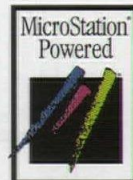
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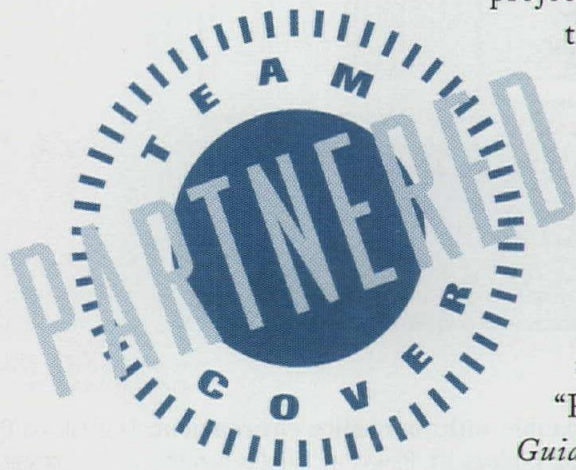


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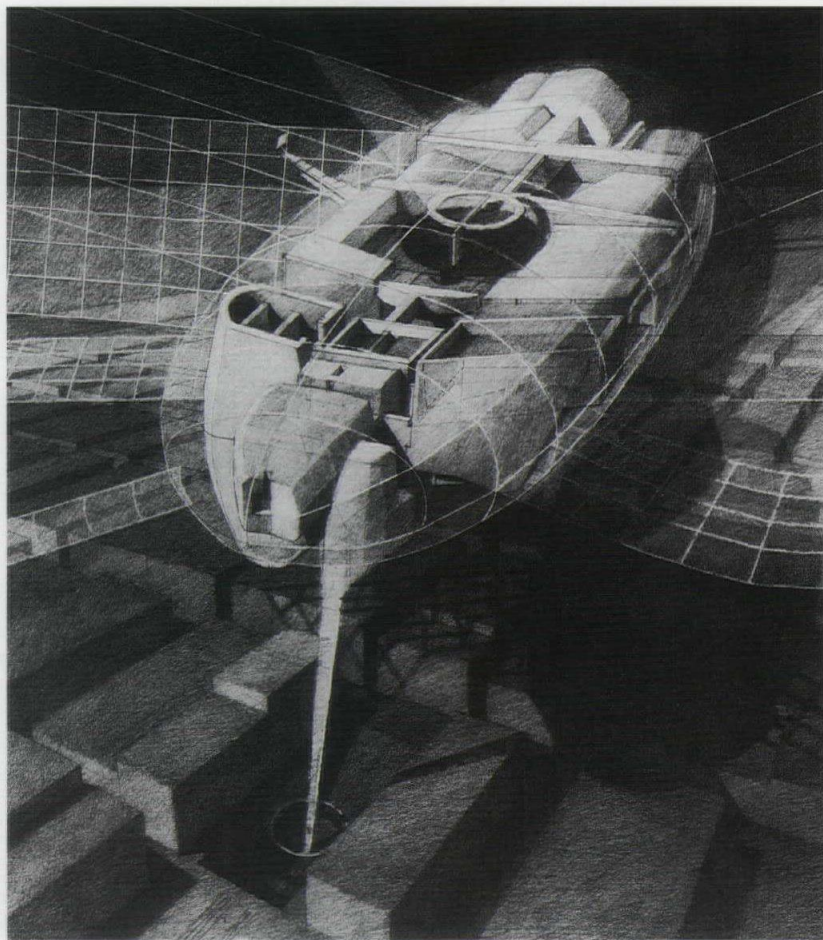
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Winners of Competition for Virtual Building

Earlier this year P/A and Learn Television, a Chicago multimedia development company, cosponsored a competition to design a virtual building for a new interactive magazine called *Forum/America*, which Learn TV will distribute nationally on CD-ROM. A jury including architects Carol Ross Barney, Garrett Eakin, Roberta Feldman, Gyo Obata, Ken Schroeder, and Ben Weese reviewed 113 entries. Winning designs featured these characteristics: placelessness (in electronic space, there is no fixed site or context), nonmateriality (virtual buildings can be made of materials without substance or mass), malleability (the structures can shape and reshape themselves as needs change), and a lack of hierarchy (everyone is on equal terms and equally connected in electronic space).

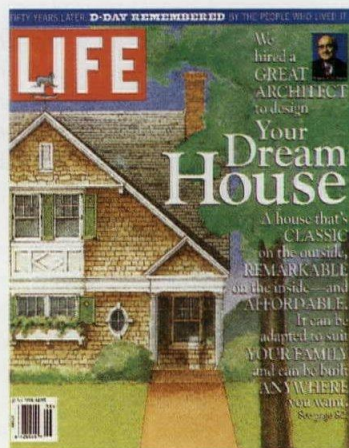
First place went to Corvin Matei and Afshin Lavee-Motlagh at the University of Texas-Arlington Architecture School; J.P. Maruszczak, instructor. Their floating scheme has a transparent, streamlined malleable envelope within which are arranged spaces based on computerized mapping of satellite photos of 2,000 U.S. cities. Their floating city, the designers say, "is structured as a time sequence of the movements of its 2,000 occupants." A public square with a holographic statue serves as the principal council chamber.

Aristotle Bakalos and Christine Sbuska of Bakalos, Zbuska Architects in Providence won second place. Tying for third place were Lucien Swerdloff and Jackson Carroll of the Hammons School of Architecture and Jeff Frahm of Washington University. □

The Greening of the Old Dominion

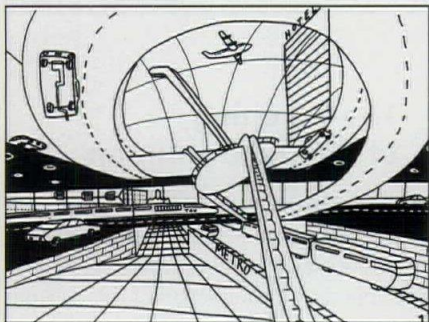
In September, William A. McDonough becomes dean of the School of Architecture at the University of Virginia, where his innovative approach to protection of the environment is expected to stimulate interdisciplinary work within the school and with other departments of the university. McDonough, a *New Yorker*, succeeds Daphne Spain, who has served as acting dean since Harry W. Porter stepped down last year. McDonough will move his architectural firm to Charlottesville.

At two other Southern architectural schools, women are assuming deanships. At the University of Tennessee in Knoxville, Marleen Kay Davis has been named dean of the College of Architecture and Planning. At Virginia Polytechnic Institute and State University, Patricia K. Edwards, a professor of urban affairs and planning, has been named dean of the College of Architecture and Urban Studies. □



Stern's "Affordable, Adaptable Home"

Dig up the June *Life* magazine if you want to see Robert A.M. Stern's vision of an "affordable, adaptable home." Stern's 2,100-square-foot Shingle Style house, commissioned by *Life*, was designed to be built for \$150,000 and to "fit nicely on a lot as small as 100 feet by 140 feet." The house features an expandable second floor, a flexible bedroom/office/nursery downstairs, and enough architectural character to provoke a developer to tell *Life* that the design is "overly detailed." □



Today's Urban Thinking: Salvation or Silliness?

P/A correspondent Thomas Vonier reports from London:

"The theme of the Association of Collegiate Schools of Architecture's well-organized 1994 European conference was 'The Urban Scene and the History of the Future,' but the program said more about the lamentable state of urban design education than it did about the prospects for cities. Keynote speaker Rem Koolhaas set the tone for much of the proceedings, showing cartoonish views of his almost completed scheme for EuraLille in northern France and plans for a bizarre new library at Jussieu University, near the Arab Institute in Left-Bank Paris.

"Saying he likes to treat urban program elements like so many strips of wallpaper and that such 'reinvented urbanism' is to him 'the salvation of architecture,' Koolhaas, in league with many others, seemed to ignore or sidestep the crisis-scale issues plaguing the increasingly urbanized world.

"A few speakers urged sympathetic reconsideration of modern design precepts; one participant said that 'after all, architecture was not to blame for Pruitt-Igoe.' There was also a call for a careful reassessment of British and French new town experiments.

"One got the overall impression that many schools of architecture, while paying lip service to urban design, are often just fiddling with theoretical arcana, arty interpretation, and playful invention of urban pattern. Meanwhile, Rome burns. 'Look,' said one bewildered conferee, 'it doesn't have to be something I can explain to my mayor or my mother, but a lot of this stuff just doesn't make any sense.'" □

Books

ABC: International Constructivist Architecture, 1922-1939

by Sima Ingberman, MIT Press, Cambridge, 1994, \$39.95.

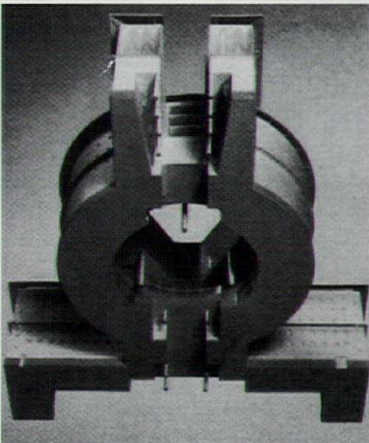
Constructivism was not an exclusively Russian movement, and its proponents designed buildings throughout Europe and North America. This is the thesis behind Sima Ingberman's account of ABC, a group of architects and designers that included El Lissitzky of Russia, Mart Stam of the Netherlands, and Hannes Meyer of Switzerland, among others. She recounts ABC's formation and growth, and the Constructivist buildings it realized.

Privacy and Publicity:

Modern Architecture as Mass Media

by Beatriz Colomina, MIT Press, Cambridge, Massachusetts, 1994, \$45.

An assistant professor of architecture at Princeton, Colomina argues that "modern architecture only becomes modern with its engagement with the media." Through a rigorous analysis of the work, ideas, and lives of Le Corbusier and Adolf Loos, she suggests that the "true site" of Modern architecture is the mass media; a culture of images (disseminated through magazines and journals), and not a high art.



James Stirling, Michael Wilford & Associates, Buildings and Projects 1975-1992

introduced by Robert Maxwell, with essays by Michael Wilford and Thomas Muirhead, Thames and Hudson, New York, 1994, \$80.

This monograph on the work of James Stirling and Michael Wilford traces their firm's transition from the systems-oriented rationalism of their nightmarish Runcorn housing to the late works in Stuttgart, Berlin, and at Cornell, which inventively merge Louis Kahn and Collage City. Stirling's sure and sometimes perverse design sense (U.C. Irvine Science Library, model, above) is a joy to see, revealing how much we lost with his untimely death.

A Better Place to Live, Reshaping the American Suburb,

by Philip Langdon, University of Massachusetts Press, Amherst, 1994, \$29.95.

Although the literature on the New Urbanism is growing rapidly, this book by Philip Langdon, now a senior editor at P/A, is one of the best available. Written with a critical eye and a skeptical and sometimes bemused voice, the book looks at the larger cultural meaning of current efforts to redesign the American suburb. Subjects covered include streets, neighborhoods, workplaces, shopping, and transportation.



A Workshop for People, Designing the United Nations Headquarters

by George A. Dudley, An Architectural History Foundation Book, MIT Press, Cambridge, 1994, \$65.

Rarely are we treated to an almost day-by-day description of the schematic design process by the likes of Le Corbusier and Oscar Niemeyer. In this eye-witness account of the design of the United Nations, we see how the project progressed from Corb's initial sketches of a slab and block (above), through various alternatives - from Niemeyer's minimalist schemes to Cormier's classicizing ones - to the design that was built. Hugh Ferriss was also there to record, in drawings, the whole process.

Briefly Noted

Patkau Architects:

Selected Projects 1983-1993

edited by Brian Carter, TUNS Press, Halifax, Nova Scotia, Canada, 1994, \$24.50 paper. Compact monograph on this Vancouver-based, P/A Award-winning firm (P/A, Jan. 1993, p. 50).

The Woodland Cemetery:

Towards a Spiritual Landscape

by Caroline Constant, Byggforlaget, Stockholm, 1994, \$60 paper.

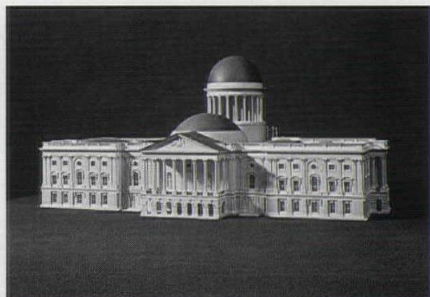
Skillful exploration of this Stockholm masterwork by Asplund and Lewerentz.

Practice of Architecture and

The Builder's Guide by Asher Benjamin,

Da Capo Press, New York, 1994, \$19.95 paper.

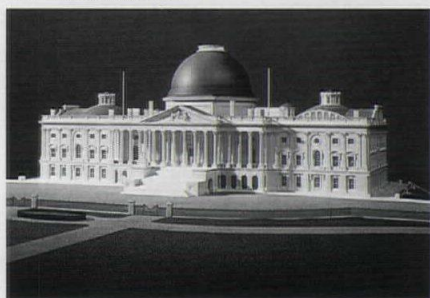
Two Grecian patternbooks, first published in 1833 and 1839, respectively, now in a single volume.



THORNTON'S ORIGINAL CONCEPT



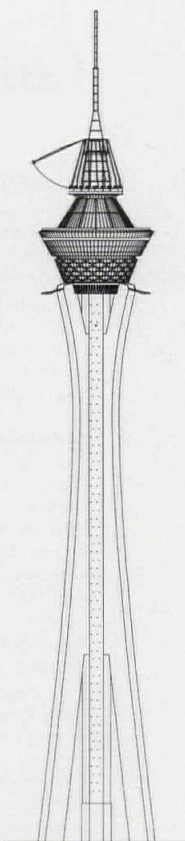
LATROBE'S LATER DESIGN



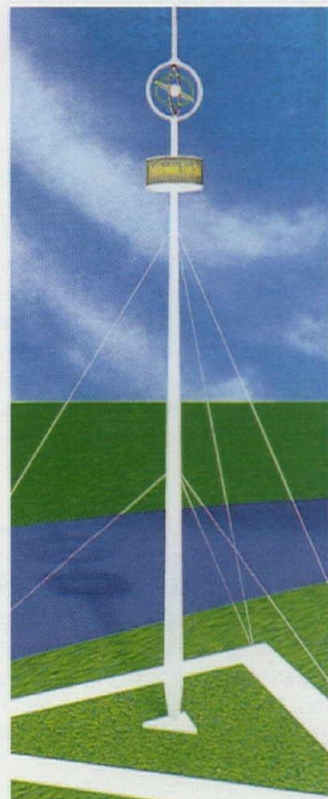
BULFINCH'S CAPITOL

The Capitol in Miniature, and How it Evolved

It's a year late, but Congress recently celebrated the 200th anniversary of the U.S. Capitol – begun in 1793 – by placing three detailed acrylic models of designs for the building on permanent display in the Capitol's crypt. The models, built at 1:128 scale, depict Capitol ideas by William Thornton, who won the original competition; Benjamin Latrobe, who began making a number of design changes in 1803; and Charles Bulfinch, under whose direction the Capitol reached its first completed form in 1826. Bulfinch continued work on the grounds and gatehouses until 1829. Since then, the Capitol has been expanded and altered several times. The models being exhibited were built by Model Solutions of Dallas. □



Gary Nelson



Cecil Denny Highton/Buro Happold

What Eiffel Hath Wrought

The two newest entries in the I-can-build-a-tower-taller-or-uglier-than-Eiffel category have just been announced. One, a cable-stayed 328-foot needle (above right) in Greenwich, England, designed by the British firm of Cecil Denny Highton with engineer Buro Happold, is slender and not bad looking until you get to the 24-hour advertising display drum and what looks like a model of the atom at the top. The Greenwich tower manages to be at once capitalistic and futuristic.

Not to be outdone, Las Vegas has weighed in with the "tallest observation tower in the U.S." Part of a planned casino complex, the 1,149-foot-tall Stratosphere Tower (above left), designed by architect Gary Nelson, with Mendenhall Smith as structural engineers, looks like Seattle's Space Needle on growth hormones. It will have observation decks, a "thrill ride" (presumably not the elevators), and the mandatory revolving restaurant. □

3,500 Cars and Not an Architect in Sight

As we went to press, a New Jersey town planning consultant, John. P. Bergan, was leading a grassroots effort to alter the design of a 3,500-car parking garage that New Jersey Transit intends to build at the Metropark train station in Iselin, New Jersey. "It would be one of the largest parking ramps in the country, and it was designed entirely by engineers, with no architects involved," said Bergan, who objects to the parking deck's aesthetics and what he sees as its poor treatment of pedestrians, among other things.

Bergan, with the backing of local business and historic groups and state environmentalists, has argued for placing retail space and a daycare center on the ground floor, giving the building a Classical façade, and creating a pedestrian tunnel under State Route 27 so that residents nearby can walk to the station, situated on the busy Boston-to-Washington rail corridor. The transit agency wants to start construction of its architect-less facility – involving mostly federal and state funds – this month. □

Expanding the Rehab Tax Credit

The tax credit for rehabilitating historic structures has lost much of its leverage in recent years because of changes to the tax code to limit passive losses. But the National Park Service (NPS) is trying to change that. It is proposing that the law be amended to include homeowners who live in the buildings that undergo a certified rehabilitation. Both single-family and multifamily homeowners would qualify for the 20 percent income tax credit as long as the rehabilitation work meets the Secretary of the Interior's standards and the dollar amount of the work equals or exceeds the tax basis of the building.

NPS argues that this amendment would enable low-income taxpayers to afford homeownership, encourage rehabilitation of deteriorated residential areas, boost local tax revenues, stimulate local economies (including architectural services), and help save historic houses. For information, contact Harry K. Schwartz, Preservation Assistance Division, NPS, (202) 343-9578. □



The AIDS Plague Stimulates Action from Designers

The design professions continue to respond to AIDS. In Denver, people from 24 architecture and design firms – along with contractors and suppliers – recently completed an AIDS wing for a local hospice (above). Project architect Joel May says the team was able to build a \$500,000 project for just over \$100,000, thanks to donated materials, time, and services.

Meanwhile, in New York, some 178 people from the design and building industry raised over \$32,000 for Gay Men's Health Crisis by participating in the annual AIDS Walk New York, the world's largest AIDS fundraising event, held on May 22. □

Calendar

COMPETITIONS

AIA Awards

The AIA has announced its 1995 awards programs. Upcoming deadlines are: Honor Awards for Urban Design (entry-Sept. 6, submission-Oct. 11); and Honor Awards for Interiors (entry-Sept. 30, submission-Oct. 28). Contact Frimmel Smith, AIA, 1735 New York Ave., NW, Washington, DC (202) 626-7300.

Sustainable Designs

Deadline: submission-August 30
Projects north of 40 degrees latitude that synthesize environmental, economic, and aesthetic issues may be entered in the 1994 design awards of the Northeast Sustainable Energy Association. Contact NESEA, 23 Ames St., Greenfield, MA 01301 (617) 868-8656.

P/A Awards

Deadline: submission-September 9
The 42nd Annual P/A Awards program recognizes projects scheduled for completion after January 1, 1995. See p. 41 for details.

Concrete Building Awards

Deadline: submission-September 30
New or remodeled buildings constructed of concrete can be entered in this program. Contact Portland Cement Assoc., 5420 Old Orchard Rd., Skokie, IL 60077 (708) 966-6200.

Urban Thresholds

Deadlines: registration-October 11; submission-October 31
The 6th Takiron International Design Competition is a call for entries that investigate the theme of "City Threshold." Contact Shinkenchiku-sha Co., Ltd., Takiron Competition, 2-31-2 Yushima, Bunkyo-ku, Tokyo, Japan 113 tel. 81-3-3811-7101.

EXHIBITIONS

Renzo Piano Building Workshop

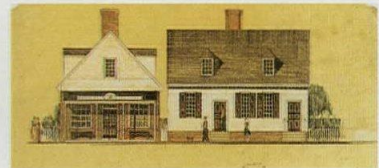
Art Institute, Chicago.
Through September 5
This is a traveling mid-career retrospective (P/A, Feb. 1993, p. 19).

Chiswick Villa

Canadian Centre for Architecture, Montreal.
Through September 25
This 18th-Century Palladian Revival villa, by architect and owner Richard Boyle, Lord Burlington, is extensively documented.

Jefferson's Monticello

Octagon Museum, Washington, D.C.
Through October 2
Original documents are included in this traveling exhibition.



Colonial Williamsburg Foundation

Restoration of Colonial Williamsburg

DeWitt Wallace Gallery, Williamsburg.
Through January 1, 1995
Drawings, models, and photos chronicle the restoration and reconstruction of this historic Virginia town.

CONFERENCES

Model Making

San Francisco.
September 4-6
The second national conference of the Association of Professional Model Makers (APMM) will bring together model makers from a variety of disciplines. Contact APMM, PO Box 470278, San Francisco, CA 94147-0278 (415) 771-2727, FAX (415) 921-8081.

The Modern Movement

Barcelona, Spain.
September 14-18
The relationship between the Modern Movement and contemporary culture will be discussed at the third international meeting of the Documentation and Conservation of Buildings, Sites, and Neighborhoods of the Modern Movement. Contact DOCOMOMO, c/o Fundacio Mies van der Rohe, c/Bailen 25, 4t. 2a, 08010 Barcelona, Spain, 34-3 265-8922, FAX 265-6187.

Firm Management

St. Paul, Minnesota.
September 22-24
The Professional Services Management Association's annual conference will address the major changes facing the profession. Contact Ann Allen Adams, PSMA, (704) 521-8890, FAX 521-8873.

The New Designer's Saturday

New York.
September 27-29
A revamped Designer's Saturday, the InterPlan contract furniture show will consolidate the exhibitors and the conference program under one roof. Contact InterPlan (212) 869-1300, FAX 768-0015.

Urban Waterfronts

New Orleans.
October 13-15
This annual international conference on urban waterfronts covers economic development, policy, planning, and design issues. Contact Waterfront Center, 1536 44th St., NW, Washington, DC 20007 (202) 337-0356.

Practice Notes

Salaries Lag Behind Inflation

Although the Consumer Price Index rose 3 percent between 1992 and 1993, the median total compensation of principals in A/E/P and environmental firms grew only 2 percent in the same period, according to a survey of over 500 firms by Mark Zweig & Associates. Average total compensation now exceeds \$100,000. The report is available for \$195 from Mark Zweig & Associates, (508) 651-1559, FAX (508) 653-6522.

Little Pricing Creativity

A Professional Services Management Journal survey disclosed that architects rarely use creative pricing strategies such as discounts on fees for regular customers, discounts to attract new customers, price incentives for completing a job early or coming in below budget, and pricing of services to reflect workloads – all strategies that contractors employ. For more information, contact PSMJ at (617) 965-0055, FAX (617) 965-5152.

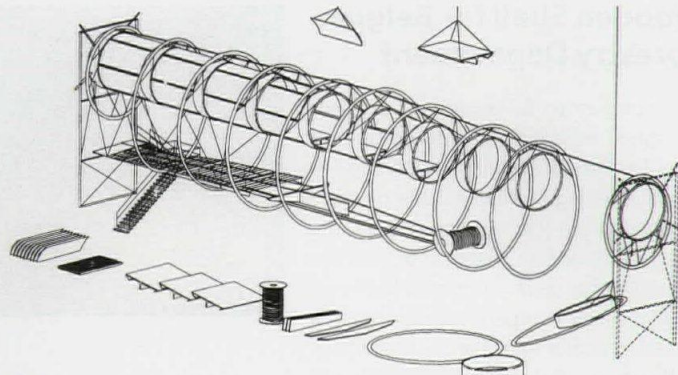
Technics Notes

Ditching the Dish

Researchers at the Georgia Institute of Technology have developed a flat antenna that resembles a window curtain as an alternative to bulky satellite dishes. According to Dr. Ed Joy of Georgia Tech, the antenna "could be put on the side of a building or in the roof and covered with a camouflaging material so you'd never know it was there. It would allow you to build in an architecturally acceptable antenna." The antenna's printed circuit board technology allows it to be custom-designed, manufactured, and delivered within a few days. Contact Ed Joy, Phone: 404-894-2936, Internet:ed.joy2ee.gatech.edu.

Hold that Mold

The American Society for Testing and Materials has released a new guide to mitigating moisture in buildings. The MNL18/Manual on Moisture Control in Buildings provides a comprehensive overview of issues and data related to moisture problems. It also contains information on construction principles and implementation of solutions. The 480-page manual is \$89 (\$80 for ASTM members). Contact: ASTM Customer Service, 1916 Race St., Philadelphia, PA 19103, 215-299-5585, FAX 215-977-9679.



John Breshears

Designing a Bridge That Flexes

Could a pedestrian bridge be designed on the same principles as the human spine? John Breshears, an architect and engineer with Busby Bridger Architects in Vancouver, British Columbia, thought so, and the idea helped win him the first Peter Rice Prize awarded by the Ove Arup Partnership of London, England. Breshears, a New Mexico native, has been exploring the idea of producing innovative structures by adapting principles found in nature. The human backbone seemed to him "a flexible yet load-bearing structure." Pursuing this anal-

ogy, he developed a two-level pedestrian bridge (as yet unbuilt) in which "a series of discrete tubular compression members are connected by soft joints that flex, accommodating differential movement along its entire length, as opposed to using a stiff truss with a clumsy sliding joint at one end, which is the traditional solution."

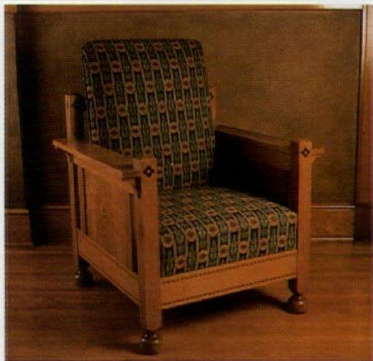
Breshears's reward will be a year of collaboration on research with leading designers at Ove Arup Partnership, followed by a year of working in the Renzo Piano Building Workshop in Genoa. □

Prairie School Heritage Celebrated in Minneapolis

Early in the century, perhaps the most notable center of Prairie School architecture outside of Chicago was Minneapolis, where the firm of William Gray Purcell and George Elmslie turned out buildings from 1909 to 1921. Now Purcell and Elmslie's designs are being celebrated as part of a major retrospective running through September 4 at the Minneapolis Institute of Arts. "Minnesota 1900: Art and Life on the Upper Mississippi, 1890-1915" comprises six small exhibitions that focus on various aspects of turn-of-the-century culture. Two sections, "Architecture and Design" and "Purcell and Elmslie Architects," explore this legacy with drawings, plans, stained-glass windows, tapestries, furniture, lighting, and decorative artifacts from houses designed in the 1910s and 1920s. A dining room by Elmslie for a Chicago client has been recreated full size to include original lighting fixtures,

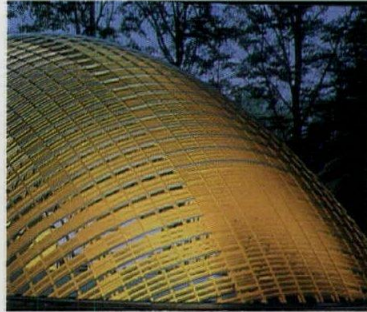
stained glass doors, and furniture.

Such "organic design" – labeled "progressive architecture" by Louis Sullivan – appealed to clients who "believed in the possibility of a truly American style developing in the West, free from the constraints of tradition imposed in Eastern cities," say the exhibits' curators. An exhibit of photos from the show is traveling to 20 locations across Minnesota. □

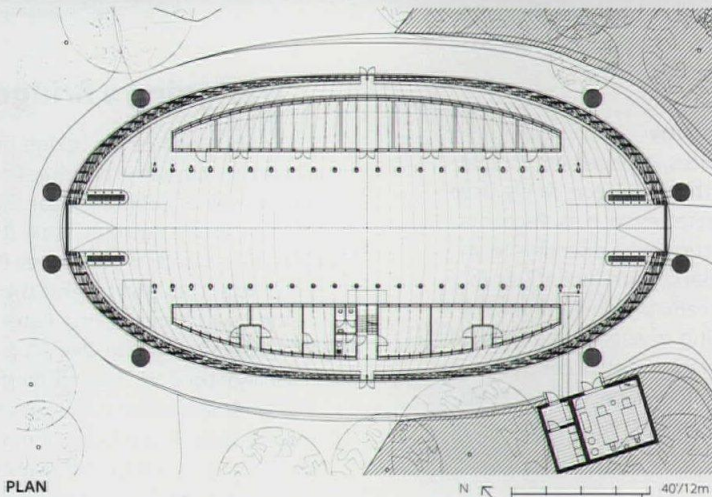


Wooden Shell for Belgian Forestry Department

Philippe Samyn & Partners of Brussels has designed an ovoid shell for the Department of Forestry of Belgium in Marche-en-Famenne. Housing facilities for the processing of seeds from the Walloon Region, the structure is formed by a system of double-layered wood arches (each composed from segments of a circle) clamped to the edges of a reinforced concrete slab. The shell structure, currently under construction, is covered with tempered pyrex panels. Positioned inside the shell along its longitudinal sides, two secondary buildings hold cold storage and administrative/lab rooms, and help support the main structure. The central nave is for the large machines that treat and predry the seeds for storage.



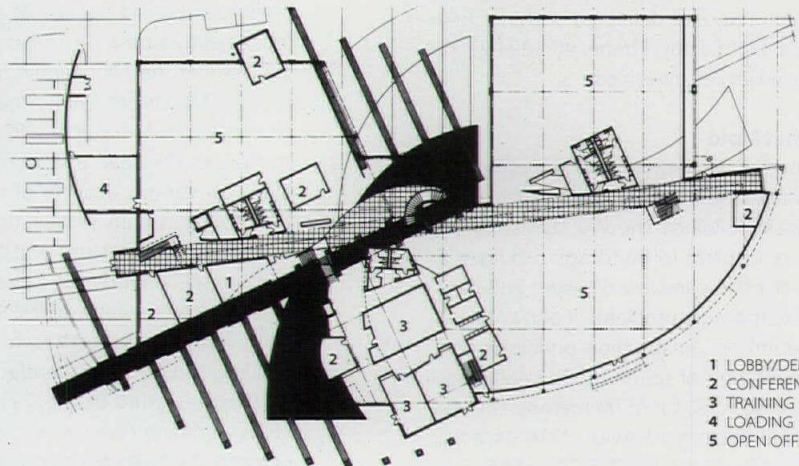
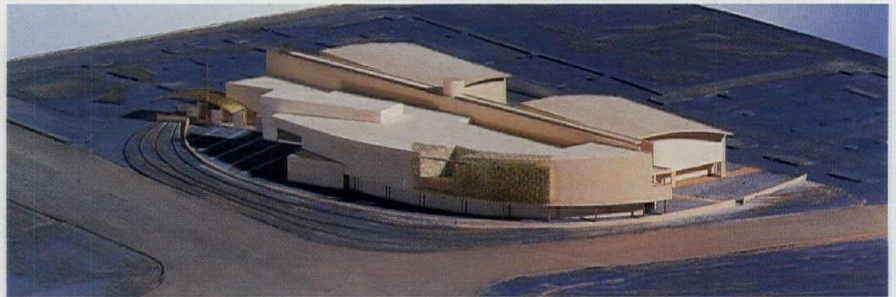
Photos: © Star Info



PLAN

Conveying Openness in Silicon Valley

In Mountain View, California, a 112,000-square-foot building now being constructed for Silicon Graphics Inc., was required by the city to present an engaging face to passers-by on heavily traveled Shoreline Boulevard. One way that Studios Architecture of San Francisco chose to accomplish this was by fashioning part of the building as a long gentle arc into which motorists can look, seeing people and activity. Stretched across 95 feet of the curving facade will be a three-foot-deep aluminum grid – much of it equipped with white canvas for sun control – through which passersby can glimpse conference rooms and an outdoor deck where participants in training sessions will gather.



GROUND FLOOR PLAN

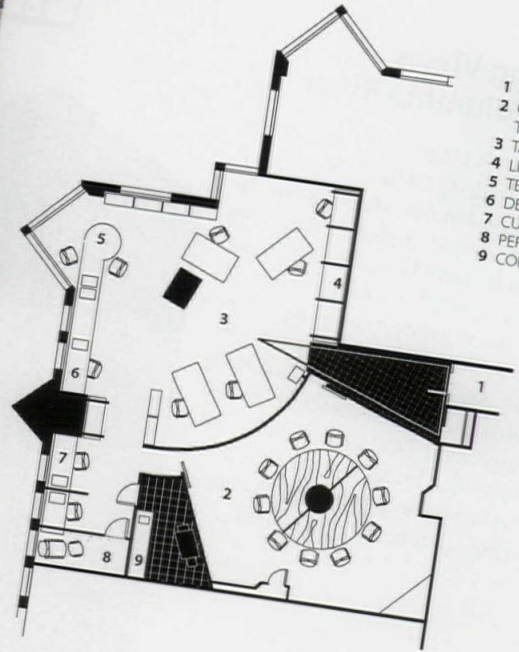
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Ron C. Rizzo / Creative Sources Photography



Office Planners Practice What They Preach

Current office-planning ideas, based on a variety of team-based and nonterritorial work environments, have been implemented by CRSS Atlanta in the design of its own office, which includes nondedicated offices, task-based work stations, and planned flexibility. The firm assembles project-specific teams that work together for intense but brief periods at the client site, so the need for assigned workspaces is no longer necessary. The scheme also achieved a substantial cost saving by occupying a smaller footprint. The new office came in at \$23 per square foot.



- 1 ENTRY
- 2 CONFERENCE THEATER
- 3 TASK WORK
- 4 LIBRARY
- 5 TEAM WORK
- 6 DESKTOP PUBLI
- 7 CUBBY
- 8 PERSONAL HARB
- 9 COPY/KITCHEN

PLAN

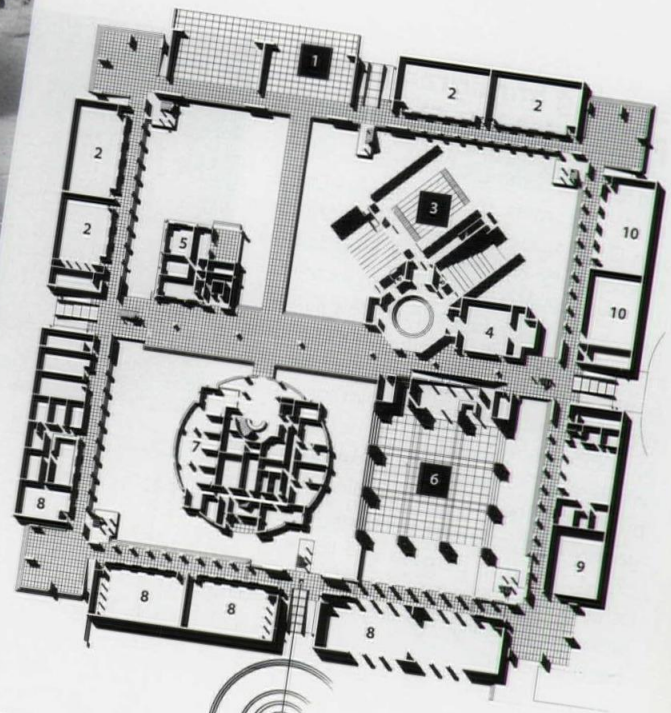
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Mark Lohman Photography



New Architecture School by Barton Myers

Barton Myers Associates' competition-winning design for a new school of architecture at the University of Nevada, Las Vegas, has classrooms and studios forming a quadrangle, within which are located common facilities: a round four-story library, a vaulted two-story exhibition space, and a two-story bookstore and office. Intended as a "living laboratory," the building will use a variety of structural and cladding systems. It will have passive solar features, including thick perimeter walls, extensive awnings, trees in the courtyards, arrays of photovoltaic panels on the roof, a 60-foot ventilation tower, and drought-resistant landscaping.



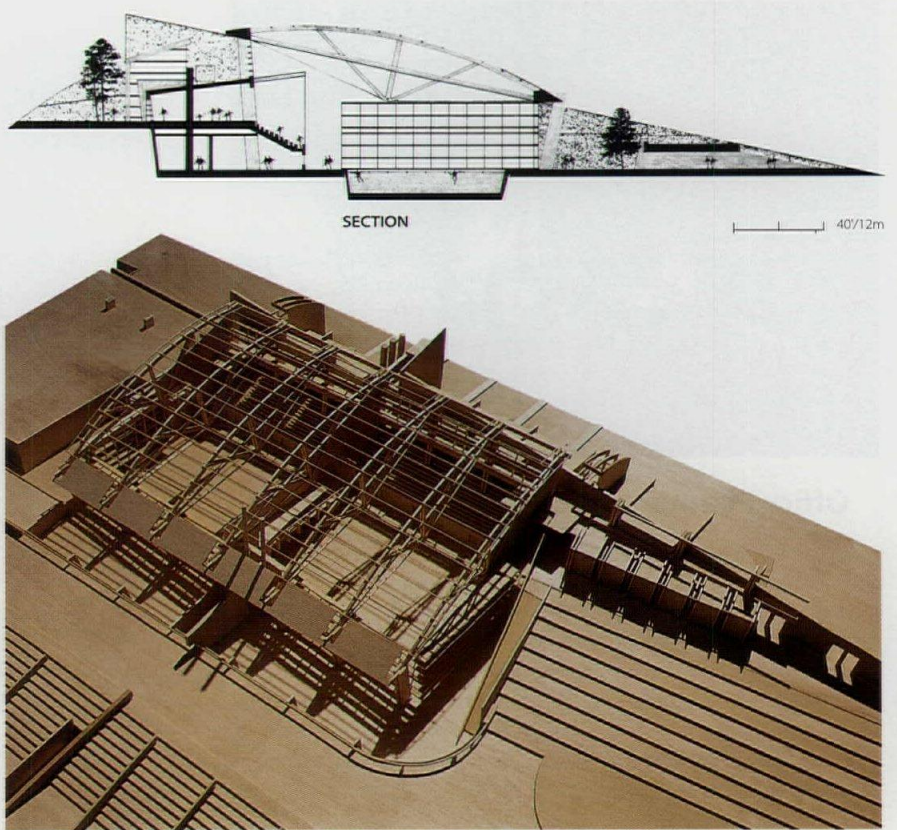
- 1 ENTRY FROM CAMPUS
- 2 STUDIO
- 3 LECTURE ROOM
- 4 GALLERY
- 5 ADMINISTRATION

- 6 "COOL" COURT
- 7 LIBRARY
- 8 CLASS ROOM
- 9 SHIPPING/RECEIVING
- 10 MECHANICAL

N ↑ 40/12m

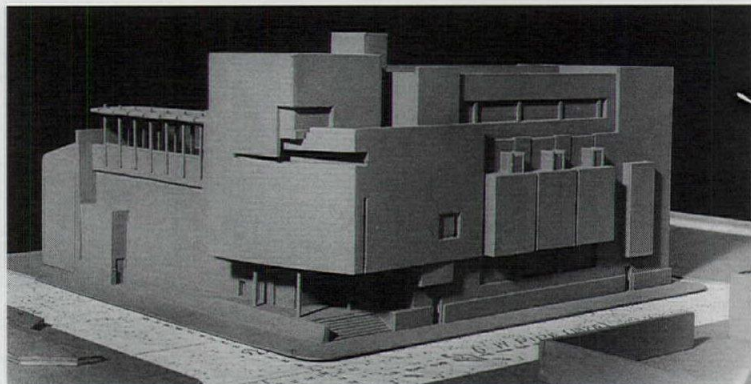
Capturing Views on the Columbia River

Architect Keith Hoelscher's design for the Camas Community Center in the Southwest corner of Washington State is internally organized and sited to capture views of its extraordinary surroundings: Mount Hood, Mount St. Helena, and the Columbia River. So too, the architect's contextual response includes symbolic references to the area's pioneer ancestry. Set on heavy-timber columns, the bow-string-truss roof structure is covered with translucent fiberglass panels. The 55,000-square-foot building, part of a proposed 47-acre housing and park development, is on hold until funding is secured.

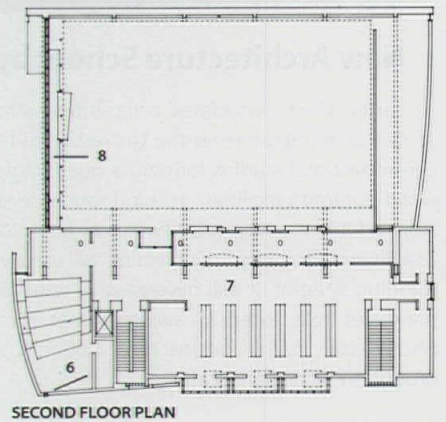
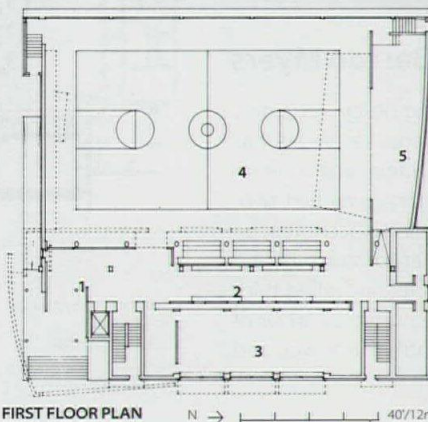


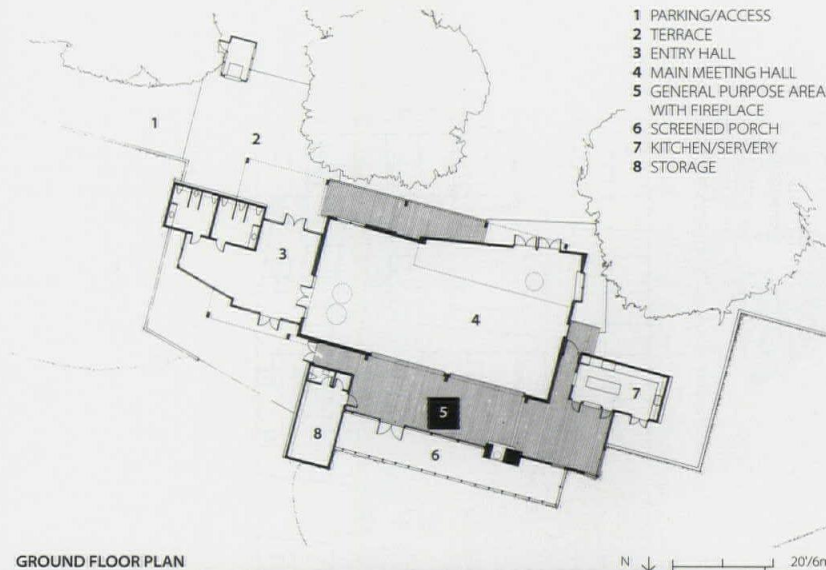
Serving Immigrants in Philadelphia's Chinatown

To fulfill its community's desire to "acculturate" newcomers, the Philadelphia Chinatown Development Corporation commissioned Wesley Wei Architects, Philadelphia (P/A, Feb. 1992, p. 78), to design a community center that could accommodate a recent increase of immigrants to the area. For a site north of the current Chinatown border, the project is envisioned as a catalyst for expansion into an area presently occupied by wholesale commercial and light industrial businesses. The four-story building includes a gallery, an events hall, a lecture room, a library, a rooftop pergola and terrace, and other spaces. Construction of the 35,000-square-foot facility, will begin once funding has been raised.

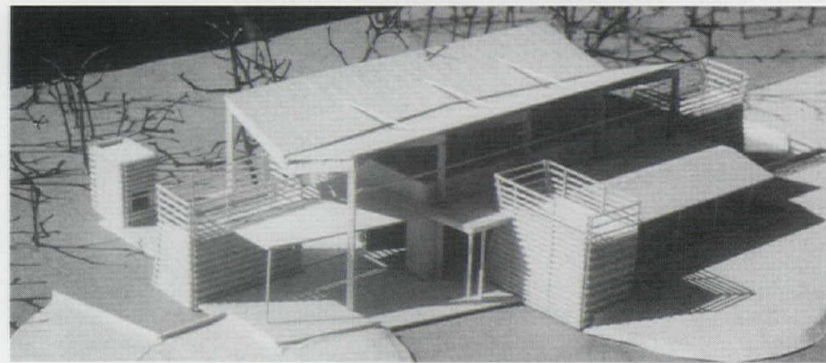


- 1 ENTRY
- 2 GALLERY
- 3 OFFICES
- 4 MAIN HALL
- 5 STAGE
- 6 LECTURE ROOM
- 7 LIBRARY/ RESOURCE CENTER
- 8 PROJECTION CATWALK



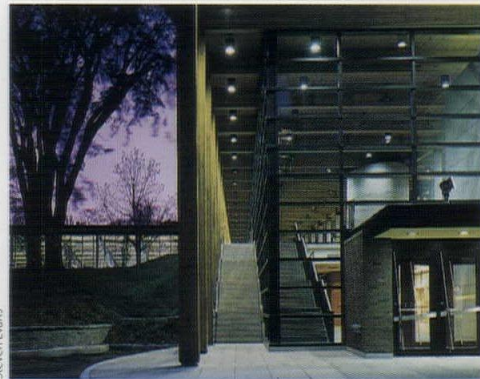


GROUND FLOOR PLAN

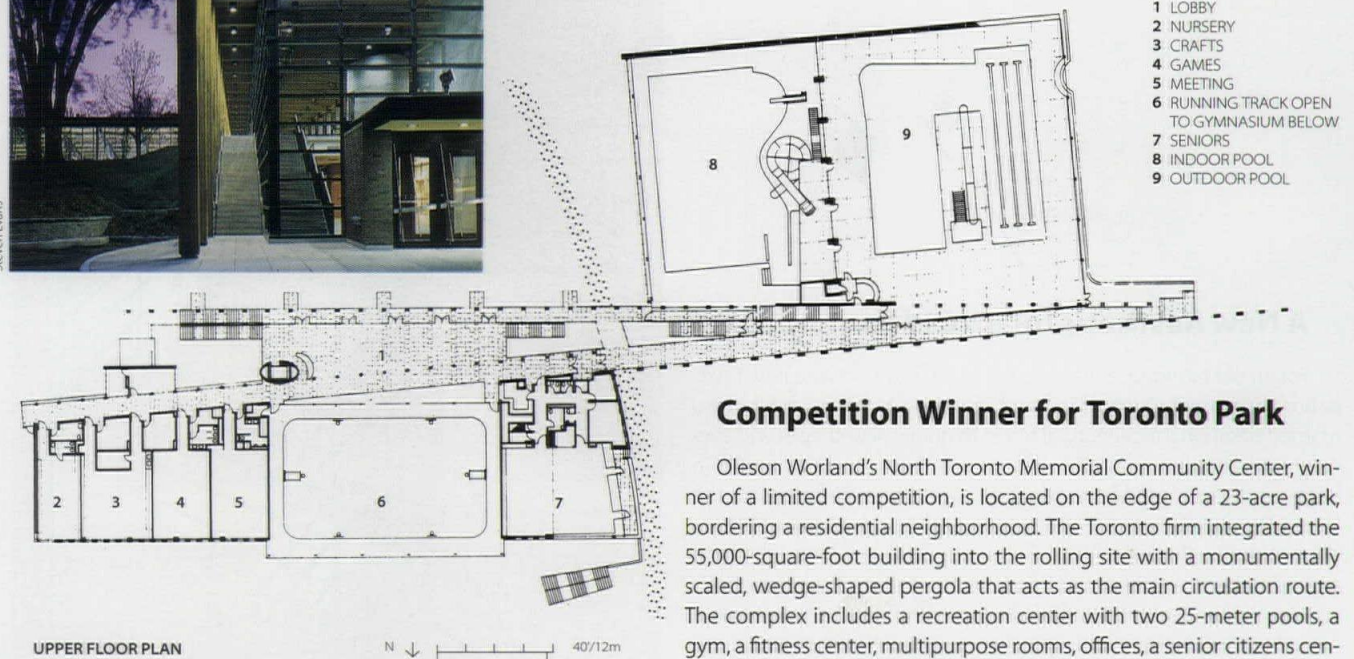


At Home in Rural Texas

Evergreen oaks, undulating berms, a pasture, and a field of wildflowers create the setting for the Salado Community Hall in central Texas. Designed by the Lawrence Speck Studio with Chris Macdonald and David Martin in association with Page Southerland Page, the main wood-frame structure and a series of small outbuildings are configured to cultivate a dialogue between indoor and outdoor spaces and forms, both natural and man-made. A series of open-air and semi enclosed terraces and decks connect the main meeting hall to the outbuildings. The butterfly-shaped, open-web steel joist roof holds custom-made skylights.



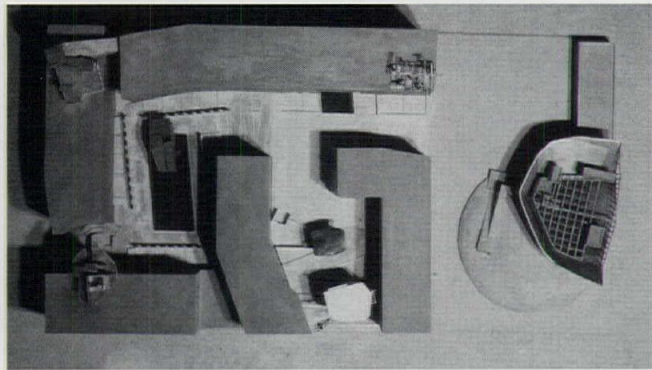
Steven Evans



UPPER FLOOR PLAN

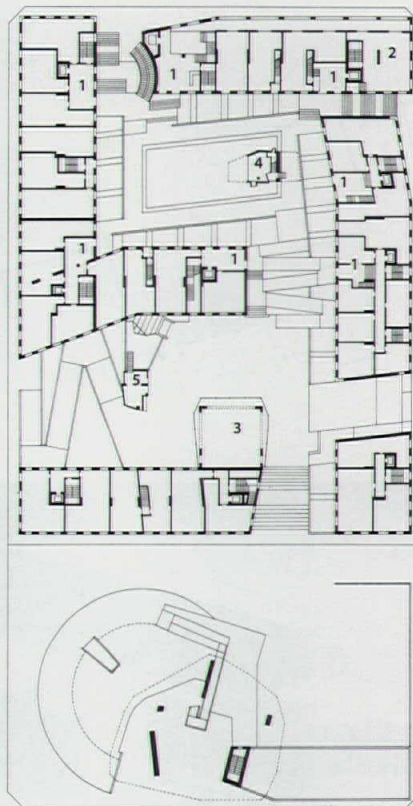
Competition Winner for Toronto Park

Oleson Worland's North Toronto Memorial Community Center, winner of a limited competition, is located on the edge of a 23-acre park, bordering a residential neighborhood. The Toronto firm integrated the 55,000-square-foot building into the rolling site with a monumentally scaled, wedge-shaped pergola that acts as the main circulation route. The complex includes a recreation center with two 25-meter pools, a gym, a fitness center, multipurpose rooms, offices, a senior citizens center, and an underground parking lot. It is the recipient of several awards, among them a 1994 Honor Award from the Canadian Wood Council.



Mixed-Use City Block by Holl

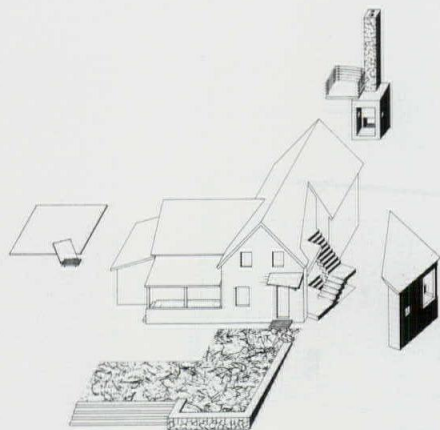
Makuhari New Town, an ongoing development along Tokyo Bay, includes a scheme by Steven Holl Architects of New York. Now in design development, Holl's project, with retail shops, 180 units of housing, and a kindergarten, investigates an urbanistic interrelationship between "silent heavyweight" and "active lightweight" buildings and programs. The concrete bearing walls of the large buildings, punctuated by repetitive windows and decks, are designed to define urban space and passage; a series of small pavilions invade the "silence" of the main structures. Among the "active," semiprivate structures are the North Garden House (cantilevered over a pond, it has a glass floor that allows for a reflected play of water and sunlight on the ceiling) and the South Garden House (its periscope-section interior funnels daylight to a below-grade parking garage).



- 1 LOBBIES
- 2 SHOP
- 3 MEETING ROOM
- 4 NORTH GARDEN HOUSE
- 5 SOUTH GARDEN HOUSE

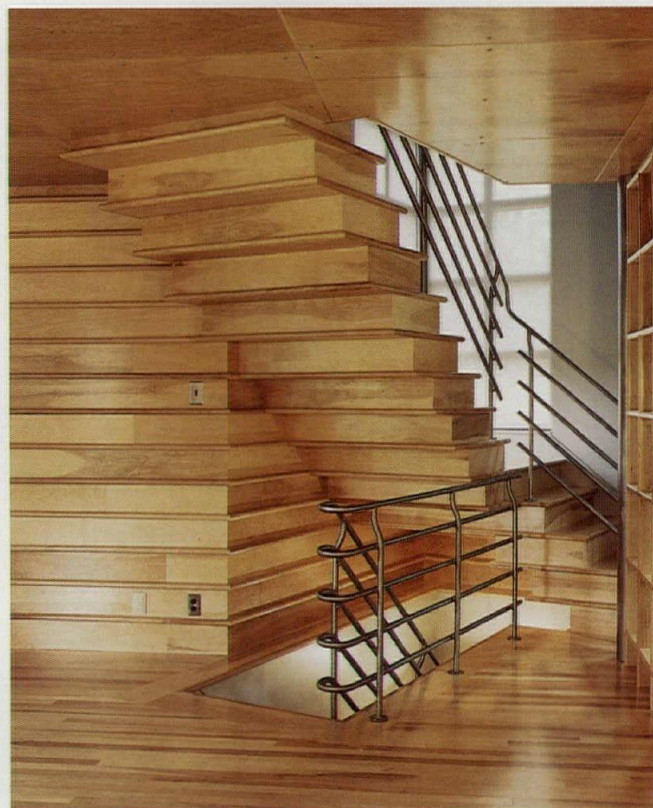
SECOND FLOOR PLAN

N → 100'/30m



A New Aesthetic for an Old Farmhouse

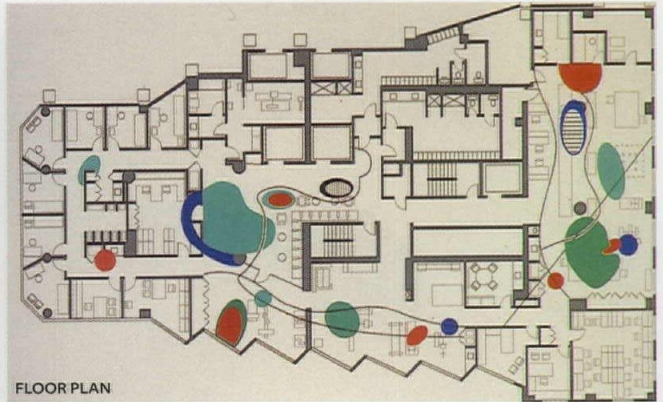
For an old farmhouse that needed to be moved onto a new foundation in Bromont, Quebec, Saia and Barbarese Architects of Montreal married traditional architectural forms to quirky new shapes and eye-catching materials. Bright aluminum roof tiles run at an angle, in keeping with the nonorthogonal design of new additions to the house. Protruding from the south side is an angular addition that encloses a stair with steel railings. The staircase's wooden nosings wrap around to become horizontal bands of molding on the yellow birch walls of the living room (right). Ceilings throughout the ground floor are covered with plywood panels that reinforce the wood-and-metal aesthetic. To the rear, a massive new fieldstone chimney anchors the house to a hill and supports a lightweight steel balcony.



Paul LaBelle



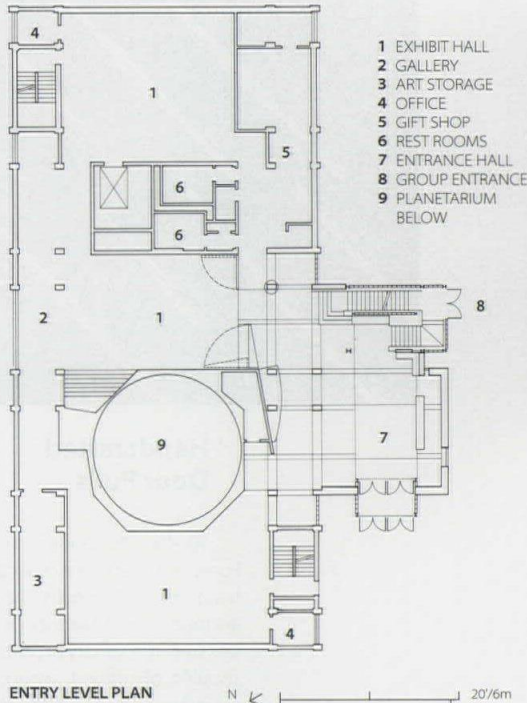
Hedrich-Blessing



FLOOR PLAN

Prototype for Rehabilitation Clinic

The 9,500-square-foot prototypical outpatient clinic for the Rehabilitation Institute of Chicago, designed by Eva Maddox Associates, embodies a successful integration of Maddox's design sensibility with the Institute's function in providing therapy for the physically disabled. Maddox has long been interested in various theories and methods of generating form and pattern; in this project, studies of the "body in motion" inspired the creation of colorful, fluid, plastic and graphic elements, which are incorporated in the interior architecture, millwork, and surfaces to animate the space and unify disparate functional areas. The clinic has garnered this year's ASID National Award for Healthcare and an AIA Chicago Design Excellence Award for Interior Architecture.



ENTRY LEVEL PLAN

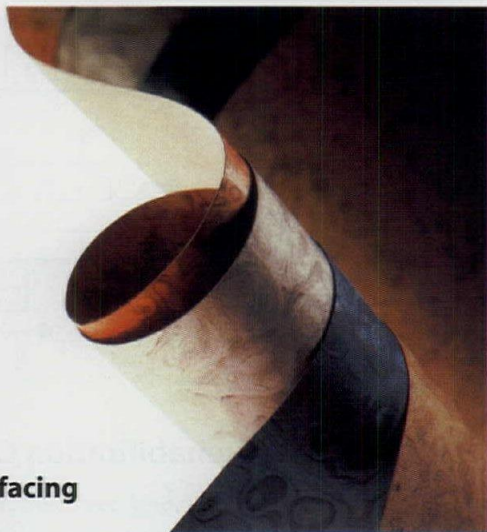
N ← 20'/6m



© 1994 Peter Vanderwalker

A Playful Entry to a Sober Museum

Bridgeport, Connecticut's Discovery Museum says a lot about our changing attitudes toward science. The 1962 original building, by John Johansen, is a straightforward concrete box, reflective of that era's belief in science as a logical, systematic process. But the museum's sprightly new entry by Chan, Krieger & Associates reveals the sense of play and imagination we now see as essential to discovery. Consisting of a lobby clad in a delightful pattern of red, blue, and green glazed brick, and a stair exposed within a steel, glass, and glass-block enclosure, the addition entices visitors inside, where they find a two-story volume with a faceted ceiling supported by a single yellow steel column. Chan, Krieger's addition shows how architecture itself is a form of discovery, at once logical and playful.



Wood Surfacing Material

Formica recently launched Ligna™, a genuine wood veneer backed by several layers of phenolic kraft paper. Marketed as an environmentally sensitive product, Ligna is harvested from fast-growing farm species (Italian poplars and Cameroon ayous) and does not require the use of solvent-based finishes. The new

material, suitable for both commercial and residential applications, is fabricated using traditional laminating techniques. Birdseye, burl, cathedral-grained oaks, metallics, and geometric patterns are among the designs available.

Circle 100 on reader service card



Heywood-Wakefield Furniture Reissued

The South Miami Beach Furniture Company has acquired the name and logotype of the Heywood-Wakefield Company and is reissuing its Streamline wood furniture originally produced in the 1940s and 1950s. Each piece is a precise replica using the same wood (select-grade Northern Yellow Birch), construction techniques, and hardware. Seven

pieces are currently being offered including a 65-inch Biscayne davenport sofa and matching club chair, 58-inch dining table with two leaves, a 48-inch round dining table, matching dining chairs with or without arms, and three-shelf and five-shelf bookcases.

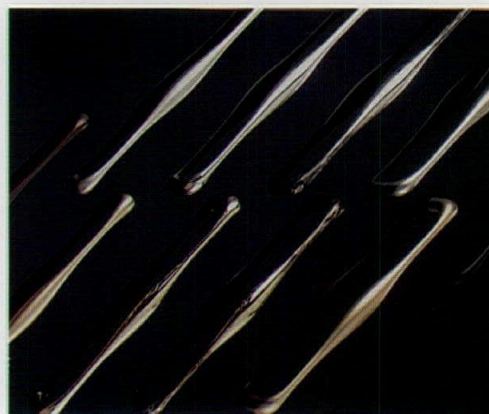
Circle 102 on reader service card



Pre-War Lighting Fixtures

Designed and manufactured by Britain's Best & Lloyd between the World Wars, the Bestlite collection is now available in the United States from Baldinger/Lowy. Available in desk, floor, and wall-mounted versions with a direct light source provided by a spun-metal reflector and an "A" lamp, all of the fixtures have swivel and slide mechanisms: the shade rotates and tilts through its complete axis, the arm tilts and inclines, and the clutch assembly rotates around the stem 360 degrees.

Circle 101 on reader service card



Handcrafted Door Pulls

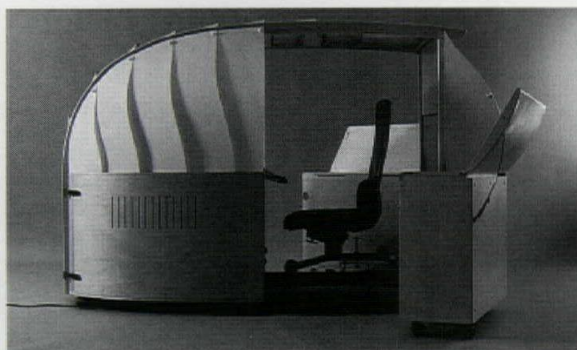
The DP7500 series from Forms + Surfaces is a collection of handcrafted door pulls. The pulls are made of solid bronze or stainless steel in a variety of polished, stippled, oil-rubbed, wrought, and patinated textures and finishes. They can be single-mounted or mounted back-to-back on wood, metal, or glass doors.

Circle 103 on reader service card



Metallic Ceiling Brochure

Chicago Metallic's Decorative Metal Ceiling Systems & Specialty Products brochure describes the manufacturer's full line: the Parallel Beam, Open Cell, and Linear Baffle ceiling systems; metal ceiling panels, and the WoodPlus Series. Color and finish options and general installation instructions are also provided. Circle 200 on reader service card



Office in a Capsule

Designer Douglas Ball's Clipper CS-1 office capsule for New Space, a division of Gilbert International, is an effort to accommodate the need for privacy in an era of corporate downsizing and nonterritorial offices. The Clipper provides privacy, diffused lighting that does not cause screen glare, and a synthetic relationship between seat and computer support surface. The Clipper's Slider Seat is set on nylon wheels and steel rails to allow the user to position him- or herself at a comfortable distance from the keyboard; the seat also tilts and is locked in position by a brake. The maple and translucent plastic capsule is 7 feet long, 4 feet wide, and nearly 5 feet high. A low-voltage fan delivers air to an aircraft-type outlet to control airflow direction and volume. Storage for papers and a small bubble jet printer is provided. In an open floor plan, the Clippers can be positioned in a radial, linear, or random configuration. Circle 104 on reader service card



Cork from Sardinia

Imported to the United States from Sardinia by EX, this cork material, known as "soft gold" in Italy, is available for both commercial and residential applications. It can be specified for flooring, walls, and ceilings, and as insulation, paneling, sound-proofing, and underlayment for ceramic tile and marble flooring. The cork, removed from the outer layer of Cork Oak and Quercus trees, is self-regenerating and is harvested every ten years. Circle 105 on reader service card



Flat Exit Sign

The AstraLite 5000 Refractive LED Exit Sign from AstraLite has a 1/4-inch profile and mounts unobtrusively to any wall or ceiling; it also meets ADA requirements for low-level, floor-mounted exit signs. The refractory design eliminates the need for plastic or metal housing to conceal lamps and other components. The sign refracts light emitted by a row of LEDs along its edges. It is said to consume 96 percent less energy than most incandescents and 88 percent less energy than most compact fluorescent signs. AstraLite is available in white, black, or clear. Circle 106 on reader service card

Fire-Proofing for Structural Steel

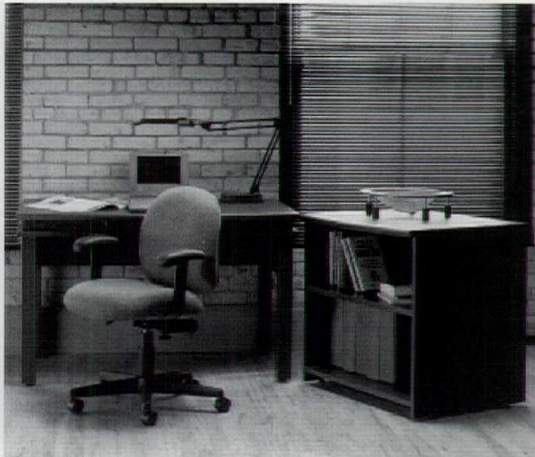
Albi Clad 900 from Albi Manufacturing is a solventless, hammer-hard, thin-film intumescent mastic fire-proofing material for use on interior exposed structural steel. Spray-applied without special application equipment, the material is 100 percent asbestos-free and requires no lath metal reinforcement. It offers two-hour protection at a thickness of 0.31 inches and will not flake or delaminate even after prolonged exposure in high-use areas. It has been UL-tested and complies with VOC regulations. Circle 107 on reader service card

Wider Sheet Roof Membrane

TROCAL® Roofing Systems has introduced an 81-inch-wide sheet for its thermoplastic, single-ply membranes used in ballasted roofing systems. Previously produced in 72-inch widths, TROCAL SRB Series in the wider sheets will be offered in 50-, 60-, and 80-millimeter thicknesses. Saving time and money, the new product is considered to be ideal for reroofing projects. Circle 108 on reader service card

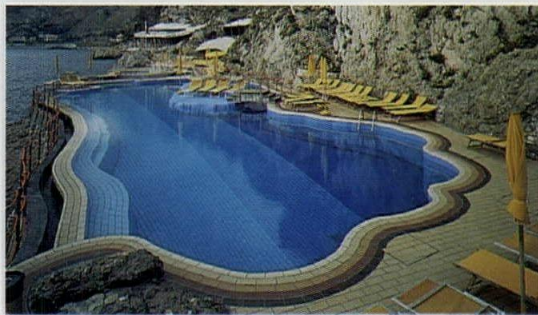
ADA Compliance Pricing Guide

The new *Means ADA Compliance Pricing Guide* presents materials and labor costs for 75 common modification projects and a total of 260 design alternatives. Each project includes ADA Accessibility Guideline design requirements and reference numbers. The guide, developed by R.S. Means in collaboration with the Adaptive Environments Center, also includes listings of government referral agencies and other ADA-related publications. Circle 201 on reader service card



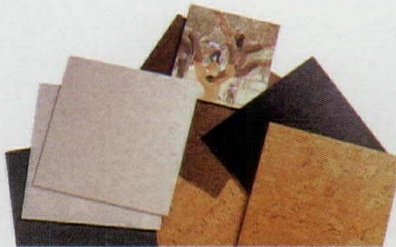
Small/Home Office Furniture Catalog

Turnstone, a new Steelcase company offering "affordable" furnishings, has published a new catalog, *Small Office, Home Office Catalog*. The home office line includes the Interactive™ desk with a built-in keyboard shelf, the Docker™ desk with a flip-up top, a technology cart, storage cabinets, and an office chair. The small office furniture line includes a desk, group work tables and easels, two multitask chairs, and a selection of storage products. Circle 202 on reader service card



Swimming Pool Tile Catalog

KlinkerSIRE, an Italian tile manufacturer, offers a comprehensive catalog containing specification information for its line of swimming pool tiles. The full-color catalog includes installation photos and descriptions of tiles and accessories. Circle 203 on reader service card



Cork Floor Tiles

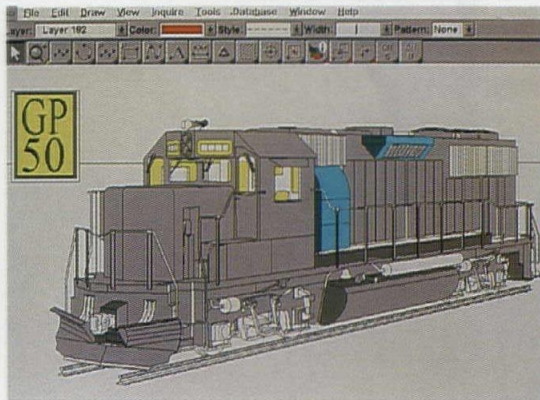
Ipcork cork floor tile, long in commercial use, is now available for residential installations. With the same acoustics and resiliency of carpet, cork is dust-free, hypoallergenic, and is produced from a renewable resource, the cork oak tree. A wide selection of natural and vinyl-coated tiles, strip flooring, and plank floating floors can be specified in a variety of finishes. Ipcork flooring features a laminating process which incorporates a vinyl backing, a cork cushion inner layer, a decorative cork veneer, and a clear vinyl surface. Circle 109 on reader service card



Prepatinated Copper

Revere Copper Products introduced its EverGreen™ prepatinated architectural copper at the AIA convention in May; it is available for order this fall and shipment in early 1995. While traditional copper roofing takes 15 to 30 years to achieve optimum green patination, architects can now specify prepatinated copper for a variety of applications. EverGreen is adaptable to all sloped, curved, and vertical surfaces. The photo above shows the new prepatinated chapel at Harvard designed by Moshe Safdie & Associates. Circle 110 on reader service card

Computer Products



CAD for Windows

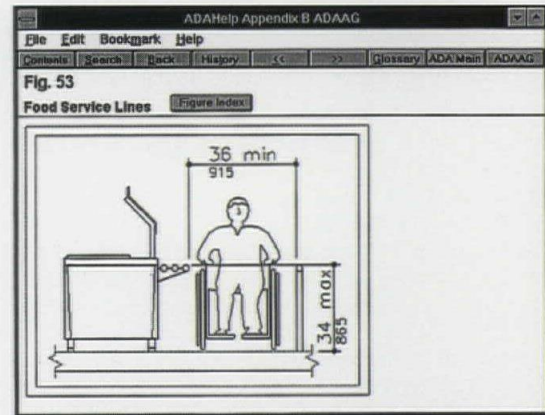
The new Drafix CAD Professional version 3.0 from Foresight Resources is designed to fully exploit the multiple document interface, object linking, built-in help, and other features available in the latest version of Microsoft Windows. Version 3.0 has direct read and write compatibility with AutoCAD DWG files, and an enhanced MacroPro language lets users customize their PC desktop to make Drafix match their own work styles.

Circle 115 on reader service card

Roof Life-Cycle Costing

The Roof Life-Cycle Costing and Energy Analysis Program, a new software program from the American Iron and Steel Institute, provides information about a roof's performance based on the system's initial costs, past performance, thermal characteristics, and maintenance costs over the life of the roof. The software includes data on the longevity and energy performance of eight of the most commonly used roofing systems, including Built-Up Roofing (asphalt and coal tar pitch); modified bitumen, PVC, EPDM (fully adhered, ballasted, and mechanically attached), and metal roofing.

Circle 113 on reader service card



Windows-Based ADA Handbook

ADAHelp 2.0 is said to be the first Windows-based software version of the *Americans with Disabilities Act (ADA) Handbook*. It is a regulation reference that contains over 700 pages of the *ADA Handbook* and the Final Guidelines and Final Rules that have been officially adopted by the Access Board in Washington, D.C. Using any CAD software for Windows, architects and designers can access the regulations without leaving their drawing program.

Circle 204 on reader service card

Support for Third Party AutoCAD Applications

Vermont Microsystems' new AutoMate/Pro for Windows (Version 2.05) "eliminates graphics display problems encountered when running some third-party applications in conjunction with the Accelerated Driver provided with AutoCAD®." Designed to stabilize the AutoCAD Release 12 for Windows environment, AutoMate/Pro also includes a SolidScreen™ feature that keeps overlapping windows visible while the AutoCAD drawing area is being redrawn.

Circle 114 on reader service card



High-Speed Rendering

Atlantis Render™ is a new rendering program from Graphisoft U.S., with high-speed raytracing, procedural shading, and texture mapping. Based on original rendering technology developed by Abvent SA, it is designed to complement high-end modeling and CAD software such as ZOOM, ArchiCAD 4.5 (the latest major upgrade of the company's AEC CAD software for Windows; P/A, Apr. 1994, p. 52), and any other programs that export 3D DXF or RIB files. Atlantis Render is a series of programs that allow the user to set up his or her rendering preview, to alter the materials in the rendering using original "almost real-time" raytracing technology, and to calculate the fully raytraced image at any size up to 10,000 x 10,000 pixels.

Circle 112 on reader service card

New Graphic Tablet

KYE Systems's NewSketch 1212 is a graphic tablet, with a 12" x 12" drafting surface that translates x-y dimensional data into readable format and transfers it into the computer. The product includes a tablet, a multidirectional puck, a soft-tip stylus, AutoCAD R10/R11/R12 compatible templates, KeyCAD software for Windows, a utilities diskette, an advanced ADI driver, a DOS tablet driver, and a WINTAB Windows driver.

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The White City Revisited

An international conference in Tel Aviv offers an opportunity to examine the legacy of 1930s Modernism firsthand.

by Esther Sandberg and Oren Tatcher

In May the city of Tel Aviv hosted a conference on International Style architecture, coorganized by the local municipality, the Tel Aviv Foundation, and UNESCO. The five-day event boasted an international roster of speakers (including designers Daniel Libeskind, Christian de Portzamparc, Santiago Calatrava, Bernardo Fort-Brescia, and Laurinda Spear, to name a few) and attracted a crowd of nearly 2,000 registered participants (mostly Israeli professionals and students). The conference was accompanied by a spate of related exhibitions, architectural tours, and even a "Bauhaus-inspired" fashion show, through which the organizers sought to arouse popular as well as professional interest in Tel Aviv as an "open-air museum" of Modern architecture and urbanism.

A 1930s building boom, propelled by an influx of European Jews, gave Israel's coastal commercial center its decisively Modernist character. And although many buildings of the time – locally identified as "Bauhaus" stock – have long since fallen into disrepair, the legacy of the period is still very much a part of Tel Aviv's architectural tradition, recently fueling campaigns for preservation as well as providing inspiration for new designs.

In the conference's scholarly sessions, many among the more than 100 speakers hurried to distance themselves from the name "International Style," dismissing that term as a simplistic reduction of early Modernism's ideological and architectural aspirations. But as Munich historian Wolf Tegethoff noted, the architecture of the 1930s may indeed have been mostly about a style, not unlike other styles in the history of architecture. Of course, it is the very ambition of early



A typical four-story apartment building, designed by architect Pinhas Hüt, displays Mendelsohn's influence.

Modernism's social agenda that made its degeneration into style so disconcerting to many, then and now.

With its focus on the 1930s, the conference steered the discussion toward the popular dissemination of early Modernism and away from the intellectual underpinnings of the "first masters." The work shown – spanning the world from Romania to Morocco, Turkey to Cuba, Brazil to Japan – amounted to a survey of Modern architecture that, while less heroic than the pioneering work of the 1920s, was perhaps more humane and better suited to local conditions.

The host city, and Israel in general, with its large-scale application of early Modernist principles and aesthetics, is a good case in point. Massive construction in British-ruled Palestine in the 1930s employed a strictly Modern vocabulary of forms, imported by a large number of European-educated architects. A genuine Modern vernacular arose. Historian William Curtis, making the case for the dissemination of Modernist ideas through the work of influential individuals such as Josep Lluís Sert or Erich Mendelsohn, may have had grounds to dismiss the architectural importance of the anonymous Tel Aviv apartment building. But it is precisely the abundance and relative modesty of Modern-styled buildings that is of interest in Tel Aviv, forming, by virtue of its continuous fabric, a unique "White City."

To be sure, Tel Aviv's Modern vernacular had its ideological roots too. The Modernist outlook coincided perfectly with the political ethos of Zionism, which from the outset sought to create a new Jew, a new society, a new environment, ultimately a new nation. Palestine, for the early Zionists, was a *tabula rasa*: it seemed imperative to ignore the old, embodied in the dilapidated, overcrowded, and – most important – culturally and politically hostile Arab towns. (It was only in later decades that those ancient towns became tourist attractions and objects of romantic yearning – nostalgic echoes of which emerged in local Post-Modernism of the 1970s.)

The theme of regionalism, brought up most acutely by Delft historian Alexander Tzonis, is well illustrated against this background. Tzonis, discussing Lewis Mumford's environmental-ecological conception of a Modernist regionalism, sought to distance it from the reactionary cultural-tribal regionalism typical of 1930s Europe. The clean-slate condition of Jewish Palestine (in the minds of the Zionists) led to an architecture that was regionalist in a Modern sense, to the extent that it sought cues in the local climate, landscape, and materials while ignoring indigenous architectural traditions.

Mumford, curiously, had indirect input in the urban design of Tel Aviv, as noted by Neal Payton of Catholic University, who quoted from correspon- (continued on next page)

Esther Sandberg writes an architecture column for the Tel Aviv weekly Ha'ir. Oren Tatcher has written for Israeli publications and is now an architecture student at Harvard's Graduate School of Design.

White City Revisited (continued from previous page)



Copyright Paul Gross

An aerial view of Dizengoff Circle in the 1950s: designed by architect Genia Auerbuch in 1934 and implemented shortly thereafter, it reveals the characteristic curvilinear geometry and incremental fabric of the White City.

dence between Mumford and his mentor, Scottish sociologist and town planner Patrick Geddes, when the latter was working in the mid-1920s on the first master plan for the city. Geddes was the topic of one of the conference's most interesting sessions. His scheme for Tel Aviv, with commercial streets running between superblocks subdivided into small plots and secondary streets, was unanimously praised for its underlying urban concepts. Even in the 1930s and 1940s, when the plots were filled with four-story apartment buildings raised on *pilotis* – rather than the smaller houses he had envisioned – Geddes's principle of freestanding buildings and incremental parceling of the superblocks prevented the construction of large projects (including housing) and ensured the present-day cityscape of detached, medium-sized buildings surrounded by greenery.

Indeed, in its coincidental fusion of several Modern sources – Garden City layout, Bauhaus geometry, Mendelsohnian curves, and Corbusian *pilotis* – as well as in its intimately proportioned street sections, its preponderance of street-facing residential terraces, and its mixed uses on the commercial avenues, Tel Aviv demonstrates that Modernism could create a city of a human scale and a vibrant street life – a city which, Payton posited, “even the most traditional urbanist could applaud.” Payton went on to suggest that this model – which accommodates the mixed-use neighborhoods and increased densities now advocated by the “New Urbanism” – is not irrelevant to the current urban crisis in North America.

In retrospect, it is a pity that more of the sessions did not offer insights in this vein. By concentrating mostly on historical perspectives, the conference passed up the opportunity to explore further the lessons and pertinence of the Modern legacy for our time. Meanwhile, one must fervently hope that the conference will energize a much-needed campaign to restore Tel Aviv's crumbling Modernist buildings to their optimistic white past. □



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Defining Gay Design

Homosexual designers, gathering in New York ask whether their work differs from that of straight colleagues. *by Philip Arcidi*

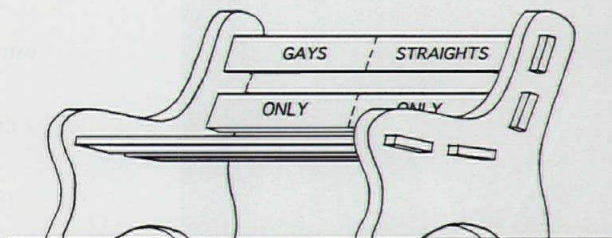
We all presume, yet rarely mention, that within architecture and interior design there is a sizable quotient of gays and lesbians. Their imprint has been sensed, but their sexuality had been scarcely discussed – until this June, when New York's OLGAD, the Organization of Lesbian and Gay Architects and Designers, sponsored Design Pride '94, the first international conference for homosexual practitioners in our field.

Coinciding with the 25th anniversary of the Gay Pride movement, Design Pride drew some 200 designers and students – about four fifths of them male – to The Cooper Union to discuss how gays and lesbians are treated and whether they work any differently from heterosexuals. Participants who had detected job discrimination generally described it as subtle rather than blatant, though no one dismissed it as a thing of the past. The conference affirmed what I'd heard over the years from colleagues both straight and gay: To be promoted to partner in a corporate firm, it was once important to have a wife. But feminism, as well as gay visibility, is making the top tier of the profession less of a straight old boy network. One gay architect said the prestigious office he used to work for actually considered his unmarried status an asset: without a wife and kids, he wasn't likely to turn down assignments that called for out-of-town travel.

The conference was orderly almost to a fault. Only one of the four sessions set the hall buzzing with spontaneous debate. Some speakers said "queers" (a strident label promoted by some gays, abhorred by others) must be confrontational to win civil rights in a straight world. Most talked, more dispassionately, about the ways in which gays and lesbians, like other minorities, could promote their contributions to the design world. Participants, including historians, practitioners, critics, and activists, spoke about architects they identified as homosexual, such as Louis Sullivan, Charles Moore, and the Irish early

Modernist Eileen Gray, not to "out" them for political leverage – they are deceased, after all – but to stake new turf for architectural scholarship.

Several speakers presented "queer" sexuality as a new frontier for cutting-edge design. Some of the projects presented under this banner hinted at erotic titillation, but



Drawing by Adam Kuby of his installation for "Queer Space."

most were at least as provocative for the intellect – exploring the relationship of the body to space, for example, or investigating the places that architecture makes for minorities, sexual and otherwise. Steven Harris showed Yale students' projects for New York's Harvey Milk High School for gay students, as well as a project involving locker rooms with translucent shower stalls on which the occupants' shadow profiles appear, and cut-away partitions that reveal rather than hide people. Mark Robbins of Ohio State University showed one-of-a-kind furniture with metaphorical references to masculine and feminine sexuality. He also presented museum installations that trace the ways homosexuals appropriate places for themselves in America's cities.

Whether homosexuals design differently from heterosexuals is a question that has been tossed back and forth for decades, and in New York it prompted much discussion, yet failed once again to receive an answer that everyone endorses. Los Angeles architect Frank Israel, well known to readers of P/A, sent a transcript, via Aaron Betsky of the Southern California Institute of Architecture, in which he said that gay sexuality gives him the opportunity to look at design issues from an unorthodox point of view. Israel, like many

panelists, suggested that being homosexual doesn't lead to identifiably gay design. In his own address, Betsky concluded that there is no gay architecture, but instead a propensity to reform and deform mainstream standards. Others said that as a gay man or a lesbian, you can consider yourself a person on the margins, critical of, or at least distant from, the norms that most people take for granted. But in a medium as complex as architecture, the sexuality of the designer can rarely be identified in the product.

Feminist criticism of architecture set the stage for today's interest in gays and lesbians. In each case, norms are considered potentially dangerous, for they tend to homogenize minorities to suit the perspective of the mainstream. Every architect, gay or straight, might learn something from this sexual critique. It invites us to address issues already germinating in other disciplines. But it would be hazardous to categorize architecture solely on the basis of sexuality. This was the conclusion I reached when I saw "Queer Space," a kindred exhibition at The Store-Front for Art and Architecture, a few blocks from Design Pride. The installations, some beautifully designed, showed how gays and lesbians establish their own territory in an ostensibly straight environment. Some "Queer Space" works were site-specific, like nine New York places marked with pink triangles installed by REPOhistory, an artists' collective. Queer space can also be one's mental space, or something as parochial as a man's recollection of the places where he came out of the closet. Some of the exhibits illustrated nothing more than the ways gays and lesbians carry out the rituals of day-to-day life among their straight neighbors. The show implied, perhaps unwittingly, that the way we perceive and use space is inherently subjective – a process that varies from person to person and ultimately defies sweeping labels like "heterosexual" or "queer." □



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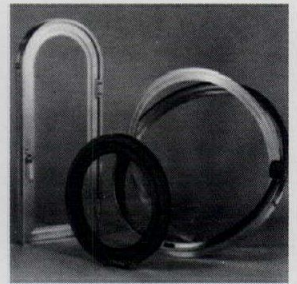
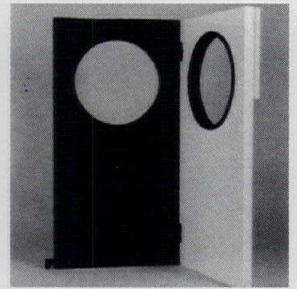
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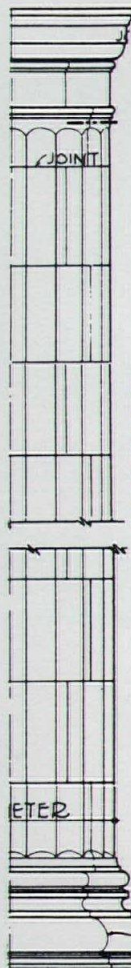
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Deadline for Submissions: September 9, 1994

Judging will take place in October 1994 and winners will be notified, confidentially, by October 31. Public announcement of the winners will be made in January 1995, and winning entries will be featured in the January issue of P/A. Clients, as well as professionals responsible, will be recognized. P/A will distribute information on winning entries to national, local, and specialized media.

42nd Annual P/A Awards

Progressive Architecture announces its 42nd annual P/A Awards program. The purpose of this awards competition is to encourage outstanding work in architecture and urban design before it is executed. Awards and citations will be designated by a jury of distinguished, independent professionals, basing their decisions on overall excellence and innovative ideas. In an effort to address the broader concerns of the profession, P/A is encouraging this jury to take into account various considerations in addition to qualities of form; response to program and context, management of the design and construction process, technical solutions and details, social and economic contributions. Potential entrants are urged to interpret the call for "outstanding work" as broadly as possible, consistent with the awards program's limitation to specific projects that have been accepted for execution.

Eligibility

1 Who Can Enter.

Architects and other environmental design professionals practicing in the U.S., Canada, or Mexico may enter one or more submissions. Proposals may be for any location, but work must have been directed and substantially executed in offices in those countries.

2 Real Projects.

All entries must have been commissioned, for compensation, by clients with the authority and the intention to carry out the proposal submitted. In the case of design competitions, the proposals eligible are those the client intends to execute.

3 Architectural Design Entries.

Entries in Architectural Design may include only works of architecture scheduled to be completed after January 1, 1995. Indicate anticipated completion date on Projects Facts page (see item 7, below). Prototypical designs are acceptable, if commissioned by a client.

4 Urban Design Entries.

Entries in Urban Design must have been accepted by a client who intends to base actions on them. Implementation plans and anticipated schedule must be explained in entry.

5 Verification by Client.

The jury's decision to premiate any submission will be contingent on verification by P/A that it meets all eligibility requirements. To that end, P/A will contact the clients of projects the jury selects for recognition. P/A reserves final decision on eligibility and accepts no liability in that regard. Please be certain your entry meets the above rules.

(Submission requirements and entry form on the following page)

Jury

Michael Dennis

Principal, Michael Dennis & Associates, Boston
Professor of Architecture
Massachusetts Institute of Technology

Merrill Elam, AIA

Principal, Scogin Elam & Bray
Architects, Atlanta

Richard Fernau, AIA,

Partner, Fernau & Hartman,
Berkeley, California
Professor of Architecture
University of California, Berkeley

Nicholas Grimshaw, RIBA

Chairman, Nicholas Grimshaw
& Partners, Ltd., London

Emanuel Kelly, AIA

Principal, Kelly/Maiello Inc.,
Philadelphia
Professor of Architecture,
Temple University

Entry Form: 42nd P/A Awards Program

Please fill out all parts and submit, intact, with each entry (see paragraph 12 of instructions). Copies of this form may be used.

Entrant:

Address: _____

Credit(s) for publication (attach additional sheet if necessary):

Entrant phone number:

Project:

Location:

Client:

Client phone number:

Category:

Entrant:

Address: _____

Project:

I certify that the submitted work was done by the parties credited and meets all Eligibility Requirements (1-5). I understand that any entry that fails to meet Submission Requirements (6-18) may be disqualified. Signer must be authorized to represent those credited.

Signature

Name (typed or printed)

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Awards Editor/Progressive Architecture

600 Summer Street, P.O. Box 1361, Stamford, CT 06904

Project:

Your submission has been received and assigned number _____
(P/A will fill in this number and return this receipt. Please retain it for reference.)

Entrant:

Address: _____

(Receipt)

Awards Editor/Progressive Architecture

600 Summer Street, P.O. Box 1361, Stamford, CT 06904

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Address: _____

(Return label)

Submission Requirements

6 Binders.

Entries must consist of legibly reproduced graphic material and text adequate to explain it, in English. All entry material must be firmly bound in binders no larger than 17" in either dimension (9" x 12" preferred). Avoid fragile bindings. Supplementary documents such as research reports or urban design appendices may be bound separately to avoid unwieldiness, as part of the same entry. Occasional fold-out pages are permissible, but unbound material in boxes, sleeves, etc., will not be considered.

7 Project Facts Page.

To assure clear communication to the jury, the first page in the entry binder must list PROJECT FACTS under the following explicit headings: Location, Site characteristics, Surroundings, Zoning constraints, Type of Client, Program, Construction systems, Funding, and Schedule. Give hard data (square footages, costs, specific materials) where possible. All Project Facts should fit on one page. Paragraphs amplifying this data, covering design philosophy, etc., should be included on subsequent pages.

8 Documenting the Process.

It is desirable for entries to document the design process, as well as its result: entrants are encouraged to include copies of preliminary sketches, alternative preliminary schemes, information on context and precedents for the design, and excerpts from working drawings.

9 Research Behind Projects.

While P/A is cosponsoring a separate annual competition for architectural research (results of the 1st annual Research Awards competition in July 1994 P/A) we encourage the inclusion of any research done in support of a specific architecture or urban design project that is otherwise eligible.

10 No Original Drawings.

Original drawings are not required, and P/A will accept no liability if they are submitted. No models, slides, or videotapes will be viewed by the jury.

11 Anonymity.

To maintain anonymity in judging, no names of entrants or collaborating parties may appear on any part of the submission, except on entry forms. Credits may be concealed by tape or any simple means. Do not conceal identity or location of projects.

12 Entry Forms.

Each submission must be accompanied by a signed entry form, to be found on this page. Reproductions of the form are acceptable. Fill out the entire form and insert it, intact, into an unsealed envelope attached inside the back cover of the binder.

13 Entry Categories.

For purposes of jury procedure only, please identify each entry on its entry form as one of the following: Educational (including any campus buildings), House (single-family), Housing (multifamily), Commercial, Cultural, Governmental, Health-related (including nursing homes), Industrial, Recreational, Religious, Urban design. Mixed facilities should be classified by the largest function. If unable to classify, enter Miscellaneous.

14 Copies of Key Pages.

To provide P/A with basic information on your entry, even if it is not premiated by the jury, please include xeroxes of six or more key pages (including Project Facts page), stapled separately and slipped inside the back cover of the binder.

15 Entry Fees.

Entry fee must accompany each submission. Fee is \$90 for P/A subscribers, \$125 for nonsubscribers. (Nonsubscribers can choose to subscribe at a special rate of \$35 per year and pay the \$90 entry fee; see entry form.) Make check or money order payable to Progressive Architecture. Canadian and Mexican offices must send drafts in U.S. dollars. Fee must be inserted in unsealed envelope with entry form (see 12, above).

16 Entry Receipts.

P/A will send a receipt by October 1, which will indicate an entry number to save for your reference.

17 Return of Entries.

P/A intends to return all entries by January 1, by U.S. Mail. P/A assumes no liability for loss or damage.

18 Entry Deadline.

Deadline for sending entries is **September 9, 1994**. All entries must show some date marking as evidence of being in the carrier's hands by September 9. Hand-delivered entries must arrive at P/A's offices (address below, 6th Floor reception desk) by 5 p.m., September 9. In order to assure arrival in time for the jury, P/A recommends using a carrier that guarantees delivery within a few days.

Address Entries to:

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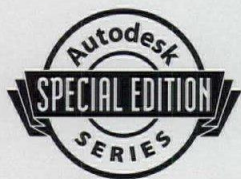
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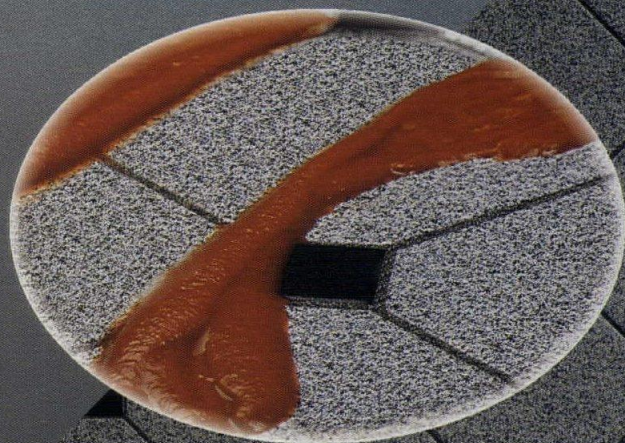
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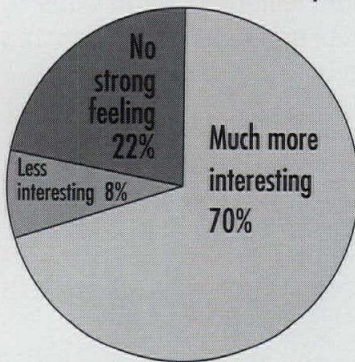
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WHAT AIA MEMBERS THINK OF P/A

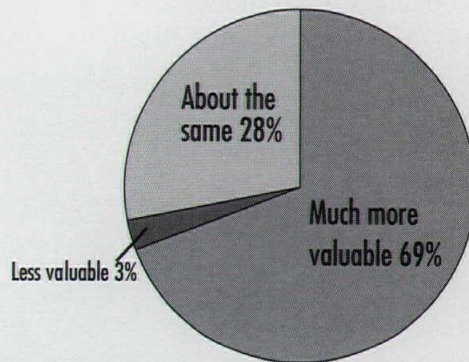
During the AIA Show held in Los Angeles May 13-15, Progressive Architecture conducted a survey asking for attendees' opinions of the architectural publications.

Here are the results of that survey:

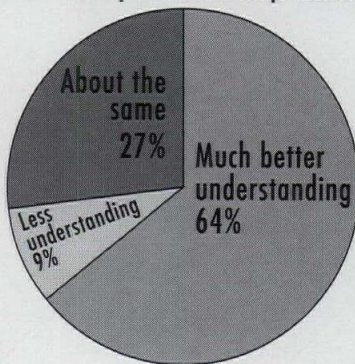
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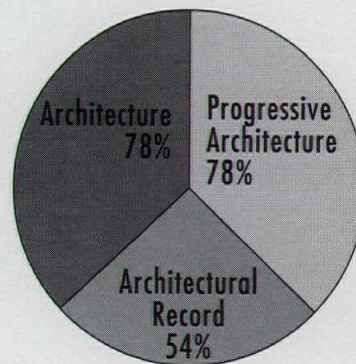
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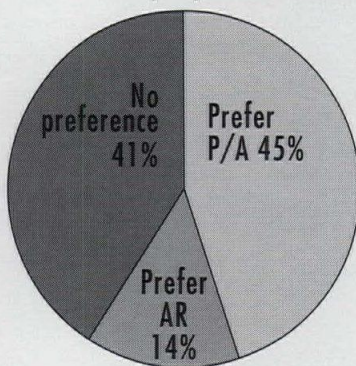
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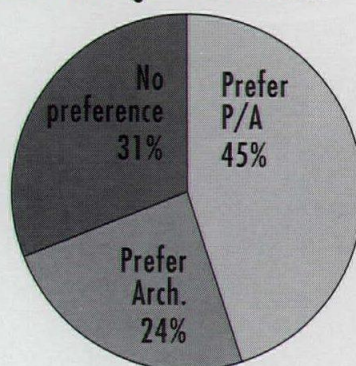
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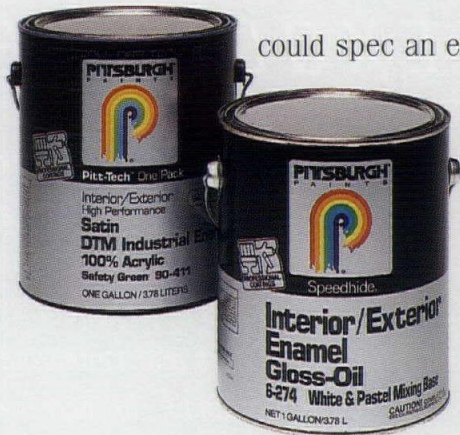
ARCHITECTURAL RECORD



ARCHITECTURE

Additional surveys and focus groups are being conducted to assure continuing assessment of readers' needs and acceptance. P/A's editorial staff welcomes your comments and suggestions

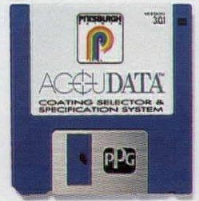
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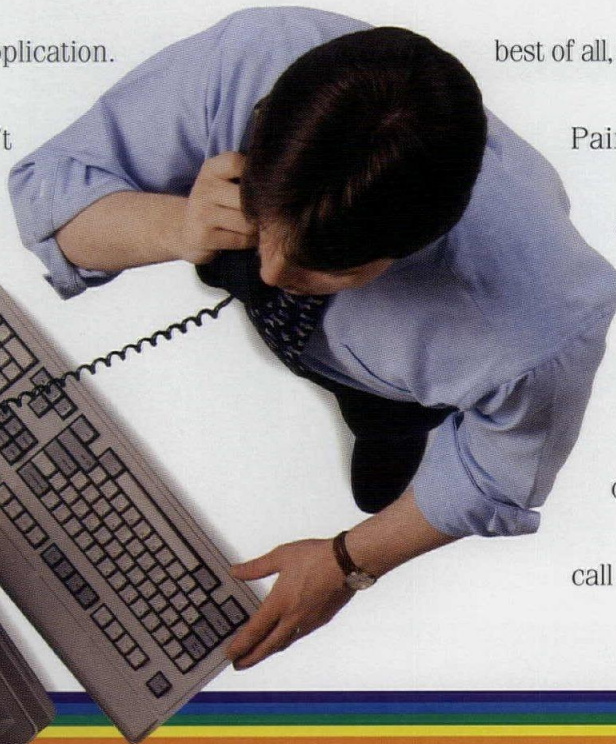
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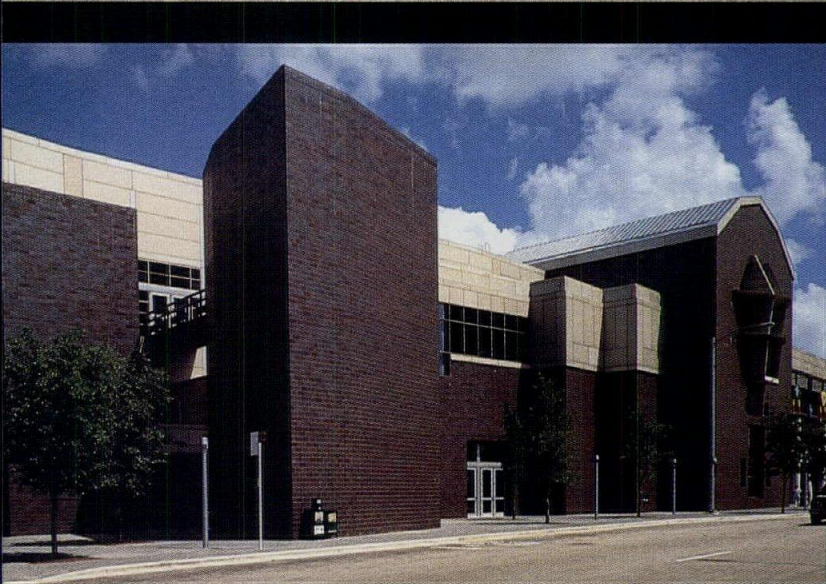
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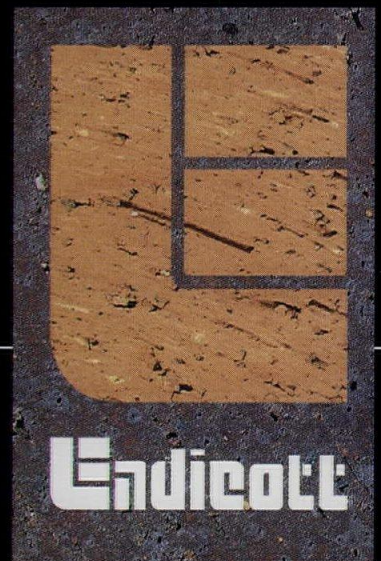
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THE AMERICANS ARE COMING! АМЕРИКАНЦЫ ИДЕТ!

Russia's new market has opened opportunities for American architects. But be prepared for a game of chance in a country amid dramatic flux. *by Michael J. Crosbie*



The grandeur of super-scaled Red Square (top) contrasts with an intimate and lively recent import from the States (above) on Moscow's Arbat. Note the many construction cranes in the distance.

The Moscow I visited this spring is very different from the city I first traveled to four years ago. Then it was still the capital of the largest nation on Earth, the epicenter of a country once described by Churchill as "a riddle wrapped in a mystery inside an enigma." Today, Moscow is fitfully emerging as the world's latest convert to capitalism. Lenin's mausoleum, the centerpiece of Red Square, is closed indefinitely; the lines now form at McDonald's, Pizza Hut, and Reebok's. The Marlboro man has replaced the visage of Marx.

On the Japanese-made television in my Moscow hotel room was a constant barrage of commercials hawking everything from German-made shampoo to Snickers bars. The hottest thing on Russian TV right now is the American soap opera, "Santa Barbara." Along the Arbat, Moscow's promenade and formerly the center of the intelligentsia, are new cafés and a Benetton store, jugglers, Peruvian street musicians, Russian ultranationalists yelling into megaphones about the good old days under Brezhnev, and

hawkers of "I Love the KGB" tee-shirts. On nearly every street corner are phalanxes of glass and metal kiosks, each about 30 square feet, where you can buy a Coke, a pack of cigarettes, watches, vodka, or Madonna's latest album. The casualties of the new capitalism are not far away. In the Moscow subway sit aging *babushkas*, living the agony of a fixed income in a country with 500 percent annual inflation, selling beets and potatoes set out on old copies of *Pravda*.

No one seemed to personify the changes in Russia better than Viktor, a chauffeur I met in Moscow. Viktor works for a Russian architect in private practice. A few years ago he was a professor of Marxist-Leninist philosophy at Moscow State University. Now retired from a job no longer needed in the new Russia, he drives a budding capitalist to his job sites.

Russia's thirst for things Western includes architecture. In a market that has been closed to them for 75 years, American architects are now designing and building projects on prominent Moscow sites and in other Russian cities. There is heady excitement in working in this once-sealed society, but practicing in Russia can be, and often is, fraught with frustration.

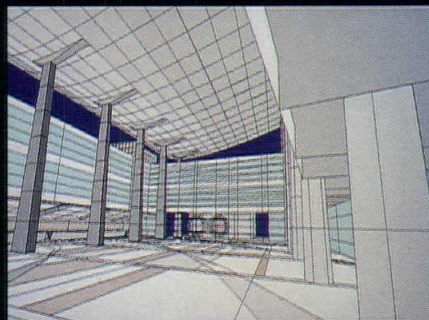
Getting a Foothold

How do you land a job in Russia? There are as many answers to that question as there are American architects now working

there. A number of Americans have backed into work through humanitarian activities. For example, Jeffrey Heller of the San Francisco firm Heller & Leake visited the former Soviet Union as part of a contingent of architects from the AIA to help rebuild Armenia after its devastating earthquake in 1989. The visit led to a number of contacts, and Heller is now designing a \$30-million airport project in Moscow (page 53).

New York architect Sidney Gilbert first visited the Soviet Union a decade ago as the head of Architects, Designers, Planners for Social Responsibility in an effort to reach out to his Soviet counterparts to help end the arms race. "It was like landing on another planet," Gilbert says, recalling the closed and stolid pre-Gorbachev atmosphere. A few years later ADPSR and the Union of Architects of the USSR started a joint exchange program for Soviet and American architects.

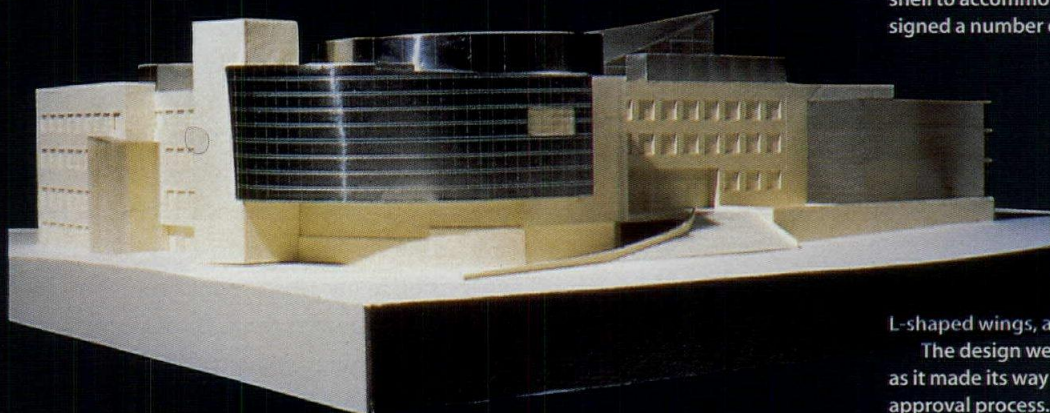
Sergey Kisselev was one of the first Russian architects to visit the U.S. under the exchange and met Gilbert in New York. The two became friends and in 1991 formed a partnership. To date, Gilbert and Kisselev have completed a number of interior renovation projects for American companies with offices in Russia. Gilbert mostly does marketing and some design, funneling projects to his Russian partner, who finalizes design and gets the projects approved and built. Other projects originate in Russia, and the two collaborate on design.



Moscow Bank of the Russian Federation Savings Bank
Ellerbe Becket, Washington
Association of Architects Design Studio, Moscow

This 300,000-square-foot headquarters for Russia's largest bank is now nearing completion. The site in the northeast section of Moscow adjoins 17th to 19th Century buildings (far left), currently being restored.

The bank headquarters incorporates a structure for a technical institute that was started in 1984 and abandoned in 1988. The floor and frame structure was completed, as were some of the cladding and interior partitions. The architects worked with the existing shell to accommodate the bank program, designed a number of infill pieces to create two



L-shaped wings, and designed new cladding.

The design went through four revisions as it made its way through the two-year approval process. The exterior of the earliest scheme (left) had a sleek, modern appearance, as did the interior of the banking hall (above). The exterior as approved was modified to respond to local historic preservationists and the City Architect's office.

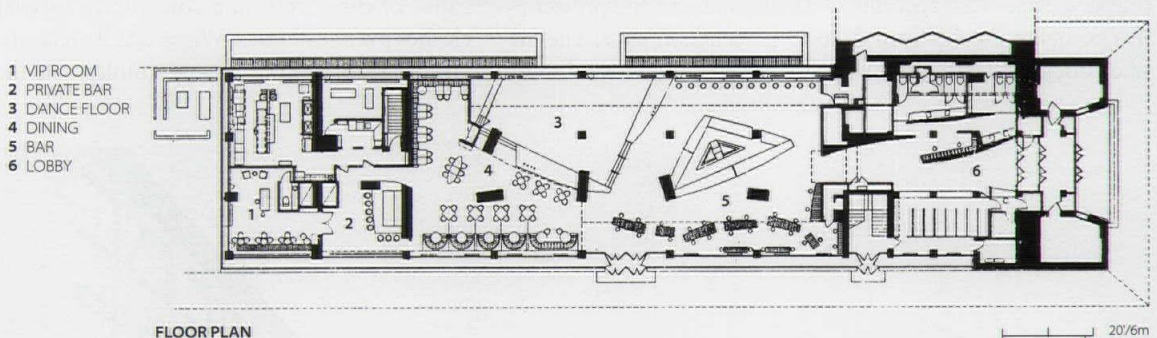
Manhattan Express Nightclub, Moscow
Bromley Caldari Architects, New York

This 9,000-square-foot nightclub is on the ground floor of the Hotel Rossiya, a 5,400-room behemoth that dates from the Brezhnev era. The architects broke up the long, rectangular, symmetrical space by playing diagonal elements off the existing columns. One enters through a dark vestibule (with a metal detector to deter weapon-wielding patrons) and meanders along a snakelike path through the club, which is rendered in deep shades of red, blue, and purple. The dining room (right) with its crushed velvet curtains strikes just the right note of decadence that Russians expect in an American-style club.

The \$1.4-million nightclub was developed by a joint venture Russian/American trading company. The architects, based in New York, did all the construction documents and site supervision of Turkish construction workers, with the aid of a Russian architect as a consultant.



Jamie Andiles Arce



FLOOR PLAN

20/6m

Another common entrée into work in Russia is for American architects to work for American clients who are building projects there. The Liebman Melting Partnership in New York has just completed the reconstruction of a nine-story office building (page 55) on Moscow's Leningradsky Prospekt for Robin Moscow, Ltd., a team of American developers that includes Zeckendorf in New York. Another Liebman Melting job, the Moscow headquarters for Citibank and Morgan Stanley (page 54), came about when an American lightweight-steel-panel fabricator, John Marino, was asked to build the project. "We had worked with John on housing in Berlin," says Theodore Liebman, "and he asked us to come on board as architects, because we were familiar with the system." This project has led to a city-block's worth of projects, and Liebman Melting is now designing a 150,000-square-foot office building across the street (page 55).

A more difficult approach is to scout out work with a Russian client as you would in the U.S. This is how Ellerbe Becket in Washington, D.C., became the architect for the Moscow Bank of the Russian Federation Savings Bank (facing page). According to architect Michael Jones, the firm sent over a Russian-speaking marketing person who tracked the project down and also found a Russian architect for Ellerbe Becket to work with on the commission. Now under construction, the bank head-

quarters of more than a quarter-million square feet is scheduled for completion before the end of this year. As Russian businesses grow (barring the total collapse of the Russian economy), this kind of work for Russian clients may become more common. "We were hired because the client wanted a building with Western standards of design and finish," explains Jones, adding that sophisticated mechanical and communication systems and the finish of American office interiors can't be accomplished by Russian architects. Not yet, anyway.

Who's In Charge Here?

Regimes may come and go, Gorbachev is long gone and Yeltsin's days seem numbered, but the Russian bureaucracy is forever. The country rests on a Byzantine structure of paper pushers. The American architects I spoke with who have first-hand experience with the building approval process describe it as something straight out of Kafka. "There's a lot of red tape, and everyone's got his hand out," says Scott Bromley of Bromley Caldari Architects in New York. Bromley's firm has completed a night club in the Hotel Rossiya (above), not far from Red Square, and is now working on a store in St. Petersburg and an entertainment complex in Moscow. "It's similar to a city like New York, just magnified by a factor of ten," says Bromley. *(continued on next page)*

"It makes New York look as easy as pie," muses Sidney Gilbert. "Anyone coming here and expecting an approval process similar to one in the States is going to be short by about 75 percent." Timothy Bryant, construction director for a Liebman Melting project, says that during a project, "whole government agencies may disappear, or new rules, regulations, decrees, taxes, fees, and governing personnel with altogether different agendas will continually appear and change."

The approval process points up the need to work with Russian architects to get a project built. As members of an old-boy network of favors and patronage, with years of experience in how the game is played, Russian architects are indispensable in guiding a project through an obstacle course of seals and signatures. And the Russians are learning the capitalist system well. Some now specialize as approval expeditors.

There is initial approval given for the project's concept, usually granted by the Russian Regional or City Architect's office. Then multivolume approval documents are prepared for various specialists to sign: sanitarians, mechanical, electrical, and structural engineers, fire officials, historic commissioners, utility experts, archeological specialists, environmental impact appraisers, even "vent specialists." Documents for the project by this point are usually from 60 to 75 percent complete. The finished document package is usually checked by architects in a re-

gional office (known as Mosproject) with jurisdiction over all buildings in the region, and is sealed by them.

For their nightclub project, Bromley Caldari worked with a Russian architect for approvals, but completed all construction documents. "We obtained a set of the multivolume building codes for Moscow," explains Jerry Caldari, who had the sections relevant to their project translated. "It's made things easier on subsequent projects, but they have some of the strangest sanitary rules. For example, in a restaurant you can't store chickens and eggs in the same room. Don't ask me which came first."

Comrades in Architecture

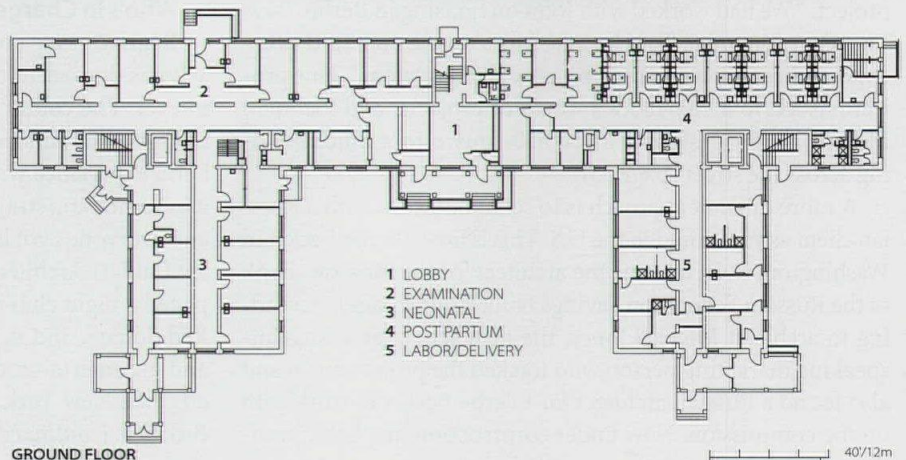
Finding a Russian architect to collaborate with is a hit-or-miss proposition. A number of architects I spoke with said they were teamed with architects in the regional Mosproject offices. Noted one American architect: "They were marriages of convenience" that sometimes worked and sometimes didn't. In some cases, the Russian architects became sensitive over turf (understandably), and may have resented American architects' coming in and designing projects, particularly when there are so many Russian architects unemployed because of dire economic conditions. Occasionally there are clashes over aesthetics. When one American architect showed an elevation drawing for a new building to the Regional Archi-

Savior's Hospital, Moscow Burt Hill Kosar Rittelmann Associates, Pittsburgh

Magee-Women's Hospital of Pittsburgh chose Savior's Hospital in Moscow as a demonstration project to improve the level of Russian medical care, primitive by Western standards. The project involves the gutting and renovation of a 35,000-square-foot maternity ward (right). The American architects worked with Magee staff and Russian physicians to make the ward more comfortable as well as efficient.

"The birthing process should be a family, rather than just a medical event," says architect Richard Rittelmann, "and we wanted to create a domestic setting." New birthing suites, nurseries, and neonatal intensive care units will provide a measure of privacy and care that Russian hospitals lack, with Western standard finishes and equipment.

The architects donated their services; to date approximately \$2 million in building materials and \$5 million in medical equipment have been donated by American suppliers. To get a rock-bottom price for construction, the renovation project is being built by Moldavian and Ukrainian workers who are paid a fraction of Russian wages.



GROUND FLOOR

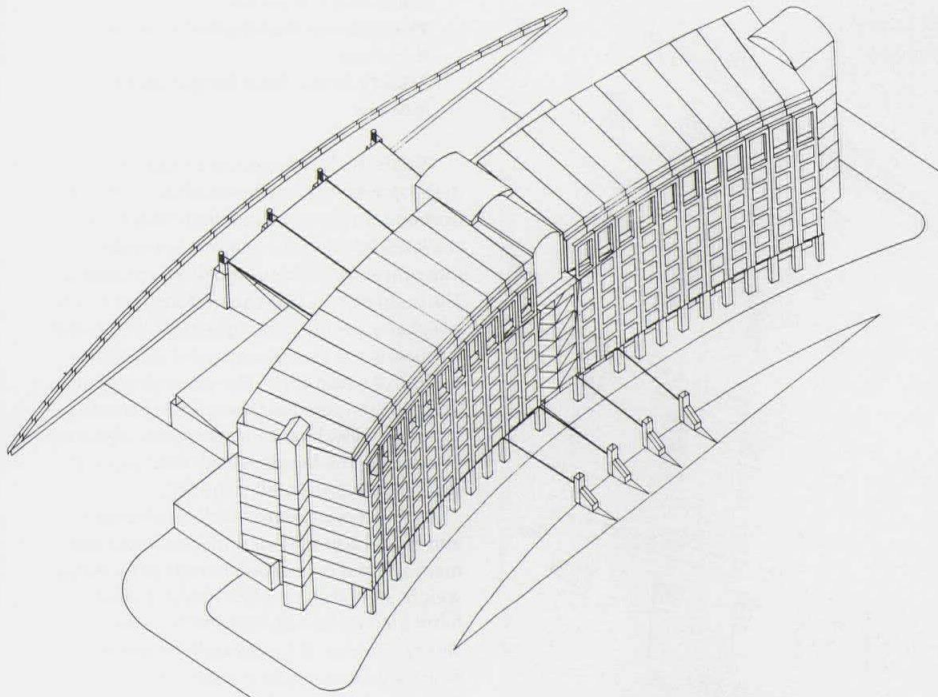
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Domodedovo Airport, Moscow
Heller & Leake Architects,
San Francisco

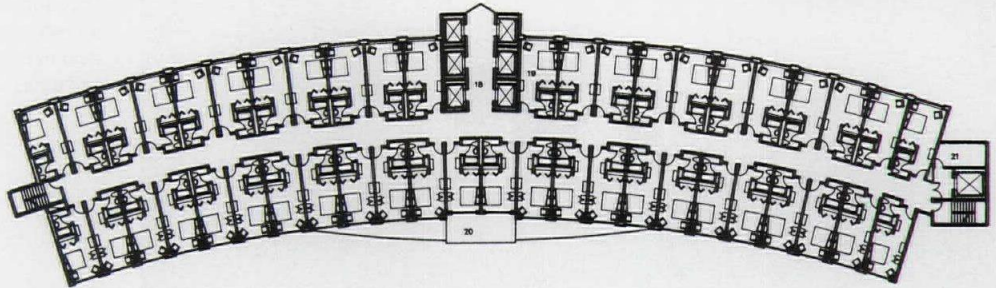
Additions and improvements to Russia's largest airport, including an air cargo facility, a vehicle service facility, a motel, a restaurant, and a hotel, will make Domodedovo the country's hub of international travel. The \$30 million project, a joint venture between Russian and American developers, is now in schematic design.

Because conventional meeting accommodations are scarce in Russia, the 400-room hotel (left) will contain a conference center, "which will allow business meetings to be conducted at the airport, just as they often are in the States," says architect Jeffrey Heller. He plans to complete the project in joint venture with Russian architect Yuri Gnedovski, head of the Union of Russian Architects.

The building will be precast concrete with a glass and metal entry canopy. All mechanical systems, electrical equipment, furniture, and finishes will be imported to assure a Western standard of quality.



HOTEL AXONOMETRIC



TYPICAL GUEST FLOOR PLAN

40/12m

tect, the latter simply muttered in broken English, "I hate."

The best solution seems to be Sidney Gilbert's approach of forming an equal partnership with a Russian architect. This is challenging for several reasons. Under Soviet rule, all architects were employees of the state, working in large "project institutes." In the late 1980s, under *perestroika*, private practice was made legal, but the number of Russian architects who have since gone out on their own is minuscule. Nearly all the architects still employed in Russia work in the project institutes, where buildings are literally pulled whole out of standardized plan books. Projects proceed through the institute by throwing the drawings over the transom to the various engineering departments, which communicate little with each other. Russia and the former Soviet republics are littered with the finished products: poorly planned buildings with uncoordinated mechanical systems; ducts, pipes, and conduits that blast through the middle of walls or mysteriously appear from ceilings — straight out of the movie *Brazil*.

Thus, teaming up with a Russian architect who is familiar with Western standards of quality and practice (which is what clients want) is problematic. Before Kisselev and Gilbert formed their partnership, the Russian architect and his structural engineer, Igor Shvartsman, traveled to America for a month-long crash course in architectural practice. "Each week

we covered another subject," explains Gilbert. They visited engineers and consultants to learn how they work with architects. Gilbert took them to client conferences, project presentations, and initial meetings with potential clients. Kisselev and Shvartsman spent a week in Gilbert's Manhattan office learning about project management, marketing, office accounting, contracts, billing, meeting a payroll, and running a business.

"The idea is not that Sergey emulate what we do in America," explains Gilbert, "but that he and Igor understand how architecture is practiced here, and how an office operates. Now, I'd prefer Sergey to negotiate a contract, because he's much more ruthless than I am," Gilbert says. Gilbert's mentorship has also helped Kisselev to run his own practice better in Moscow, and to be more competitive with Western architects for projects in Russia.

Gilbert is now seeking to set up a program at an American architecture school for Russian graduates, which would combine six months of course work with a six-month internship in an American firm. "We'd take the best of Russian architects and help them to be self-sufficient," says Gilbert, who adds that the U.S. Information Agency offers funding for such a program, and the Moscow Architectural Institute is interested in participating. But Gilbert has yet to get an American school on board. (continued on page 56)

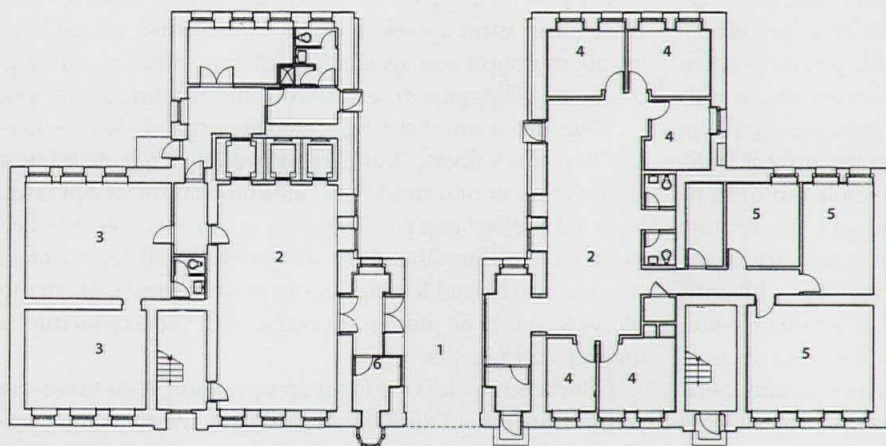
Ducat Place, Moscow
The Liebman Melting Partnership,
New York
Arkady Polovnikov, Mosproject I,
Moscow

This is the first project in a block-sized development in a northwest Moscow neighborhood. The original building dates from the late 19th Century, and was renovated into offices for Citibank and Morgan Stanley. The building's 51,000-square-foot plan forms a U-shape. Secure parking (a big selling point) is found in the central courtyard, accessible through a gated entry. The street elevation (left) was rendered as three distinct façades in warm yellow hues that are commonly found in Moscow. The façade is clad with synthetic stucco (Selected Detail, page 96).

With an eye toward quick construction, and to add a sixth floor under the building's mansard roof on existing foundations, light-weight steel stud construction was used, fabricated by Marino Industries in New Jersey. "The framing was up in five weeks, which was amazing to the Russians," says Theodore Liebman. Russian construction projects, usually of concrete and masonry, tend to drag on for years. Ornamental lamps and gates were made locally (below).



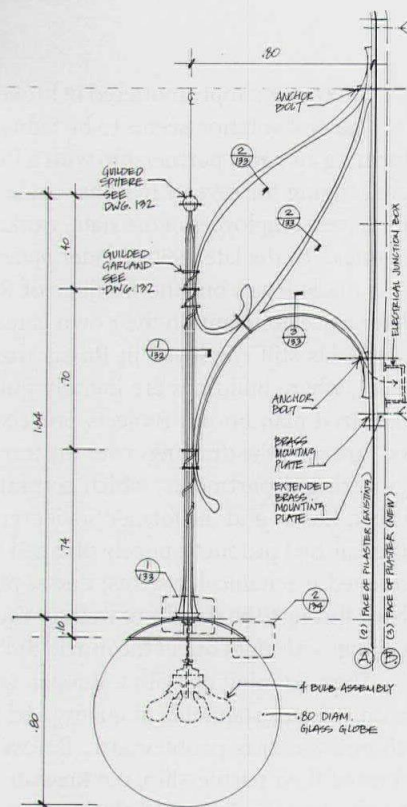
Theodore Liebman



GROUND FLOOR PLAN

- 1 PORTE-COCHERE
- 2 LOBBY
- 3 TENANT
- 4 OFFICE
- 5 CONFERENCE
- 6 GUARD

20/6m



LAMP DETAIL

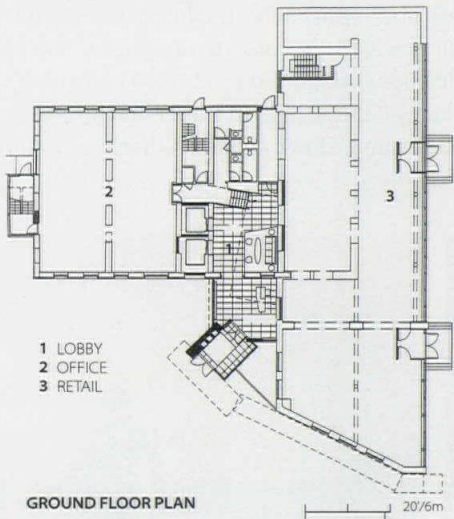
21/6m

53 Leningradsky Prospekt, Moscow
The Liebman Melting Partnership,
New York
Yuri Dmitriev Studio, Moscow

This office building, completed this spring, started with the gutting of a Brezhnev-era concrete-slab apartment house that had been abandoned. The integrity of the structure was suspect, so the hollow-core precast concrete bearing walls were reinforced with steel and grout.

The interior will be fitted out to Western standards to accommodate Western businesses; Motorola has rented space for its Moscow headquarters. Ground-floor retail space (plan below) was added fronting Leningradsky Prospekt, a busy thoroughfare.

The original drab concrete exterior (inset) has been re clad with synthetic stucco (right) in colors similar to those found in Moscow. The project was built by Russian construction workers managed by an Italian contractor.

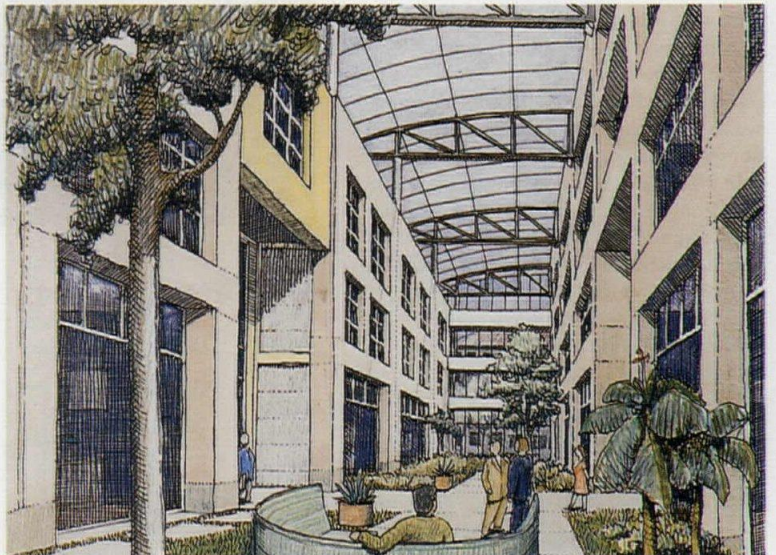


Theodore Liebman

Ducat Plaza, Moscow
The Liebman Melting Partnership,
New York
Arkady Polovnikov, TOO DIAR, Moscow

The second phase of the block-sized Ducat development (facing page), this 150,000-square-foot office building will feature a four-story-high atrium (right) directly accessible from the street. Also along the street façade will be neighborhood services such as a dry cleaner and an office supply store. For tenant safety, the building will also contain two below-grade levels of secure parking.

The basic structure will be concrete – common for most contemporary buildings in Moscow. The atrium enclosure will be steel frame with aluminum and glass infill. Planned exterior materials are granite, steel, aluminum, brick, and glass. Stone, wood, and architectural metals will distinguish the public areas inside. The project is now in design development.



A similar approach is taken by Richard Rittelmann of Burt Hill Kosar Rittelmann Associates in Pittsburgh, who has invited a few architects from Latvia and Lithuania to spend nine months in his office learning the conventions of American design and practice. "We send them back with training and software so that they can set up a practice at home," explains Rittelmann, "and become part of an international network of architects who have trained with us." The "graduates" of Rittelmann's office then pursue joint ventures on projects such as hospitals (a BHKR specialty). Rittelmann maintains that this is a low-cost way to cultivate an international practice while mitigating the risk. "A lot of firms have poured money into black holes trying to establish a practice abroad," he says.

Materials and Methods

Getting the materials you spec on a Russian project and making sure they're properly installed can be a major source of frustration, unless you know where to look and who to ask. On both fronts the situation is getting better than it used to be. Traditionally, materials were hard to come by. "A few years ago it was terrible," says Sergey Kisselev of the selection, "just bricks, concrete, and wood." Now business directories and classified ads offer a plethora of materials from countries abroad, such as Italy, Germany, Japan, and Finland. Product

catalogs from around the world are becoming more plentiful. "Almost all the materials we use now come from outside Russia," Kisselev observes. "Not many Russian industries can supply them."

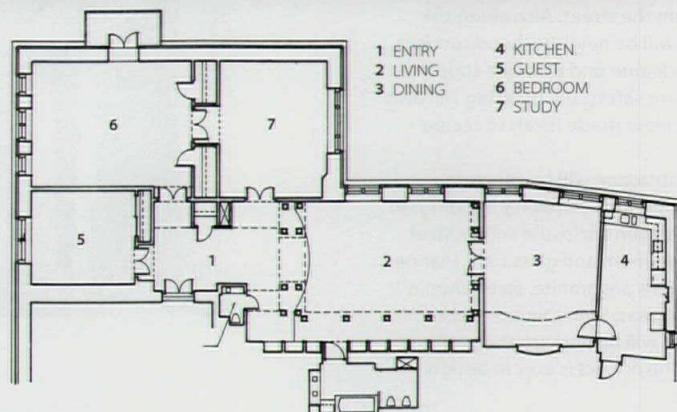
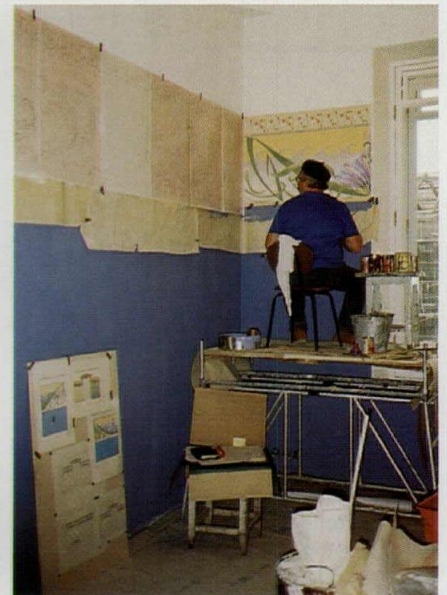
What you can't find, you can bring with you. Theodore Liebman's first project in Moscow was built with a steel-frame system that came from the U.S. Ellerbe Becket's Moscow Bank project is being constructed with curtain wall, mechanical, and communication systems from the U.S., granite from Finland, marble from Italy, and a German office-partition system.

There is a smorgasbord of construction companies. Finnish, Polish, and Turkish firms have been building in Russia for many years, and have the best track records. Italian and Austrian companies are now becoming common. The rule of thumb offered by nearly all the architects I spoke with: don't use a Russian construction firm. According to one American construction manager in Moscow the Russians, having lived under a system for three generations that makes it a crime to fire someone, have little motivation to do good work. "Time, quality, and cost are not important to the Russians," he notes of several experiences with local construction firms. "On my first job I had six drunks who showed up at 10:00 in the morning, and you were lucky if they came back after lunch. One day the whole crew disappeared. Down the street there was a store

**Private Apartment, Moscow
Office of Metropolitan Design,
Colorado Springs, Colorado
Art + Architecture Workshop, Moscow**

The client for this apartment near Red Square, an American businessman, had commissioned its design from two Russian architects, who each produced Deconstructivist extravaganzas that ignored the client's wishes for a Russian Regency style interior. The client then turned to Robert Mark Harris, a Colorado architect who has never visited Russia, for a design that was more sympathetic to the 19th-Century building.

Harris worked with Russian architects, faxing design concept sketches and hard-line drawings back and forth. Details were modified as the availability of materials and finishes dictated. For example, the dining room door (near right) was to be a custom French door from a Finnish manufacturer. A Russian finish carpenter on the job offered to build the door himself, which ended up costing less than the import would have. In the study (far right) an Art Nouveau-era mural was uncovered and restored by Russian artisans.



APARTMENT PLAN

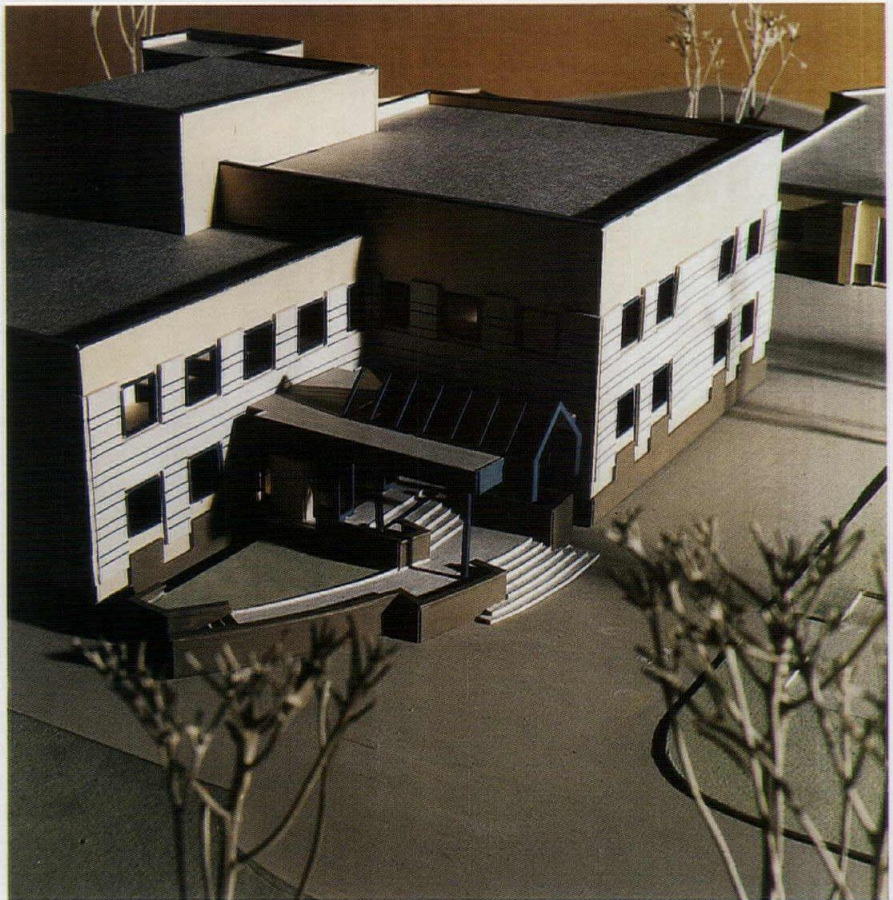
20'/6m

**Mos/Otis Elevator International, Moscow
SPGA + Sergey Kisselev & Partners,
New York and Moscow**

A deteriorating two-story industrial building constructed in 1977 is being renovated for the Moscow headquarters of Mos/Otis, a joint venture company of the Russian Moslift elevator company and Otis Elevator of United Technologies. The advantage of adaptive use is that the permitting process is much easier for "reconstruction" projects than for entirely new buildings.

The Mos/Otis headquarters, still in design, includes an 18,500-square-foot office building and a separate elevator maintenance facility. As part of the development agreement, Mos/Otis agreed to improve an existing children's playground and hockey rink, to be used by residents of a nearby apartment building.

The \$2-million headquarters building will contain two floors of office space and worker amenities such as recreation and dining facilities, along with the ubiquitous Russian *banya* (sauna, hot tubs, and steam room).



with a sale on sugar, and they were all standing in line."

Kevin Smith of Liebman Melting has found that Russian construction crews work well with non-Russian supervisors. An Italian firm, Codest, is managing Russian construction workers on Liebman Melting's Leningradsky office building with Western-standard results. Even Russian architect Kisselev, who avoids Russian construction firms, says that the Russians work best when managed by Western firms. "They're better in quality, speed, and price."

Having a site presence during construction appears to be essential for American architects. "You have to have an office here," says Smith, who works out of a suite of rooms in a hotel next to his office building site. "But it's not cheap. You can spend a fortune in rent, and the people you send to Russia are going to be useless for six months until they get up to speed."

And the commute can be hell. Smith's schedule is now two weeks in Moscow and a week in New York. Michael Jones of Ellerbe Becket splits his time between Washington and Moscow, in three-week-long stints. Ellerbe Becket moved a crew of a dozen American architects to an office in Moscow, to work with Russian architects. They brought their own CAD systems and equipment, even mylar. Drawing materials are scarce.

But some architects have found that being on site isn't necessary. Robert Mark Harris, an architect in Colorado Springs,

designed an apartment for an American businessman in a building just behind St. Basil's Cathedral on Red Square (facing page). His client found a Russian architect, Dimetri Velinchkin, to take care of approvals and working drawings. Harris designed the project in Colorado and sent all the drawings to his Russian counterpart by fax. During construction, Harris worked out details over the telephone line, faxing ideas back and forth to Velinchkin. The two never met, and Harris has never been to Russia, but he has a completed project in the heart of Moscow.

Liability, Getting Paid, and Paying Taxes

Because drawings for Russian projects are sealed by Russian architects and, under Russian law, American architects cannot legally practice in Russia, professional liability isn't a problem. The American architects I interviewed said that their insurance agents and lawyers were not concerned about their Russian work. Attorney James Nowacki with the Chicago firm of Kirkland & Ellis, who advises SOM on its Russian work, suggests that a contract with a Russian client include a provision for international arbitration, modeled on the United Nations rules on arbitration. "It allows hearings to take place at a neutral site in the event of a dispute," says Nowacki.

If you work for an American or a (*continued on page 90*)

Educating the Russian Architect

Russia's social convulsions are changing architectural education in that country.

by *Elena Smirnova* translated by *Kenneth Cassie*

Editor's Note: This description of architectural training in Russia offers lessons for education here. The Russian program includes the training of draftspersons and technicians. Though no such coordinated system exists here, this example might serve as a model for American architecture schools. Also worth considering is exposure to practice as part of education, and the school's role in placing students for internship.

There are a number architectural institutes in Russia, along with scores of small programs of study in various universities. Although each institute has different emphases, programs of study are similar. Until five years ago the program at the Novosibirsk Architectural Institute, where I teach, had a strong technical slant; little time was paid to art and creativity. Since the dissolution of the Soviet Union, courses in Marxist-Leninist philosophy, political economy, and Communist Party history disappeared from the curriculum to make way for artistic study.

The design of gigantic industrial projects, of Communist and Komsomol (Communist Youth) buildings, of faceless micro-regions, and of cities with a population of a million or more have also become a thing of the past. Social changes have made it necessary for architecture students to be educated in the design of smaller-scale projects such as dwellings of one or a few units, office buildings, banks, small industrial enterprises, public buildings, and interiors. All of this has made a new approach to education necessary.

The new program requires six years of instruction divided into three two-year phases. In the first year the students master the expressive "language" of architecture: architectural drafting, perspective drawing, architectural graphics, color theory, and chiaroscuro. Proportions of Greek and Roman orders are studied, as is the work of various Russian architects.

With a foundation in graphic skills, second-year students design modest projects: a small public transit shelter or a shady spot at the beach. Design programs in the second semester become more complex, such as a tourist hotel, rendered in drawings and models. There are also courses in descriptive geometry, higher mathematics, building mechanics, strength of materials, engineering geodesics, architectural and urban history, foreign language, history of philosophy and culture, logic, and esthetics.

At the end of the second year students prepare a diploma project (a small public building, an exhibit pavilion, or a café) followed by a six-hour design examination on an assigned topic. Those who pass continue to the next two-year phase. Those who do not pass receive a certificate that qualifies them as draftspersons. This gives young people who have not shown the requisite ability to complete the program a chance to be involved in the field of architecture.

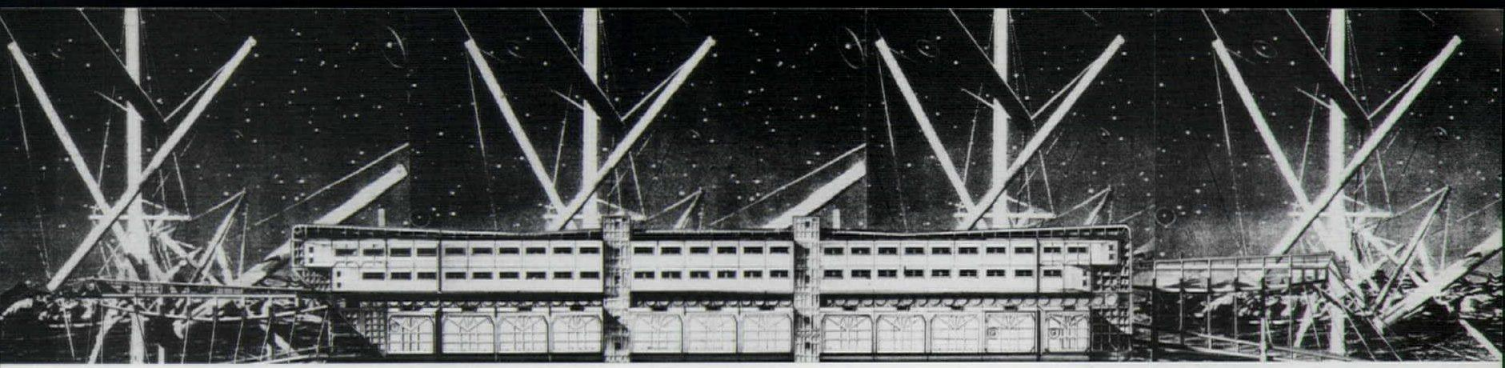
In the third and fourth years qualified students select a specialty: the architecture of dwellings and public buildings, of industrial and agricultural buildings, or regional planning. Support courses in the second phase are more specialized: building typology and construction, architectural physics, social foundations of architectural design, city and regional planning, transport, landscape architecture, urban ecology, engineering equipment, and computer graphics. Lectures on the history of architecture and art continue with classes in drawing and painting. At the end of the fourth year students again complete a diploma project and a comprehensive examination for entry into the third phase of instruction. Those not going on receive diplomas certifying them as "architect-technicians" to assist architects in practice.

The fifth and sixth years offer students the opportunity to participate in real-life design in a specialized studio under the direction of teachers or practicing architects. In recent years a significant change has taken place in the themes of student projects in response to social demands. For example, in housing design architects are no longer shackled to rigid government norms. Both students and architects now design dwelling units of various sizes that offer a higher level of comfort than previous housing. The industrial and agricultural studio works on designs for public service buildings, trash recycling factories, fire stations, and farm dwellings. Support courses focus on building construction technology, economics of designing and building, history of contemporary architecture, and research for the architect.

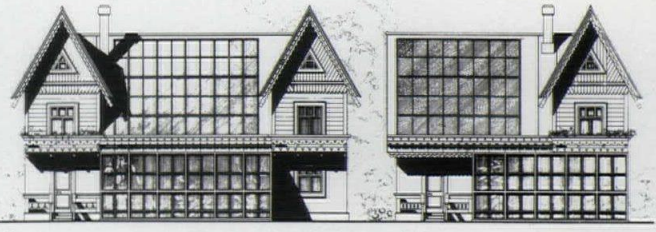
Following fifth-year exams the students are offered summer practicums such as measuring buildings, painting, or construction. Then they spend a pre-diploma practicum year in project institutes [state-run practices] and select a theme for their sixth-year diploma projects. The students defend their projects before a state examining commission.

After graduation great problems now confront the students. Just a few years ago graduates easily found employment. They were assigned as interns by the school at project institutes around the country. The current economic crisis in Russia, however, has caused many of these project institutes either to disband or to curtail their activities. The most able and experienced architects have created their own workshops and studios. But the greater number of architects are unemployed in their field. As a result, graduates must find work independently and many are forced to find work outside of architecture. Students and teachers alike now face the challenge of keeping the profession vital in a time of volatile social change. □

The author is a doctoral candidate and docent (professor) at the Novosibirsk Architectural Institute in Novosibirsk, Russia.



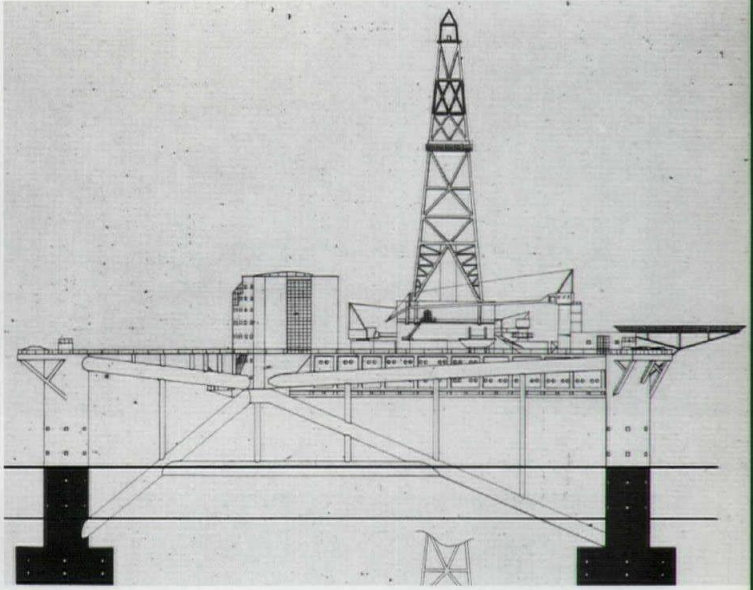
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Student projects from the Novosibirsk Architectural Institute include (1) an industrial work station in northern Siberia by fifth-year student A. Steshenko; (2) new farm buildings in a vernacular style by sixth-year student

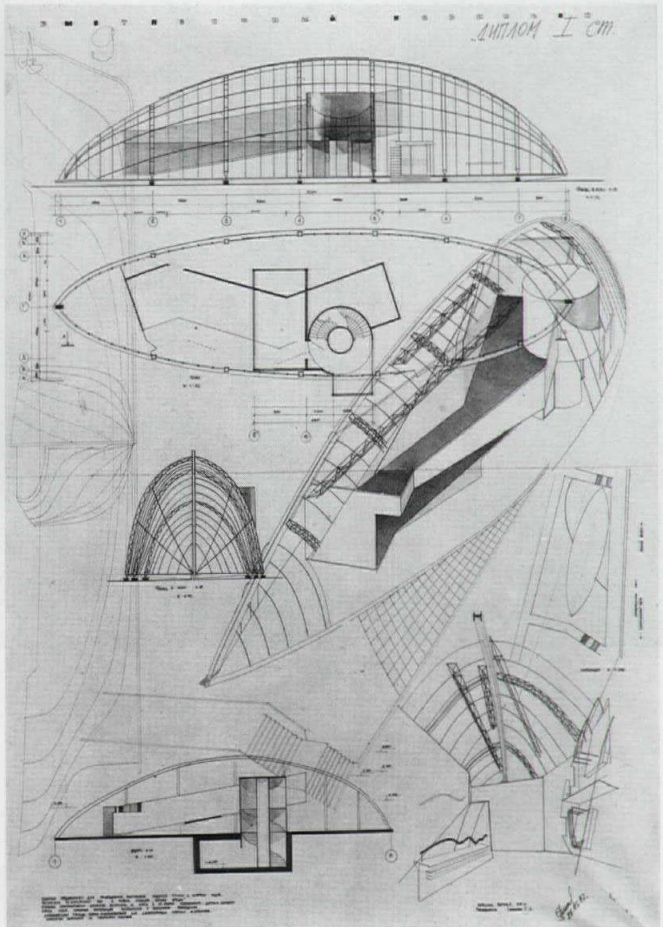
N. Osing; (3) a prototype oil drilling platform by fifth-year student T. Domracheva; (4) rendering of an ancient Russian church by first-year student I. Ananieva; (5) exhibition pavilion by second-year student A. Bagrov.



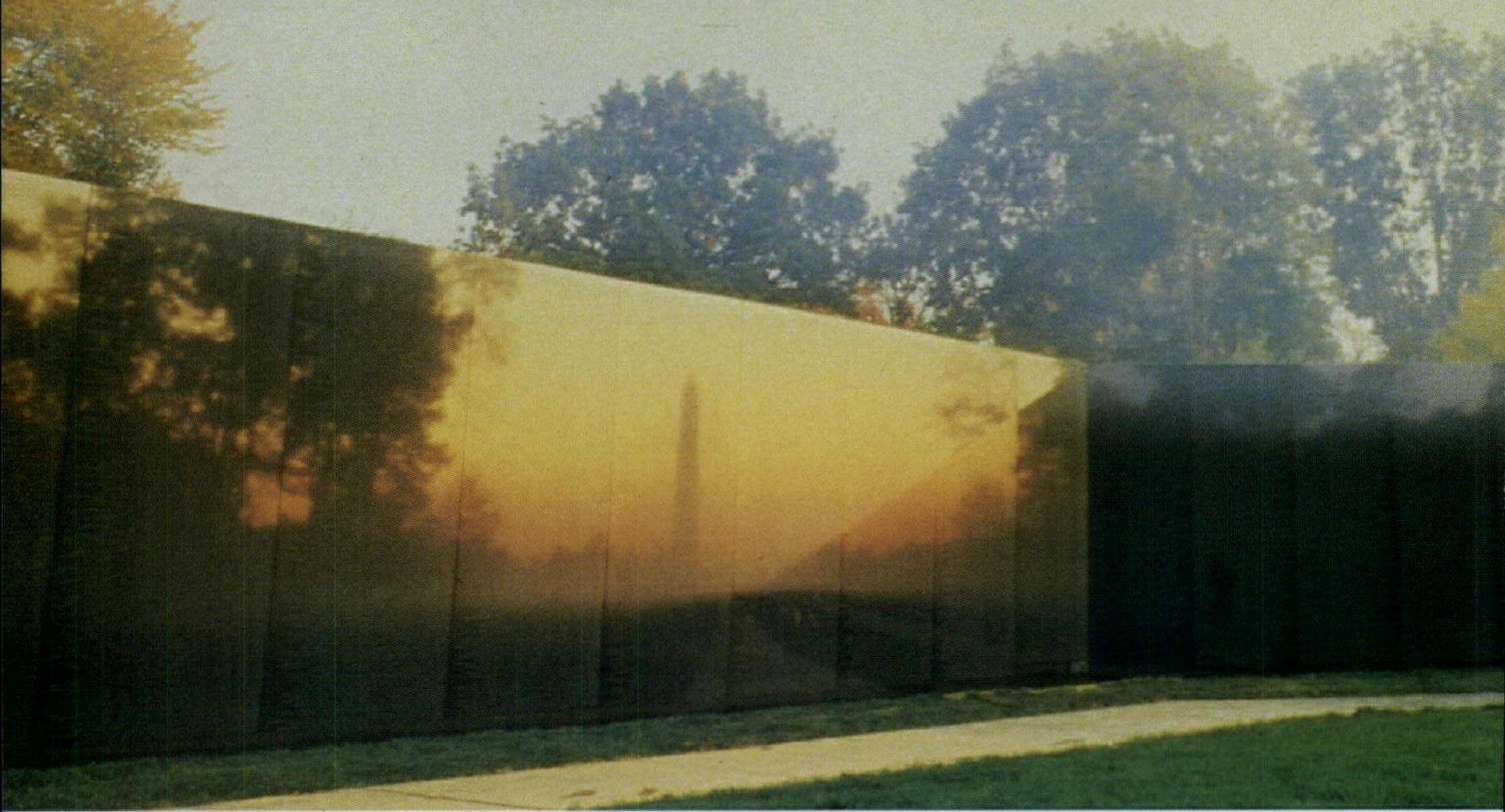
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Mark Sheehan

Maya Lin

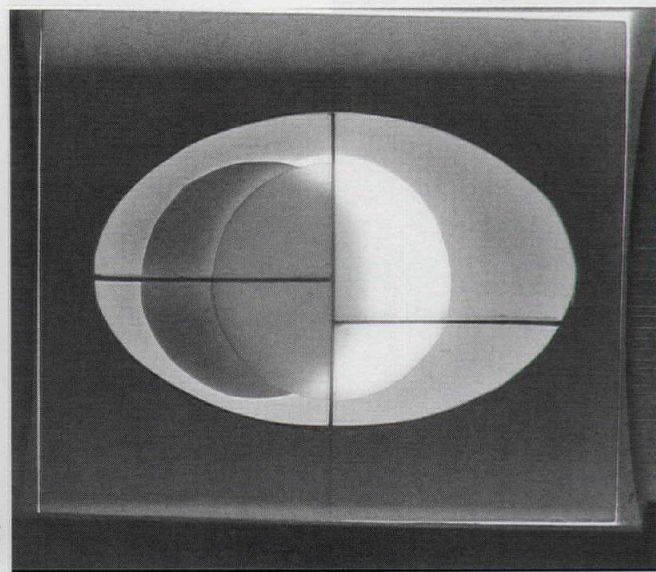
After the Wall

Thirteen years after she designed the Vietnam Memorial, this designer and artist is successfully making sculpture, public art, and architecture.

by Mark Alden Branch



Mark Segal



Courtesy Maya Lin

Don't go to Maya Lin for advice on marketing. The 34-year-old designer and artist has an unlisted telephone number and works in a home studio four flights above New York's Chinatown, identified to the street only by the word "Lin" on the doorbell. Lin, who has spent the last decade trying to forge a career that balances art and architecture, is more like an artist in her quest for privacy. "My work is public," she says. "I'm not."

It's difficult to think of many works more public than Lin's first project, the Vietnam Veterans Memorial, which made her famous and put her at the center of controversy when she was a 21-year-old Yale undergraduate. Since then, she has designed two other commemorative sculptures – the Civil Rights Memorial in Montgomery, Alabama, and a monument to women at Yale. But at the same time, she has produced a series of more private studio sculptures using materials such as lead, beeswax, and shattered glass. And, most recently, she has completed her first architectural projects: the Weber House in Williamstown, Massachusetts (with architect William Bialosky), and the Museum for African Art in New York (with architect David Hotson).

All of this work was exhibited last fall at the Wexner Center for the Arts at The Ohio State University, in a show aptly titled "Maya Lin: Public/Private." Even though the show came 13 years after she became famous, Lin saw it as "a debut, where people can finally understand what I'm beginning to do. There has been a lot of skepticism, people saying, 'Oh, she does great monuments, but she's never going to do architecture.' So works like the houses and the Museum for African Art are especially satisfying."

But if Lin is "doing architecture," she is doing it on her own terms. She keeps a minimal studio, with only one assistant; she affiliates with firms for her architectural projects. Although she has a Master of Architecture degree from Yale and

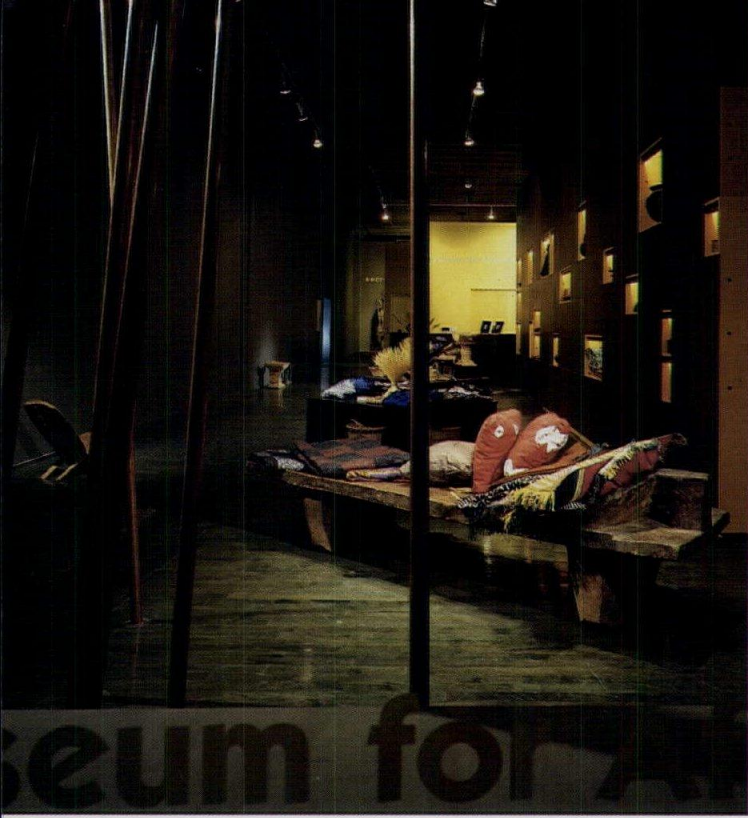
has completed her internship requirements, she has not taken the registration exam to become an architect. "I don't know why I haven't taken the exam," she says. "One reason is that I've been really busy and haven't had time to study. But also, being registered wouldn't change the way I work. I would still want to have a firm to back me up, because it allows me the freedom to stay small."

It's not just in her professional status that Lin differs from some of her former classmates. She also has a penchant for introducing the intuitive, sculptural quality of her art into her architectural works. This shows up in her predilection for irregular, handmade (or at least hand-drawn) forms: she drew the curves of the Museum for African Art's two staircases on site, and called out every joist height for the hand-drawn, irregularly curving roofs of the Weber House. "It's like the difference between a freehand drawing and a CAD drawing", she explains. "It makes you feel the presence of another person."

Given Lin's upbringing, her artistic streak is less surprising than the fact she ever strayed to the more rationalized world of architecture. She was born in Athens, Ohio, in 1959, the daughter of a pair of professors at Ohio University. Her mother, Julia Chang Lin, still teaches Asian literature there. Her father, the late Henry Huan Lin, was a potter and later Dean of Fine Arts at the university.

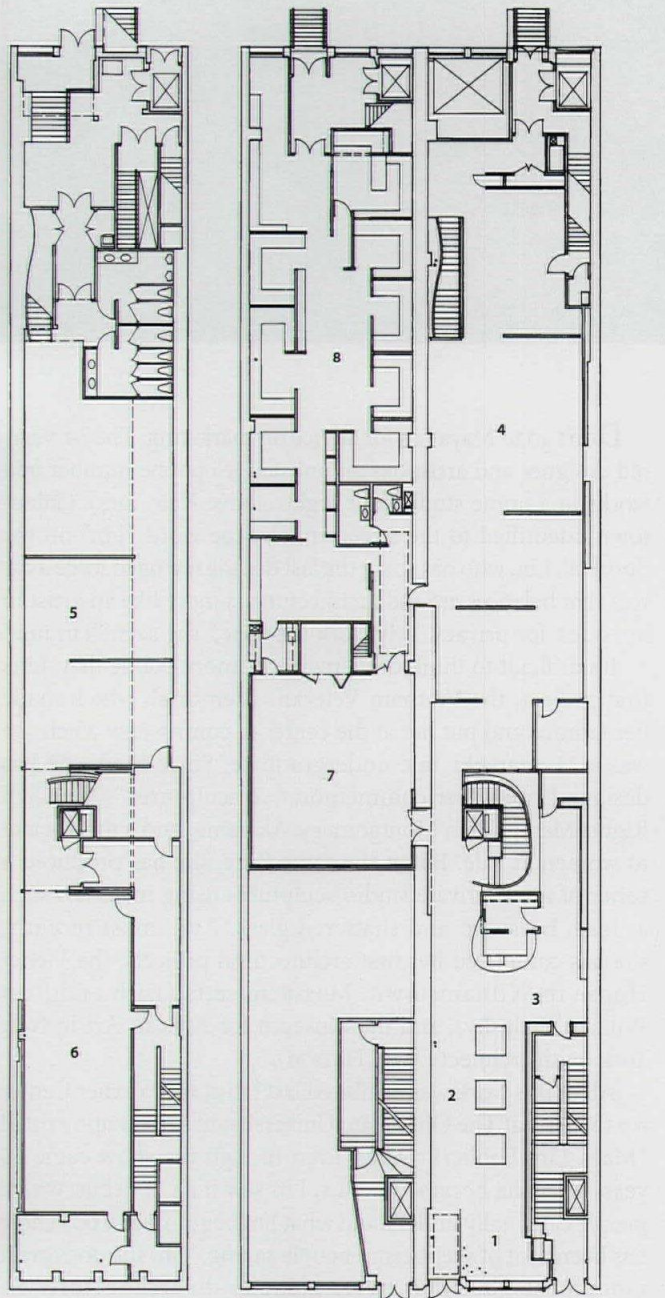
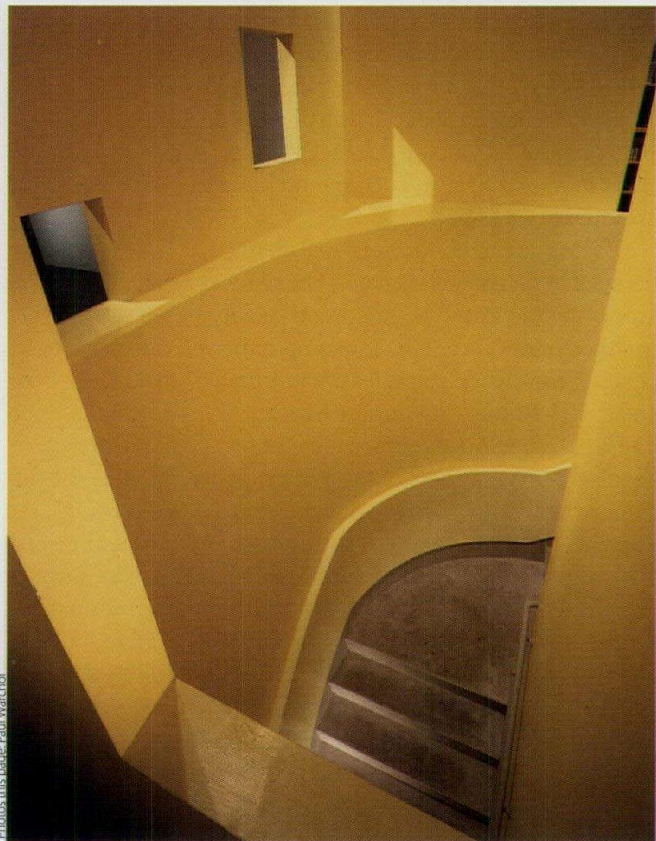
"When I was growing up there, there was a kind of Ameri-

The now-acclaimed Vietnam Veterans Memorial (above left) brought unusual attention – and unusual pressures – to the 22-year-old Lin. Some of its characteristics – the expression of time, the use of abstract geometry, and the shaping of the earth – have shown up repeatedly in her later work. One of her newest projects, "Eclipsed Time," (model, above) has just been installed at New York's Penn Station. Over a 24-hour period, a moving aluminum disk eclipses the light source above a fixed glass disk, inviting hurried commuters to look at time in a different way.



Museum for African Art, New York City

Lin challenged the white-box Modern orthodoxy of SoHo's gallery world with this 1993 loft conversion in collaboration with architect David Hotson. Not only does the design employ rich colors on walls and floors, it also emphasizes hand-shaped features like the staircases (below left), whose curves Lin drew on site, and the cabinetry of the reception area (left). Lin also made the copper pipe sculpture at the museum's entrance, which is based on an African symbol for humanity. Lin describes a narrative journey through the space, as visitors walk to the back, descend via a dark "night" staircase, then ascend again through a bright yellow "day" staircase.

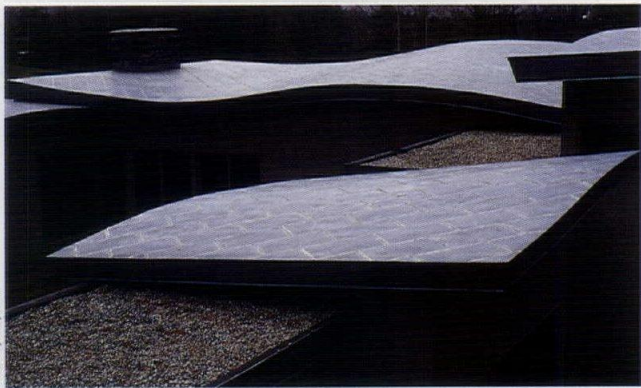


BASEMENT PLAN

FIRST FLOOR PLAN

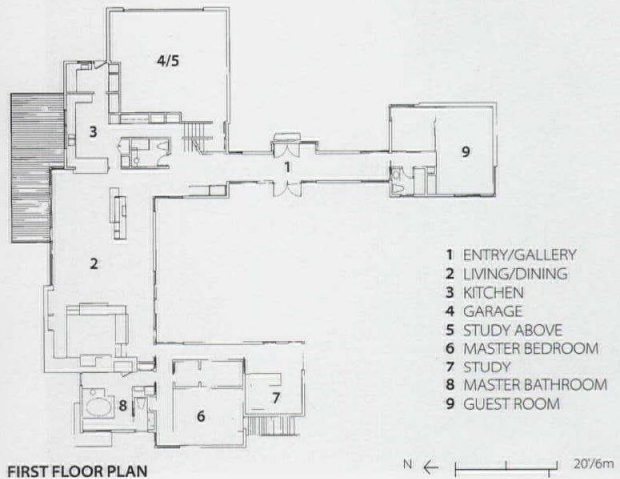
N → 20'/6m

- | | |
|-----------------|------------------------------|
| 1 ENTRY | 5 LOWER GALLERY |
| 2 MUSEUM SHOP | 6 TEMPORARY EXHIBITION SPACE |
| 3 RECEPTION | 7 SCREENING ROOM |
| 4 UPPER GALLERY | 8 OFFICES |



Weber Residence, Williamstown, Massachusetts

This house, Lin's first architectural project designed from scratch (in collaboration with architect William Bialosky), takes its irregularly curving roof forms from the surrounding mountains. The plan consists of overlapping rectangles that form a courtyard, in which a Japanese garden is being planted. Stone walls, inspired by an existing stone-walled garden nearby, anchor each portion.



can arts and crafts movement going on, very clean, very simple, but with an acknowledgment of artisans. My father made a lot of the furniture in our house, and all our professor friends were making things. That was definitely an influence.”

After flirting with biology as an undergraduate, Lin chose a major in architecture. Like many architects, she was drawn to the discipline for its blend of sciences (“not that I’m good at them, but I do like them”) and art. It was her senior studio at Yale, which focused on funerary architecture, that led to her entry in the Vietnam Veterans Memorial competition.

When her design was chosen from more than 1,400 entries, her elation was quickly overtaken by frustration as politicians, artists, architects, veterans, and others fought – sometimes viciously – over her design. Now that “the Wall” has become a place of pilgrimage and an icon of national healing, it is easy to forget the forces who once tried to stop it. H. Ross Perot, Phyllis Schlafly, Tom Wolfe, and Interior Secretary James Watt all spoke out against Lin’s deceptively simple plan to engrave the names of all the Americans who died in Vietnam on a sunken, V-shaped wall of black granite. Lin spent her first year out of college shuttling to Washington, defending the design and fighting proposed alterations. (In the end, a sculpture by Frederick Hart of three soldiers was added, but at a reasonable distance from the Wall.)

“It was insane in D.C.,” recalls Lin. “It was the kind of pressure that no architect should ever have to witness, especially a 22-year-old.” She found her refuge in architecture school, first at the Harvard Graduate School of Design, where she spent less than a term, then at Yale, where she got her Master’s. “I thought that school would be the best remedy, the best way to get over D.C. And it did work, but I was pretty tired. In fact, it took a few years after grad school to get my pace back and do the work I’m doing now.”

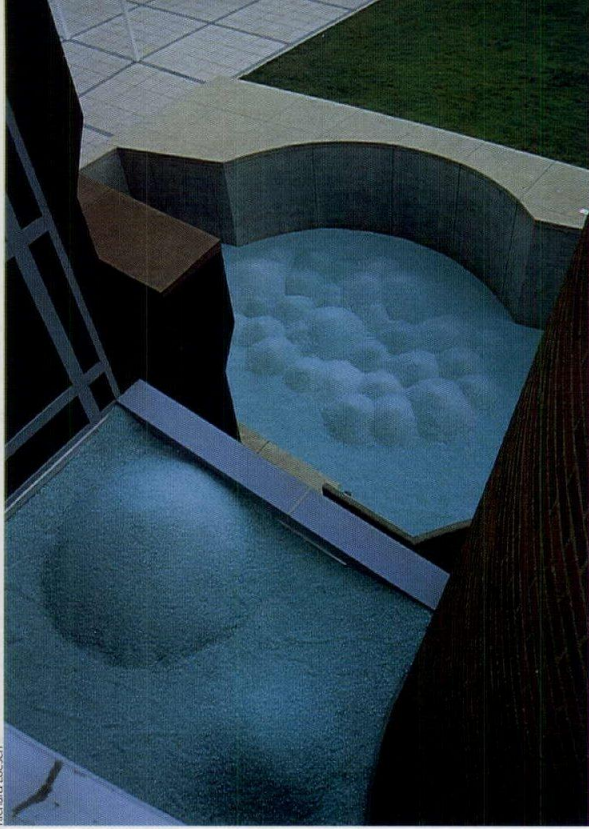
Graduate school held its own frustrations for Lin, who often bridled at professors’ attempts to “make her draw,” when she preferred to work in three dimensions. “I was brought up in a ceramics studio; models are my sketches. I think the Vietnam memorial was first laid out in mashed potatoes or something. The saddest thing I went through in school was professors who couldn’t accept that.”

Lin also found her education lacking when it came to non-European cultures, an omission she tried to remedy by working for Japanese architect Fumihiko Maki one summer. She came back with an admiration not only for the gardens of Kyoto, but also for the Japanese approach to design and construction. “Even as the building was going up, Maki was still exploring ideas and changing things as he went. We’re kind of prevented from doing that in the States with the change-order system, unlike an art installation, which goes in, and then you get to manipulate it a bit.”

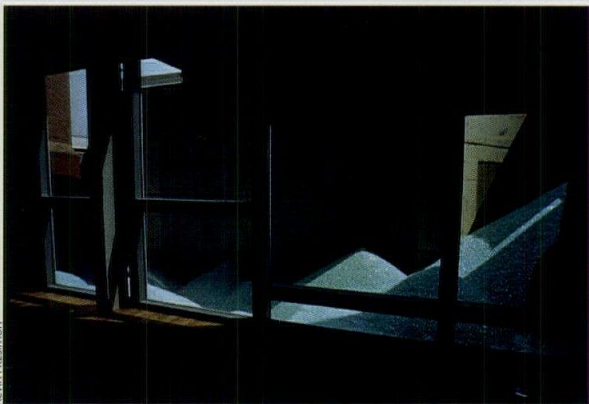
After graduate school, Lin set up her studio in Manhattan, and has since been working on an extraordinary range of projects – from her sensuous, highly personal sculptures to an installation of 12-foot spherical holly bushes in Charlotte, North Carolina, to the memorials in Montgomery and at Yale.

There is no such thing as a typical Maya Lin commission. She has been hired to shape the earth (in a current project called “Wave Field” at the University of Michigan), to build a house on someone else’s abandoned foundation and structure (for a Santa Monica couple currently making a documentary film about her), and to help design a supercomputer (the Thinking Machine CM-5, for which she was brought onto the design team as a sculptor). Currently, she is working as the lead designer on a paper recycling plant in the Bronx proposed by the Natural Resources Defense Council and a coalition of community groups and corporations. (*continued on page 65*)

Richard Loeisch

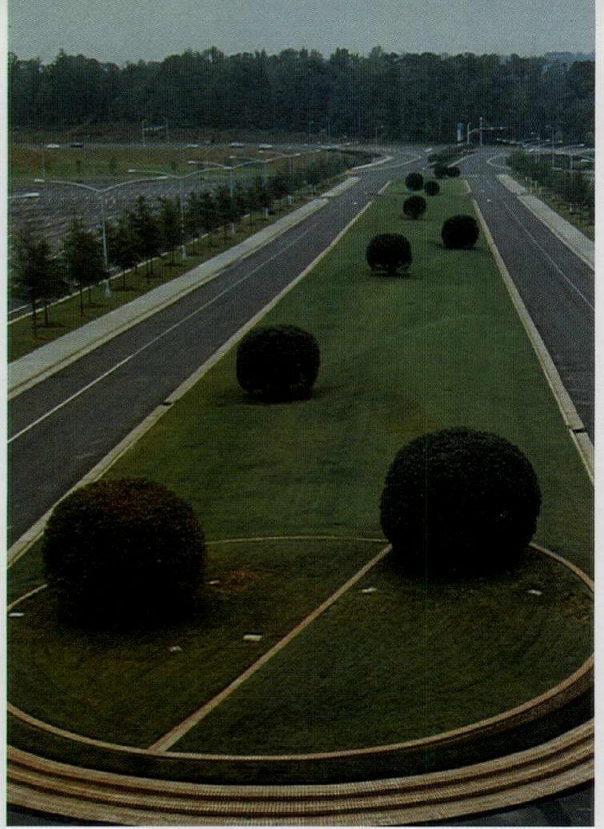


Kevin Fitzsimon



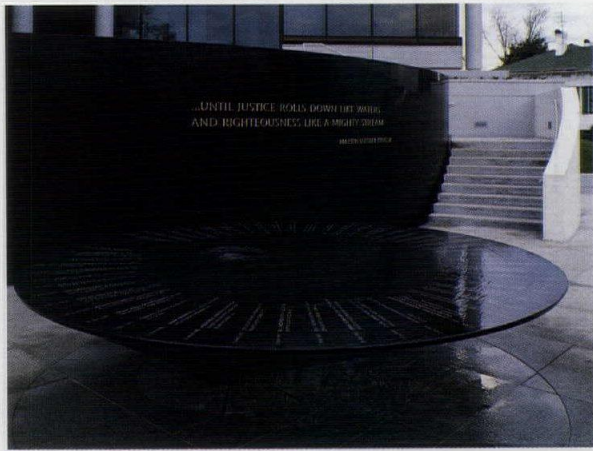
Groundswell, Wexner Center for the Arts

Last fall, in conjunction with her exhibition and term as artist-in-residence at the Wexner Center for the Arts at The Ohio State University, Lin created the center's first permanent installation. Groundswell, an installation of shattered auto glass in three "residual spaces" on three outdoor levels of Eisenman Architects' Wexner Center, combines one of the materials of her studio sculpture with the scale of her public art. Some of the contours in the 46 tons of glass were shaped by Lin's hand; others retain the conical shape of the pouring of the glass. After a vandal dumped dried magenta pigment into the largest space (top), Lin had the glass removed and reshaped the piece.



TOPO, Charlotte, North Carolina

Lin cites the prehistoric mounds of her native Ohio and formal French topiary gardens as inspiration for *TOPO*, a 1991 installation in the median of the approach to the Charlotte Coliseum. Lin and landscape architect Henry Arnold developed an "imaginary game" with 12-foot spherical holly bushes that seem to roll down the sinuous slopes. Willow oaks on either side of the road will eventually form an arch over the piece.



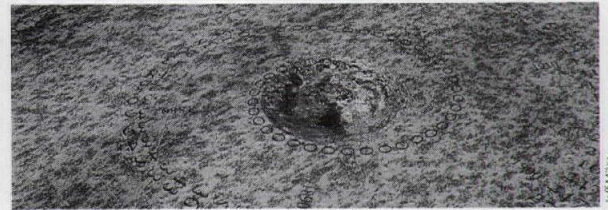
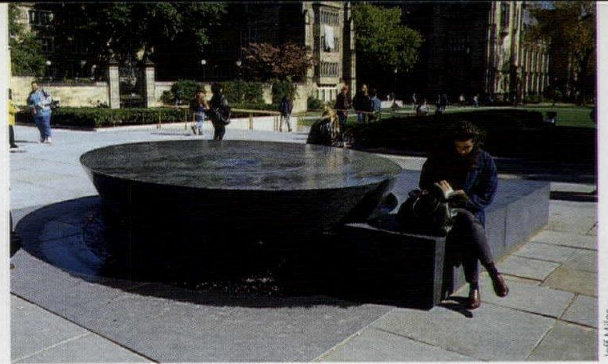
Civil Rights Memorial, Montgomery, Alabama

The use of water in this 1989 memorial at the Southern Poverty Law Center was inspired by a Martin Luther King, Jr., quote (originally from the Book of Amos), part of which appears on the granite wall: "We will not be satisfied until justice rolls down like water and righteousness like a mighty stream." The adjacent circular table, over which water also flows, is inscribed with a series of events in the civil rights movement, from the *Brown v. Board of Education* decision to King's assassination.

Lin tries to have only one or two of these projects in the design phase at any given time. Still, the constraints on her time are great, as she is in great demand for committees, boards, and the like. She continually yearns for more time with her sculptures, which are typically blocks of beeswax with lead embedded inside them. Over a long period of time, she uses a heat gun to reveal the lead and shape the wax into contours she thinks of as "miniature landscapes." She completes one or two pieces a year.

Despite the diversity of her work, Lin felt until recently that she had been "typecast" as a designer of monuments, a stereotype she encouraged by following up the Vietnam Memorial with her second-best-known work, the Civil Rights Memorial, in 1988. Commissioned by the Southern Poverty Law Center, the memorial honors those killed in the fight for racial justice in the South. Her design, a wall of water next to a round granite "water table," that documents major events in the civil rights movement, won public acclaim without any of the attendant controversy of the Vietnam Memorial. A third memorial, commissioned by Yale University to honor its women students, is a similar "water table" with a spiral of numbers representing the female enrollment at the university from its founding through 1993, when the monument was dedicated.

All three of the memorial projects combine abstract form with text; Lin believes that the text performs a teaching function while the form invites a more visceral, emotional reaction. Asked if she could foresee the cathartic power that the Vietnam Memorial has turned out to possess, Lin says simply, "I knew that when you saw it, you would cry." The reaction has something to do with the names and something to do with the form, but the necessary third element, what makes the piece whole, is the presence of people. One of the most startling things about the memorial is its reflective surface; the viewer



The Women's Table, Yale University

Lin used another "water table" – this time elliptical on a rectilinear base/bench – for this sculpture celebrating women at Yale, her alma mater. A series of numbers, beginning with a long run of zeroes, spirals outward from the water source on the table top, documenting the number of women enrolled at Yale from its founding to the sculpture's 1993 dedication.

confronts himself when he stands before the names.

Lin describes her memorials as the place where her architecture and sculpture come together, and that is especially true if one sees her sculptures as essentially self-contained objects and her architecture as narrative, experiential spaces that, like the memorials, require a human presence to be complete.

Lin consciously constructed a narrative of the passage of time in her design of the Museum for African Art, completed last year in the first floor and basement of a SoHo loft building. Visitors enter and descend to the basement in a dark stairwell representing night. They ascend again through a bright yellow "day" stairwell.

Whether or not one consciously catches the metaphor, the museum is a warm, inviting space, in part due to the color palette: rich grays and blues for gallery walls, and an ocean blue-green for the stained wood floors. Just as the freehand curves suggest a sculptor's presence, these colors seem especially painterly.

While the stairwells of the museum and the curved roofs and ceilings of the Weber House begin to suggest an attempt to shape space the way she has successfully shaped earth and object-forms, her architecture does not quite match the transcendent power of some of her public and private art. That may be inevitable: she likens art to poetry and architecture to prose, and her architecture sometimes seems prosaic by comparison. But there is reason to hope that her continuous trips across the border between the disciplines will further inform and enrich her architectural work. Lin has already quieted skeptics who thought she was just a kid who got lucky with the Vietnam memorial, who – as she puts it – thought "she just drew a black line." Lin has managed to build on her early success and become what she should be about now: a 34-year-old architect-in-progress. □

Critique

The Price of Hubris

Eight years later, Lloyd's of London is enjoying the dividends of its architecture's visionary aspects, but paying a hefty premium on the vainglory behind the design.

by Ziva Freiman

When the new headquarters designed by Richard Rogers Partnership for Lloyd's of London opened in 1986, there was much ado: trumpeted in architecture journals seduced by its razzle-dazzle, the building met with boos and jeers in the British press and a groundswell of grumbling from its users, a constituency of notoriously conservative insurance underwriters.

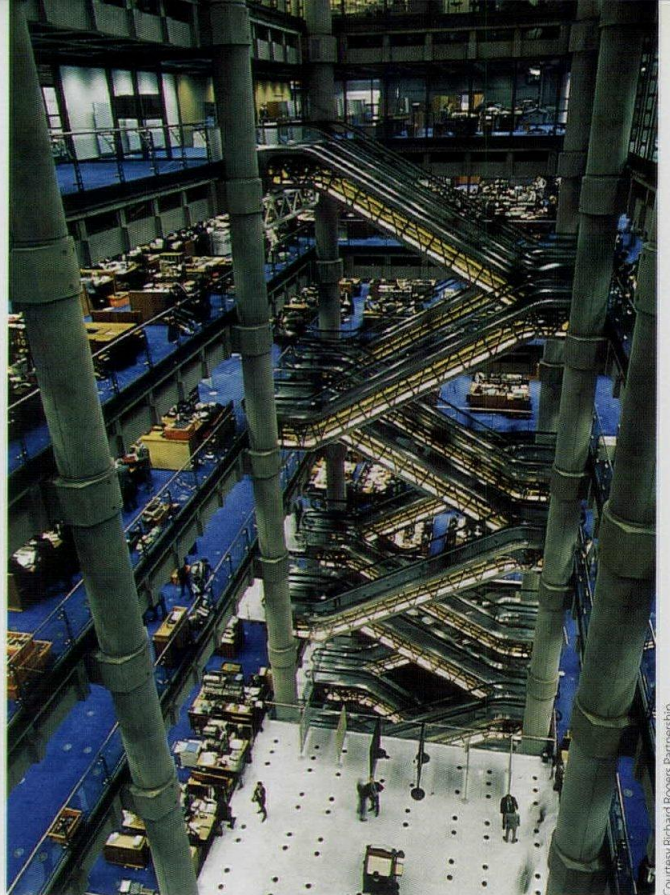
Now it's time for a hardnosed assessment: a new, younger generation of underwriters and brokers is well acclimated to the building; its radical high-tech appearance has been superseded by more egregious extravaganzas on the London skyline. And the British newspapers, when not preoccupied with Prince Charles's peccadilloes, are churning out the ink on the more pressing issue of Lloyd's' financial woes.

Certainly the building has performed well with respect to the way Lloyd's functions, and it has responded admirably to the company's altered circumstances – but at what cost?

The Building Brief

Lloyd's is a society of 300-odd autonomous underwriting syndicates. The crux of its operation is a physical marketplace known as the "Room," in which brokers circulate to discuss competitive terms with various insurers. Traditionally, business has always been conducted face-to-face; to this day, even with the advent of computers, direct negotiation is seen as essential.

In 1977, around the time the building was commissioned, Lloyd's was booming; it had outgrown two homes in 50 years and was fed up with moving. The society wanted a building that could accommodate continued expansion (or contraction) of the market and the underwriters' increasing use of information technology. Moreover, the society's leadership wished to broadcast a new message: "Lloyd's needed a higher public profile; they wanted to market themselves in a way they had never been marketed before," explains Superintendent of the Room Ian Simister. "They wanted to say: Lloyd's is a modern organization that insures spacecraft and satellites as well as ships."



Courtesy Richard Rogers Partnership

A Role for Architecture

Richard Rogers Partnership (RRP) won an international competition for the commission. Lloyd's 1928 building was razed, with the exception of a ceremonial gate, to make way for the new headquarters. RRP teamed up with Ove Arup, with whom Rogers and Renzo Piano had collaborated on Pompidou Center.

There is little doubt that two mainstays of Rogers' proposal won him the job: one was the inversion of the building, placing all services on the exterior to create a clean, rectangular floorplate, and the other was the idea to saturate the infrastructure with services within a structural framework that could support almost unlimited functional flexibility.

Turning the building inside out ostensibly offered a way to make better use of an odd-shaped site wedged amid the medieval-scale streets of London's financial district. Moving the services to the periphery also promised to overcome the planning constraint of a 5:1 plot ratio: since only net office space was counted in computing it, (and the Room could be discounted as non-office space) RRP managed to increase the ratio to an effective 8:1.

But beyond the zoning rationale for the inversion were powerful aesthetic considerations, which, on the one hand, beguiled Lloyd's with precisely the high-tech image they were looking for, and on the other, lured the architects with the prospect of a blockbuster sequel to the Pompidou Center. In my view, it was this not-quite-acknowledged glory agenda of architect and client that laid the ground for much of the building's unwarranted excesses.

Flexibility Worth the Cost

The investment in a building that could accommodate the contraction of the market proved prescient. Lloyd's people are unanimous in praising the building's flexibility. The warmth is understandable, given the financial straits Lloyd's is now in.

After a slew of global disasters underwritten by Lloyd's, many of the member syndicates are going out of business. Physically, this has

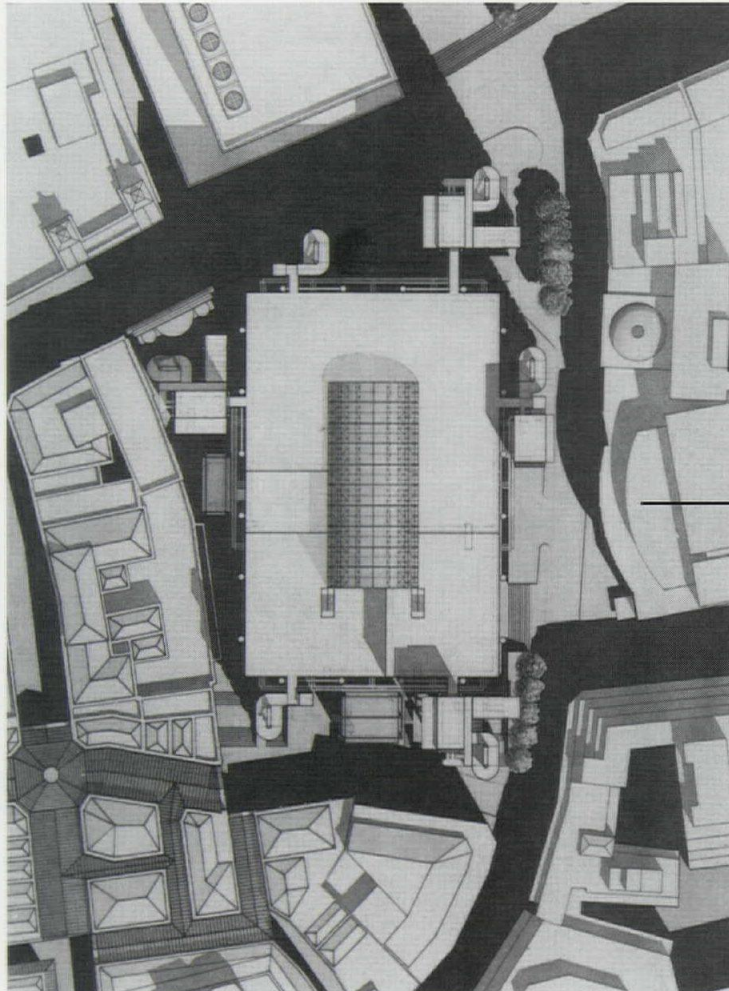
The **building mass** steps down on the south and west sides as a concession to the small-scale fabric of Leadenhall Market. The setbacks introduce **felicitous daylight** to the atrium.

Enormously **successful as a marketplace**, the main floor of the Room and the galleries surrounding the thrilling space of the atrium (facing page) are further animated by escalators with exposed workings.



Richard Bryant

You have to rise above the rooftops to get an overall view of Lloyd's, usually glimpsed only in snippets at street level. There is a marked and unfortunate disparity between the relatively **"dumb" plant rooms** atop the service towers and the otherwise high articulation of the building's exteriors. From a distance, the cranes dotting the structure and the color contrasts give it a scrappy, incoherent appearance.



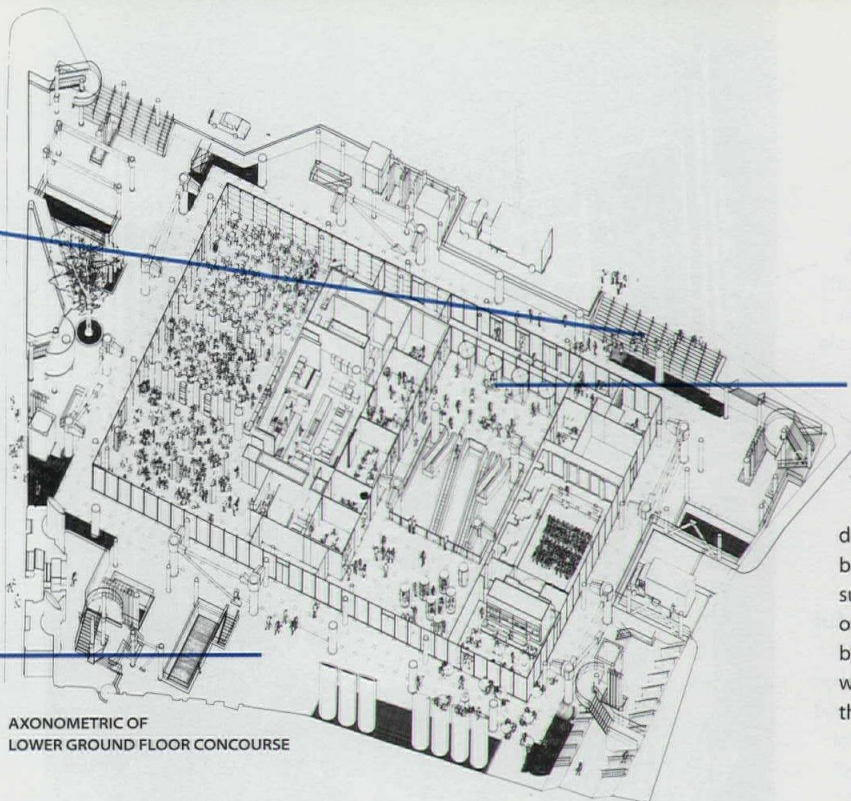
SITE PLAN

N  100/30m

The building's **services were externalized** to make better use of an odd-shaped site bordered by medieval-scale streets, allowing the creation of a rectangular floor plate within. With its gently curved façade and straightforward corner entrance, the **1958 Lloyd's Building** presents a much more benign face to the small street than is offered by the 1986 building.

Euphemistically called the "lower ground floor," a **sub-street-level concourse** leads to the main reception area. **The entrance sequence** is less than dignified, requiring visitors to descend and turn before reaching the revolving door. From my observations, the amenity of the public areas beneath the structure is limited.

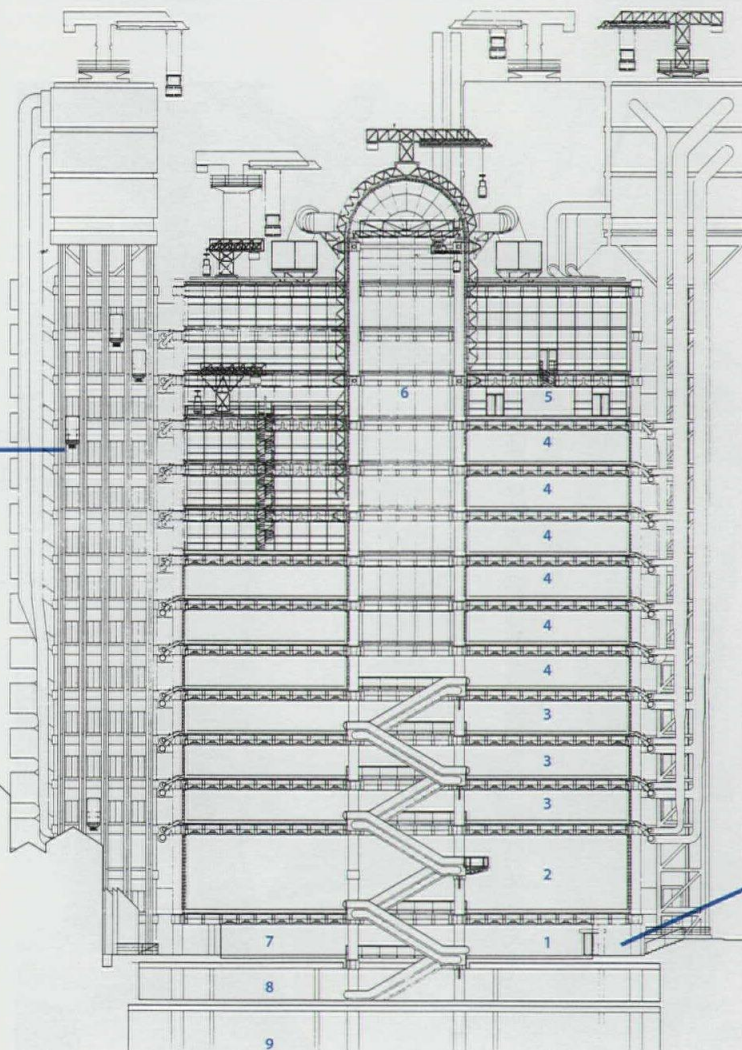
I found **the concourse** largely deserted and generally quite gloomy, with the exception of a well-used **open court** on the west side, adjacent to a concourse-level coffee shop.



AXONOMETRIC OF LOWER GROUND FLOOR CONCOURSE

The main reception area was reconfigured four years after the building was occupied: a single airport revolving door, easier for file-laden brokers to negotiate, supplanted four narrower ones, and a glass partition bisecting the vestibule was removed to relieve the congested space.

The exterior elevators provide a thrilling ride (those susceptible to vertigo are advised to use the stairs or a blindfold). The elevators' sensational views undermined circulation projections for escalator use by drawing too much broker traffic on the lower levels.



- 1 MAIN RECEPTION
- 2 MAIN FLOOR
UNDERWRITERS' ROOM
- 3 UNDERWRITERS' GALLERIES
- 4 OFFICE GALLERIES
- 5 ROOF TERRACE
- 6 ATRIUM
- 7 CONCOURSE
EXHIBITION SPACE
- 8 CLOAKROOM
- 9 PLANT

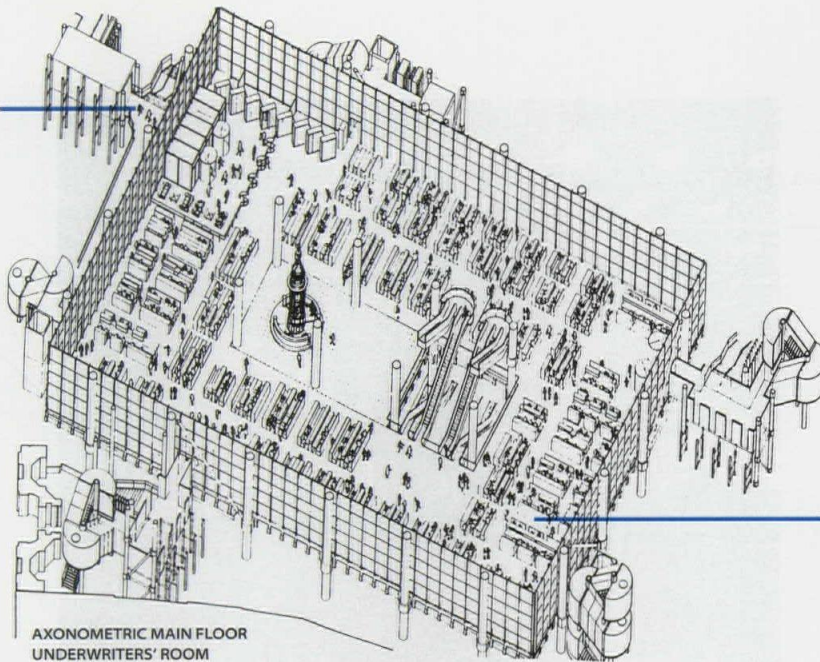
The architects' decision to **submerge the building** below sidewalk grade creates an unsettling "beetle-brow" relation to the street, and an uninviting, cave-like space all around the structure.

SECTION

40'/12m

Secondary entrances

to the building, such as the canopied stair leading directly to Room level, are actually more dignified than the main entrance. But they are miscues, in that they're not equipped for visitor clearance. You end up having to go first to the subterranean main reception to pick up an entry pass.



AXONOMETRIC MAIN FLOOR
UNDERWRITERS' ROOM

The double volume main floor of the Room is entirely **sheathed with translucent glass**, ostensibly to preserve confidentiality, although sightlines from the street or neighboring buildings hardly pose a threat. More likely, the architects simply liked the way the beaded glass looked.

The Room is furnished with **underwriter boxes**, derived from the benches in the original 17th-Century Lloyd's coffee house.

translated into a considerable shrinking of the market. With its saturation of mechanical, power, and data services, the building is geared to respond by enabling market spaces to be converted with minimal disruption to rentable office space (open to a pool of some 30,000 potential tenants, all affiliated with the society). Moreover, thanks to extensive computerization, it is possible for Lloyd's to service and bill tenants individually for the full complement of utilities.

Cellular offices are composed of modules based on the ceilings' concrete grid of coffers; each coffer has a data "address" in the main computer, which allows building operators to activate lighting, power, and air conditioning individually to any configuration of coffers, even a minimal four-coffer (144-square-foot) office. By a similar logic, easily demountable partitions are attached along the coffer beams.

Though such saturation of services was very costly to install, Lloyd's Facilities Manager John Mitchell considers the high capital investment well worth the expense. The same, I suspect, could not be said of the investment in the building's highly publicized exterior.

Problem Skin

The building's envelope reflects two very English themes: a venerable tradition of genuinely innovative engineering, coupled with the overwrought, somewhat eccentric quality one associates with the contraptions of a "mad inventor." On its face, every bit of machinery is backed up by cool rationale; yet underlying the reason is a tinkering fascination with the mechanical. Witness the ductwork's inordinate intricacy; or the incredibly elaborate heat-reclaim system that funnels extract air down through cavities in the triple-glazed window wall (see detail section, p. 71).

I was given lengthy explanations of the energy savings thus effected: the reclaimed heat is stored in the plant sprinkler tanks to give a warm start to the boilers; the air traveling in the glazing cavity significantly reduces solar gain in summer, and keeps the wall temperature comfortable in winter. But does it really have to be so complicated? I can't help suspecting that the much-touted energy savings are not really sustainable, and are actually little more than politically correct baubles covering a love of complexity for its own sake.

A prominent mechanical engineer who has worked on numerous projects of equivalent magnitude all over the world, was similarly

skeptical. "One has to respect the impulse to seek energy savings, and in many ways this is a pure, clever idea," he said. "But if you scratch and dig to find out what things are actually costing, you will probably find that this system does not support itself." A source at Lloyd's unofficially corroborates the engineer's assumption.

But even setting aside the ambitious, well-intentioned energy-related system, the building's externalized services may be faulted for a number of more prosaic reasons. "There's no doubt services on the outside of the building give rise to more problems than they would in a conventional building," says Nicolas Philips, the general manager of all Lloyd's properties. "By putting the pipes on the outside you actually run the risk of damaging them, so you give yourself an ongoing maintenance cost you wouldn't normally have."

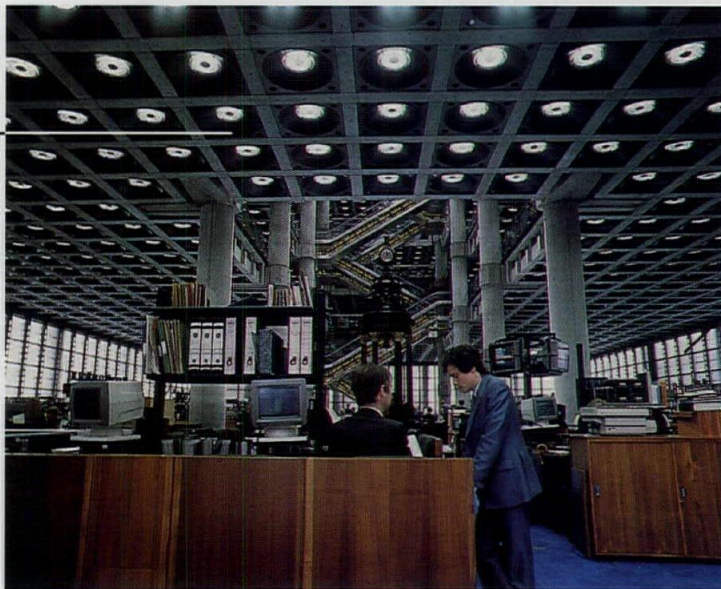
Repairs and cleaning are facilitated through a series of cradles that provide access to most of the exterior. The remaining nooks and crannies are reached by bo'sun's chairs temporarily affixed to the structure. John Mitchell likens cleaning the building to the never-ending maintenance of a bridge, necessitating the employment of full-time staff. "Because we overhang the pavements in many areas, we can't hose the building down," Mitchell explains. "And so it's a very tedious, soul-destroying job of washing down and drying off with rags." (I suppose the American practice of cordoning off portions of the sidewalk would constitute bad form in the City.)

Architect John Young, a director of Richard Rogers Partnership who devoted eight years to the building, explains that they specified stainless steel for many of the building surfaces (at an additional cost of \$2 million) to reduce the maintenance strain. "You could say the building can be left uncleaned for a long time because it's stainless steel," remarks General Manager Philips. "But it is the headquarters building. If you left it in that state people would be wondering, 'What on earth's going on at Lloyd's? They've stopped cleaning their building - things *must* be bad.'"

The Elevator Headache

The exterior elevators at Lloyd's are spectacular: entirely transparent, exquisitely detailed - and a heartstopping ride. Unfortunately, the design team's assumptions about the way people would circulate in the building did not pan out; as a result, the 12 external

Among building users' quibbles with the décor, prominent were complaints that the **black luminaire shields**, fitted into the concrete coffers and stretching to infinity, created an oppressive effect, especially on the 9-foot-high galleries. Alternative color finishes for the lighting fixtures were tried in mockups but none seemed to work as well as the black.



Courtesy Richard Rogers Partnership

The claustrophobia that troubled users was compounded by the **translucent glazing**, and by royal **blue carpets** (facing page) that swallowed light and seemed to accentuate the coldness of concrete and steel. With the exception of areas ringing the atrium, the blue carpets have been replaced with rather boring, albeit lighter oatmeal-colored carpet tile.

elevators servicing Lloyd's are used much more than projected. The architects envisaged that the bulk of broker traffic from the lower ground floor concourse throughout the market galleries would be handled by the escalators in the atrium, leaving the elevators largely free to service the upper office floors. Instead, brokers use the elevators. (If they are as bothered by the blinking effect of the ubiquitous translucent glazing as much as I was, they might be using the elevators just to get a look at what's going on outside.) The problem is compounded by a "rush hour," just before lunch, when the transitional population in the building can reach as high as 4,500. During that period, according to John Mitchell, the building is "chronically underlifted."

Any smallish battery of elevators would have trouble coping with that kind of volume. The situation at Lloyd's is aggravated by "the inherent unreliability" of the externalized system, attributable to exposed components that are subject to weathering and thus more vulnerable, and to complex door-latching and weather-flap engagement systems that extend wait and flight times. (Another headache: the oil that lubricates the guides has to be changed between summer and winter.) One elevator is always out of service for routine maintenance, increasing the pressure on the remaining 11.

It's hard to understand why some of these problems could not have been foreseen, especially since John Young of RRP reports that extensive studies were carried out prior to the decision to use exterior elevators, including a study tour of installations in the United States.

Other Miscalculations

It would be unfair to lay the blame for the building's high maintenance costs solely at the design team's door. While now cost and energy efficiency are foremost in everybody's mind, these were by no means always given such priority. "At the time the building was commissioned Lloyd's as a society was very buoyant, some people would say verging on arrogant," says Facilities Manager Mitchell. "Such things as operating costs were peripheral to the image."

If the client had not been so cavalier about such matters, the architects would probably not have been allowed to use so many custom building components. For example, when the stippled glass in the window wall needs replacement, the German manufacturer has to set up a special run. "On top of the cost of the glass we have to pay

import duties and all the rest of it," says Facility Engineering Manager Edward Abley. "So it becomes a very expensive exercise."

The Welcome M(o)at

For a building that put such a premium on image, the main entrance is mystifyingly mean. The main reception area is located below street grade, and jogged off axis to the stairs. Approaching the building for the first time, I found the darkness under the overhang about as appealing as a parking garage.

RRP's John Young explains that the design team wished to create a sheltered public space around the building, which led to the creation of the sub-street-level concourse. With but one quite popular coffee shop facing an open court on the west side of the building, the concourse struck me as grim and deserted.

"I've never known a building where you go down to go up," comments General Manager Philips. "One theory that was put to me was the thought to create a castle with a moat around it – all I wish is that it would have had a drawbridge."

Conclusion

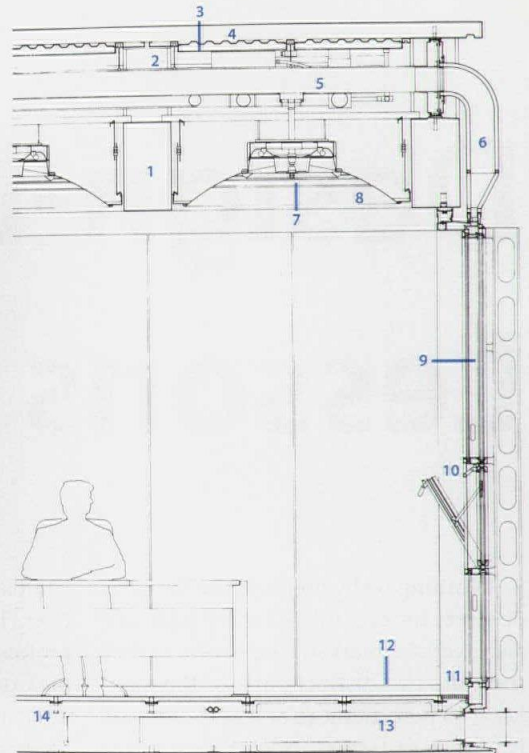
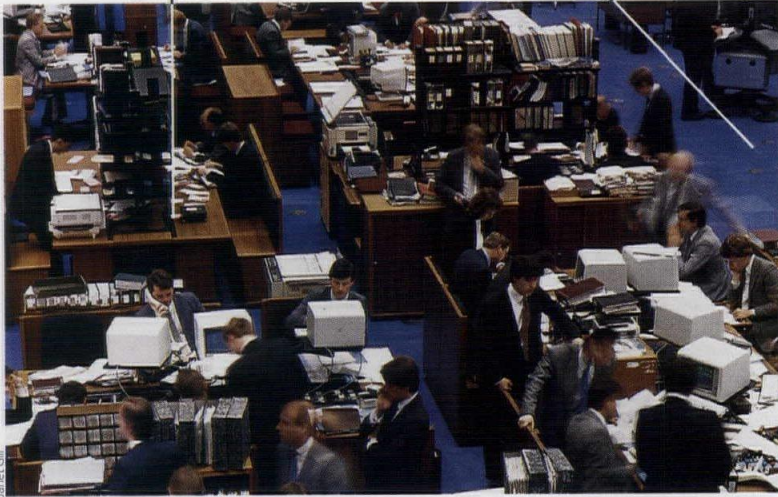
The astute gauging of risk is stock in trade for Lloyd's of London. Ironically, in the construction of its own flagship, the society allowed itself and its design team a costly arrogance it probably would not have entertained in any other venture.

The building's most spectacular features must be credited to the sheer force of the architects' vision. By all accounts it functions remarkably well as a market. The atrium space is stunning; the impeccable quality of construction and the loving attention lavished on every detail – handrails to stairtreads – renders the high-tech palette and forms as sensuous as one could wish. Likewise, the building's acoustics and air conditioning are excellent – no mean feats given the enormous fluctuations in the building population and its spatial diversity. To top it all, the building is extremely well managed, and maintained in pristine condition.

Yet, whether in its dank entry, its arbitrary withholding of views (available on office galleries only through narrow strips of clear glazing, set at seating height), or in the vainglorious excess of its façades, Lloyd's of London falters where the egos of architect and client overpowered common sense. □

The underwriters' boxes are decidedly high-tech. Wired to accommodate increasing use of computers, the furnishings also deliver additional air via **desktop grilles**,

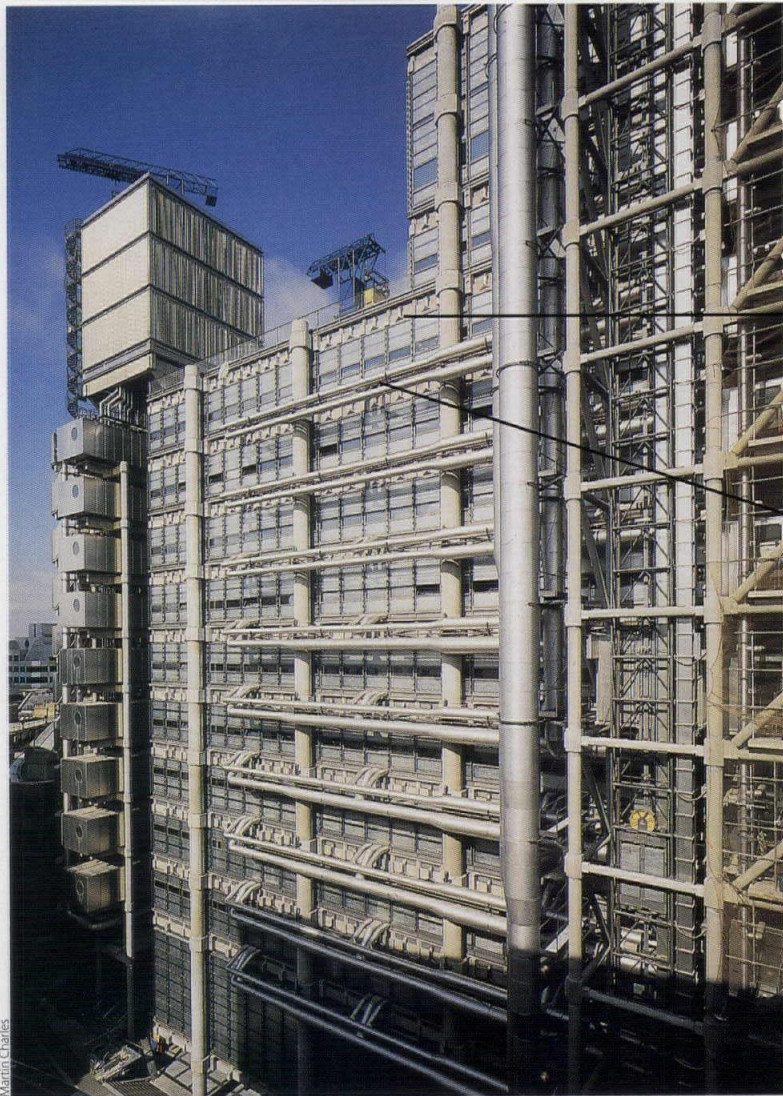
which are often obscured by paper. The bulk of the air conditioning is provided via floor **fan air terminals**.



DETAIL SECTION

- 1 IN-SITU CONCRETE BEAM
- 2 440MM DEEP SERVICES VOID
- 3 PERMANENT STEEL FORMWORK INCORPORATING ACOUSTIC PANEL
- 4 100MM IN-SITU CONCRETE SLAB
- 5 DUCT EXTRACTING AIR THROUGH LIGHT FITTINGS
- 6 INSULATED STAINLESS-STEEL FISHTAIL EXTRACT DUCT
- 7 SPRINKLER HEAD
- 8 BLACK-PAINTED ALUMINUM LUMINAIRE SHIELD
- 9 TRANSLUCENT TRIPLE-GLAZED WINDOW WALL WITH VENTILATED CAVITY
- 10 CLEAR DOUBLE-GLAZED SMOKE VENT VIEWING STRIP
- 11 EXTRUDED ALUMINUM AIR GRILLE
- 12 FLOOR TILE ON PEDESTALS
- 13 INSULATED GALVANIZED SUPPLY-AIR DUCT
- 14 300MM DEEP FLOOR SERVICES PLENUM

A complicated heat-reclaim system funnels extract air through the ceiling voids into **fishtail ducts**, then down the cavity between the layers of triple glazing, (the air must *detour* along the sides of the double-glazed smoke vents), and finally out to **external extract ducts**. The inordinate complexity of the system raises doubts whether it actually pays for itself.



Project: Lloyd's of London Headquarters, London.
Architects: Richard Rogers Partnership (Sir Richard Rogers, John Young, Marco Goldschmied, Mike Davies, directors.)
Interiors: RRP with Eva Jiricna.
Consultants: Ove Arup & Partners (Peter Rice, structural; Tom Barker, mechanical).
Management Contractor: Bovis Construction Ltd.

This study by Weld Coxe and the late Mary Hayden shows the relevance and the uniqueness of design-build's position in Japan.

Design-Build: Lessons from Japan

Nothing really prepares the Western observer for the realities of the Japanese architectural market. The reason is that there are two distinct parts to the market – 55 percent more or less traditional (in Western terms) independent practice of architecture; 45 percent provided by integrated design-build construction companies – and even the two sides in Japan don't fully understand each other. Thus, the unwary observer who reads about or listens to only one side or the other is not likely to get a clear picture of the practice of architecture in Japan.

Some aspects of Japanese practice are

companies' primary activity is construction. The 81 largest companies have a professional association called the Building Contractors Society (BCS). Shunsuke Yamamoto, head of BCS's Architectural Design Committee and a Managing Director at Shimizu, reports that on average 60 percent of their work is pure construction and 40 percent is combined design and construction. Virtually all the design-build work is for private clients, since public clients in Japan are prohibited from using design-build.

These private clients, to a great extent, are companies with whom one or an-

clients, and contractors in Japan. Problems are worked out within the context of long-term relationships rather than in court. Only 20 percent of Japan's architects carry liability insurance, and it is reported to be inexpensive.

The design work obtained by the design-build companies is carried out in what may be one of the most efficient architectural processes anywhere. It is not unusual for a five-architect team to do all the architectural work on a very large project. Takashi Sato, a project architect with Mitsui, reports that he needed a team of only four other architects, four structural engineers, and four mechanical engineers to design a 1,000-unit high-rise housing complex in Tokyo.

This efficiency results from several factors. First, all the large construction companies maintain research divisions engaged in studies of construction systems, methods, and materials. This capability, which in most other countries is limited to product manufacturers, is widely admired by all architects. Architect Fumihiko Maki particularly likes this aspect of the large companies "where our ideas can be tested," and adds that "this is not available abroad." A by-product of this research capability that makes design-build efficient is that each company develops many standardized construction details that are used repetitively on many buildings. Thus, much of the design effort on routine buildings is simply choosing from and/or applying a menu of standard specifications that the particular company has developed. With this comes knowledge of how and where to get the necessary ma-

"Problems are worked out within the context of long-term relationships rather than in court."

similar to what architects in other parts of the world experience, and other aspects are unlike those of any other country. The similarities are in the fundamental tasks and technical processes architects go through to design, document, and deliver their work at the project level. The differences are in the way architects are part of the cultural fabric – in historic tradition, education, and legal and professional status. Japan is particularly interesting to study at this time because of the prominence of design-build in the Japanese marketplace.

How Design-Build Works

To fully understand the place of design-build in the Japanese construction industry, one must recognize not only what the big design-build companies are, but what they are not. First of all, the big

other design-build company has maintained long-term relationships, some for generations. The nature of these relationships varies from formal, interlocking ownership to informal but equally binding understandings. Mitsui Construction, for example, is part of a giant trading group of 40 major companies that has a small equity position in Toyota, and vice versa. These relationships are part of the historic "Keiretsu" tradition in Japan and they provide a ready market for the design-build companies. The result, which in another society might be subject to anti-trust questions, is in Japan an integral and traditional way of doing business.

One consequence of the different or more limited competition that results from these relationships is a much less adversarial climate with architects,

terials, and which sub-contractors will install it at what cost.

A second and more surprising contributor to design department efficiency in the design-build companies is that their working drawings are frequently farmed out. (This practice of not doing construction documents in-house is also common among some of the largest independent architects.) The explanation is that it avoids "the risk of adding full-time employees whom we cannot fire because of the tradition of lifetime employment." The obvious question is: If the largest construction companies in the world cannot offer stable employment to preparers of working drawings, how do the subconsultants do it? Apparently, many of the working drawing services are cottage industries using as drafters small independent firms or retired architects and women who work at home while raising families. The process seems to be successful in avoiding coordination problems. There is, however, a loss in technology; only 20 percent of working drawings for design-build work are produced on CAD.

The third area where the design teams of the design-build companies achieve their efficiency is in the way the process is managed. Most of their staff "architects and engineers" are involved in managing every detail of the planning, design, procurement, and field construction process. This produces high-quality service, but when these layers of management are added on top of the design effort, it is not clear that design-build yields overall economies.

The Design-Build Market

It appears that the design-build companies have thrived in Japan throughout the post-World War II boom economy not because of their cost efficiency, but chiefly because of the quality and single-responsibility of their integrated service. These attributes fill the needs of a large segment of the Japanese marketplace. But to fully understand the large design-build companies it is also important to understand the markets they do not fill.

First and foremost is the continuing policy in Japan that design-build is not appropriate for public work, which by directive must be independently designed and competitively bid for con-

struction. The only exceptions to this are some public housing projects where the government asks developer-builders to submit competitive proposals to design, finance and build the units.

Another factor often misunderstood about the design-build companies is their involvement in developing and/or owning equity interests in some of their work. The average share of projects they build in which they also have a financial interest is less than 10 percent.

"They have not made any breakthroughs in cost reduction or in overcoming ... conflicts of interest."

Another area where the design-build companies are not as successful as they would like to be, is in retaining any of the "stars" of the architectural community. To offset this, the design-build companies have been leaders in bringing famous foreign architects to Japan to do highly visible projects.

Finally, and perhaps the most defining aspect of the Japanese design-build companies is the reality that despite strenuous efforts to export their expertise to the U.S., Western Europe, and Asia, they report that only 2 to 3 percent of their work is outside Japan, and most of that is for Japanese companies building facilities abroad.

It seems clear that while Japanese construction companies have developed design-build to its highest levels of quality in client service, constructability, and technical results, they have not made any breakthroughs in cost reduction or in overcoming the inherent conflicts of interest that plague the process in other less trusting societies, including half of their own nation. In the end, it seems the unique nature of business relationships in Japan is most responsible for their success.

Using Independent Architects

Much of the estimated 55 percent of the market that the independent architects serve is part of the same society and operates by many of the same traditions, with much of its building done by construction divisions of the design-build companies. The primary difference is that the independents work for

clients whose perceived need for professional advice outweighs the integration of design-build.

Masami Tanaka, a senior officer of Nikken Sekkei, Japan's largest architectural firm, says he tells prospective clients: "You may go for a design-build contract if you have in-house engineering staff competent enough to control the contractor. But if you don't, you would do better to employ an independent architect to control the contractor.

In these cases the architect will act as your in-house engineering staff."

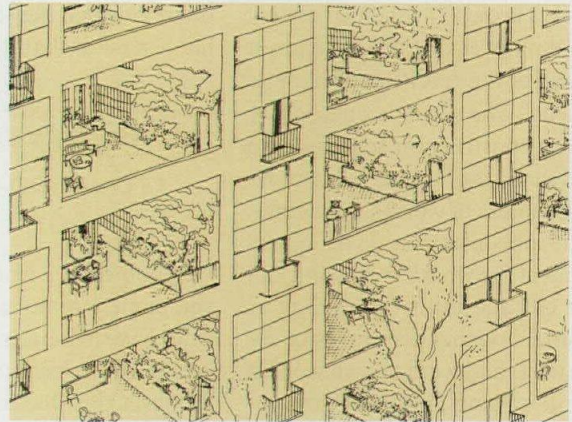
Yuzo Mikami, who heads a ten-person office in Tokyo, expresses a similar thought: "If the client thinks they can trust design-build that is fine; let them do so. In a long-term relationship, where they know they will get quality for their money, it is all right. But if the client is not sure they can trust the contractor, or if they want a distinctly personal touch in design, then they should have an independent. The people representing clients realize the difference. For some projects it is better one way, for some the other."

The inescapable conclusion is that Japan offers no magic answers. Design-build serves an important niche in Japan, and when properly organized can produce high-quality work. At the same time, the professional independence of architects in strong private practices is also alive and well in Japan for all the reasons that independent professionalism has survived in complex societies. Except for the interlocking relationships, it appears that a client's choice of design and construction process in Japan is based on much the same criteria as those used by clients in every free market of the world. □

Weld Coxe is Chairman of The Coxe Group, a management consulting firm for design professionals. His late wife, Mary Hayden, worked in the financial and marketing management of architectural firms. This article is based on a three-year research study for the International Union of Architects, entitled World Trends in Private Practice.

Vive Le Corbusier!

The French, Le Corbusier's most trenchant critics, have a new generation of Corbusians in their midst. **Wojciech Lesnikowski** describes their milieu.



Villa Immeubles, 1922

In 1956 Le Corbusier was asked to join the Academy of Fine Arts in Paris. He replied: "Thank you, never. My name would serve as a banner for a superficial Modernism." Obviously, he feared that in the future his ideas would be adopted in a shallow, mostly stylistic manner or turned into dry, academic canons.

If Le Corbusier could rise from his grave and confront the architecture he inspired, he would conclude that his fears were justified. He would argue that in the absence of any greater social cause, of any debate about creating a radically new culture, the adaptation of his principles reflects nothing more than a formalistic, academic imitation, emptied of humanistic meaning. It seems that any mention of Le Corbusier over the past few decades focused on his figurative plans, his relationship to other Cubist painters, or imagined relationships between his work and that of Italy's 16th-Century Mannerists. All this would probably fill Le Corbusier with contempt; he always scorned academic interpretations of creative thought. Le Corbusier was eulogized by André Malraux as one of the giants of the Western World. But this state-sponsored recognition did not change the fact that Le Corbusier's impact on the architecture of France, his adopted country, has remained until today limited, unclear, and confusing. (*continued on page 76*)

The author is Don Hatch Distinguished Professor of Architecture at the University of Kansas, author of The New French Architecture and coauthor of the forthcoming The Many Faces of German Modernism and Functionalism in Czechoslovakia, Hungary and Poland, 1919-1939.



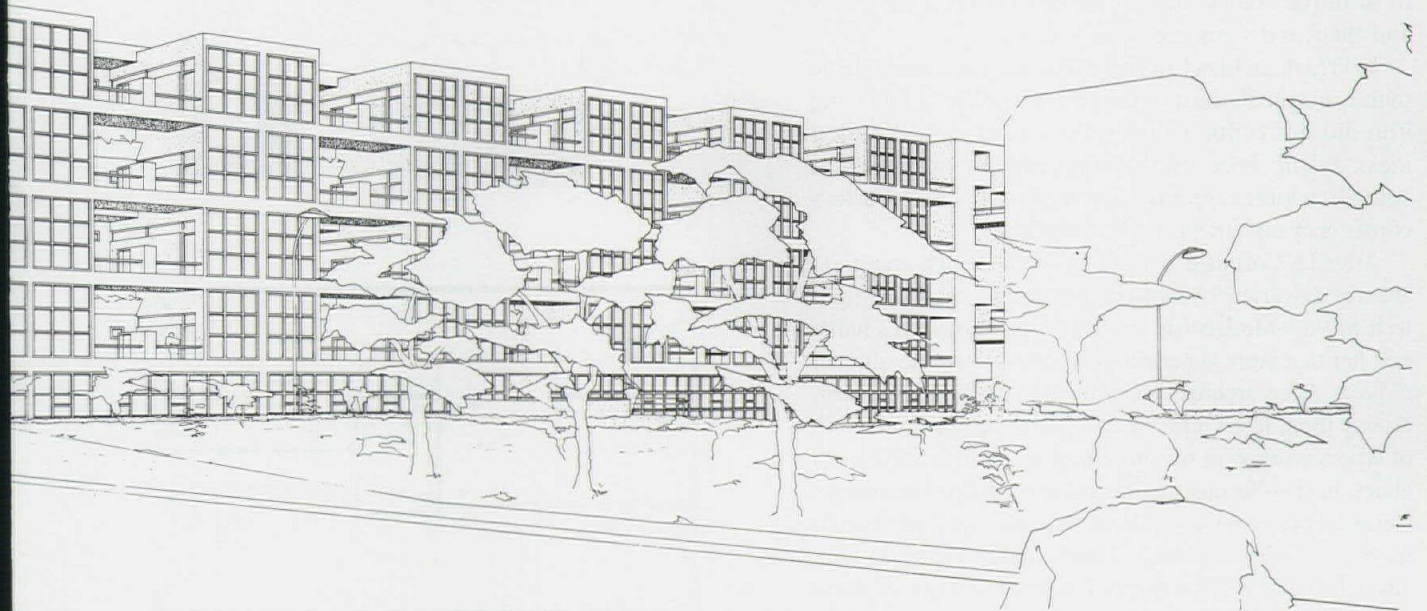
Public Housing, Paris Jean Dubus and Jean Pierre Lott

Le Corbusier's early unrealized scheme for duplex units alternating with gardens in the air (top) was re-

interpreted in a competition-winning housing scheme completed in 1992. In the new version, (above and facing page) pairs of units alternate with pairs of terraces.



Stéphane Coururier



The French perspective on Le Corbusier is quite different from ours in North America. In France, architects associated with him directly, not in an abstract realm. French architects observed Le Corbusier at close range, in a context of well-defined traditions; North Americans studied him at a distance, granting him a more trusting reception.

Le Corbusier disliked America's socio-economic and cultural character; ironically, it is here that his strongest following developed. Cornell University and the "Five" architects of New York, among others, generated a consistent – even dogmatic – Corbusian mode in the 1970s. But the same years in France yielded considerable uneven Corbusian work, experimental attempts based on theoretical interpretations of widely varying conceptual strength, which were hardly known in North America.

A Sparse French Following

Le Corbusier's influence on French architecture could be divided into three historical periods: up to 1964, when the French were directly in touch with him; 1964 to 1980, when some of his closest collaborators and followers were erecting scores of buildings; and 1980 to the present, when a new generation of architects were influenced by him, but in a more indirect way. Le Corbusier's total of built work in France after World War II is remarkably small, considering his fame: less than 10 buildings completed in a 20-year period. And only the three famous *unités d'habitation* are in the domain of public habitation, despite his intensive studies of housing and urban planning, his lifelong passions. It is evident that few French clients, public or private, would put their trust in him.

Although Le Corbusier never had a chance to implement his city planning concepts in France, they were enormously influential there. His concepts are behind most of the French housing developments of the 1950s and 1960s and many later urban efforts.

In French architecture, his influence was more stylistic than conceptual; most of the French architects following him did not commit themselves to his radical design ideas. *Pilotis*, *brise-soleil*, ramps, ribbon windows, and Brutalist textures appeared, but rarely with Le Corbusier's consistency and intellectual conviction.

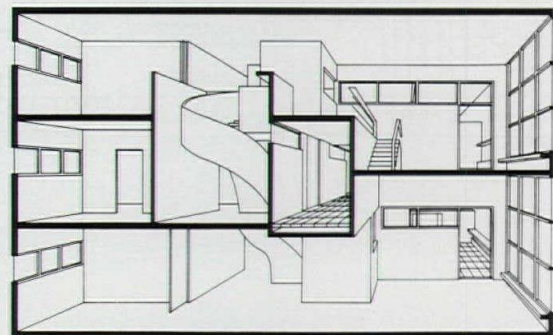
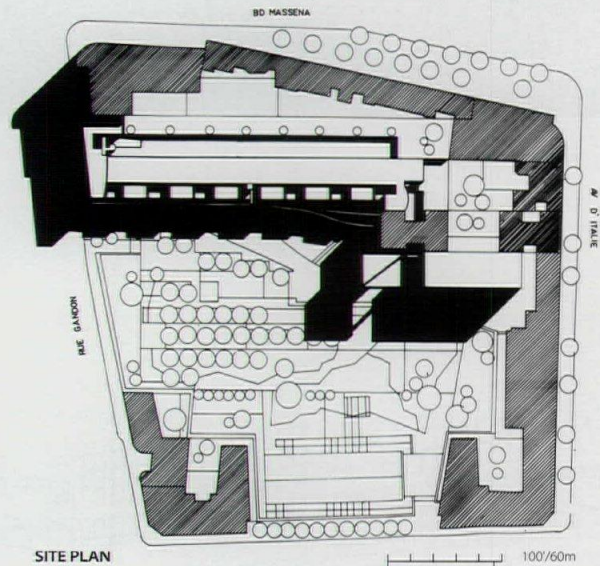
After Le Corbusier's death in 1965, French architects absorbed a variety of contradictory influences, from high-tech to Post-Modernism. In the 1970s, though his name and heritage were venerated, his ideas were generally out of favor. A few architects continued to design in his spirit, among them Jose Oubrerie and Jullian de la Fuente, both of whom worked in his office and are now in the United States, his two former associates from Atelier Montrouge, Gérard Thurnouer and Pierre Riboulet, and three well-recognized Paris architects, Henri Ciriani, Henri Gaudin, and Christian Portzamparc. Though the work of these architects differed considerably, the presence of Le Corbusier was strong in most of their buildings.

The French have always been attracted to the radical *coup de force*, in contrast to the middle-of-the-road plu-

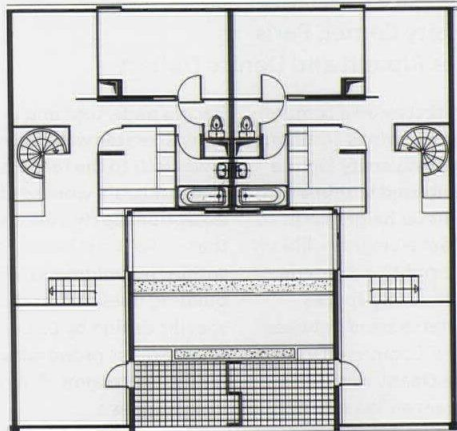
Public Housing, Paris
Jean Dubus & Jean Pierre Lott (continued)

While Le Corbusier's Villa Immeubles scheme had open gardens on one side of the slab, open corridors on the other, Dubus and Lott have drawn concepts from other Corbu designs, running an open corridor through the middle of the slab. In the complex building section, three stories shift to two on the living room and terrace side. The corridor (facing page, top) runs through alternating low tunnels and high open volumes; tall living rooms in

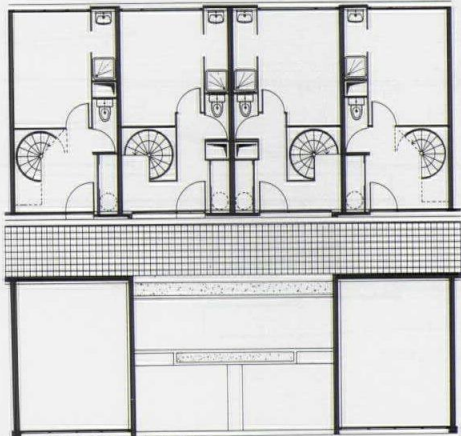
the upper-tier apartments (facing page, bottom) are reached by half-flight stairs. Corbu had envisioned his Villa Immeubles structures marching in parallel lines across the cityscape or forming a quadrangle around a central court, while Dubus and Lott have fitted their building among existing structures and open spaces, with a subterranean garage beneath it. The 95 units are rented at subsidized rates to lower-middle-income families.



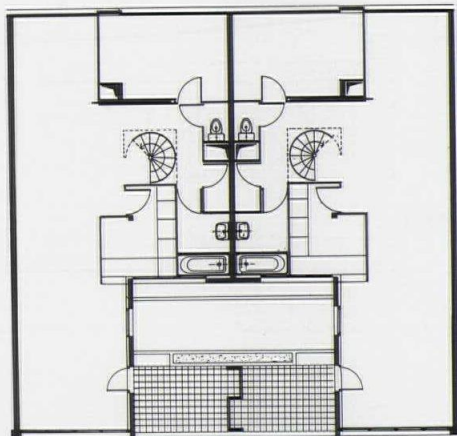
SECTION, TYPICAL THREE-STORY PORTION



TYPICAL ABOVE-CORRIDOR FLOOR



TYPICAL CORRIDOR FLOOR



TYPICAL BELOW-CORRIDOR FLOOR 10/3m



Photos: Stephane Couratier

ralism that prevails in American design, and this was particularly true in the 1980s, a decade of stimulating technical experimentation in France. To many, the work of Le Corbusier's followers lacked this kind of excitement.

Technical Changes, New Perspectives

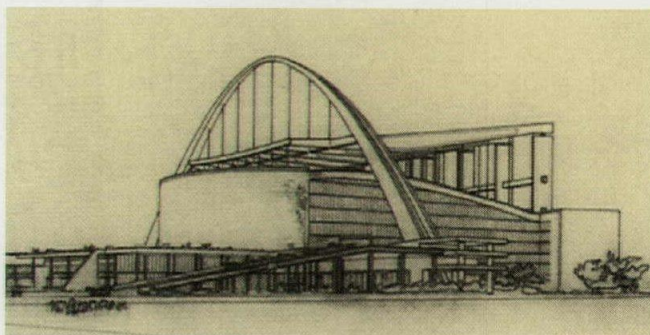
The regeneration of Le Corbusier's influence in recent years must be seen in the light of parallel technological advances in France's building industry that changed the nature of its architecture. Prior to the 1980s the leading building material in France was reinforced concrete, applied in a variety of ways, from thin, prefabricated panels or slender skeleton systems to heavy Brutalist walls. Post-Modernists such as Ricardo Bofill delighted in the use of this material – a natural, given their interest in monumental, historicizing design.

In the 1960s and 1970s, Corbusian architecture had been strongly influenced by his late, Brutalist phase, with its sculptural concrete forms. But Corbusian architecture since the 1980s has taken into account thin materials – metals, plastics, glass, and lightweight panels. Like other French architecture of the decade, it has been characterized by lightness, flexibility, and industrial rigor – traits of technological progress.

Architects interested in Le Corbusier now took their point of departure from his early machine-inspired work; his "machines for living" corresponded well with the technical concerns of France in the 1980s. Even those who continued to work in concrete handled it in the manner of Le Corbusier's early applications, as if it were a thin, smooth industrial component. The interval of years that separates today's architects from Le Corbusier has been an advantage; it allows them to look at his work with detachment. His crushing personality is not around anymore, and the leeway for independent investigations is wide open.

The revived interest in Le Corbusier was stoked by people such as Henri Ciriani (ironically, not French but Peruvian by birth), keepers of the flame in French architecture schools. At the same time, the academic and professional work of Corbu's American followers – Colin Rowe at Cornell, Richard Meier in New York, among others – convinced the French that there were still many opportunities to be discovered in the universe of Corbusian design.

The ambitious government patronage in France during the 1980s, fostered by President Mitterrand, rejuvenated the French profession, including those who chose to emulate Le Corbusier. With the rigor and commitment typical of the French, a new wave of designs was launched. But this generation of Corbusian work takes a position between Le Corbusier's ideas of a machine aesthetic and the realm of high tech. The modest concrete technology of early Corbu has been replaced by high tech structural possibilities – large panels of suspended glass, sophisticated movable sun screens, new sandwich composite materials, metal and plastic panels. Thanks to new building technology, Le Corbusier's poetic equation of architecture to a ship is closer to full realization. *(continued on page 80)*

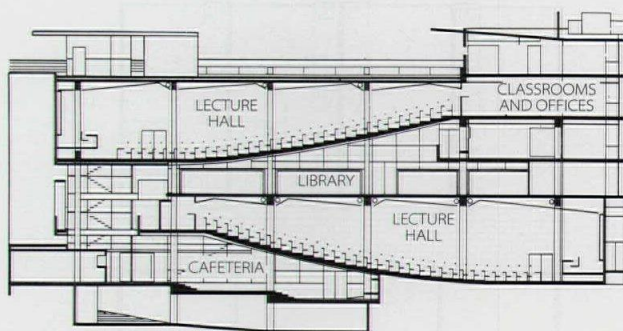


Palace of the Soviets, competition scheme, 1931.

**University Center, Paris
Jacques Ripault and Denise Duhart**

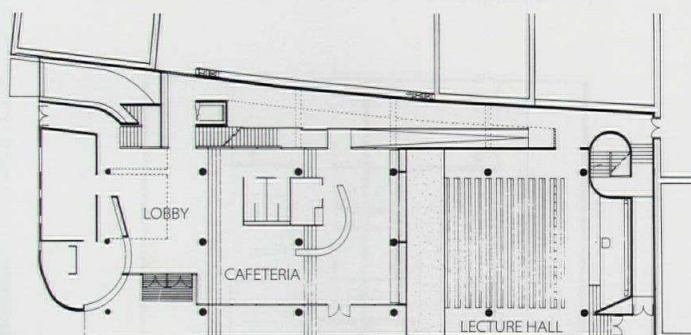
The architects won a competition for their ingenious accommodation of two university lecture halls superimposed within a mandated 14.5-meter height limit. Other program elements – library (facing page, right), a cafeteria, offices, and teaching spaces – are neatly interspersed between the main halls. Completed in 1990, the structure clearly reveals its spatial diagram on the exterior

(facing page, top) and in the extensive stairwell (facing page, lower left) to the rear. Engineer André Mizrahi worked at the exceptionally thin floor sections that make the scheme possible within this volume. While the building does not recall any specific design by Le Corbusier, several of his proposals called for the expression of meeting hall volumes.



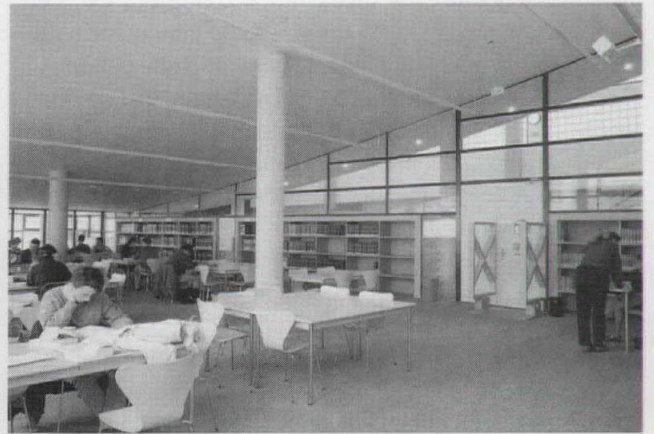
LONGITUDINAL SECTION

20/6m



GROUND FLOOR PLAN

20/6m



Whither the Revival

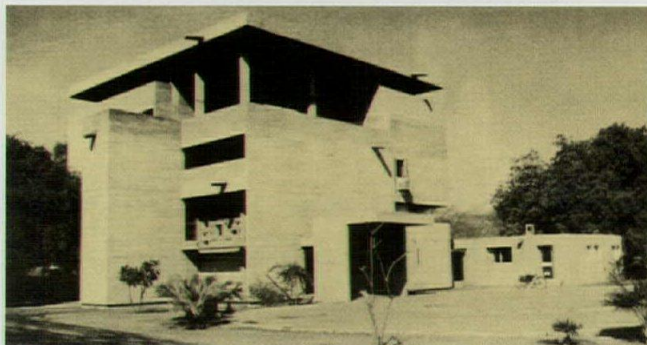
Is this revival a solid commitment to Le Corbusier's tradition? Or is it another explosion of interest that will quickly fade? The answers to such questions can only be speculative. Le Corbusier's ideas represent only one specific episode in the French cultural spectrum, their uniqueness and anti-historicizing nature in conflict with the nation's creative traditions. Despite Corbu's genius – his Cubist-inspired spatial virtuosity, his revolutionary functional arrangements, his lyricism, and his humanistic approach to building scale – his buildings lacked the notion of the *grand parti*, with its symbolic power, impressive spaces, and technological bravura. To Le Corbusier, a descendant of Swiss watchmakers, modern humanity could do without monumentality; to him, inspiration meant something radically different.

Corbu's successors in France follow this tendency very closely. But public patrons in France today, despite talk about cultural and physical fragmentation and pluralism, continue to search for the *grand parti*. Proof of this can be seen in Paris's presidential *grands projets*, where the work of architects such as Dominique Perrault, François Deslaugiers, and Jean Nouvel has more of the elegant, cold, rationalism of French traditions than does the work of Le Corbusier and his followers.

Could Le Corbusier's epithet of "superficial Modernism" apply to today's architects who work with his vocabulary? Should their work be labeled formalist or fashionable because the sociocultural conditions that Le Corbusier envisioned are nowhere to be found? Perhaps we should ask whether a creator's architectural concepts should be applied only under sociocultural conditions that he or she would consider ideal. Should we condemn Lord Burlington for importing Palladio's architecture to England? After all, the British Isles have nothing to do with Palladio's milieu, on either cultural or climatic terms. Should we automatically condemn Peter Eisenman for the Americanization of highly specific European ideological themes?

Indeed, Le Corbusier understood this dilemma: he called himself Don Quixote for his stubborn refusal to submit to criteria he did not invent. Why should we follow in the footsteps of such an ideological purist, an architect who lived in an entirely different reality? Today's followers of Le Corbusier act in the spirit of our own time, an era that does not particularly appreciate holistic ideas. These days we all act as formalists in pursuit of inspirations that are inherently fragmentary.

It is too early to place today's Corbusians in a historical context; their movement is still developing. Time will show how they use Le Corbusier's inheritance. □



Villa Shodan, Ahmedabad, India, 1956-1958.

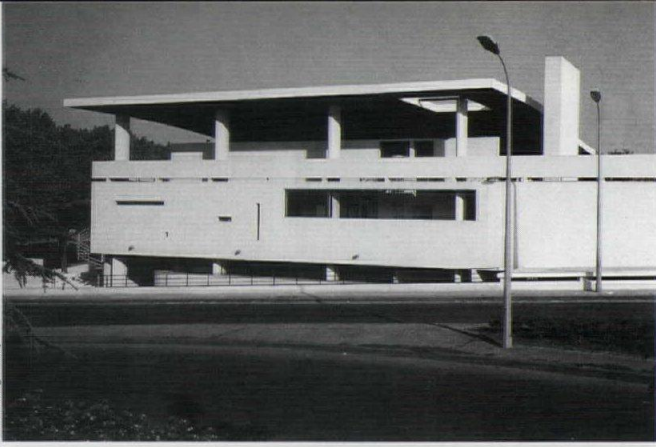
**City Technical and Administrative Complex, Paris
Michel Kagan; Serge Le Franc, collaborator**

Completed in 1991, this municipal complex is the first completed work by an architect who was a pupil of Henri Ciriani and has taught at Columbia in New York. Set amid a tangle of highway ramps at the periphery of the city, the buildings face inward toward a vehicular court yet form an effective sculptural grouping for the passing public. The office block

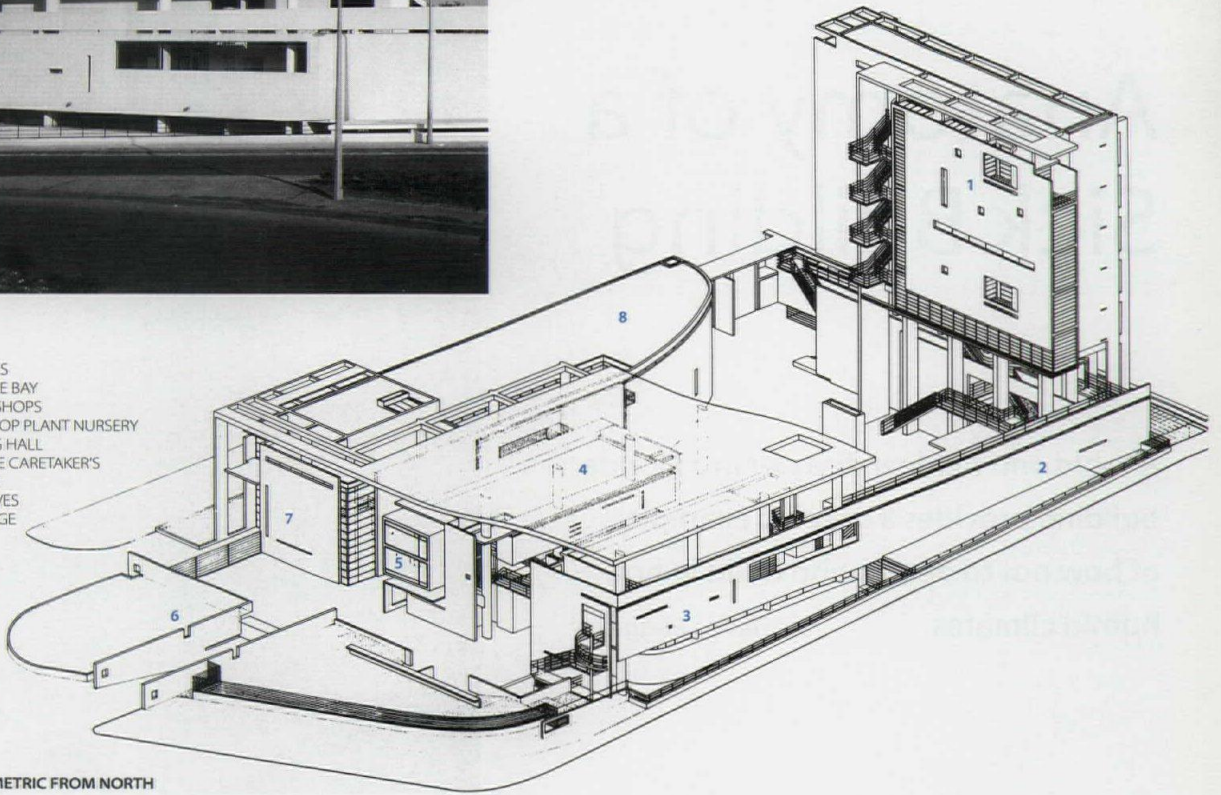
poised above the prevailing roof level (below) has fenestration tailored to uses inside. On the central court (facing page, bottom) the tower's base is juxtaposed to the gentle curve of a storage volume. The low wing, its roof plane hovering above a rooftop plant nursery, recalls Corbu's work in India. For all the complexity of planes, supports, and openings, Kagan claims that each element resolves a specific problem.



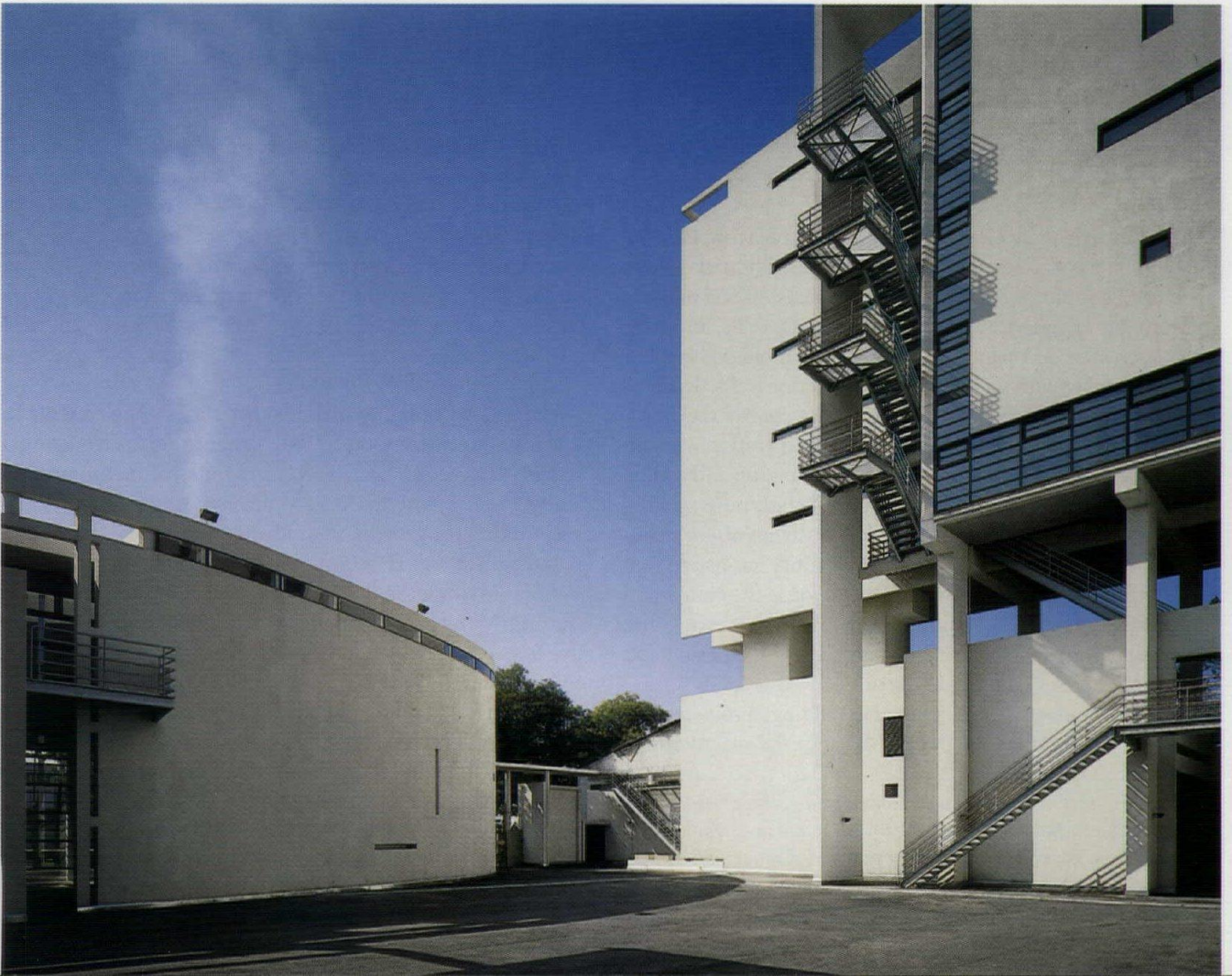
Jean Marie Monthiers



- 1 OFFICES
- 2 VEHICLE BAY
- 3 WORKSHOPS
- 4 ROOFTOP PLANT NURSERY
- 5 DINING HALL
- 6 FUTURE CARETAKER'S HOUSE
- 7 ARCHIVES
- 8 STORAGE



AXONOMETRIC FROM NORTH



Anatomy of a Sick Building

A mold and mildew disaster in a Florida building provides a graphic example of how not to design and build in hot, humid climates. *by Steven Ruggiero*

Abstract

Mold and mildew problems are often the result of a combination of factors, including water leakage through the building envelope, improperly sized or dysfunctional HVAC systems, and nonbreathable wall finishes. Diagnostic investigation of one such building yields strategies for preventing building environment problems.

The Imperial Polk County Courthouse in Bartow, Florida, is a ten-story concrete-frame structure clad with brick veneer and clay tile roofing (2). Built in 1987 at a cost of \$35 million, the complex experienced leaks through roofs, walls, and windows soon after occupancy. Soon thereafter mold and mildew started growing with gusto within the exterior walls. To compound matters, the HVAC system could not control the building's relative humidity, which led to the proliferation of mold and mildew on interior surfaces such as carpeting and ceiling tiles. By 1991 the building had to be vacated; now nearing completion is \$20 million in remedial construction for occupancy later this year. In the interim the county has had to rent space throughout the town of Bartow to house the courts and hundreds of displaced County government personnel, and has pursued litigation with nearly all the original design and construction firms involved in the project.

Our firm was retained to study the building's problems and to develop solutions. Though at first glance the magnitude of

The author is a senior associate with Simpson Gumpertz & Heger in Arlington, Massachusetts, specializing in design and investigation of the building envelope and its interaction with the building environment.



1 MOLD GROWTH BEHIND VINYL WALL COVERING

the failures may seem extraordinary, many of the issues I encountered at Polk County are common to buildings throughout the country and, in particular, to buildings in the Southeast.

Failure of the Building Envelope

In the first year of occupancy, the roof leaked through the clay tile, particularly where the lower wing roofs intersect the adjacent brick veneer walls of the tower. The occupants soon noticed pink and yellow stains appearing on the vinyl wallpaper covering the interior face of certain exterior walls. These stains spread with time (1). Concurrently, the brick veneer on the tower developed severe cracks and bulges, with pieces of masonry falling off the building.

The County building maintenance staff struggled with little success to operate the HVAC system to properly control interior relative humidity (RH). At times of maximum humidity the RH rose to 80 percent or more in some rooms, precipitating the growth of mold and mildew on interior surfaces. Further, the HVAC system created sustained negative pressure, inviting the infiltration of warm humid air into the building. Maintenance personnel also found it nearly impossible to gain access to the condensate pans of the air handlers to clean them. Because the pans retained residual water and could not be cleaned, they became a potential breeding ground for toxic microbials.

As occupants began to complain of respiratory problems linked to the time they spent in the building, the County Health Department decided to close the courthouse. An independent study of the occupants by a team of physicians con-



2 IMPERIAL POLK COUNTY COURTHOUSE EXTERIOR

firmed that they had a significantly higher percentage of respiratory illnesses than occupants of neighboring buildings, thus confirming the presence of “sick building syndrome.”

The team of forensic engineers that I led conducted an extensive on-site evaluation of the building. This involved water testing the envelope for leaks, sampling the envelope components, evaluating operating conditions of the HVAC system, sampling and identifying the microbial matter in the exterior walls and HVAC system, and developing appropriate remedial action. The complete manifestation of some problems was not always clear because the building had been occupied for such a brief time.

Mildew Farming

A combination of factors resulted in the growth of mold and mildew within the exterior walls. Eventually, the affected wall finishes (vinyl wallpaper and gypsum wallboard) were removed under “containment procedures” similar to those used when removing asbestos. Work areas were isolated by polyethylene barriers (4) and were negatively pressurized to prevent spores from migrating to other parts of the building during remediation. Workers in these areas wore respirators.

The subtropical environment of the southeastern U.S. often gives rise to vapor flow through exterior walls that is opposite to that experienced in other parts of the country. Warm, humid air from the exterior (high vapor pressure) tends to flow to the cold, air-conditioned interior (low vapor pressure) for much of the year. At the Courthouse, the lack of a continuous air/vapor barrier at the exterior face of the con-

crete masonry unit (CMU) backup walls, in combination with many window openings in those walls, allowed significant infiltration of warm, humid air to the interior wall finishes. To make matters worse, the interior face of the gypsum board was covered with vinyl wallpaper; a very effective vapor retarder located in the worst possible place within the wall construction. Consequently, warm humid air condensed behind the wallpaper, providing a medium for mold and mildew growth within the gypsum wallboard. Mildew growth was most pronounced at areas of leakage (window sills, roof/wall intersections) that experienced high moisture buildup behind the wallpaper.

Exterior Wall Leakage

Water leakage through the veneer occurred primarily at window openings and at roof-to-wall intersections, with some occasional leaks through the field of the walls. Poorly installed (or no) flashing and the use of nondurable flashing material were major reasons for leaks. For example, the design and construction of through-wall flashing at the intersection of a brick veneer and the side (rake edge) of a sloped roof is tricky. The flashing must follow the general slope of the roof while conforming to a stepped configuration (8) that follows the mortar bed and head joints of the veneer. At Polk County the roof edge was flashed with a metal cover mounted to the surface of the wall (6), with no through-wall flashing to collect water flowing downward within the veneer cavity.

In many of our investigations/remediations we find that wall leakage results from the use of thin, unreinforced PVC



3 RUBBERIZED ASPHALT MEMBRANE INSTALLED AROUND WINDOWS



4 POLYETHYLENE BARRIERS ISOLATE MOLD SPORES FOR REMOVAL

material installed with little skill. At the Courthouse, the PVC became brittle in the short term (less than three years), particularly where it was under mechanical stress (90-degree folds, indentations from mortar accumulation). Then the material split.

Haphazard installation of flashing at windows is another common problem we find in our investigations. At this project, failure to extend flashings to the face of the veneer, to form end-dams at terminal edges, and to turn up flashings behind window sills all resulted in significant leakage within the exterior walls.

Brick Veneer in Distress

The exterior walls consist of brick veneer, cavity space, reinforced CMU, insulation, gypsum wallboard, and vinyl wallpaper. The veneer is supported on relieving angles bolted to the spandrel beams of the concrete frame.

Cracking and bulging of the veneer (6) resulted from two fundamental problems: the veneer lacked vertical control joints and horizontal soft joints, and the relieving angles were not properly attached to the concrete frame. We find these problems to be the source of distress in many of our investigations of brick veneer. Horizontal soft joints are needed to isolate the veneer from the concrete frame, because the veneer expands with time (moisture growth) and the concrete frame consolidates (creeps under dead loads). Without adequate soft joints, the veneer is compressed between the relieving angles at each floor line. Similarly, vertical control joints are needed to control accumulated movement within the veneer

and subsequent cracking at building corners or at reentrant corners formed by window openings within the veneer.

Relieving angles installed on preset anchors in the face of concrete spandrels often cause problems because setting tolerances are hard to control. The angles have prepunched holes and are meant to bear on horizontal bolts that are preset in the concrete. When the holes and bolts do not align, the angle holes are enlarged (often haphazardly with a torch) to allow installation (5). The oversized holes, however, create a connection that no longer acts in bearing and is not adequate to perform in friction.

To remedy the veneer distress, the exterior wall leakage, and the infiltration of humid air required total removal of the brick veneer and windows. A rubberized asphalt membrane was applied to the exterior face of the CMU back-up walls and new copper flashings were installed around the entire perimeter of the window openings. The flashing system was sealed to the window frames and the rubberized asphalt membrane was adhered to the flashings (3). This created a barrier system that controlled both air and water infiltration. A new brick veneer was then installed on properly secured relieving angles with soft joints below each relieving angle and vertical control joints at approximately 20 to 30 feet on center. All the vinyl wallpaper was removed from interior surfaces and replaced with a breathable latex paint.

A Slope Too Shallow

The roof sloped 3-in-12 and was covered with clay tiles nailed over a 90-pound mineral surfaced capsheet underlay-



5 BOLT HOLE ENLARGED WITH A BLOW TORCH



6 BULGING CONCRETE VENEER AT WALL-ROOF INTERSECTION

ment. The roof deck was a prefabricated composite panel of 1/2-inch waferboard, 1 1/2-inch rigid insulation, and 3-inch cement fiberboard. Our water tests showed that tiles at a 3-in-12 slope allow considerable amounts of water to penetrate to the capsheet. In effect, the tiles are little more than a decorative covering at this slope. The capsheet was treated haphazardly during construction and had several holes and splits. As a result, the roofing system leaked readily. To compound the problem, the deck panel materials, particularly the waferboard, degraded rapidly from repeated wetting. Furthermore, the deck materials were glued together to form a composite. The layers debonded and the deck planks deflected excessively (7).

In the end, we advised that all the tiles be removed to replace defective deck panels and install new underlayment. After testing several types of clay and concrete tiles at a 3-in-12 slope in our laboratory facilities, we concluded that tile roofing was not suited to such a low slope. Even if a waterproof underlayment is installed beneath the tiles, it is penetrated by thousands of roofing nails. We recommended reroofing with batten-seam copper to provide a "monumental" roof, with superior waterproofing and wind blow-off resistance.

New Building Environment

The HVAC system played a significant role in the building's problems. The variable air volume (VAV) design used at Polk County is common in modern construction. The building is heated and cooled by varying the quantity of air delivered to a given space, so that the thermostat setting within the space is satisfied. Such a system often does not have to deliver much air

to satisfy the sensible heating/cooling loads. Consequently, during times of maximum latent loads, when outside RH is 90 percent or more, the system does not operate often enough to dehumidify the air. Often, as in the case of the Courthouse, reheat capability is omitted from these systems, making it impossible to control interior RH.

Indoor air quality suffered because the system did not operate frequently enough to ensure adequate distribution of outside air to all parts of the building. The system lacked control overrides to monitor air quality and force operation of the system independent of temperature conditions. Balancing the building's operating environment also proved difficult; infrequent operation of the air handlers resulted in an overall negative building pressure, thus increasing the infiltration of warm humid air through the exterior walls.

To remedy these problems and other environmental concerns, such as condensate pans that did not drain completely, the entire HVAC system was revamped, including new air handlers with half the capacity of the originals, to force more frequent cooling operation. Reheat capability was added and return air supplies are now monitored for RH and carbon dioxide, with overrides to force system operation.

Lessons Learned

In summary, the lessons that architects and builders should keep in mind when using building systems similar to those used at Polk County include:

Flashings to eliminate concealed leakage. With increasing public health concerns related to mold and mildew growth in



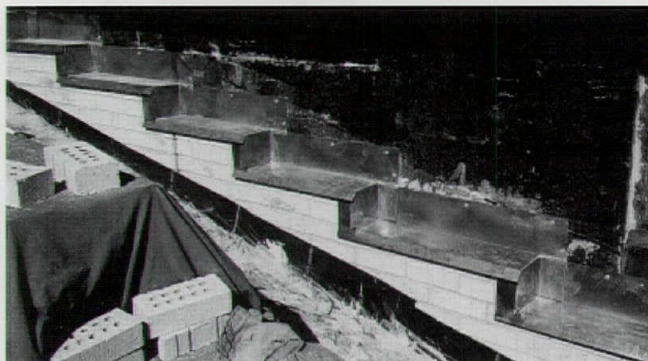
7 DEGRADED AND DEFLECTED ROOF DECK PANELS

buildings, proper design and construction of flashings to control concealed leakage within walls is of critical importance. Do not rely on window-frame construction to be watertight. Use complete window flashing assemblies, including pan flashings beneath windows to capture water that may often leak into the exterior wall construction unnoticed (at first) by occupants.

Location of vapor retarder within wall assemblies. The old adage, "Place the vapor retarder on the warm side of the insulation" is generally sound. Remember, however, that the warm side of the insulation can vary depending on the region and climate. Further, the vapor drive in hot, humid climates is so pervasive as to warrant careful consideration of, and detailing for, an air barrier to seal all penetrations through exterior walls. Avoid the use of vinyl wallpaper climates like that of Polk County, Florida.

Tile roofing at shallow slopes. At slopes less than 5-in-12, tiles can be expected to admit significant water to the underlayment; provisions must be made to ensure a watertight membrane to control leakage. Use of a "self-sealing" type membrane, such as a rubberized asphalt sheet, to seal around tile fasteners, seems most appropriate for this application.

VAV systems tuned for ventilation and humidity control. HVAC systems using the variable air volume approach to deliver conditioned air to the building should be carefully designed to ensure that relative humidity can be controlled within the building, and that adequate ventilation (outside air) is delivered to the occupants. All too often these systems provide adequate control of sensible heat load (thermostat controlled cooling), but fail to maintain RH and ventilation.



8 NEW STEP FLASHING AT WALL-ROOF INTERSECTION

Microbials within the HVAC system. The use of fibrous insulation to line ducts and air-handling units can be a problem, as dirt and debris accumulate in the fibers and support the growth of microbials. Some industry sources believe these materials will be phased out of use in HVAC systems. Residual ponding in condensate pans is a likely breeding ground for microbials. Proper drainage is essential, and air handlers should be easily accessible to allow timely maintenance.

In retrospect this project, like so many others I have investigated, would have been well served by a peer review process. Starting with a review of the plans and specifications, and continuing with timely field visits during construction, a qualified consultant could easily have alerted the project design and construction team to the deficiencies that led eventually to millions of dollars in remedial effort. □

Guidelines on selecting the fluorescent lights for proper color rendering.

Q: How can I be sure that I am selecting the correct fluorescent lamp color for an office lighting system?

*Rick Sheick, R.A.
Newark, New Jersey*

A: The selection of surface finishes and the color of light sources play a significant role in the appearance and feeling of an interior. The appearance of the color of surface finishes can vary widely when viewed under different light sources. The color quality of light is also affected by the color of the surfaces from which it is reflected. It is always good practice to select and evaluate colors and finishes using the same type of light source that will be used in the completed project.

Two major criteria should be considered in the selection of an appropriate light source. Color temperature or chromaticity refers to the warm or cool appearance of the light source and is designated in degrees kelvin. Color rendering index is a measure of the color shift exhibited by a lamp compared with a reference lamp of the same correlated color temperature. Two lamps with the same color temperature can have very different color rendering characteristics. Color rendering index is directly tied to the spectral energy distribution of a light source, the quantity of light that is produced in each portion of the visible light spectrum, and its total balance.

Lamps with color temperatures of 3,000 degrees kelvin or lower can be said to create a "warm" atmosphere, appearing golden or yellowish in hue. They enhance color palettes that contain ivory, beige, natural wood tones, yellow metal, brown, red, and orange. Fluorescent light sources in this range also blend well with incandescent and quartz lamps. Light sources with color temperatures of 4,000 degrees kelvin or higher create a "cool" atmosphere and tend to appear very pale blue or white in hue. They enhance color schemes that consist of pale grays, gray stone and granite, white metals, blue and green. Light sources with color temperatures that fall between these two

(3,500K) are considered to be neutral and tend to appear pink or peach in hue. They enhance all color families and have the added advantage of being particularly flattering to flesh tones.

Color rendering index (CRI) is a measurement of the "quality of color" that a light source is capable of producing. The maximum CRI value is 100, that of natural daylight and incandescent light, which are used as reference sources. Theoretically, a lamp with a CRI of 100 is capable of rendering 100 percent of colors equal to or better than the reference source, and so on down the scale. The higher the CRI rating, the better the chance of achieving faithful color rendering. It has also been stated (but there is no conclusive proof) that lamps with higher CRI ratings contribute to visual clarity; we can see better with less light if we perceive colors accurately.

It can generally be said that light sources with spectral energy distribution curves that are more or less continuous tend to have higher CRI ratings. In fluorescent lamps the spectral energy output is affected by the mix of phosphors in the lamp tube itself. The rare earth phosphors in the tri-phosphor or "designer" lamp series (with CRI of 75 to 80) balance their spectral output. Lamps with a more continuous spectral balance distort colors less. In comparison, standard cool white and warm white fluorescent lamps (with CRI of 62 and 52) have spectral energy distribution curves that are not balanced. The Federal government will prohibit the manufacture and sale of these lamps in favor of tri-phosphor lamps after 1995 as part of its energy policy.

*James Conti
Lighting Designer
Haines Lundberg Waehler
New York*

Readers are encouraged to submit questions regarding technical issues. You can mail, phone, or fax your questions to the attention of Michael J. Crosbie, Senior Editor, Technics. The answers are presented in good faith, but P/A does not warrant, and assumes no liability for, their accuracy, completeness or fitness for any particular purpose.

**FAX us your thoughts
and help P/A address a critical subject:**

Diversity in the Profession

For a November article on the role of minorities and women in the architecture profession, P/A would welcome your observations.

1. To what extent do you think women and members of minority groups are getting a fair opportunity to succeed in this profession?

2. Do you think the profession's institutions (AIA, schools, press, etc.) are addressing diversity issues adequately?

3. Can you cite any experiences that would help fellow professionals understand the diversity situation more clearly?

4. Can you propose or endorse any ideas for achieving greater equality of opportunity in the profession?

5. Information about you:

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Race or ethnic group
Age
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Optional: Your name
Your telephone

Please feel free to address the issue as you wish, without being bound by the above questions or by this form. All responses will be considered confidential. Nothing will be quoted by name unless we obtain your express permission. Send us your thoughts

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THE AMERICANS ARE COMING! АМЕРИКАНЦЫ ИДЕТ!

(continued from page 57) Western client on a project in Russia, compensation in dollars is the norm. If you work for a Russian client, insist on being paid in dollars, not rubles. "We get paid by check or wire transfer," says Jerry Caldari. "We don't deal in rubles at all." Sidney Gilbert has occasionally been paid in Russian currency. "You could buy an apartment, supplies for your Moscow office, exchange rubles for dollars, or put them in a bank there." But don't put them in Russian banks, which appear and vanish with breathtaking speed. Also, Russian banks routinely sell lists of depositors to Russian Mafiosi, who might appear on your doorstep with smiles and Kalashnikov rifles.

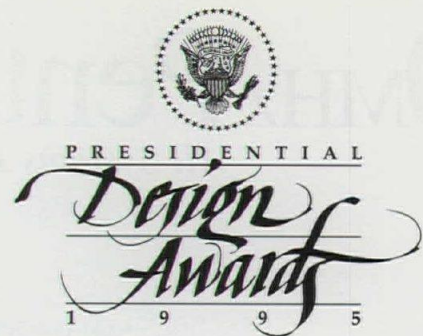
Although the Russian Mafia has infiltrated nearly every stratum of the market (the Interior Ministry pegs the number of mob gangs at 5,600, and 40 percent of privatized Russian businesses have been infiltrated) the architects I spoke with said that the mob is not strong in the construction industry. "It's not as bad as it is in New York," muses Jerry Caldari, although he does recall that a German building materials showroom in Russia was recently blown up.

Russia collects taxes on the profits from any portion of architectural work conducted there. At press time, the rate was 35 to 38 percent, but it changes frequently. Good records are essential, because without them the Russians will tax you on an assumed 25-percent profit. "The important thing is to hire good counsel," says Dan DeCanniere, SOM's chief operating officer, "because the tax law is very much in flux, and you have to stay on top of things."

Why Go to Russia?

Given the shaky political situation, an economy edging towards collapse, the rising crime rate, the language and cultural barriers, and the red tape, why bother to practice in Russia? I heard a variety of reasons why the work is rewarding. Several architects said it's lucrative; fees are higher than for work in the States because there is less competition. A few others mentioned the glamour of international practice. A common theme in many of the responses was that architects in Russia command a good deal of respect, unlike architects here. Sidney Gilbert also mentions that working for American companies in Russia has opened doors for projects in the U.S. "The message is, 'If we can work for you 8,000 miles away, maybe we can do something for you here.'"

Kevin Smith of Liebman Melting best expressed the intoxicating frenzy of working in Russia when we spoke in his Moscow office. Smith sits amid a buzz of activity: associates scurry in and out, faxes rattle, phones ring, and just outside his window a new project nears completion. "I wear two hats here," says Smith. "I'm an architect, but I also represent the client's concerns. Organizing the work is challenging, and the process can be fun. The range of things that I can do here is much broader than being an architect in New York. There's a seat-of-the-pants excitement about working here that you can't get anywhere else." □



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Categories

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Eligibility

Works that have been sponsored, authorized, commissioned, produced, or supported by the government of the United States of America are eligible.

Works must have been completed and in use between June 1, 1984 and June 1, 1994.

Deadline

Entries must be received by 5:00 pm E.S.T., Monday, October 31, 1994.

For Further Information

For an entry form or information about the Presidential Design Awards, call Thomas Grooms at (202) 682-5437.

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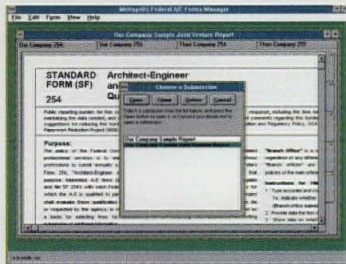
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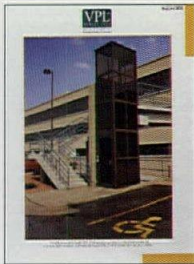
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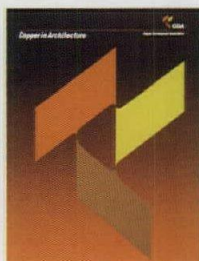
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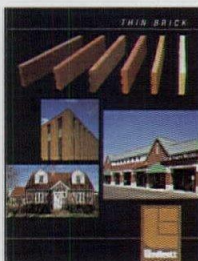
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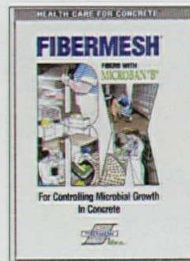
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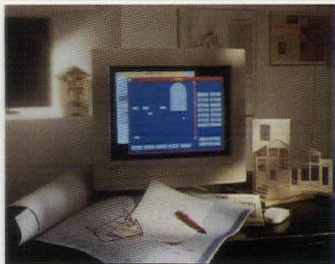
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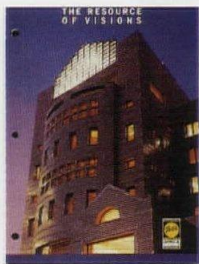


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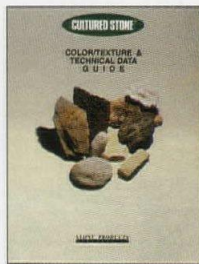
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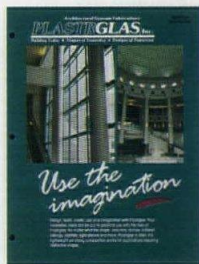
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P/A Advertisers' Index August 1994

Advertiser	Page No.	Circle No.
a la mode, Inc.....	8	317
Access Industries, Inc.....	92	341
American Plywood Assn.....	10	318
Andersen Corp.....	92	342
Autodesk, Inc.....	44	•
Baudisson Concept Window Corp.....	38	315
CertainTeed Corp.....	91	320
Compaq Computer Corp.....	6,7	•
Copper Development Assn.....	92	343
DPIC Companies.....	14	321
Endicott Clay Products.....	48, 92	300, 344
Fibermesh.....	92	345
Homasote Co.....	92	346
Hoover Treated Wood Products.....	92	347
Intergraph Corp.....	13	312
KDI Paragon.....	34	301
Kimball Office Furniture Co.....	35, 37, 39	308, 307, 309
Living Architecture.....	97-108	•
Lonseal, Inc.....	34	303
Louisiana-Pacific Corp.....	92	348
Marble Institute of America.....	38	322
Marley Floors.....	43	323
Marvin Windows & Doors, Inc.....	2, 3, 93	302, 349
Montgomery Elevator Co.....	93	350
Nevamar Corp.....	C2, 1	310
P/A Design Awards.....	41, 42	•
PPG Architectural Finishes.....	47	324
PPG Industries, Inc.....	C3	325
Pella Corp.....	93	351
Plastrglas.....	93	352
Sto Industries.....	11	304
Stone Products Corp.....	32, 93	314, 353
Summagraphics Corp.....	40	305
Summitville Tile, Inc.....	45	313
Toshiba America Information Systems, Inc.....	30, 31	001
Tri-Star Corp.....	89	326
United Gypsum Co.....	C4	311
Zerodisegno.....	93	354

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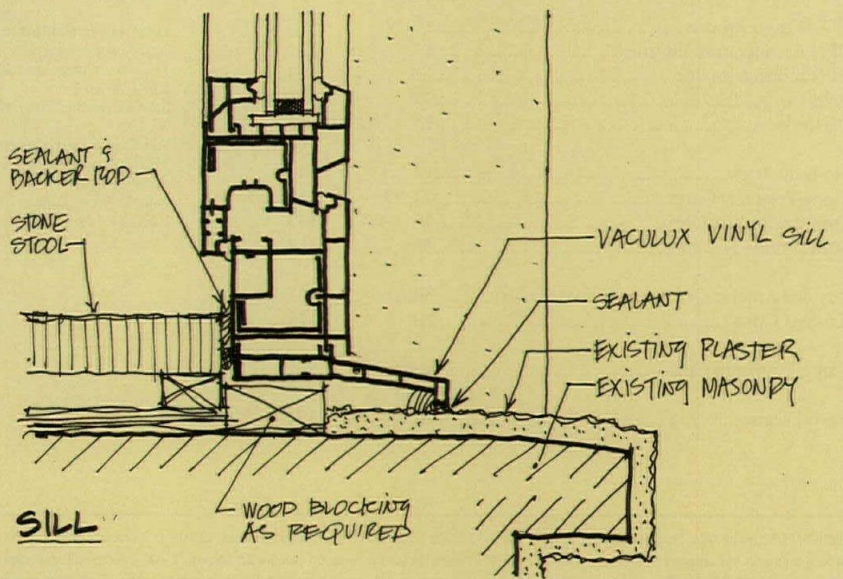
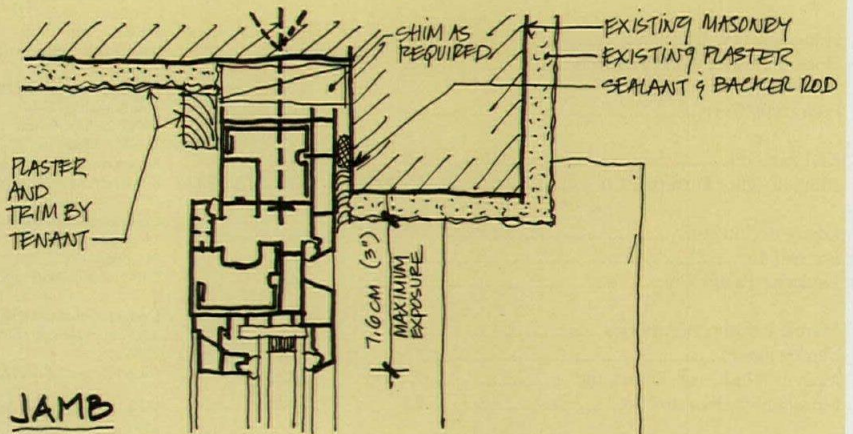
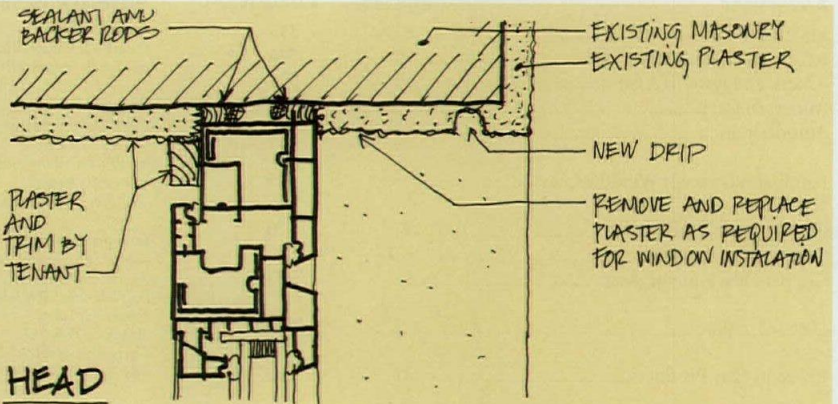
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For projects abroad, the amount of detail and the presentation style of working drawings will vary according to the local requirements. This sheet of window details from a set of drawings for an office building in Moscow (see page 54), designed by The Liebman Melting Partnership, New York, demonstrates several tricks of the trade of practicing abroad.

The 11" x 17" sheet size makes it easy for the set to fit into a briefcase. This allows the drawings to be carried on board a plane, instead of having to be rolled up and checked as baggage (and possibly lost). The sheet size is also faxable. The drawings are easier to work with on the building site than larger sheets, and they can be duplicated on copy machines; blueprint shops are virtually nonexistent in Russia.

The details were developed as construction of the project progressed. The architects took note of what details needed elaboration for the Russian construction team and developed them freehand, without extensive notes. They found that it was easier and more cost-efficient to sit down with the construction workers and an interpreter to discuss the details than to pay an interpreter to translate the notes.

Specifications were developed as a single document with side-by-side text in Russian and English, in place of separate specs in each language. This made it easier for the Americans and Russians to discuss the specs without having to flip back and forth between documents. Michael J. Crosbie □



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