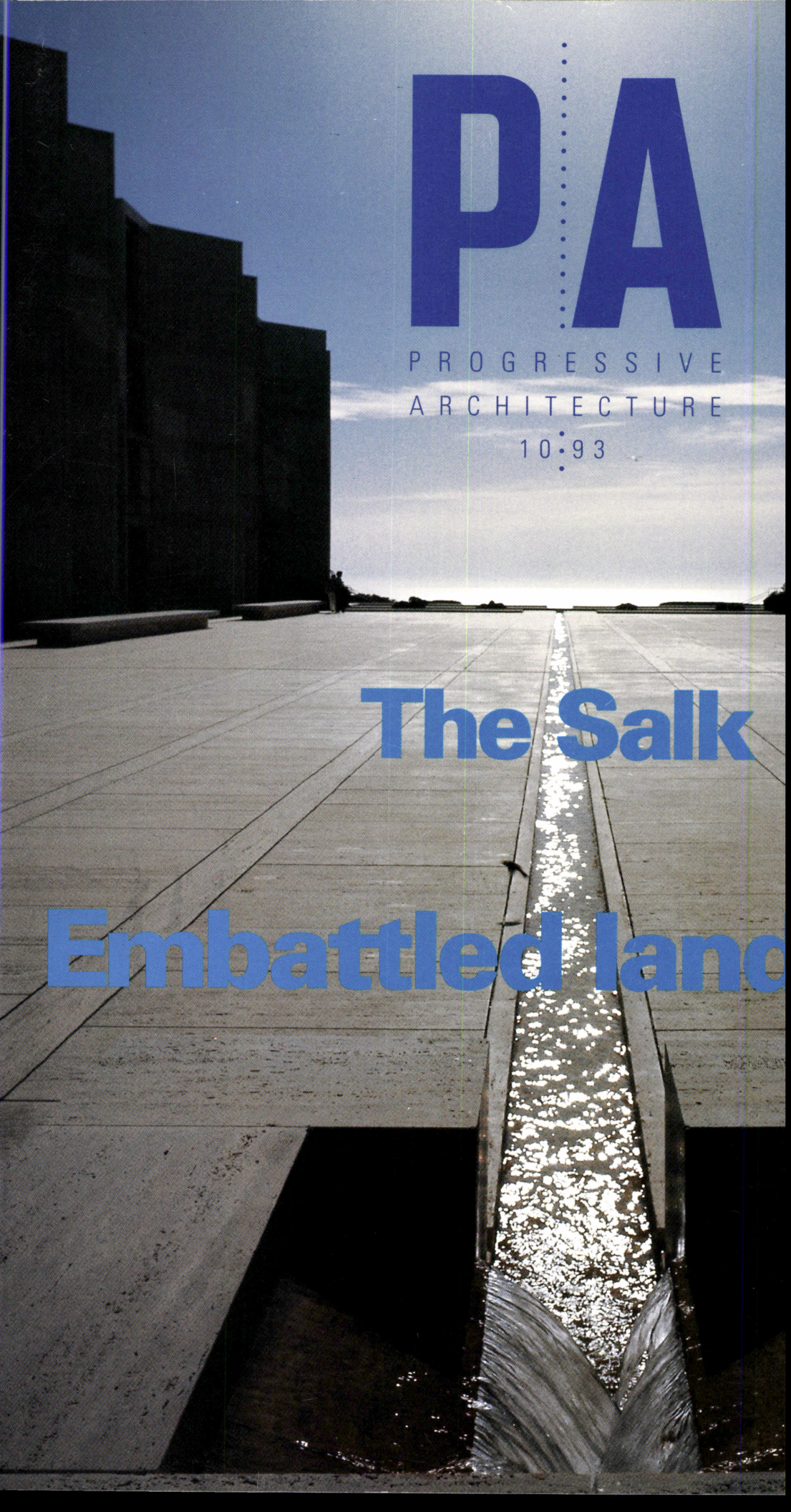

PA

PROGRESSIVE
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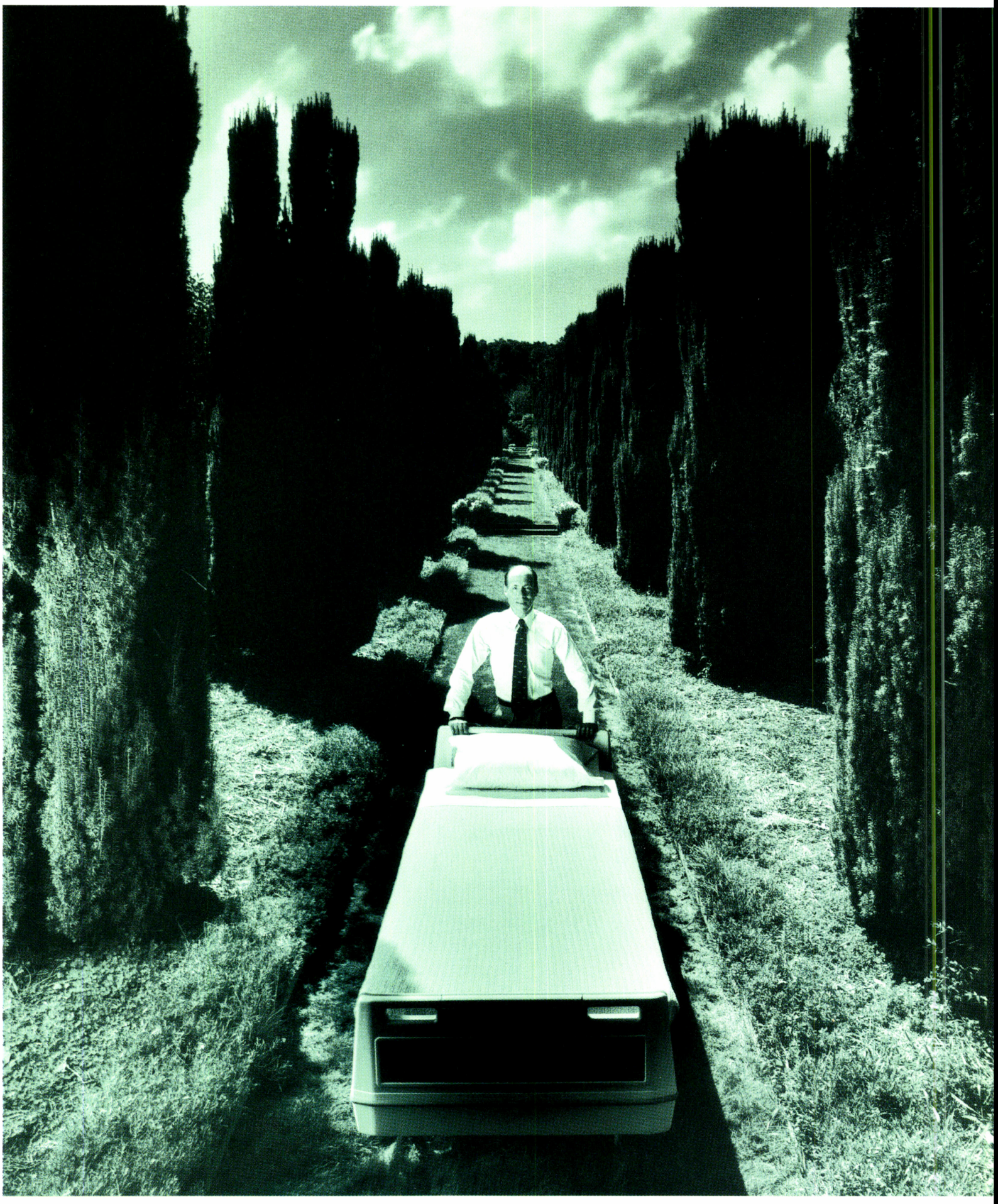
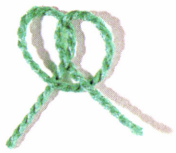
The Salk

Embattled land



Wayne Ruga On Environmental Awareness



"Most designers think of healthcare environments as being black and white. The result is an environment in great contrast to Mother Nature. Yet, the elements of nature can be as vital to design's healing power as all the elements of design put together. Fresh air, natural light, colors and sounds, all can help create welcoming spaces — spaces that ultimately have a profound effect on healing."

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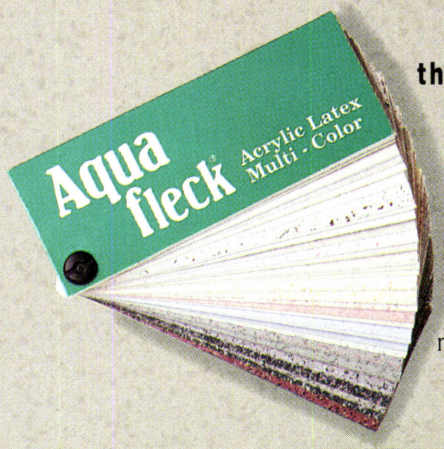

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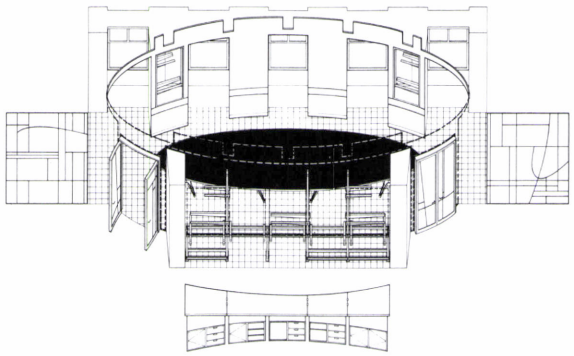
Progressive Architecture October 1993

P/A

Cover: *The Salk Institute, La Jolla, California, by Louis I. Kahn, (page 40). Photograph by Ezra Stoller, Esto Photographics. Cover design by Julie Anne Yee.*

Editor in charge: Ziva Freiman



Cutaway axonometric of conference room at Elektra Entertainment by Bausman-Gill.

Departments

This Month In ...

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Editorial | Lessons From the Salk

The controversy surrounding the Salk addition points up our inability to quantify or communicate the effects of such a building.

Whatever you may think about the addition to the Salk Institute (p. 40), the controversy surrounding it reveals a gulf that separates the architectural community from the larger culture in which we work. At the Salk, the differences that exists between those who favor the addition and those who oppose it stem partly, as Michael Crosbie suggests, from the schism between humanists and scientists – between those who want to preserve great works from the past and those who focus solely on making new discoveries. But the old debate between preservation and progress, while relevant, does not get at the larger issue raised by this controversy, one that affects almost every architect in some way.

Jonas Salk touched on it (p. 47) when he mentioned his surprise at how people have had such different interpretations of the same building. Such differences have their value. Indeed, every field could be said to have a characteristic way of seeing – its own set of lenses and its own blinders – which enables professionals to perceive things that others miss and to recognize what is important and what is not in their area of expertise. But there are pitfalls to such specialized vision, including an inability to communicate what one sees to other people.

Physicians are notorious for this: viewing life and death issues with a strictly clinical eye, and describing them in ways that patients don't understand. But the Salk controversy shows how architects can fall into the same hole. We may talk about the existential power of a space such as the Salk courtyard or study the building's phenomenal character, but that has little effect, especially when it comes to preserving such a structure, if we cannot adequately explain the value and importance of those experiences to nonarchitects.

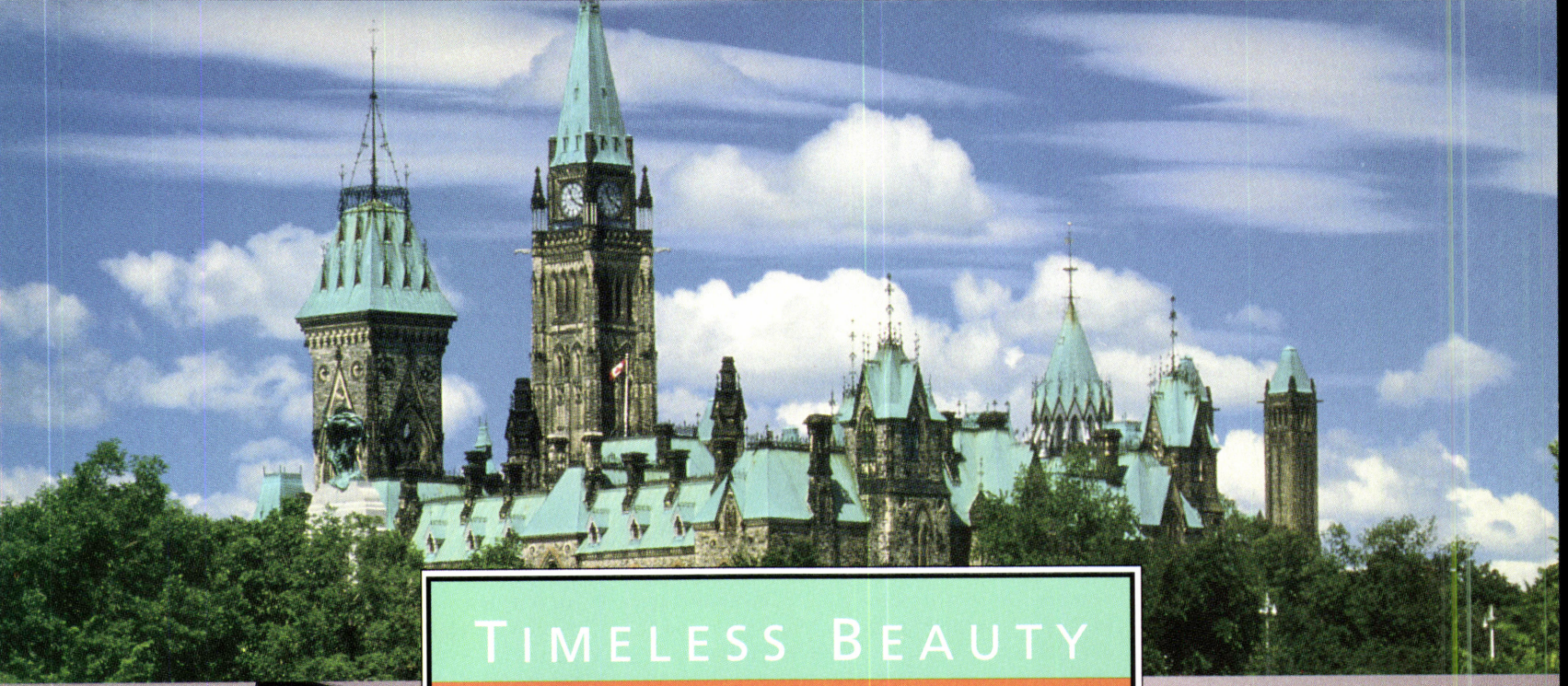
Here, architecture differs somewhat from medicine. However arcane the concerns of physicians, the consequences of their actions are quite clear and quantifiable: people feel better or worse, their temperature goes down, their vital signs improve. That is not the case in architecture. The way in which we work is just as mysterious to the public as anything physicians do or say. But unlike them, we rarely quantify the benefits of good design, and so have a harder time swaying public opinion or even convincing clients to do the right thing. At the Salk, for instance, one wonders what would have happened had the opponents of the addition argued, not about experiencing the courtyard or about Kahn's original design intent, but about the functional failings of the new building and about the impact it would have on the productivity and well-being of the staff. As every doctor knows, you have to make a bitter pill palatable; the original polio vaccine came in a sugar cube.

We may approach buildings such as the Salk with a religious awe, as Michael Benedikt observes, (p. 52), but we can defend our beliefs about the healing benefits of design – or save pilgrimage sites such as the Salk – only if we have hard data about it. No amount of high-flown talk about design improving the quality of life means anything without proof to that effect.

The problem, of course, is that this profession has few means to gather such proof. Spending on postoccupancy evaluations, especially of landmarks from the recent past, is almost nonexistent; and what little does get done rarely goes beyond the client's office. One of the most important steps this profession could take right now would be to commit itself to developing and distributing, by the end of this decade, a substantial body of evidence about the measurable consequences of good design, be they greater worker productivity, higher resale value, more efficient operation, or lower staff turnover.

All the pieces needed for such a program exist. The AIA and the over 60 architecture foundations around the country could take the lead in fundraising, the AIA's research council could coordinate the work. Research-oriented schools could be sources of expertise and training, and the magazines could dedicate pages to publishing the findings – good and bad. The initial effort could focus on recent AIA Honor Award winners and on embattled landmarks, such as the Salk.

The demolition of Penn Station helped ignite the preservation movement. Perhaps the addition to the Salk will someday be seen as a similar turning point, where this profession began, in a coordinated way, to quantify the benefits of what it does, to test the consequences of its actions, and to communicate its findings in ways that the public understands. There will no doubt be some in the profession who will object to such an effort, who will argue that attempts to measure the effects of design either destroy it or miss the point. But such arguments will only ensure that architecture continues to remain at the margins and that landmarks such as the Salk remain vulnerable. **Thomas Fisher** ■



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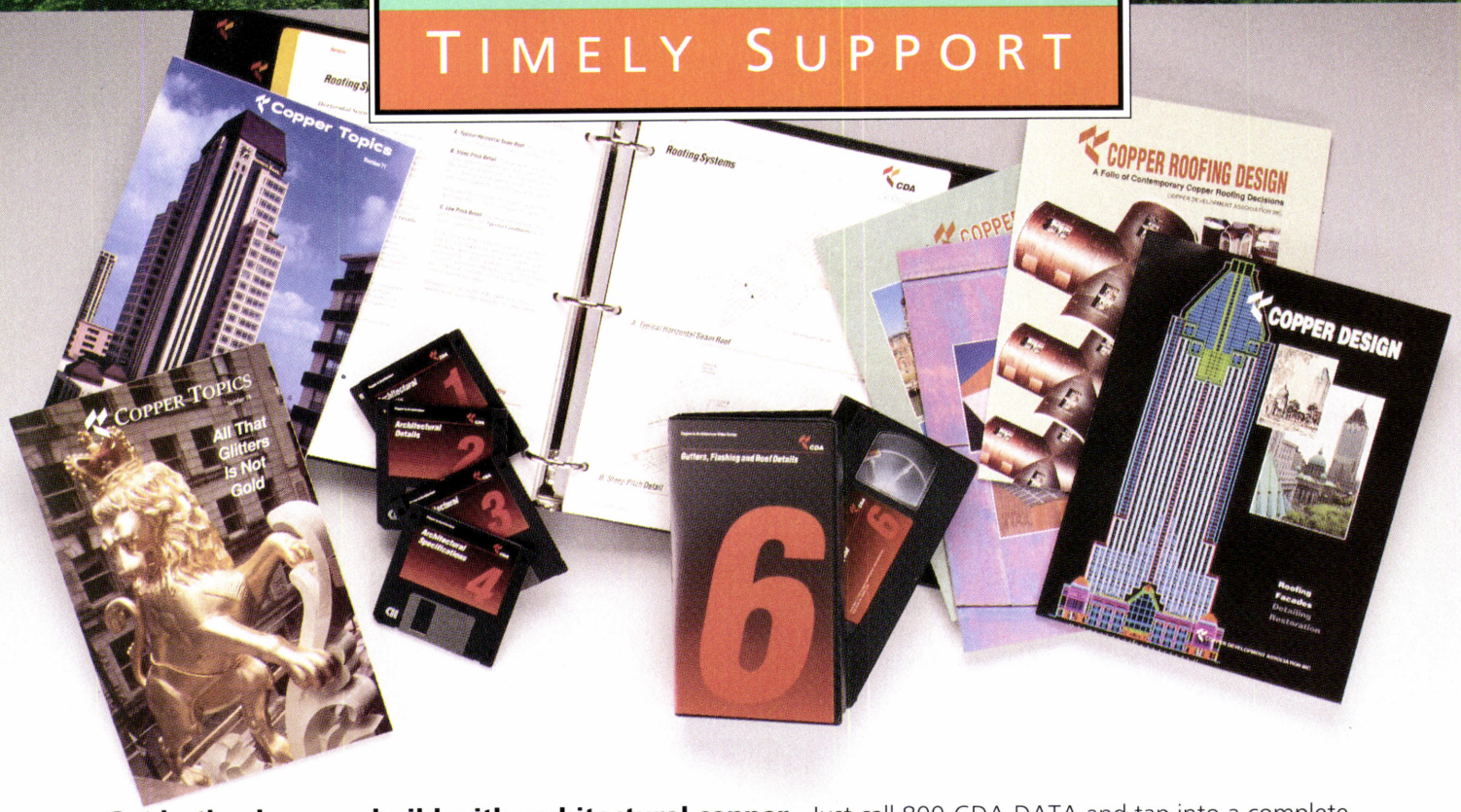

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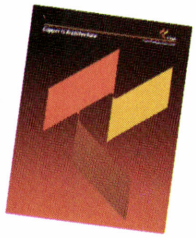

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Views

The Avant-Garde

I have just received my August issue of P/A, and I must write to thank you for the latest in your series of insightful editorials ("The Avant-Garde, Past and Future," August, p. 7). It is refreshing to read an editorial genuinely worthy of that term – not merely an insipid *précis* of the "magazine theme of the month."

In the context of this month's offering, I would suggest that the use of "avant-garde" as though it were interchangeable with "Deconstructivism" is, perhaps, part of the current problem. While, as Renato Poggioli pointed out some thirty years ago, the idea of an avant-garde invariably depends upon a particular set of sensibilities, at no point beyond the first decade of this century could the term "avant-garde" be applied only to a single, monolithic expression of those sensibilities. De Stijl and Constructivism, for example, as concurrent "movements" were both undeniably "avant-garde," but could hardly have been more different in their formal or social aspirations.

I believe that you are completely correct in noting that Deconstructivism's seeming irrelevance is due in large part to its exclusive focus on "questions of form and meaning." However, Deconstructivism's remarkable lack of convincing arguments regarding social economics or a "collective sensibility" is not a failing of the avant-garde, *per se* – only of one particular expression of the avant-garde.

In other words, we do not need to invent a "new avant-garde"; we merely need to broaden our focus to encompass those expressions of the avant-garde that seem to provide less limiting directions. I look forward to P/A's contribution to that process.

Edward S. Levin, AIA
Principal, Levin-Morris Architects
Santa Monica, California

Colorado Boycott

Philip Arcidi is on the right track when he recommends a continued boycott of all products and services from and conventions held in the State of Colorado (P/A, Aug. 1993, p. 82). Discrimination is not to be tolerated in any form anywhere in America.

Our profession, as Arcidi asserts, is "responsible to design spaces for all." "All" includes the disabled, the sick, the black, the brown, the non-English-speaking, the gay, the lesbian, the poor, the homeless, the convicted, the immigrant, as well as the straight, the white, and the zealous.

As citizens of a country that discriminates covertly on the basis of religion and race and overtly on the basis of sexual orientation, we as professionals must look to higher ideals than those accepted by many politicians and religious zealots of our age. We must learn to look in the face those who wish to segregate and, with pride and dignity, explain that we want to live in a country that celebrates diversity and does not reward discrimination.

I support a continued boycott of Colorado.

John D'Amico
Principal, Tierra Concepts
Los Angeles

I have been a subscriber of your magazine for more than 35 years and a practicing architect for almost that long. I have never writtten in response to articles or content until now, although I regularly correspond with many publications. Architects in business today are busy dealing with the multitude of laws, ordinances, codes, regulations, and government involvement in every level of our work. But two articles in the latest issue of P/A compel me to comment.

First of all, I don't want to be told who to boycott by your magazine. How I feel about this issue is my business and I believe you are doing your readers a disservice with your involvement in this very arguable social issue that has nothing to do with the building industry.

The article "Why Boycott Colorado?" does not belong in your magazine and the inclusion of it considerably reduces the value I place on this publication. Like most Americans, I believe everyone should be treated with respect, that discrimination is wrong, and that certain self-appointed groups should not expect specially favorable treatment. Your particular behavior is your business, but when you start to endorse certain behavior you and your magazine are not doing a service to our profession. For your magazine to allow a writer to even consider behavior in the same category as civil rights is a mockery of the term. Many today are beginning to treat with disgust improper use of language. The gay issue you espouse has nothing to do with civil rights.

Secondly, your article "The Architecture of Survival" is one example of a waste of paper. We all know why there are homeless people in our great country. Anyone who has read William Tucker's research in this area can tell you that, for the most part, government has added so much to the cost of development that housing is out of reach for many. Your magazine could do this profession a great service by lobbying and writing articles that might do some good, instead of trying to call the pitiful shelter of the tragic homeless architecture. We have designed and built low-cost housing, but with the multitude of regulations which have little to do with safety, it is almost impossible to make them economically viable. If the Pacific Institute study, "Resolving the Housing Crisis – Government Policy, Decontrol and the Public Interest" was widely read or reviewed, more would find out that government is the problem as far as affordable housing is concerned.

If the magazine is looking for material, it shouldn't take a great deal of awareness or knowledge to see how the building professionals are being treated by government at every level. Just because the national AIA endorses big government doesn't mean that working architects do. Architects and building developers have to be concerned about a nightmare of regulation.

If you are looking for subject material you have many areas which would be of value to professionals. You must be aware that more than 90 percent of your readership does not subscribe to the behavior that this article encourages and endorses.

Donald E. Van Curler
Donald E. Van Curler & Associates Architects AIA
Ann Arbor, Michigan

[The issue is one of civil rights, whether or not the writer acknowledges that. P/A is not endorsing "behavior." The Colorado amendment would affect any architect or architectural employee living or working in that state. –Editor]

Byzantine Frescoes May Stay

On behalf of the Byzantine Fresco Foundation, I would like to express our appreciation to *Progressive Architecture* for its report on our project to construct the Byzantine Fresco Chapel in Houston (P/A, July 1993, p. 87.)

I must correct one factual error, however. There is good likelihood that the 13th-Century frescoes will not "be reinstalled on their original site," as stated in your story (P/A, July 1993, p. 87). The loan agreement between the Menil Foundation and the Church of Cyprus foresees the possibility of an extension of the loan beyond its current expiration date of 2012. It is the Foundation's hope that the frescoes will remain in the United States for a period far longer than 20 years. If so, they will serve as a splendid example for future generations of the spiritual and artistic heritage of Byzantine culture and the Orthodox world, offering an unequaled opportunity for Americans, as no frescoes of comparable beauty and quality exist in the Western Hemisphere.

Dominique de Menil, President
The Byzantine Fresco Foundation
Houston

Fence Story Corrections

Our News Report article on "The Fence," a recent Los Angeles design competition (P/A, August 1993, p. 20), contained several factual errors. The Village Green, the competition site, was built between 1938 and 1943 – not designed in 1940, as we reported; the development sits on 64 acres, not 8 acres. The prize money, was $12,500, not $10,000; in fact, the jury awarded six prizes of $2,000 each. And while we referred to a "seven-person jury of architects and landscape designers," one of the jurors, Susan Whitin of The SWA Group, is a landscape architect. Finally, the photo of one of the winning entries should have been credited to "The End." ■

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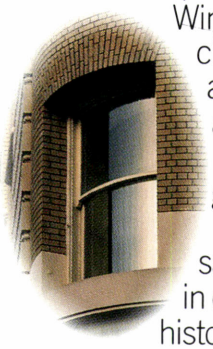

No less of a challenge were the hotel's 585 aging double-hungs. Each demanded the same craftsmanship and attention to detail in order to maintain sightlines and replicate the historical profiles of the originals. And to guarantee their durability and consistency, each would have to incorporate the same performance features, too.

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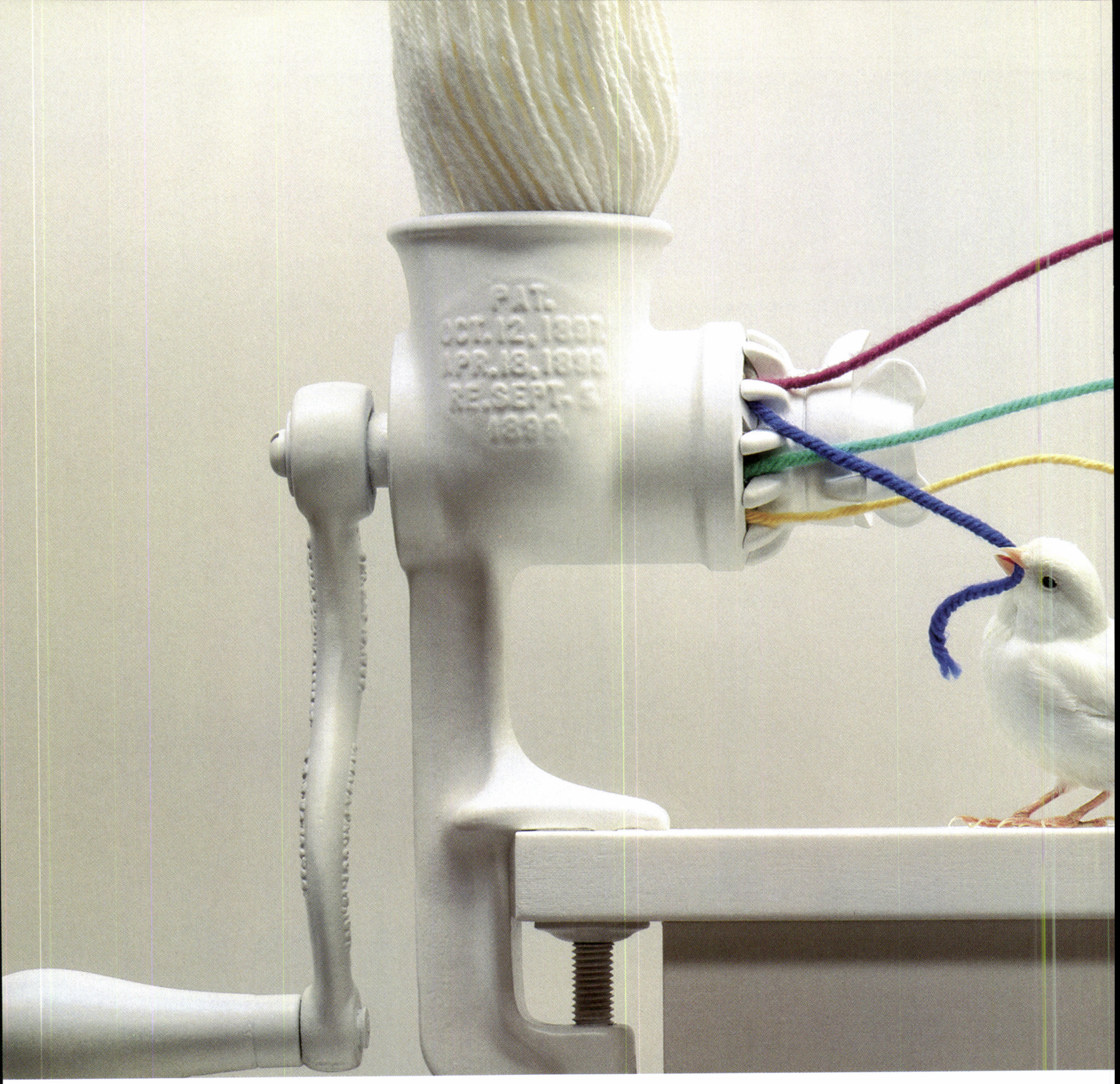

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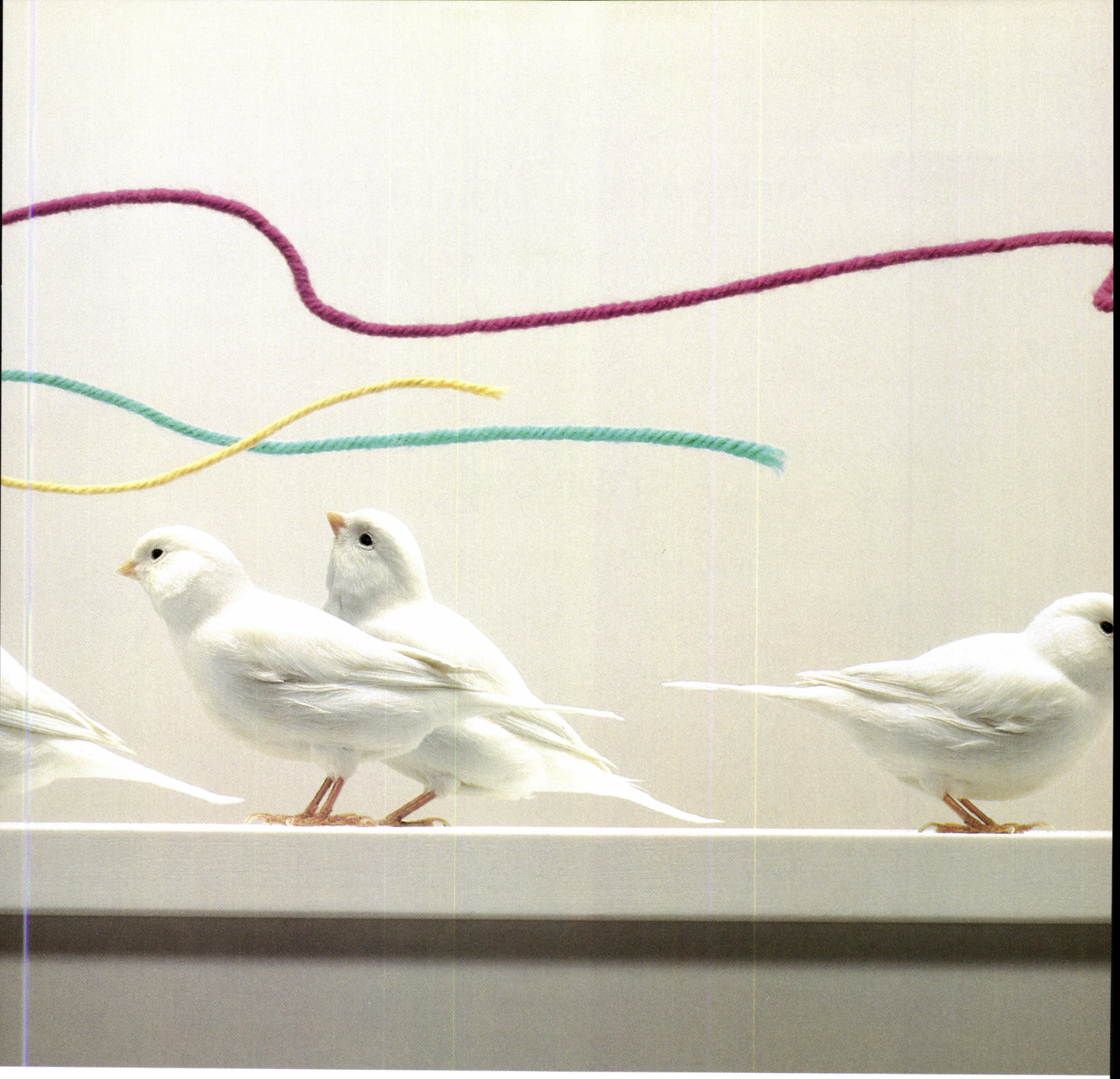

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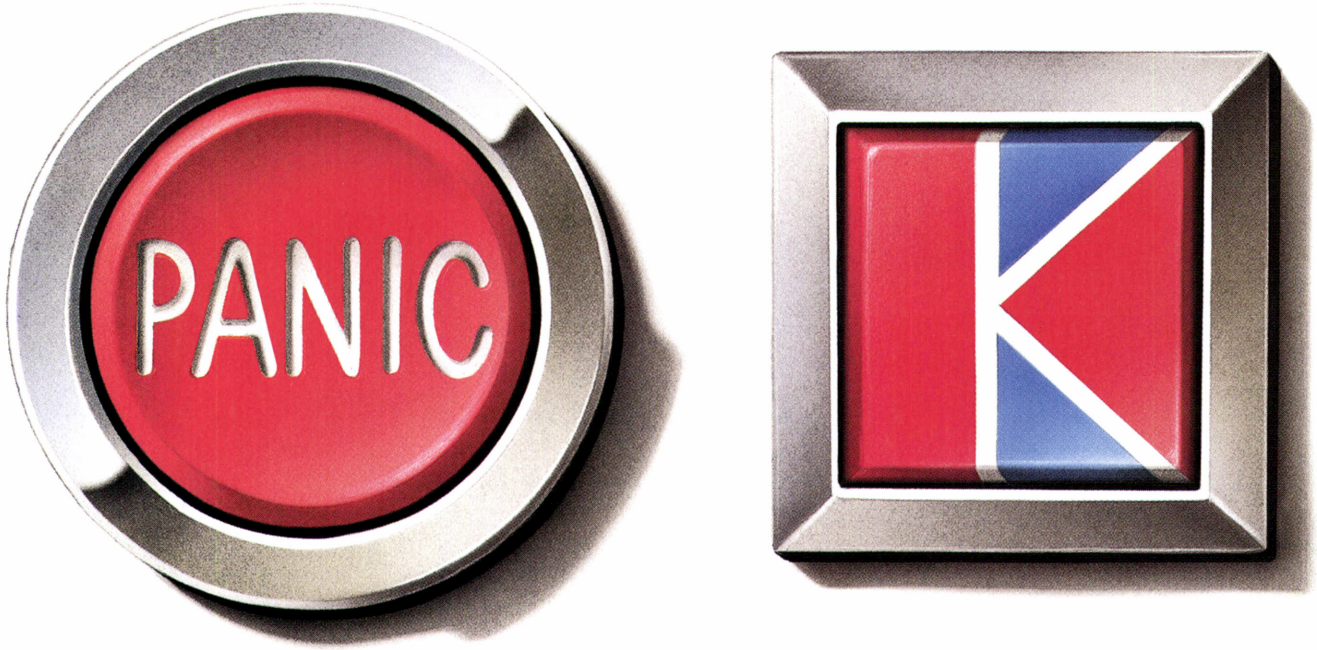

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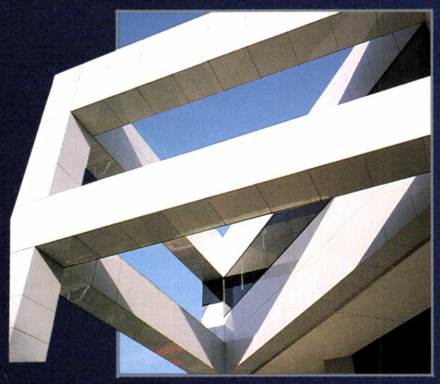

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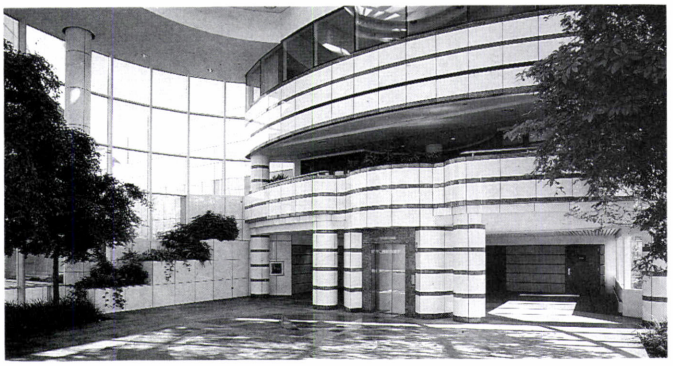

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Flat	900 X 900 mm $35^{7}/_{16}$" X $35^{7}/_{16}$"
	900 X 1200 mm $35^{7}/_{16}$" X $47^{1}/_{4}$"
	900 X 1800 mm† $35^{7}/_{16}$" X $70^{7}/_{8}$"
Curved	max. $35^{7}/_{16}$" x $47^{1}/_{4}$" (either dimension can be arc of panel)
Round Corner Piece	3.94" R x 90° arc X $47^{1}/_{4}$" long 5.91" R x 90° arc X $47^{1}/_{4}$" long

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Specific Gravity $(lbs/in^3) \times 10^{-2}$	
NEOPARIÉS	9.75
MARBLE*	9.75
GRANITE*	9.75
*Flexural Strength*** (lbs/in^2)	
NEOPARIÉS	6600
MARBLE*	1900
GRANITE*	2150
Young's Modulus $(lbs/in^2) \times 10^6$	
NEOPARIÉS	12.6
MARBLE*	4.0-11.9
GRANITE*	6.1-8.7
Mohs Hardness	
NEOPARIÉS	6.5
MARBLE*	3-5
GRANITE*	3-7
Coefficient of Thermal Expansion $(x10^{-6}\ in/in/^{\circ}F)$	
NEOPARIÉS	3.44
MARBLE *	4.44-14.4
GRANITE *	2.78-8.33
Water Absorption Rate (%)	
NEOPARIÉS	0.00
MARBLE *	0.5-3.0
GRANITE *	0.05-1.5

† Check color availability

* Values are average of various stones tested by an independent laboratory. It is not our intention to imply that these are design values.

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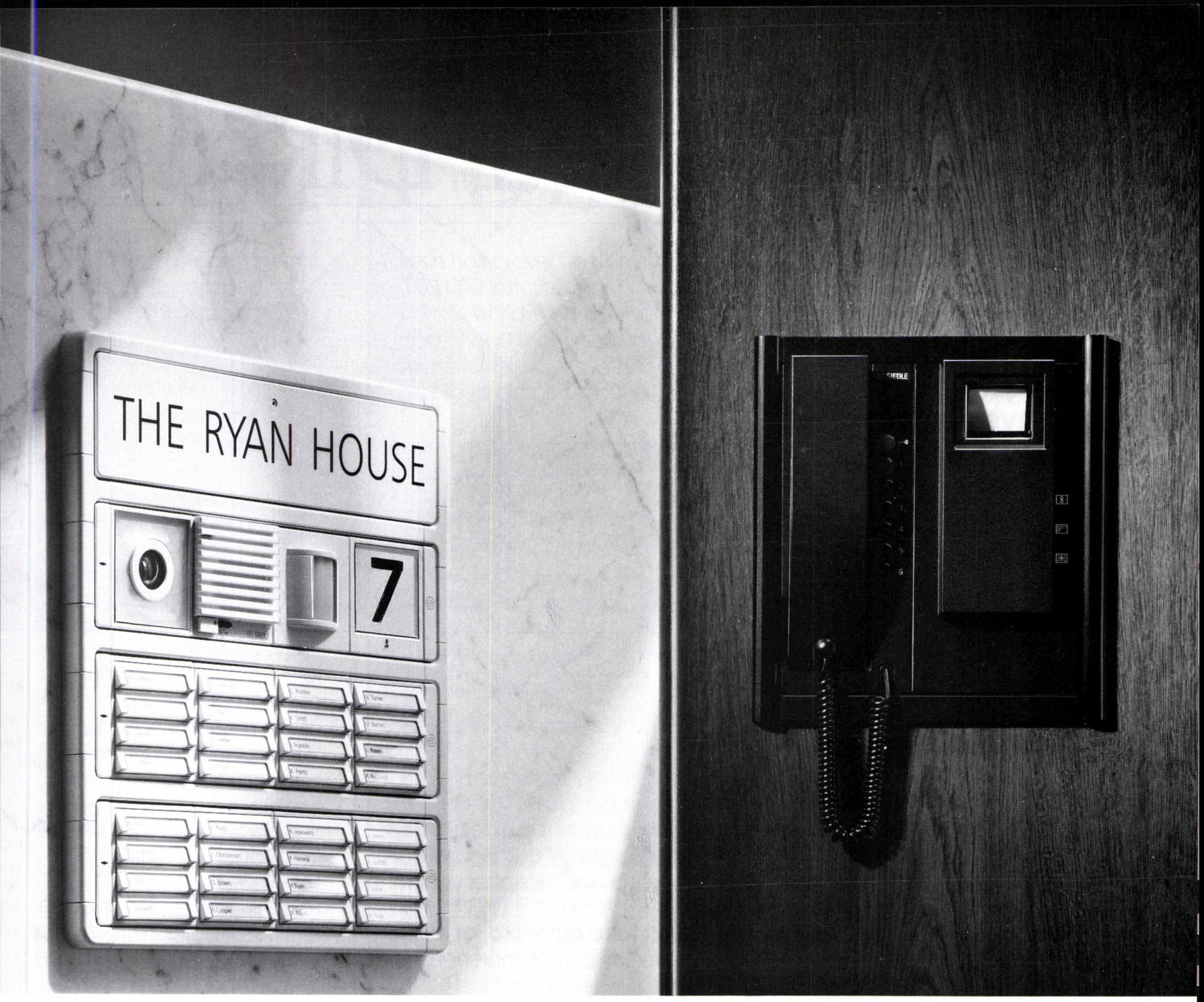

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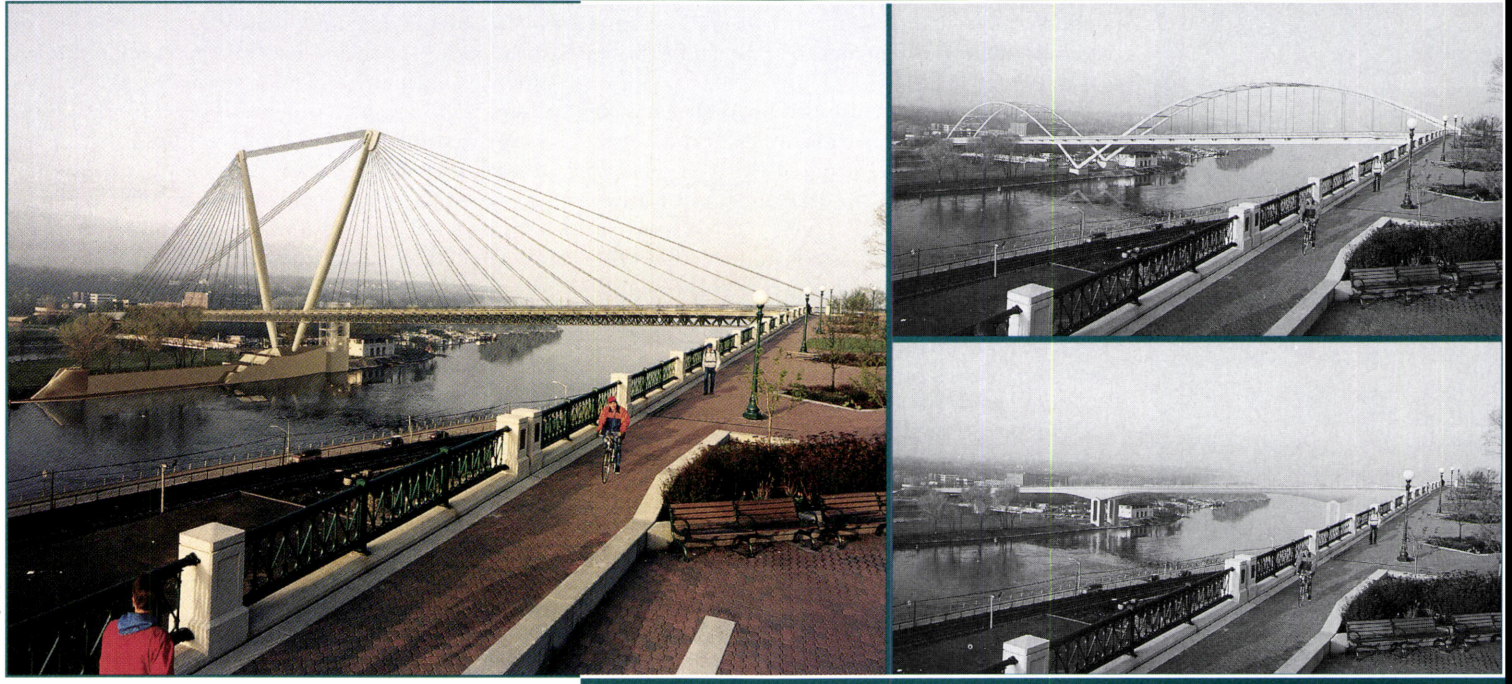


Photomontages by Macromedia

Three St. Paul bridges by James Carpenter: his favored V-mast (above), a double-arch suspension structure (top right), and the least expensive option, a simple girder design (above right).

St. Paul Debates Carpenter's Bridge Designs

As with Eero Saarinen's Gateway Arch in St. Louis, James Carpenter's proposed V-mast design for the Wabasha Bridge in St. Paul, Minnesota, has the potential to become a symbol of the city, an icon to muster the pride and cultural aspirations of a major Midwest center.

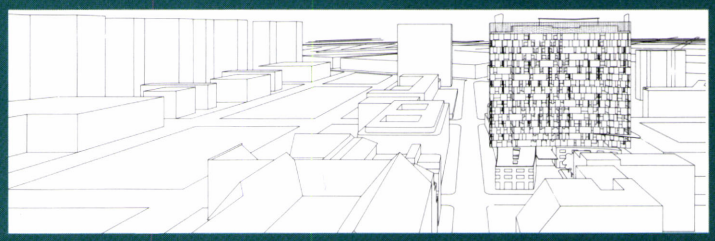
Or so claim the proponents of Carpenter's bridge, which would replace the aging Wabasha Street Bridge that crosses the Mississippi in downtown St. Paul. In 1987, the existing bridge was determined to be structurally unstable and unrepairable, leading to a six-year discussion of what kind of bridge to build.

When running for mayor in 1989, Jim Scheibel made the Wabasha Bridge an important part of his campaign. If elected, he said, he would include from the outset an artist as part of the project design team. He won the election and made good on his promise by establishing a task force to review artists' proposals for the new bridge.

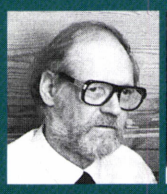
A list of 70 respondents was pared down to five finalists: Carpenter, Alice Aycock, Santiago Calatrava, May Sun, and Philip Rickey. Calatrava withdrew at the last minute, saying the $20-million budget was inadequate to produce the bridge the city wanted (a prediction later proved true). The winning proposal came from Carpenter, a New York artist trained in architecture and known for his work with glass (P/A, March 1988, p. 112). When his designs were unveiled earlier this year, the controversy began in earnest.

Of Carpenter's proposed designs (the Federal funding process requires a choice of three schemes), the cheapest – a plain-looking girder design – costs $32 million. The artist's preferred choice, which uses a V-mast cable stay configuration, would cost about $55 million. The third design, a double-arch sus-

10.93 News Report



P.28 In Projects, a "green" scheme for a Berlin office building by Louisa Hutton and Matthias Sauerbruch.



Collection of Alison and Peter Smithson

P.26 Obituaries for Reima Pietilä (left) and Alison Smithson (right), who died in August.

Norman McGrath

P.24 A park grows in Harlem – atop a much-debated sewage treatment plant.

Greg Lombardi, Anthony Poon, and Steve Straughn of Kirkpatrick Associates, Los Angeles, have won the design competition for the renovation and expansion of the public pier in Hermosa Beach, California. Second place was awarded to Alexander M. Ward, Venice, California, and third place went to Peter Everett Brown of Friday Architects, Philadelphia.

The National Endowment for the Arts has announced a two-year research project to determine how design works as a catalyst for learning and why it should be integrated into school curricula. Until November, the NEA is accepting nominations of teachers who use the design process effectively to help students read, write, and develop creative skills for problem solving and critical thinking. For more information, contact OMG, Inc., 117 South 17th Street, #2100, Philadelphia, PA 19103, or call (800) 883-3744 between 1 and 5 p.m.

The World Monuments Fund will present its Hadrian Award to Dominique de Menil this month in New York for her leadership in the preservation of art and architecture. A lifelong patron of the arts, de Menil created the Menil Collection museum and the Rothko Chapel in Houston. (For recent Menil Foundation efforts, see P/A July 1993, p. 87, and this issue, p. 9.)

Harry F. Kaufman has been named Dean of the School of Architecture at Southern College of Technology in Marietta, Georgia. The school is currently working toward accreditation for its five-year Bachelor of Architecture degree.

Future Systems of London recently received the Grand Award in the 11th Annual *Architect's Journal*/Bovis Construction Awards for its model of a visitor's center at Stonehenge. The program honors excellence in design and communication through the use of models, drawings, and graphic presentation.

pended bridge, is estimated at $40 million. In all cases, additional funding must be raised if the bridge is to be built.

Battle lines have been drawn between advocates of the bold, innovative V-mast design and conservatives who feel that the proposed bridge's costs are too high and its design too "far out" to fit with the city's image.

"The [V-mast] design is absolutely wonderful," says Christine Podas-Larson, director of Public Art St. Paul. "It's a genuine response to the river, a thoroughly thought-out proposal. This would be an innovative step forward for St. Paul." But Jack P. Maloney, who co-chairs the anti-V-mast River View Group, argued in the *St. Paul Pioneer Press* that "symbols do not breed substance" and that the extra $23 million could be better spent on libraries or housing.

Meanwhile, Scheibel has announced that he will not seek reelection. Several mayoral contenders have used the bridge controversy as political fodder, further complicating the project's future with the city council, which is expected to make a decision on the bridge in mid-October. **Bruce N. Wright** ■

The author, who lives in Minneapolis, is editor of INFORM Design Journal *and managing editor of* Public Art Review.

Harlem Gets a Sewage Plant...and a Park

After a 25-year wait, New York finally has its Riverbank State Park, a $129-million, 26-acre recreation center atop the North River Sewage Treatment Plant at West 145th and the Hudson River. Since 1968, when plans for the facility were formalized, four park schemes have been proposed to irate Harlem-area residents as a palliative for the anticipated odor and the loss of a half-mile of waterfront. This last one is the best.

In 1980, a limited competition awarded the job to New York architect Richard Dattner, who needed a politico's instinct to survive this project, which involved negotiations with Federal, state, and city sponsors, and community groups. Design criteria included the screening out of highway noise and north winds, security, building flexibility, and zoning for seasonal use. Access was also a critical issue, as the Henry Hudson Parkway lay in a trough between the city and the plant. Dattner's plan survived a round of value-engineering cuts forced by rising building costs, and construction finally began in 1987.

It was also in 1987 that the sewage plant began treating waste – malodorously, mocking the reassurances of experts and confirming the worst fears of nearby residents. Opposition to the whole scheme – park and plant – which had never been far below the surface, flared up again. And, despite a ten-year engagement, Dattner nearly lost control of the project when the state suddenly turned against the plan in a budget crunch. But the architect prevailed with an 11th-hour redesign that eliminated nonessentials and simplified roofing and cladding details.

Despite all the conflicting input, Dattner's plan manages to be both logical and pleasant. The community facilities are grouped around a courtyard in the center of the roof, leaving room for a waterside esplanade and play areas on the perimeter. The facilities themselves are impressive, including a football field, a gymnasium, a skating rink, a cultural center, and an Olympic-sized pool. Access is over an extension of 145th Street, which bridges the parkway. Since the park's opening on May 27, it has seen an average daily attendance of 10,000, swelling to almost twice that number on weekends.

Norman McGrath

Skating rink (left) and cultural center (right) at Riverbank Park.

Riverbank could set a useful precedent for negotiations concerning unpopular public works projects, whereby something would be given back to the community as a quid pro quo. The attendance figures support the park's promoters, who had noted the West Side community's lack of recreation facilities. Then, of course, there is the matter of the smell: with a breeze off the water, it is not too noticeable, and a new filtering system should help in 1996. **David Taylor** ■

The author, a second-year student at the Yale School of Architecture, was an intern at P/A this summer.

UC Architecture Programs Scuttled, Revised

Architectural education has suffered severe blows in recent months at two University of California campuses. At UC-San Diego, university officials have all but shut down the new School of Architecture. At UCLA, the Graduate School of Architecture and Urban Planning is threatened with a breakup in which the architecture program is to be wrapped into the School of Fine Arts, while the school of planning becomes part of a new center for public policy.

The budget problem in the deficit-plagued UC system, which is expected to lose $200 million this year, is the official reason for the demise of both schools, although observers say that university politics also played a role, since both the UC-San Diego program and the UCLA school were comparative newcomers to their campuses, had comparatively few alumni, and carried little political clout.

The closing at UC-San Diego is particularly painful for faculty, since the school had barely finished its first academic year. While UCSD officials have not officially announced the death of the school, the professional program has been scuttled, and about two dozen students have been transferred

to the corresponding programs in UCLA and UC-Berkeley. A small number of students in post-graduate programs may remain on campus, however.

The elimination of the architecture program is expected to trim $1 million from the UCSD budget, which needs to be slashed by $13 million. Adèle Naudé Santos, dean of the defunct school, said there will never be another school of architecture at UCSD. "Too much bad precedent has been set. After ten years of planning and excitement for this great dream, in the midst of an economic crisis, we were snuffed out," she told the *San Diego Business Journal.*

At UCLA, the announcement that university officials were considering the dissolution of the Graduate School of Architecture and Urban Planning (GSAUP) has been met with protest from students, alumni, and some faculty. Two years ago, an academic review of the school concluded that the planning and architecture faculty were at loggerheads with one another, and that the two programs had little reason to coexist.

The division of the planning and design programs represents a defeat for the late Harvey Perloff, the urban planner who created the school in 1968. Perloff had conceived GSAUP as a place where the two disciplines would cross-pollinate.

More recently, Dean Richard Weinstein and some faculty sought to further the marriage of architecture and planning by holding studios that involved students of both programs, and by launching a post-graduate certificate program in urban design. Ironically, however, after 25 years of existence, the school has not yet created a joint degree program between the two disciplines.

Weinstein says that despite the reorganization, which has yet to be approved by reviewing bodies, "ties between the architecture and urban planning programs will remain strong and ... become more focused and articulated." **Morris Newman** ■

Michael J. Crosbie

Kremlin building slated for restoration, with Kremlin wall and Lenin's Tomb in the foreground.

Yeltsin Plans to Renovate Kremlin Landmark

Russian President Boris Yeltsin is planning a major renovation of one of his country's chief landmarks, the 200-year-old Kremlin building that has served as Moscow's power center since shortly after the 1917 Communist revolution.

The renovation involves the historic Neo-Classical seat of government located off Red Square immediately behind the Lenin Mausoleum. The 18th-Century domed, triangular building, designed by Matvei Kazakov, currently houses Yeltsin's offices. Erected during the reign of Catherine the Great to house the Russian Senate, it also contains the apartment and study where Lenin lived and worked and subsequent Communist leaders ruled.

To help prepare them for the renovation, Yeltsin sent a six-member team of Russian architects and aides to inspect the official quarters of several Western heads of state, including the White House. The team visited Washington on July 14, then met with construction and architecture firms in New York to discuss possible collaboration on the landmark project. Talks are also being held with German and Austrian construction firms, the officials said, but no agreements have yet been reached on foreign participation.

Construction is expected to begin by December and take two to three years to complete, said Yeltsin aide Victor Savchenko. About 80 percent of the building's interior would be replaced with modern offices and the remainder restored, said Kremlin chief architect Boris V. Paluj. The exterior of the building, designated a landmark by UNESCO, will not be altered.

"It is high time to do this job so there will be a real office for the president that corresponds to the needs of the day," said Savchenko. The cost of the project is expected to run well over $20 million, and the expenditure will be subject to Russian parliamentary approval.

After Yeltsin's victory in a referendum on his reform program last April, the Russian leader decided to move rapidly to update the building, the officials said. A primary objective of the project would be to allow public access for art exhibitions and periodic viewing of the presidential offices.

The ancient Kremlin fortress has often been altered over the past eight centuries, and officials say that many of its interiors were inappropriately modified under Communist leadership. "The president is attaching great importance to the restoration of many things that have been demolished or ruined before," said Savchenko. **Michael Z. Wise** ■

The author, a freelance writer in New York, writes frequently about architecture for the New York Observer.

Lighting Designs Honored by IALD, *Interiors*

Five projects were recognized with Awards of Excellence in the tenth annual awards program sponsored by the International Association of Lighting Designers and *Interiors* magazine. Another 13 projects were selected for citations.

A seven-person jury including lighting designers, interior designers, and an architect chose the winners from among 95 entries. Winners of Awards of Excellence are:

- **The Palace of the Lost City, Bophuthatswana, South Africa, by lighting designers Luminae Souter Lighting Design, San Francisco, and architects Wimberly Allison Tong & Goo, Newport Beach, California;**

Nick Merrick, Hedrich-Blessing

100 E. Pratt Street lobby.

- **100 E. Pratt Street lobby, Baltimore, by lighting designers Fisher Marantz Renfro Stone, New York, and architects Skidmore, Owings & Merrill, Washington, D.C.;**
- **Islamic Cultural Center, New York, by Fisher Marantz Renfro Stone, New York, and Skidmore, Owings & Merrill, New York;**
- **"Terrors of the Deep," Sea World, Orlando, Florida, by Randy Burkett Lighting Design, St. Louis, and architects Peckham, Guyton, Albers & Viets, St. Louis;**
- **UCLA Powell Library Staging Facility, Los Angeles (P/A, June 1993, p. 104), by architects and lighting designers Hodgetts & Fung Design Associates, Santa Monica, California, with lighting consultants Patrick B. Quigley & Associates, Torrance, California.** ■

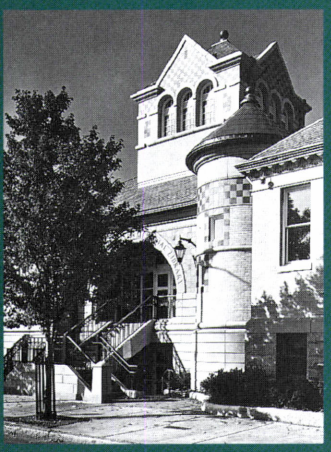
Eight Library Buildings Chosen for Excellence

The AIA and the American Library Association have announced the winners of the 1993 Awards of Excellence for Library Architecture. Four expansions, two new buildings, a temporary facility, and an adaptive reuse comprise the winners in the biennial awards program.

This year's jurors included architects Ben Weese of Weese Langley Weese, Chicago; Robert Herman of Herman Stoller Coliver Architects, San Francisco; and Mark Simon of Centerbrook Architects, Essex, Connecticut. Winners are:

Hope Library.

- **Hope Library, Hope, Alaska, by Krochina Architects, Anchorage, Alaska;**
- **UCLA Powell Library Staging Facility, Los Angeles, by Hodgetts & Fung Design Associates, Santa Monica, California (P/A, June 1993, p. 104);**



Parlin Memorial Library.

- **Parlin Memorial Library, Everett, Massachusetts, by CBT/Childs Bertman Tseckares, Boston;**

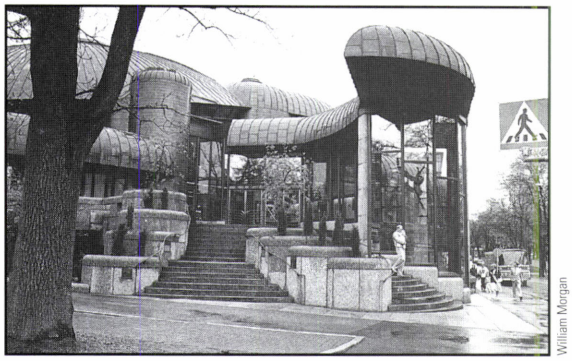
Reima Pietilä 1923–1993

Reima Pietilä, Finland's most important postwar architect (excepting the legendary Alvar Aalto), died in Helsinki on August 26, just one day after his 70th birthday.

A philosopher-poet-theorist-teacher, the controversial and enigmatic Pietilä was born in Turku, educated at the Institute of Technology in Helsinki, and served in the army during World War II. He set up private practice in 1957 and was joined in partnership by Raili Paatelainen, whom he married in 1961. Together, they won a number of major competitions, including Kaleva Church in Tampere (completed in 1966), the student center at the Institute of Technology at Otaniemi (1966), the main library in Tampere (1986), and Mica Moraine, the residence of the President of Finland (under construction – see P/A, Sep. 1992, p. 112).

With its sculptural forms, traditional materials, and metaphorical allusions, the Pietiläs' anthropomorphic expressionism is closer to Aalto's organic work than to the dominant Finnish Modernism. Otaniemi's massive boulders suggest a cave, while the granite and copper library in Tampere and the undulating glass walls of the president's house seem outgrowths of the glacial landscape – echoes from the forest primeval.

Pietilä's output was small, in part because he taught for many years (including a year at Washington University, St Louis, in 1966), and perhaps because he attempted to divine a new morphology of architecture. Furthermore, his few works are not easily accessible – Tampere, the home of two of his masterpieces (the library and Kaleva Church), is hardly in the architectural limelight, even in Scandinavia. Ironically, Pietilä has not always been well served by his biographers, who have tended to get tangled in his cosmic theory rather than respond viscerally to his buildings. Beyond all the debate over the "Arctic Shaman," as Pietilä was sometimes known, there remains a handful of timeless monuments – works of art that any child could understand. **William Morgan** ■



William Morgan

Pietilä's library at Tampere, Finland.

The author, a historian at the University of Louisville, writes frequently on Finnish architecture.

Alison Smithson 1928–1993

British architect Alison Smithson, an outspoken advocate of Modernism's social program, died on August 16 in London at age 65. As founding members of the Independent Group (IG) and Team 10, Smithson and her husband, architect Peter Smithson, confronted what they saw as architecture's failure to respond to the changing forces of everyday life.

The IG, a group of artists, architects, and critics brought together by a common fascination with the products of mass culture and disdain for the social elite, advocated an inclusive, consumer-driven, media-based society; the group, active in the 1950s and 1960s, is considered to have planted the seeds for the rise of Post-Modernism. The Smithsons, joined by an international group of young architects, also challenged the charter of CIAM, the Modern Movement's planning body. Known as Team 10, the group presented urban planning ideas that directly responded to the lifestyles of city dwellers.

Smithson was born Alison Margaret Gill in Sheffield, England, in 1928, and studied architecture at the University of Durham. She married Peter Smithson in 1949, and they began their practice in the following year. Their first major commission, the Hunstanton School (1950) in Norfolk, was a pioneering effort in Brutalism. The Smithsons' call for a more synthetic relationship between people and architecture, was successfully achieved, most agree, with the Economist Building in London. Completed in 1964, this grouping of three octagonal buildings is composed of a pedestrian platform with porticoes and streets meeting at different levels. Their last major work was the Robin Hood Gardens housing block, completed in 1973 in the Docklands.

Alison Smithson wrote *Portrait of the Female Mind as a Young Girl* (1966) and edited *Team 10 Meetings 1953–1984* (1991). The Smithsons also coauthored several books.

By the mid-1970s, the Smithsons had become marginalized. They "became historical footnotes while still practicing and teaching," says Hugh Pearman of London's *Sunday Times*. Nonetheless, the contributions to architectural discourse made by Alison Smithson and her husband, who survives her, have had a significant and lasting impact. **Abby Bussel** ■

Architectural Association/©J. Baily

The Smithsons' Economist Building in London (1964).

Washington Report

by Thomas Vonier

As the Clinton administration moves ahead with some hoped-for efforts to turn attention toward American cities, at least some focus is being placed on buildings and – maybe – matters of architecture.

With support from the Justice Department and sponsorship from a long list of noted private urban organizations, the AIA/ACSA Council on Architectural Research will hold a conference in Washington this winter, titled "Secure and Livable Communities: Crime Prevention through Environmental Design."

Advance notices promise to show "how buildings and communities can be designed to reduce crime and improve the quality of life, by treating the built environment not simply as a setting in which crime occurs, but also as a means to deter criminal activity and enhance safety and security." To people who have been around Washington's architectural research community long enough, this recalls Oscar Newman's pioneering work on "defensible space" during the 1960s and 1970s (P/A, Oct. 1972, p. 92).

Some critical differences have emerged in the intervening years. Newman's work addressed problems facing Federally subsidized public housing developments (which were still being built then) in center cities; the AIA/ACSA sessions will examine measures for today's urban and suburban battlegrounds: shopping malls, parking structures, office buildings, parks, streets, and schools.

Newman and his HUD clients were concerned with ways to make residential communities safer through design. Today, most attention in the physical security business is being directed toward single commercial and institutional buildings or, less often, sealed and self-contained complexes. When design comes into play at all, it tends to be on the level of programming vantage points for surveillance. This industry – and it is a large one – seems to have given up on the world outside the controlled perimeter.

There are exceptions (Rockefeller Center in New York comes to mind; there, property management's sphere of concern extends to the subway station and nearby public sidewalks), but many big-city downtown street corners, sidewalks, and public spaces are now deserted or are the domain of outcasts, outlaws, and the mentally deranged, while "ordinary citizens" scuttle warily from one stronghold to another.

On a related note, architecture professor and author Witold Rybczynski sounds puzzlingly hopeful in "The New Downtowns," an article in the May 1993 issue of *The Atlantic*. He describes upbeat signs of "real life" he sees in new center-city shopping malls: such things as cinemas, post offices, counseling centers, loitering teenagers, video arcades, amusement rides, "reasonable espressos" and, generally, "people rubbing shoulders in a shared space." Saying that such malls have the potential to become "new mini-cities," Rybczynski envisions their incorporating housing, a wider array of community functions and – as he notes was done successfully in Baltimore's Harborplace, "traditionally urban" outdoor spaces.

But some of these new downtown places – and some of the design approaches likely to be advocated at the Research Council conference – are aptly described as establishing police control zones or secure enclaves; these may not be what cities need.

Crime, poverty, the homeless, and a host of other street woes have spawned a new breed of closely policed private indoor urban spaces; they serve to divide the province of the "haves" from whatever is left to the "have-nots."Outside these protected zones, underlying problems remain unresolved – and worse, ignored. Some people find these places attractive and even "fun," but to reach them one must still run the gauntlet through an increasingly dangerous and rundown public domain.

Controlling access to public and semipublic places involves issues of fairness, standards, and criteria: Who is permitted to enter and who is denied? What behavior is unacceptable? In the absence of clear or compelling law and public policy, most such judgments are left to private security personnel.

And how are they doing? A recent issue of a monthly magazine for retail store security managers and "loss prevention specialists" examines how center-city shopping malls deal with the homeless who camp on public sidewalks at their doorsteps: one mall issues free bus tickets to a nearby city, and another provides free transportation to homeless shelters in another neighborhood. A photograph shows security personnel handing out free meal tickets for a fast-food restaurant in another part of downtown.

With countless deranged people and armed thugs roaming real city streets, lawful citizens may be inclined to accept – or at least not to resist very much – the loss of a little "real life" and a few invasions of privacy. But at stake in these tightly controlled "private" public indoor shopping streets and office complexes may be no less than urbanity itself.

Loss of agreeable (or at least interesting) street life was not a hazard associated with suburban shopping malls; there was usually no street life there to begin with. But in downtowns, much of the activity and vitality that once characterized public streets and parks is now marginal, moribund, or simply gone – it is moving indoors, sanitized to the point of banality, to secured enclaves.

To regain a sense of security, if not quite the real thing, American cities seem too ready to embrace private police methods and walled enclaves – even if it leaves more than a few unfortunates on the outside looking in, and even if the semblance of anything genuinely urban is lost in the process.

Must the necessary quest for security result in an anti-urban collection of more or less "lively" control zones, linked by mean streets and needle parks? One hopes the architecture profession will have much to contribute to this important renewal of interest in our ailing center cities. ■

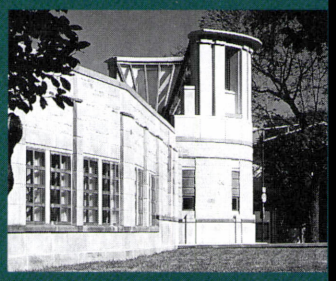
Library Awards

(continued from previous page)

- **Science Library, University of California at Santa Cruz, by Esherick, Homsey, Dodge & Davis, San Francisco;**
- **MIT Library of Art, Architecture, and Planning, Cambridge, Massachusetts, by Schwartz/Silver Architects, Boston (P/A, May 1991, p. 90);**

Howell Carnegie District Library.

- **Howell Carnegie District Library, Howell, Michigan, by Osler/Milling Architects (now David W. Osler Associates) and associate architect Quinn Evans, both of Ann Arbor, Michigan;**



Firestone Library.

- **Harvey Firestone Library addition, Princeton University, Princeton, New Jersey, by Koetter, Kim & Associates, Boston;**
- **Albuquerque Academy Library and Science Complex, Albuquerque, New Mexico, by Shepley Bulfinch Richardson & Abbott, Boston, with associate architect Van H. Gilbert Architect, Albuquerque.** ■

Projects

"Green" Berlin Highrise

In a competition-winning addition to the Modern headquarters of a Berlin housing agency, London architects Louisa Hutton and Matthias Sauerbruch seek to reconcile the conflict of pre-Modern and Modern urbanism in the city. Their design is also intended as a model energy-saving highrise.

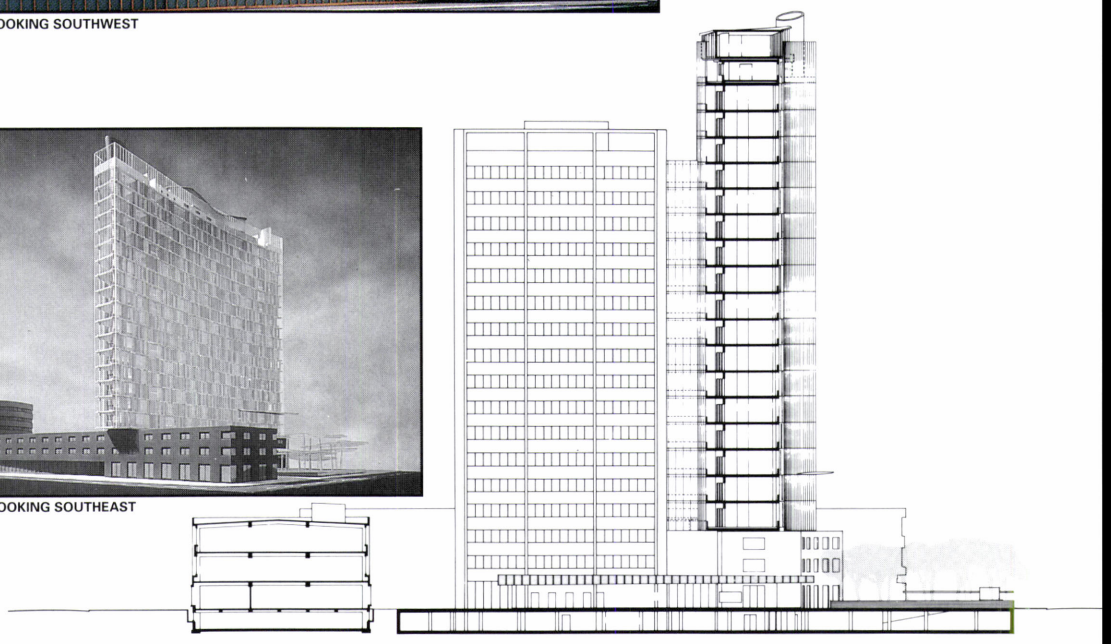
The project adds approximately 200,000 square feet to a 16-story 1950s office tower. A three-story bar building with a travertine façade and punched windows will sit between the existing tower and the street; this structure will contain stores at street level and high-traffic offices above. A 21-story glass office tower will connect to the existing tower. The architects say the composition will "enhance the appearance of the existing building through framing ... and anchor the floating object into the street plan."

As for energy-saving features, the highrise uses a glass skin to maximize daylighting. The west wall features a dual glass skin to create a solar chimney effect, "drawing fresh air throughout each floor through openings on the opposite side." During the summer, cooler nighttime air can be passed from the flue through floor slabs to "freshen the air for the following day." Sliding shutters of perforated metal help regulate daylight penetration on the west side.

Construction on the project will begin this fall; consulting engineers are Ove Arup & Partners.

MODEL VIEW LOOKING SOUTHWEST

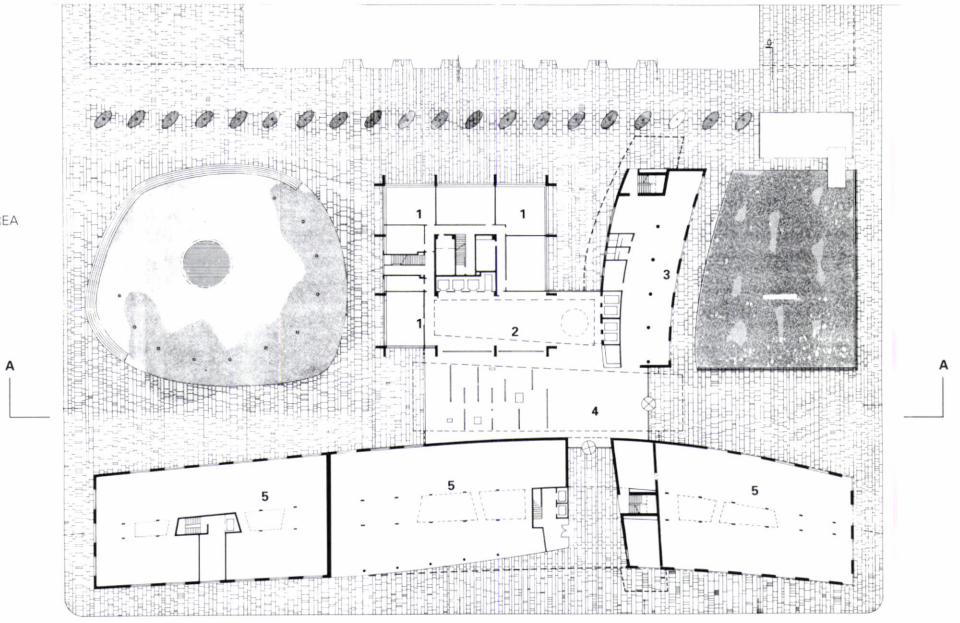
MODEL VIEW LOOKING SOUTHEAST



SECTION A-A

40'/12m

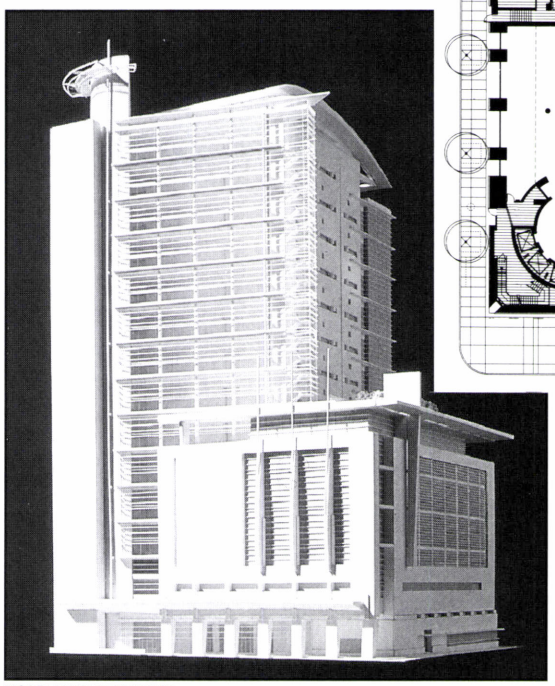
1 EXISTING BUILDING
2 LOBBY
3 TENANT CENTER
4 EXHIBIT/CONFERENCE AREA
5 RETAIL



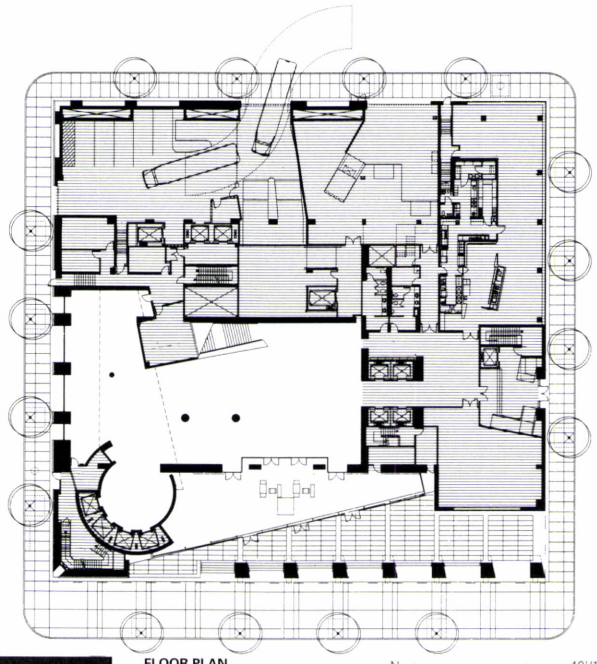
FIRST FLOOR PLAN

N

100'/30m

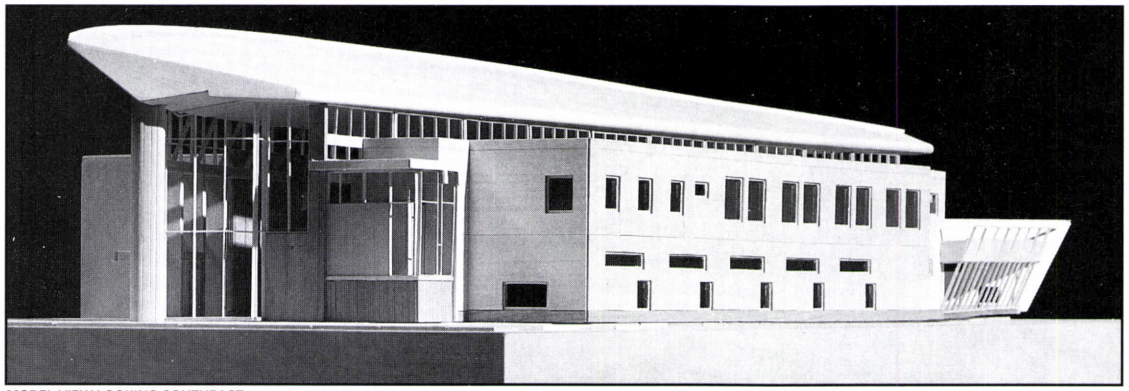


MODEL VIEW FROM WEST



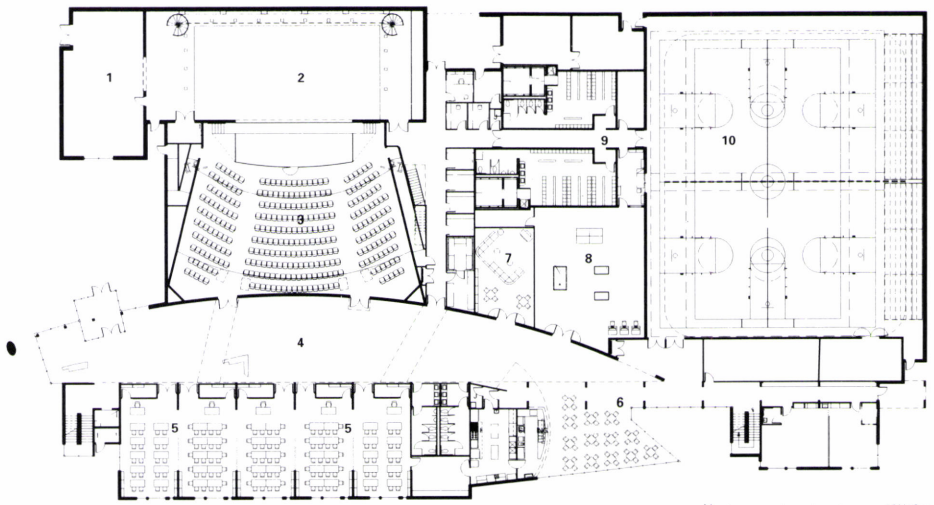
FLOOR PLAN

N ← 40'/12m



MODEL VIEW LOOKING SOUTHEAST

1 SCENERY/PROPS
2 STAGE
3 AUDITORIUM
4 GALLERY
5 CLASSROOM
6 DINING
7 TV ROOM
8 GAME ROOM
9 LOCKERS
10 GYMNASIUM



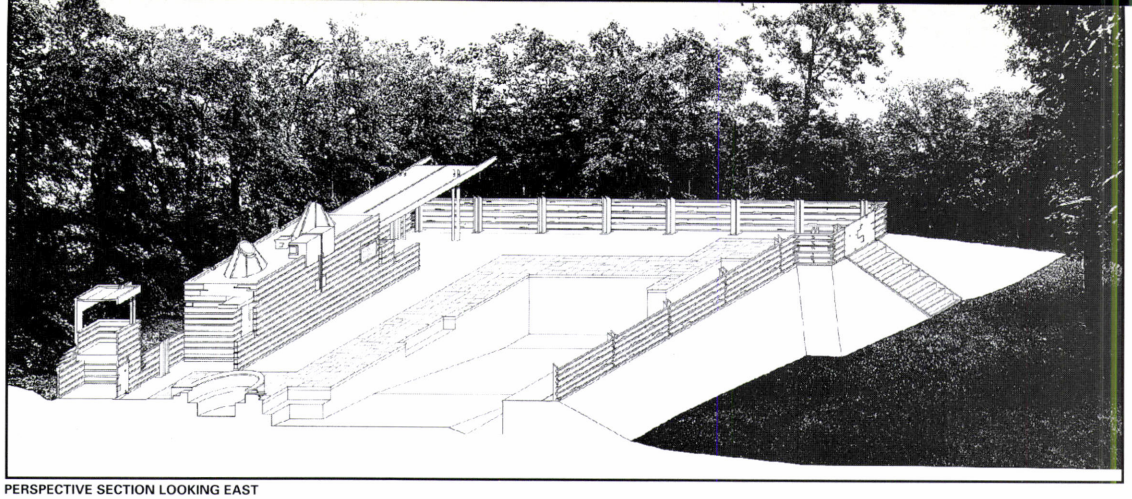
FIRST FLOOR PLAN

N ← 40'/12m

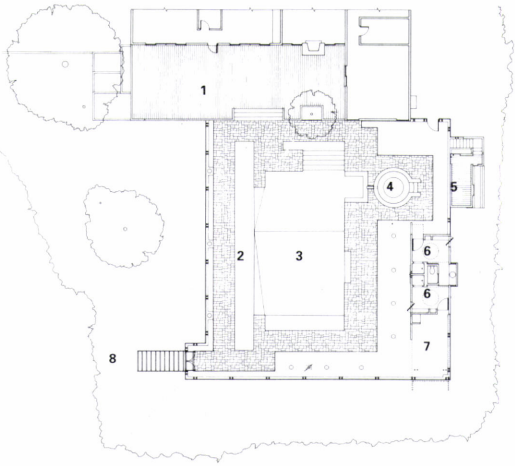
A Long Island Poolhouse

What does it say about the times when some of the most interesting designs we've seen lately are poolhouses? (See Album, P/A, June 1993, p. 129.) This poolhouse project in Amagansett, New York, by New York architect George Ranalli, turns the backyard of a builder's contemporary into an elevated outdoor room.

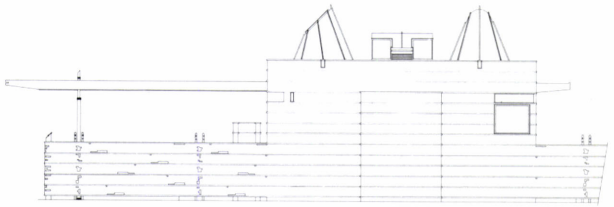
Set on an earth berm, the project includes a poolhouse, an equipment room (with sun deck above), a covered terrace, and a fence, all of which are, Ranalli says, "conceptually part of the same structure." The elements are tied by horizontal boards and battens in Douglas fir. The roof of the poolhouse is populated with copper skylights in a variety of forms.



PERSPECTIVE SECTION LOOKING EAST



FLOOR PLAN N 40'/12m



NORTH ELEVATION, POOL HOUSE 40'/12m

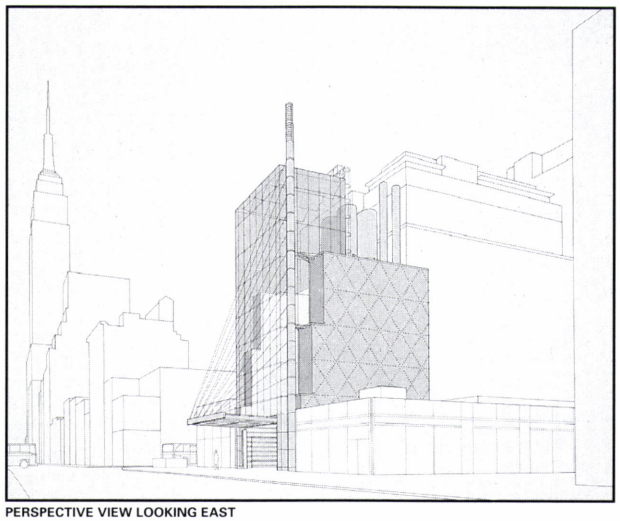
1 EXISTING DECK
2 LAP POOL
3 POOL
4 PLUNGE POOL/SPA
5 SUN DECK
6 CHANGING ROOM
7 COVERED TERRACE
8 GARDEN ENTRY

New Penn Station Entrance

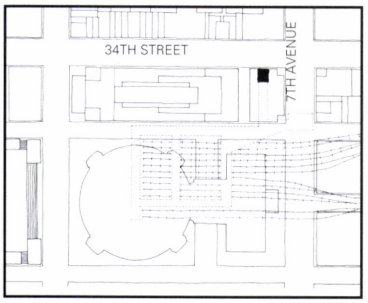
The recent proposal to reuse a Beaux-Arts post office next to New York's grim Penn Station as an Amtrak terminal (P/A, June 1993, p. 23) was of little comfort to the 40,000 daily commuters on the Long Island Railroad, who would continue to use the existing station. But they will surely be cheered by a new L.I.R.R. entrance on 34th Street, scheduled for completion next year.

Architects R.M. Kliment & Frances Halsband of New York say that their goal is to "create a new and welcoming gateway to New York City" with the entrance, which leads to an escalator that in turn leads to an underground concourse.

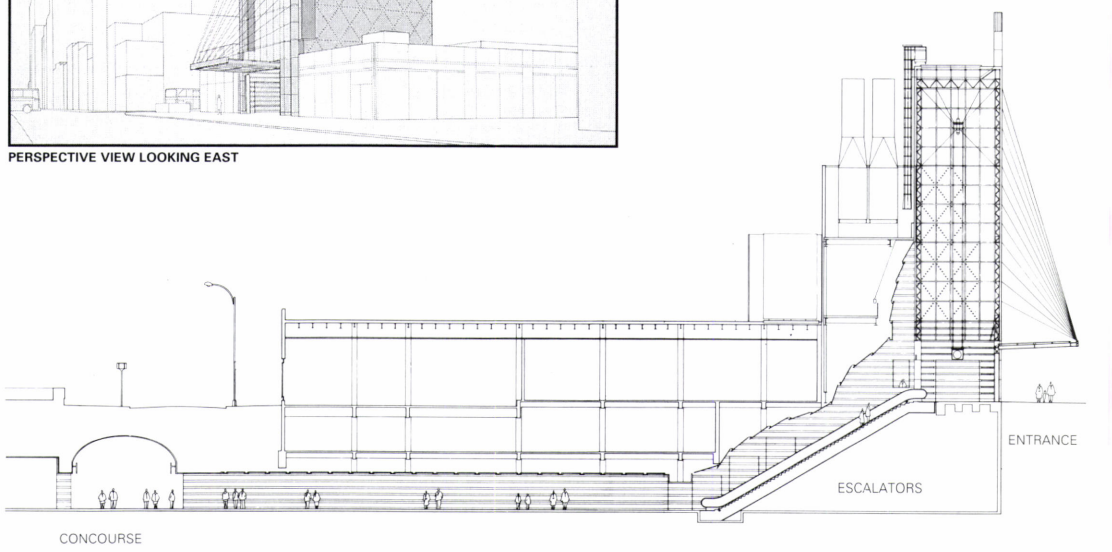
The entrance is marked by a 100-foot steel-and-glass tower that is transparent by day and brightly lighted by night. The other elements in the composition are a diaper-patterned brick party wall and a wide, steel-and-glass canopy suspended over the street. ■



PERSPECTIVE VIEW LOOKING EAST

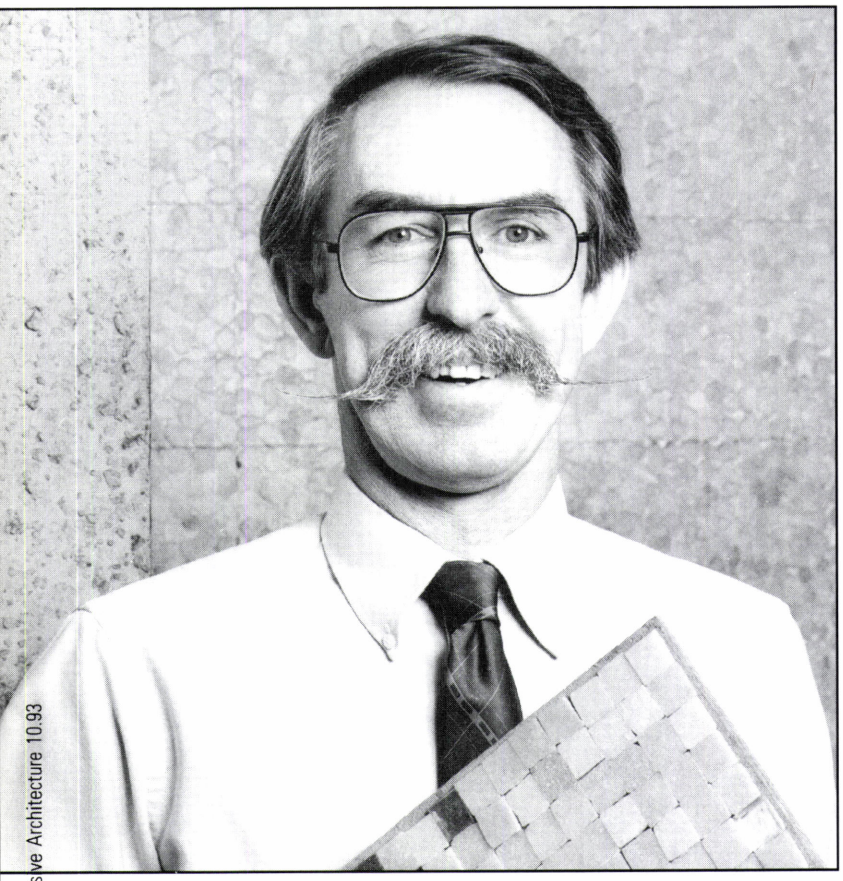


SITE PLAN N 400'/120m

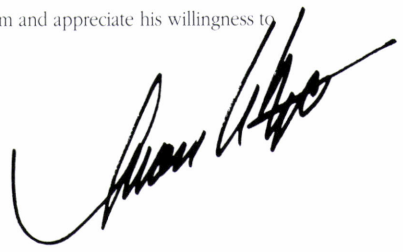


SECTION THROUGH ENTRANCE AND TUNNEL 40'/12m

DPIC's taught us a lot about communicating with our clients.



Tom Zartl is principal of Heaton/Zartl & Associates, a 44-year-old architectural firm based in Pasadena, California. He has been president of the Pasadena and Foothill chapter of the AIA and is a director of the California Council of the AIA. We value our relationship with his firm and appreciate his willingness to talk to you about us.



I often give clients DPIC materials to back up a point. It's part of making sure my clients get their questions answered. When we're negotiating a contract, we take the agreement paragraph by paragraph.

One of the paragraphs in almost every Heaton/Zartl contract is a limitation of liability (LOL) clause, limiting the amount of his firm's risk to $50,000 or the fee. DPIC has made information on using LOL available to design professionals for over twenty years.

We attempt to get limitation of liability into every agreement we have. We're very successful. It comes down to economics – we charge more if they don't take LOL, because it's going to cost us more.

Heaton/Zartl & Associates has obtained limitation of liability in 86% of its contracts over the last five years.

The limitation of liability clause is already in our word processor, so it's easy for us to use. The credit money we get back from DPIC is a nice incentive, but we'd limit our liability anyway.

In 1992, Heaton/Zartl received a 25% reduction in its professional liability insurance premium from DPIC because of the architectural firm's use of limitation of liability clauses.

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Calendar

Exhibitions

Rebuilding After the Oakland Fire
Through October 25

San Francisco. "New Homes: Architecture for Rebuilding in the East Bay Hills," based on an exhibition at LIMN (P/A, Mar. 1993, p. 22), includes models and drawings of new houses in Oakland and Berkeley. San Francisco International Airport.

The Meaning of Home
Through December 31

Washington, D.C. "La Casa de Todos Nosotros" (A House for Us All) is an exhibition of 12 installations that "evoke both the physical and emotional fabric of houses." The installations represent Puerto Rican artist Antonio Martorell's associations with houses, ranging from recollections of his childhood homes to issues of migration and eviction. National Building Museum.

Piranesi et al.
Through January 2, 1994

Montreal. "Exploring Rome: Piranesi and His Contemporaries," organized by the Pierpont Morgan Library in New York, includes 14 prints recording temporary structures built in Rome between 1722 and 1778. Canadian Centre for Architecture.

Young Washingtonians
October 8–November 5

Washington, D.C. "In Response" is the Metropolitan Forum of Young Architects' second annual show of work by Washington-area architects who are ten years or fewer out of college. Urban Arch Gallery.

Expressionist Utopias
October 21–January 2, 1994

Los Angeles. "Expressionist Utopias: Paradise, Metropolis, Architectural Fantasy" will explore how the Expressionist generation of artists and architects in Post-WWI Germany "transformed its expectations of a natural paradise into the promise of a man-made cultural utopia." Work by Hans Poelzig, Erich Mendelsohn, Fritz Lang, Paul Klee, and Wassily Kandinsky is included; the exhibition installation is designed by Coop Himmelblau.
Los Angeles County Museum of Art.

Acconci and Holl
October 23–December 4

New York. This collaborative, site-specific project by artist Vito Acconci and architect Steven Holl will "radically transform" the Storefront for Art & Architecture's funnel-shaped space. Storefront.

P/A's New Public Realm
November 1–30

Boston. This traveling exhibition of visionary public works proposals submitted to P/A's ideas competition (Oct. 1992, p. 73) is supplemented by photos of neglected spaces, substandard housing, and decrepit infrastructure. For symposium information, contact Lucy Pedler (617) 547-8120.
Boston Public Library.

Competitions

African Burial Ground Memorial
Registration deadline October 15, entry deadline January 14

New York. The New York Coalition of Black Architects/National Organization of Minority Architects, in collaboration with the Municipal Arts Society and other organizations, is sponsoring an ideas competition to preserve and commemorate New York City's 18th-Century African Burial Ground. Contact NYCOBA/NOMA, Box 5623, Manhattanville Sta., NY 10027.

CSI Specs
Application and project manual deadline November 2

Alexandria, VA. The Construction Specifications Institute's 1994 Specifications Competition, honoring professionals who prepare quality construction documents. Contact CSI, 601 Madison St., Alexandria, VA 22314-1791 (703) 684-0300.

Theater Design
Submission deadline November 5

New York. The first USITT Annual Architectural Awards Program for theater design, sponsored by the United States Institute for Theater Technology, has been announced. New construction, renovation, and restoration projects completed since January 1, 1986 by architects practicing in the U.S. or Canada

(continued on page 34)

Calendar *(continued from page 33)*

may be entered. Contact Architecture Commission, USITT, 10 W. 19th St., Ste. 5A, New York, NY 10011-4206 or call David Hartung (212) 807-7171.

Unbuilt Architecture Awards
Submision deadline
November 8

Boston. The second annual Unbuilt Architecture Awards, sponsored by the Boston Society of Architects, is divided into two categories: Academic/Theoretical projects and Sponsored projects for real clients. Contact Unbuilt Architecture Awards, BSA, 52 Broad St., Boston, MA 02109.

Urban Gardens
Proposal deadline
November 15

New York. The Public Art Fund, a nonprofit organization founded in New York in 1977, has announced "Urban Paradise: Gardens in the City," an open call to artists, architects, and landscape architects for conceptual proposals for real sites. Contact Public Art Fund, Inc., 1 E. 53rd St., New York, NY 10022 (212) 980-4575 or FAX (212) 980-3610.

Public Space in the New American City
Registration deadline
December 3, submission deadline March 1, 1994

Atlanta. The "Public Space in the New American City/Atlanta 1996" competition, sponsored by the Architecture Society of Atlanta and the Corporation for Olympic Development in Atlanta, is part of a design initiative for the creation of public space/installations in Atlanta; projects are expected to be completed prior to the 1996 Olympic Games. Contact ASA/Competition, PO Box 19861, Atlanta, GA 30325 (404) 723-7210.

Traveling Fellowship
Registration deadline
December 6

St. Louis. Established in 1925 in the name of James Harrison Steedman, a 1889 graduate of Washington University's School of Engineering, the Steedman Traveling Fellowship is a $20,000 award for foreign travel and study by an architect. All architects are eligible for the fellowship for a period of eight years or fewer after receipt of their professional degree. Contact Steedman Governing Committee, Washington U., School of Architecture, Campus Box 1079, One Brookings Dr., St. Louis, MO 63130-4899.

Conferences

The Changing Workplace
October 27–28

Long Island City, NY. Designed to address "the changing face of the American Workplace," the Home Sweet Home conference includes educational sessions and a furniture and building materials show. Contact IDCNY (718) 937-7474.

Firm Management
October 27–29

New Orleans. The Professional Services Management Association's 1993 national convention will address the "future of architecture, engineering, and environmental consulting firm management." Contact PSMA (704) 521-8890.

Build Boston
November 17–19

Boston. The 9th Annual U.S. Design and Construction Industry Convention, Build Boston, is a regional conference offering 100 educational sessions and exhibits of environmentally responsible, interiors, ADA, and renovation products. Contact Build Boston, PO Box 73, Hyannis, MA 02601 (800) 447-7112 ext. 301.

Healthcare Design
November 18–21

Chicago. "DESIGN: Contributing to the Quality of Healthcare" is the theme of the sixth National Symposium on Healthcare Design. A trade show and educational sessions and presentations are offered. Contact Debra J. Levin, National Symposium on Healthcare Design, 4550 Alhambra Way, Martinez, CA 94553 (510) 370-0345.

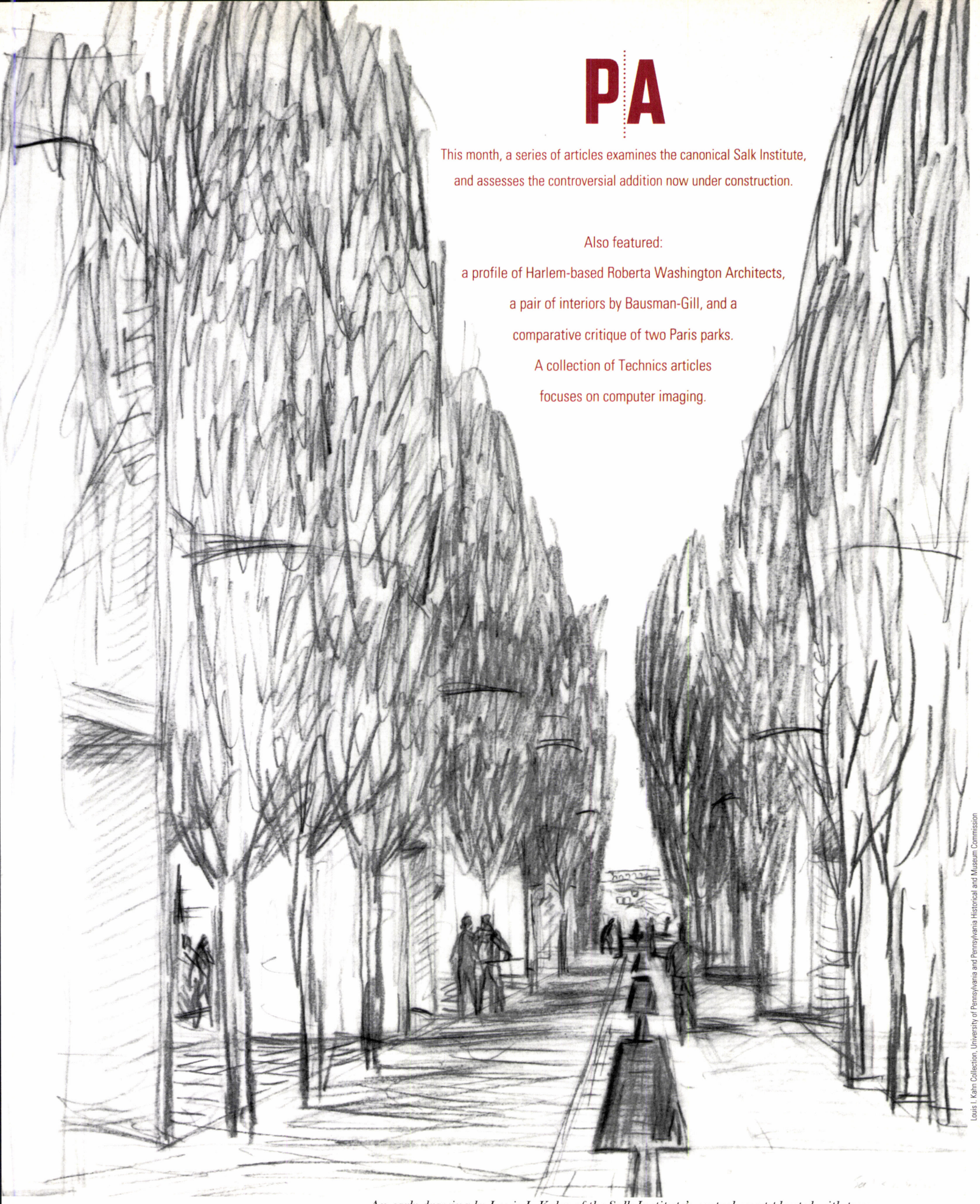
Restoration '93
December 6–8

Boston. This conference and trade show will address the restoration of building exteriors and interiors, monuments, public structures, parks and landscaping, decorative arts, books, and cultural artifacts. Sponsored by RAI Exhibition Center of Amsterdam and a Massachusetts consultancy, the conference program is organized by the Association for Preservation Technology. Contact E. Glew International (617) 933-9699 or FAX (617) 933-8744. ■

PA

This month, a series of articles examines the canonical Salk Institute, and assesses the controversial addition now under construction.

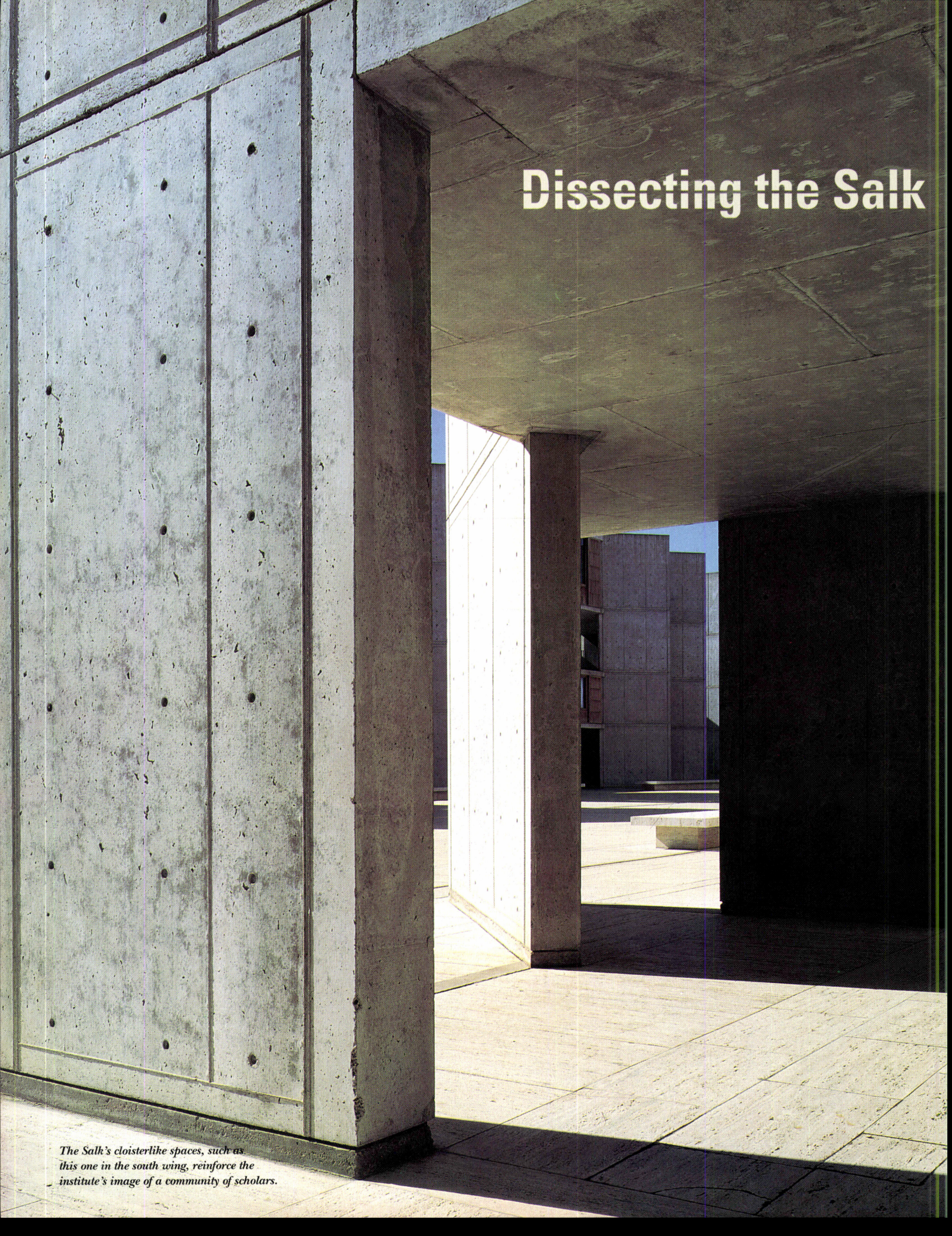
Also featured:
a profile of Harlem-based Roberta Washington Architects,
a pair of interiors by Bausman-Gill, and a
comparative critique of two Paris parks.
A collection of Technics articles
focuses on computer imaging.



Louis I. Kahn Collection, University of Pennsylvania and Pennsylvania Historical and Museum Commission

An early drawing by Louis I. Kahn of the Salk Institute's central court planted with trees.

Dissecting the Salk



The Salk's cloisterlike spaces, such as this one in the south wing, reinforce the institute's image of a community of scholars.

Grant Mudford

An experiment in process, Louis Kahn's landmark of Modernism and laboratory design is about to undergo an acid test of its architecture.

A series of articles examines this canonical building and its controversial addition.

It has been likened to the Acropolis and Stonehenge. For the past 30 years it has consistently turned up on architects' lists of their most revered buildings. Now, with an addition under construction, Louis Kahn's Salk Institute, like a character in Greek tragedy, appears a victim of its own success, as those who claim to know it and love it best quarrel over its future.

When the Salk Institute was presented with the AIA's 25-Year Award last year, James Ingo Freed, the jury chairman, observed that Kahn's masterwork "goes beyond architecture into a mystic realm." Like pilgrims to a shrine, architects travel to La Jolla, California, to see a vision – an affirmation of their faith in architecture's cosmic power. The Salk's thin, aqueous channel, flowing west to the horizon, is for the pilgrims like the waters of Lourdes. They stand at the eastern edge of the open plaza, snap their pictures, and return to their boards to do (or at least try to do) likewise.

But this building on a cliff, perched as if to take flight over the Pacific, is much more than an architectural landmark. It is a working laboratory, a second home to more than

500 scientists, students, and support staff. They appreciate the building for reasons that are of little interest to the architect-tourists: flexible lab spaces, an abundance of light and views, opportunities for casual meetings in which shoptalk and insights are shared, private spaces where one can retreat and think.

This distinction puts the Salk into a class of its own. Canonical works of architecture, particularly Modern landmarks, are usually given special dispensation for their functional failures. The Guggenheim Museum, for example, is a disaster as a picture gallery but a monument to Wright's genius. The Yale Art & Architecture building is substandard for its purposes but Rudolph's supreme triumph. The Salk breaks this mold. It leads a double life as a Modern milestone and an exemplary building of its type.

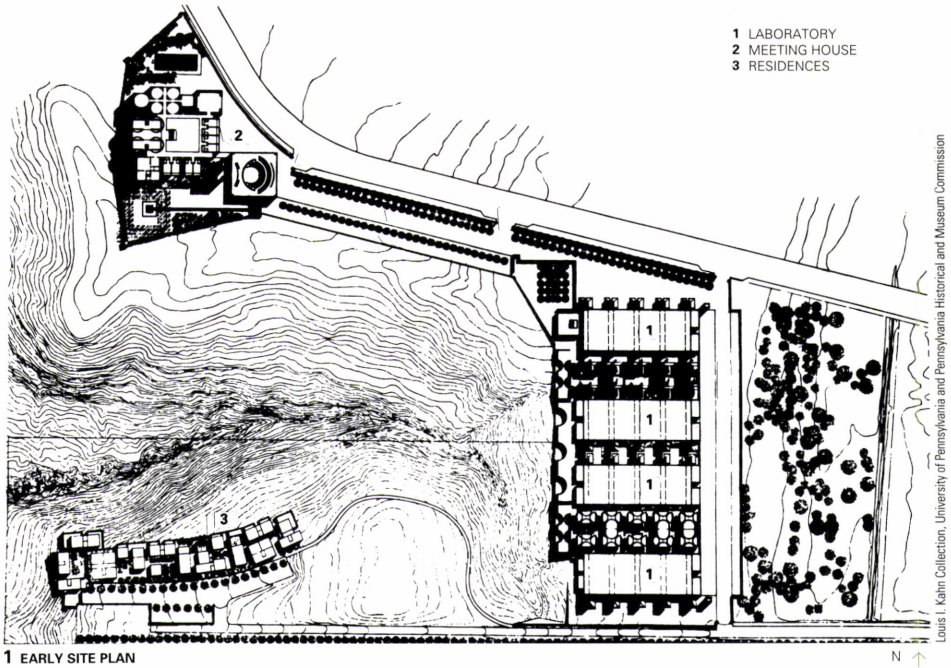
"The Salk is a watershed laboratory for our time," says Dr. Richard Rietz, a scientist turned lab programmer and design consultant. "It introduced open laboratories, modular lab planning, ease of communication between scientists, reconfigurable lab utilities and services, cantilevered benches." Rietz points out that before the Salk, labs were based on 19th-Century design notions of long, dark, double-loaded corridors of inflexible labs, with poor or nonexistent support spaces. "The Salk challenged the old ideas," says Rietz, "and introduced new ones that continue to evolve."

Design History

When he was tapped in 1959 for the commission by Jonas Salk, Louis Kahn was hardly an obvious choice to design a new kind of laboratory. His Richards Medical Laboratory at the University of Pennsylvania was nearing completion – a building that to this day is a functional flop. Its lab services run in vertical shafts that are difficult to access; floor-to-floor height is insufficient for running utilities horizontally; its square lab pods are badly proportioned for benches; it lacks lab support space. There is little natural light in some spaces, too much in others, and little communication between scientists.

Kahn worked on the Salk with some of the same people who had collaborated with him on Richards, such as structural engineer August Komendant. The Salk team included mechanical engineer Fred Dubin and lab consultant Earl Walls. Kahn also had an ally on the Salk that he didn't have on the Richards lab: Salk himself, an involved client who had designed some of his own lab spaces at the University of Pittsburgh. "Those labs were clear-span, with movable walls," recalls Salk. "You could differentiate them as needs changed. I had discovered something that worked, tried to make it better, and Lou was an ideal playmate with whom to tinker."

Salk also had a vision for his institute that would distinguish it from other enclaves of hard-nosed scientists. A few months before Salk met Kahn, C.P. Snow delivered his landmark lecture "The Two Cultures" at Cambridge University. Snow sketched a view of the intellectual life of industrialized Western society split into two polar groups: those who pursued the humanities (whom he called "literary intellectuals") and those who pursued science.

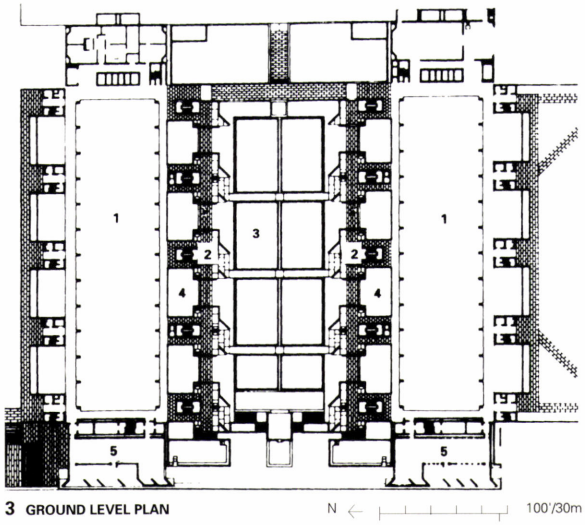


1 EARLY SITE PLAN

Louis I. Kahn Collection, University of Pennsylvania and Pennsylvania Historical and Museum Commission

2 FINAL SITE MODEL

Courtesy: The Salk Institute



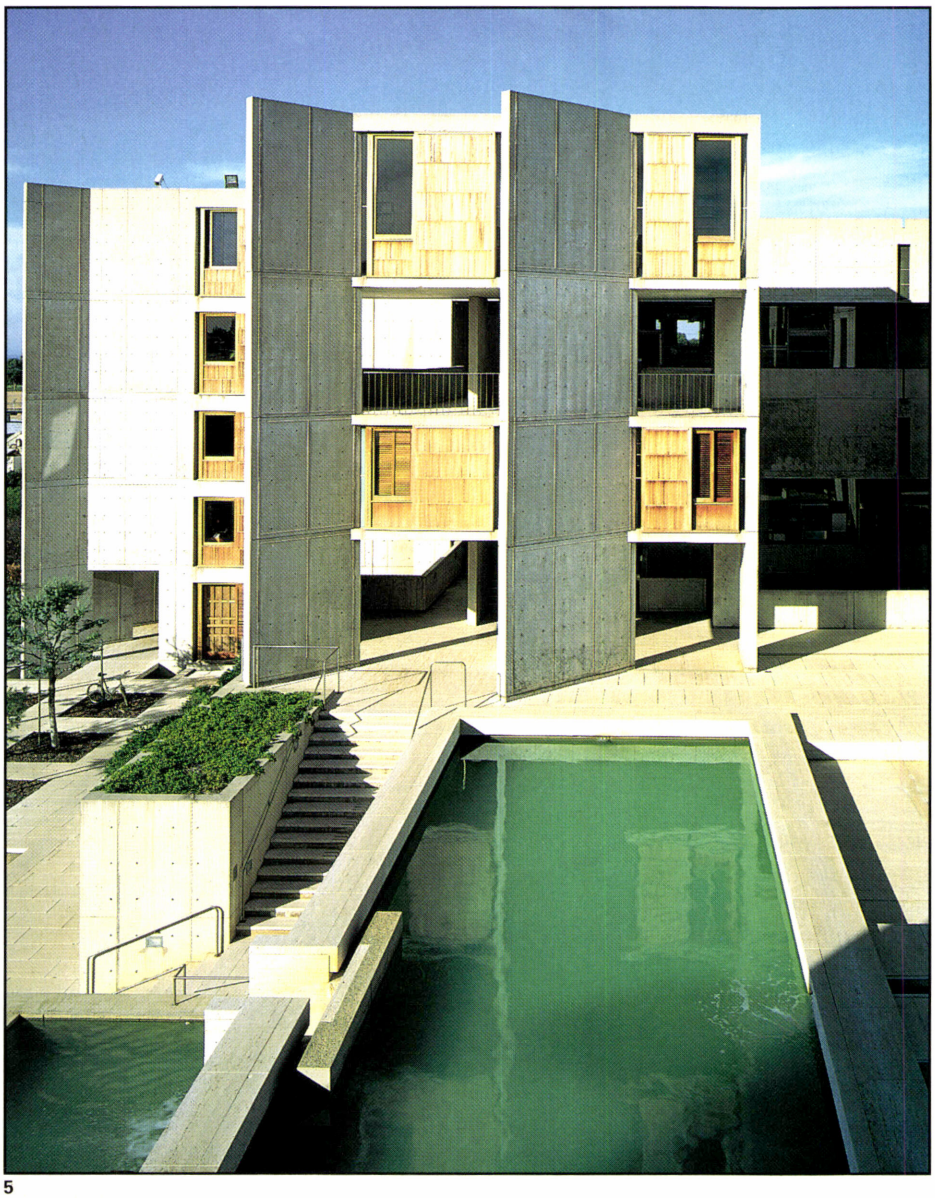
3 GROUND LEVEL PLAN

1 LABORATORY
2 STUDY
3 COURT
4 LIGHT WELLS
5 ADMINISTRATION

In an early version (1) of the Salk design, Kahn placed four lab buildings in a row. The scheme was later simplified (2, 3) at Jonas Salk's suggestion, uniting two lab blocks with a single courtyard. The concrete work during construction (4) was exacting, the product of the architect's and the client's desire that the material be like "man-made marble," in Salk's words. The forms were coated with polyurethane to achieve a smooth finish. The concrete today (5) looks as good as new, and has required little maintenance.

Courtesy The Salk Institute

4



Grant Mudford

5

"The nonscientists have a rooted impression that the scientists are shallowly optimistic, unaware of man's condition," observed Snow. "The scientists believe that the literary intellectuals are totally lacking in foresight, peculiarly unconcerned with their brother men, in a deep sense anti-intellectual, anxious to restrict both art and thought to the existential moment." This polarization, Snow concluded, was a practical, intellectual, and creative loss.

Salk wanted his institute to fuse the two cultures. "He wanted to be able to invite Picasso to the laboratory," wrote Kahn of Salk. "He felt that the belief which makes a painter paint must be constantly felt by a scientist so that he never forgets, in his measurable work, that the unmeasurable desires somehow have come together." According to historian David Brownlee, Salk saw to it that Snow was invited to Kahn's RIBA lecture in London in 1962.

Kahn's initial forays into the Salk design looked a lot like Richards; there was a scheme with lab towers transplanted to California, at the elbow of the U-shaped site. At the northwest end he placed a meeting house with recreational and conference facilities. Across the ravine, to the south, were houses for fellows of the institute, where scientists and artists would reside.

The design for the labs evolved over the next year into a row of four identical two-story buildings. Each pair had a central garden with meandering pools and streams. Salk had visited the monastery at Assisi in 1954, and told Kahn that he wished to replicate in the labs a sense of the cloister. Overlooking the gardens were rows of private studies (referred to by Kahn as "the realm of the oak table and the rug") joined to the labs with stairs and bridges.

Salk approved the scheme, and signed a construction contract in April 1962. Within hours after the stroke of his pen Salk changed his mind. He believed that the four labs would compete with each other, and that it would be better to join two buildings with a single central court. Kahn redesigned each building with three lab levels; the bottom-most level below grade naturally illuminated with light wells.

Salk also had doubts about the five-foot-deep service space above the labs, concealed in a folded concrete plate structure. Komendant came up with a 9-foot-deep Vierendeel truss to span the 65-foot-wide labs, which simultaneously created flexible, column-free labs with an interstitial level above to contain mechanical systems and utilities.

The meeting house and residences were never built, nor was the garden between the labs. Kahn was unhappy with landscape schemes by Lawrence Halprin, and in 1966, after the labs were occupied, invited Luis Barragán to brainstorm on the courtyard. Barragán was so taken by the sweeping view to the Pacific that he suggested no planting at all, only stone paving with a water channel. Kahn conceived this "façade to the sky" as the building's soul.

The Salk and its Site

A visit to the Salk today is not the trip to a desolate, windswept crest that one might imagine. Thirty years have brought lots of neighbors: ticky-tacky houses

encroach from the south, a hang-glider emporium is to the northwest; the University of California's San Diego campus nudges the Salk to the east, and all along the coast are biotech and medical labs. The sheer density of the scientific community here has not encouraged a collaboration of artists and scientists, as Salk had hoped. Intellectual historian Jacob Bronowski was a nonresident fellow until his death in 1974, and there hasn't been one since. Last year David Hockney visited for a day and gave a talk on his art, but such guests are rare.

Parking lots nearly surround the Salk. I was surprised to learn from many with whom I spoke that few entered the building from the east through the now-gone eucalyptus grove, removed to make way for the controversial addition (see pp. 48 – 51)."Almost no one came into the lab that way," says Bart Sefton, a scientist who has been at the Salk for nearly 20 years. "People come in depending on where they park, and most park to the south and northwest."

The Salk's iconographic view to the ocean is a valued one for those who work there. "I find coming into the institute a source of inspiration," says Saraswati Sukumar, who has worked there for five years. "I look at the little stream falling into the ocean, and the big vista, the blue sky, and the beautiful building that frames it, and it fills me with a great sense that today I have to achieve something."

The Salk's grand courtyard may be its most famous outdoor space, and its least used. During my two-day visit I counted a total of no more than a half-dozen people lounging in this vast plaza, most of them sitting at its west end where the water channel empties into a pool and then spills into another at the lower level court. The upper court is an ever-changing show of shadow and color, but its travertine paving glares in the strong California sunlight. "No one spends any time there, they hurry from one side to the other," says Sefton, who half-jokingly suggests renting potted palms for the court. Yet it has served as a spectacular setting for numerous weddings, concerts, and conferences.

The lower courtyard at the Salk's west end, next to the cafeteria, is a comfortable place to lounge, as are the subterranean light wells that line the lower-level labs. These spaces are humanly scaled, and the lab courts offer close respite from the labs for a smoke or casual conversation. They have a comfortable measure of privacy, they filter daylight, and they are a popular spot for badminton, according to scientist Stephen Heinemann, who has a lower-level lab in the south wing.

The Convivial Laboratory

The open nature of the labs – clear-span spaces 65 by 245 feet with 11-foot ceilings – makes it easy to change equipment and bench layouts as the demands of scientific investigation dictate. Every scientist I spoke with praised the Salk for its flexible design, many commenting that it was the best lab of the dozens they had worked in or visited. The interstitial space above each lab is the key to the building's success, because it allows pipes, ducts, and electrical conduit to be moved and installed virtually anywhere without disrupting the lab below. The interstitial level is also a parking space for bulky, noisy equipment like refrigerators and centrifuges. This makes the labs more compact, without objects that might thwart interaction between people.

"Many ideas in science come through osmosis," says Ian Trowbridge, who has worked at the Salk for 20 years. "If you're cut off from people it doesn't work very well." Trowbridge and other scientists point out that the open labs foster communication, with the sharing of equipment and ideas. The Salk's numerous stairways play a similar role, as people constantly pass each other and talk shop. Kahn sought to stimulate such discussion by placing blackboards in the stair towers. Alas, chalk trays were not provided, and the boards are hardly ever used. Trowbridge mentioned that communication between the north and south wings is not very good, and speculated that different fields (neurobiology in the south and molecular cell biology in the north) may account for some of this.

To balance the close quarters and easy communication of the labs, there are 36 studies in the towers that line the central court. Kahn and Salk imagined them as rustic beach houses without lights or heat, but many have been made more comfortable over the years. The studies are a popular refuge. Here scientists can escape the labs to think, write, or just gaze out carefully angled windows toward the Pacific.

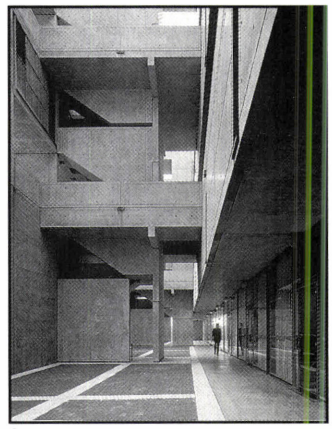
Bulldozers in the Grove

During my visit, the subject of the new building often came up. It was usually broached by the scientists, who would ask, "What are all these architects upset about?" The addition, which will contain labs, offices, and an auditorium, has for the past two and a half years been the subject of controversy between architects who see it as a desecration of Kahn's masterwork, and Jonas Salk, who believes that he is fulfilling Kahn's vision (see p. 47).

The arguments to preserve the aesthetic experience of "discovering" the Salk beyond the eucalyptus grove are lost on the scientists. "The whole discussion has a slightly unreal air about it," says Bart Sefton, who believes that the critics have made the experience of walking through the grove a bigger deal than it is for those who use the building every day. So much for mending the two cultures.

Some of the scientists miss the grove, but they welcome more lab and conference space. The new building will also allow space in the south wing now occupied by administration to be used as labs, as Kahn intended. Yet other scientists I spoke with object to the new building for other than architectural reasons. "I think the size of the Institute is just right," notes Stephen Heinemann. "If we get bigger, we'll lose the sense of intimacy and communication. But Jonas wants the new building, and the board of trustees wants it." Another scientist mentioned that the new building will be a financial strain, which means that scientists will have to spend more time writing grant requests and less time doing science.

Does great architecture make for great science, or is it largely irrelevant to scientific achievement?



Marvin Rand

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Marvin Rand

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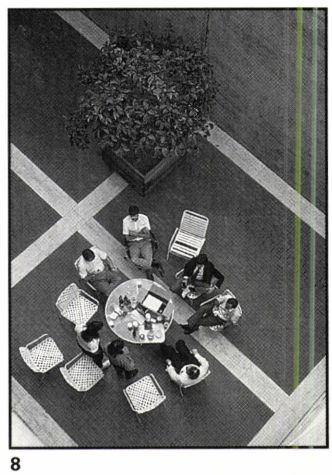

Michael J. Crosbie

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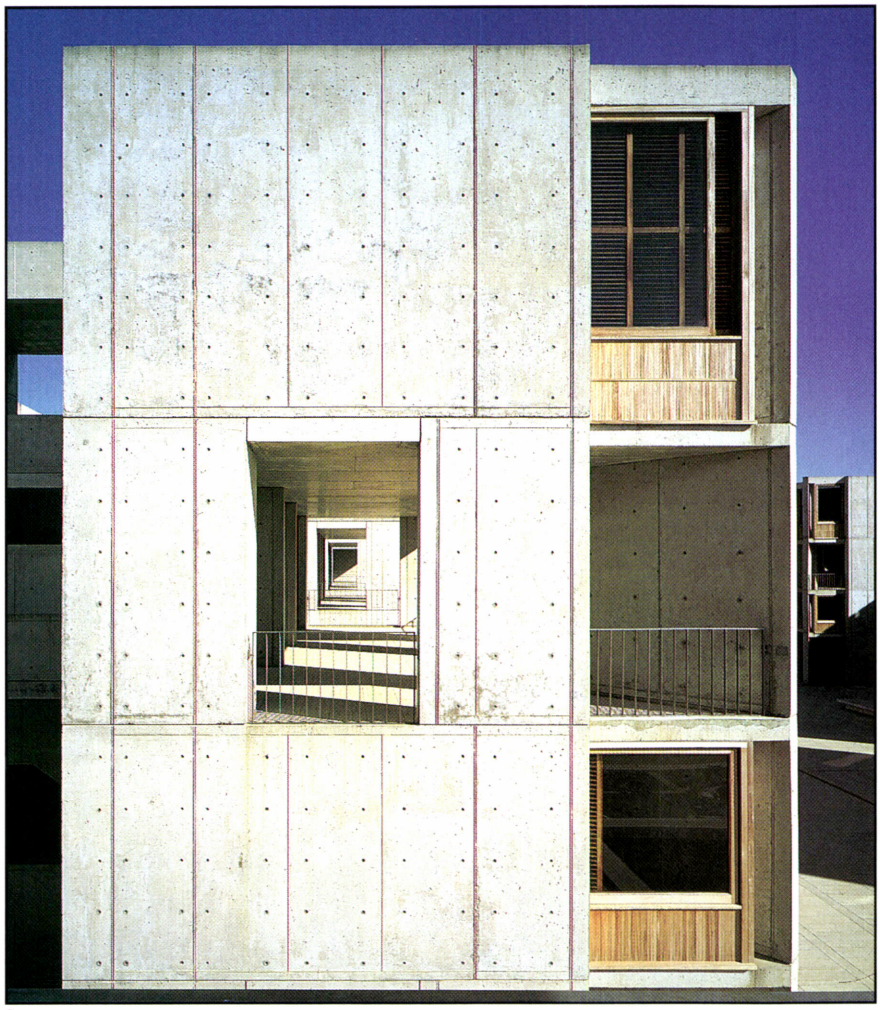
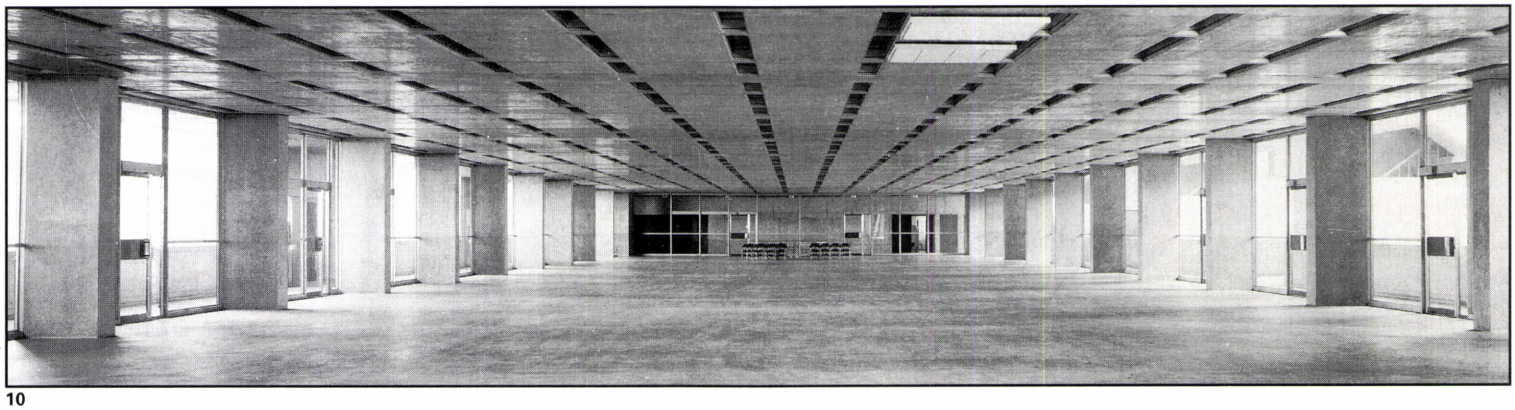


Grant Mudford

9

The laboratory spaces are clear-span (7,10), achieved with Vierendeel trusses that create interstitial space (11). This allows benches, equipment, and utility drops to be located virtually anywhere, and is the main reason why the Salk has been adaptable while scientific investigation has changed dramatically over 30 years. The below-grade labs (6) have light wells that provide natural illumination and are popular for informal gatherings (8). Private studies connect to the labs with bridges (9) and provide respite for scientists from the open work spaces.



Courtesy, The Salk Institute

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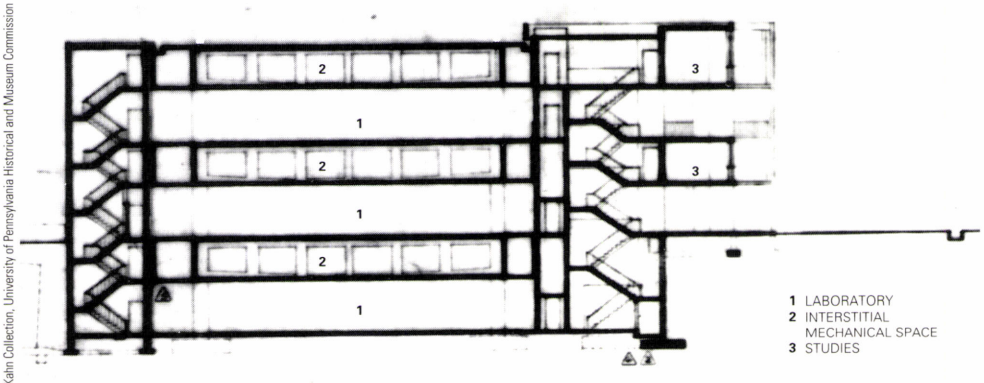
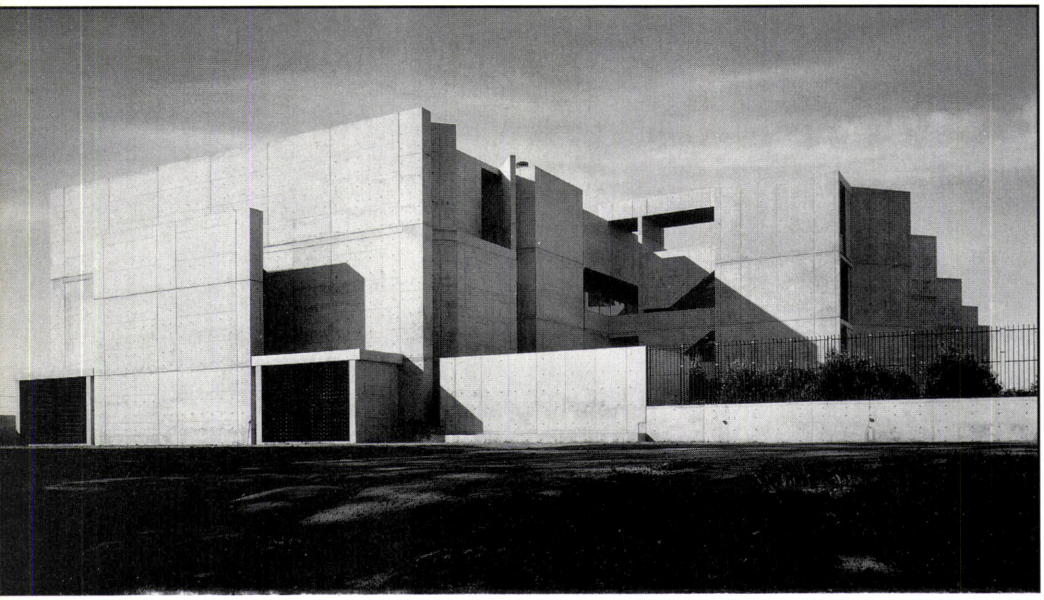


Louis I. Kahn Collection, University of Pennsylvania Historical and Museum Commission

11 NORTH BUILDING SECTION LOOKING EAST



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Marvin Rand

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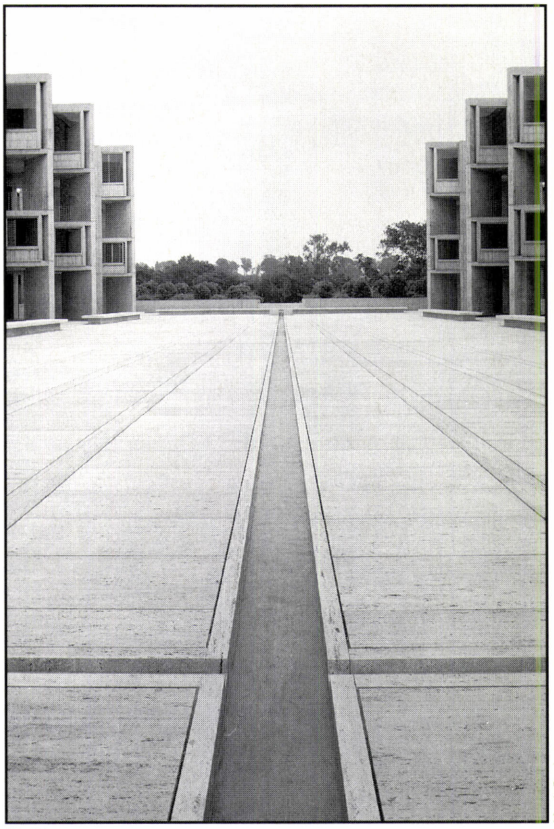
Grant Mudford



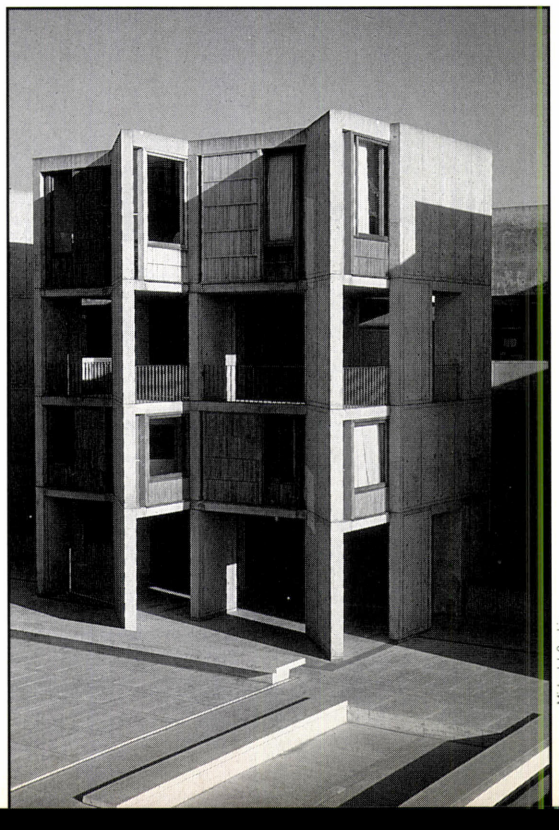
14, 15

Marvin Rand

From the east (12) the Salk appears as an impenetrable concrete mass, while from the west (13) the building opens like a fan toward the Pacific and views. The monumental central court (14) is a glare-filled space not often used. The teak panels (15), bleached by sun and salt air, are currently being restored to their original appearance.

Within the Salk itself there are two cultures, each with its own answer. "Most scientists are so dedicated that they're prepared to work in cubby holes and little corners," notes Nobel laureate Francis Crick, who has been at the Salk for 17 years. "Some of the best work has been done in the most ridiculous shacks! I think scientists here are aware of the architecture and glad to have it, but don't consider it essential."

At literally the opposite end of the building from Crick's office, Saraswati Sukumar, who is leaving the Salk to pursue new research, offers a different appraisal: "I never imagined, before I came here, that a building could do so much to affect a scientist. I didn't think that it had any impact on one's thinking. This building lifts you." **Michael J. Crosbie** ■



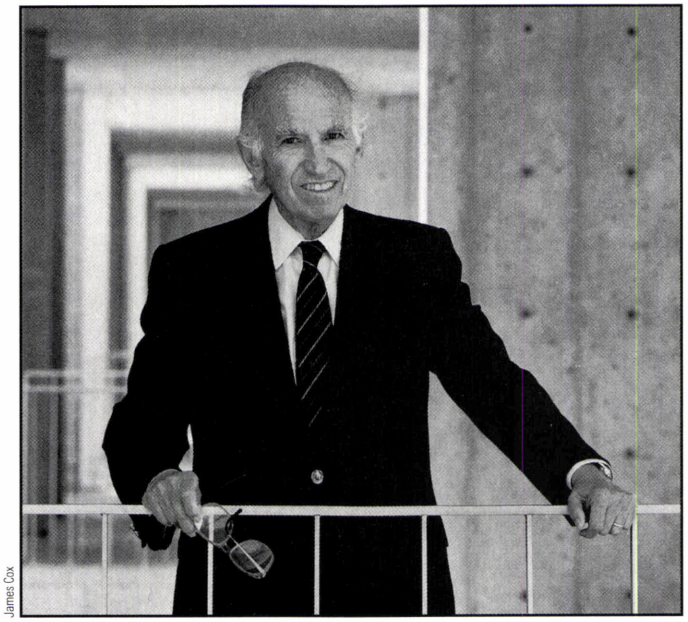
Michael J. Crosbie

A **Talk** with **Salk**

Jonas Salk, who discovered the first polio vaccine and founded the Salk Institute, discusses Kahn's building and its controversial addition.

Michael J. Crosbie: How did you conceive of architecture in supporting the work here?

Jonas Salk: My ambition was to optimize the functioning of the human mind, to deal with the issues and questions with which the human mind is concerned. I wanted to create something that would influence the realm of the mind – the minds of those who would gather here to carry on this kind of work. I was seeking a retreat atmosphere for reflection and work, away from the business and noise of the world.



James Cox

Dr. Jonas Salk, 79 this month, stands on a bridge connecting the labs and studies near his office in the north wing.

We were trying to create an organism, rather than a collection of organs, for that purpose. This organism would be capable of evolving and be responsive to the needs of the future, not only the present. And it would be designed in a way that would defy obsolescence. It would be here as long as this cliff remained, looking out into the future. The potential for the future seemed so great – to gather the exceptional minds of inspired people, and give them an inspiring setting in which to work. That was an interesting experiment. Now we're engaged in a new experiment.

Crosbie: Were you surprised by the negative reaction of some architects to the new building?

Salk: I was surprised. I didn't quite see what they saw. That's the thing that's always surprising: someone sees something that you don't see, and you're both looking at the same thing. Somehow the eucalyptus grove and the space between the east end of this building and the parking lot has been considered to be included in this structure. And, therefore, any intrusion on that space is regarded as defacing, destroying, or diminishing this building. That's their premise. When I pointed out that is not the way it was left with Lou, their response is, "Well, it has become that." That's an interesting difference in perception, the difference between preservationists and evolvers.

I've been telling you that I was trying to create something that would go on forever, and be capable of change, and now we're talking about another school of thought: no change. I'm not unfamiliar with that. That's the difference between discoverers and followers. This is a place for discoverers, explorers. As Kahn's exhibit is called "In the Realm of Architecture," we're discussing something in the realm of the mind. And the mind does not remain the same, does not remain fixed. The purpose of the institute is to help guide it, facilitate it, and encourage moving it into the future. And if I were to do something other than what seems to me to be a sequence into the future, I would not be true to myself or to Louis Kahn. I wish that Kahn were here to affirm, himself, what I think is the spirit in which we had worked until now.

In my view, what we're doing will be enhancing; in the view of others it will be diminishing. What do you do under those circumstances? In scientific work, if I did not try to do things differently from the way others did them, I wouldn't have discovered anything. One thing you can be sure of: if you don't try, you'll never fail. But you'll also never succeed.

Crosbie: What has been your reaction to the critics?

Salk: I kind of feel sorry for them in a way, because I know that they're in pain, they're uncomfortable, and I don't like to see that. So I've spoken to all with whom I've had an opportunity, hoping to be responsive, and we have been. We've responded to everything other than two suggestions: that the building should be sited elsewhere, and that we should have gotten other architects.

Crosbie: Was there any consideration of using architects other than David Rinehart and Jack MacAllister of Anshen + Allen?

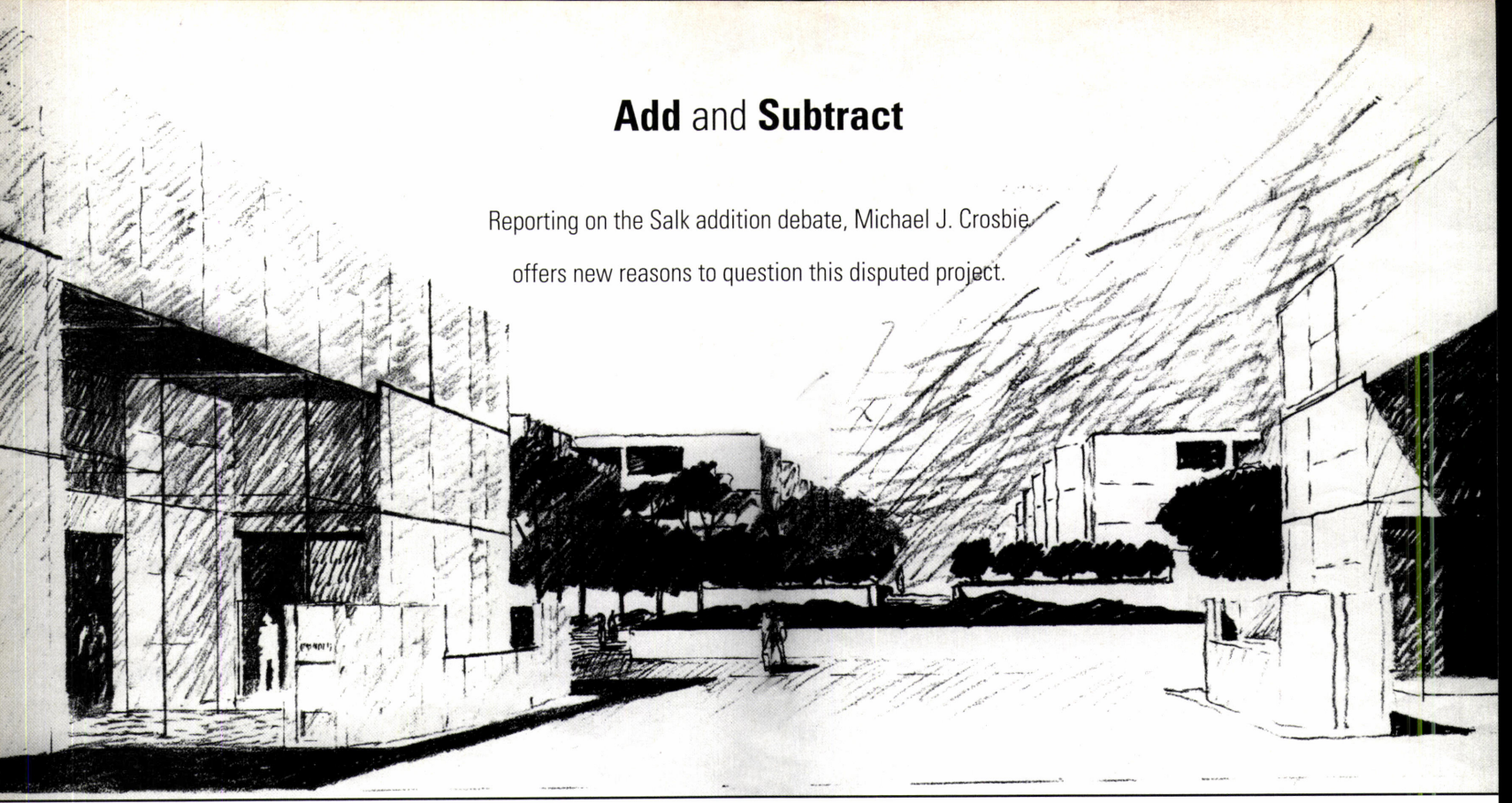
Salk: They worked with Kahn on the original building, and continued to have a relationship with us over the years. There was no thought at all about who we ought to have, as if we should have tried to get another Lou Kahn.

The point is to continue the process with the very people who were involved in the original design. That's looking at it from the point of view of consistency, continuity with change, as distinct from the idea that this is supposed to be a place where architectural genius is to be fostered.

Architecture is used here. Some people pursue science for human use, in contrast to science for the sake of science. This architecture is for human use, to serve a purpose. ■

Add and **Subtract**

Reporting on the Salk addition debate, Michael J. Crosbie offers new reasons to question this disputed project.



1

The battle over the Salk Institute's addition has been raging since the design's formal unveiling in 1991. The scheme, by former Kahn associates David Rinehart and Jack MacAllister of Anshen + Allen in Los Angeles, places the 113,000-square-foot-building approximately 150 feet to the east of the Salk in a eucalyptus grove. Critics claim that Kahn intended visitors to approach the Salk through the grove and see it revealed through a scrim of trees. The addition, wrote *The New York Times* architecture critic Herbert Muschamp, "would ruin the most sublime landscape ever created by an American architect." The addition's proponents, Salk chief among them, see it not as an addition at all, but the consummation of Kahn's master plan.

What Did Kahn Want?

This war's combatants wave 30-year-old documents at each other like swords, claiming that they reveal the master's true vision. Salk showed me working drawings from the original set (3), indicating that the eucalyptus grove was not part of the landscape plan, and that the present building site was outlined for future expansion. He claims that a grounds keeper planted the grove to solve drainage problems. The drawings also show stubbed-out utility lines, constructed in 1964, extending from the original building to the east. Salk's critics counter that the dotted lines showing future expansion are vague, and that Kahn expressed in a letter to landscape architect Lawrence Halprin that he wanted the building to have a "green entry."

Anne Griswold Tyng, a former Kahn associate, believes that the drawings are useless in divining what Kahn intended. "Lou was always changing his mind," says Tyng. She points to the Salk's barren central court as proof. The drawings (p. 39) show it planted with trees.

As the site for the addition was cleared and footings were poured this summer, the debate only intensified. Those who have expressed objections include several prominent architects and historians, veterans of the 1989 battle that stopped the expansion of Kahn's Kimbell museum, among them Robert Venturi and Vincent Scully, Kahn's widow Esther and his children, and former Kahn associates such as Marshall Meyers and Harriet Pattison. Stuart Emmons, an architect in Venice, California, never knew Kahn but became so upset over the new building that last spring he started something called "The Louis I. Kahn Preservation Group." He has mounted letter-writing campaigns to the Salk's trustees and met with Salk in June, to no effect.

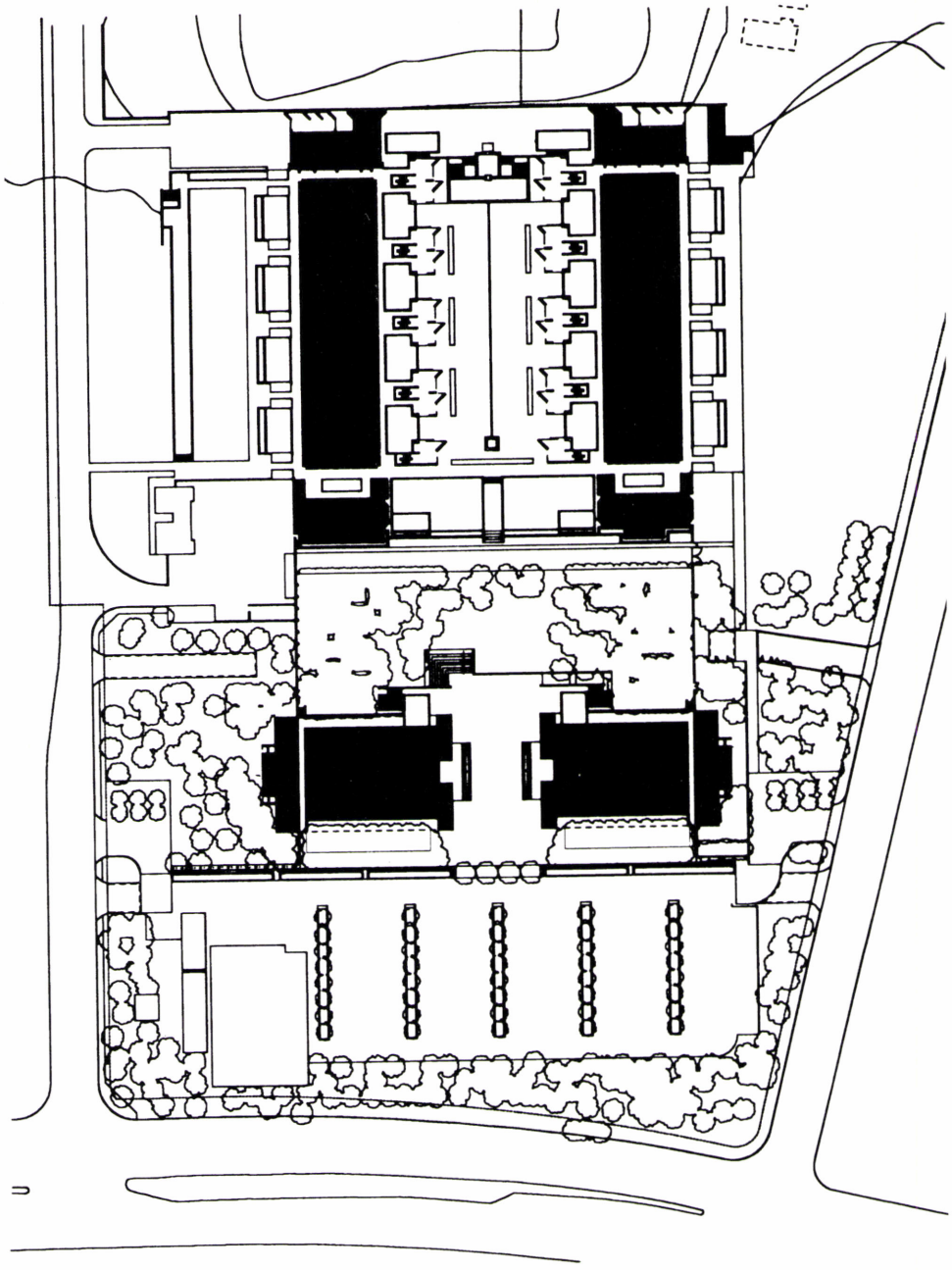
The doctor may have grown gun-shy. Last November Salk made a presentation to the Architectural League of New York. That meeting, intended as an informal get-together, turned out to be a bit of an ambush. After Salk's presentation members of the audience such as Susana Torre, Kenneth Frampton, Esther Kahn, and Steven Holl rose to deliver their own lectures on why the addition shouldn't be built. Scully even brought his own slides.

Salk's openness to debate on the design appeared less than genuine as he revealed to the New York group that a ground-breaking for the building was scheduled for the following week. Ground-breaking rituals don't mean much in construction schedules; in fact a building permit for the addition wasn't issued until this past June. But the ritual was a message from Salk that the addition was a *fait accompli*.

It is unfair to characterize this debate as "America's architects versus Jonas Salk." The objectors comprise a small group, mainly including relatives, admirers, and former students and employees of Kahn. AIA's Committee on Design voted to bring the debate on the Salk to the floor of the national convention in June. AIA President Susan Maxman, to avoid embarrassing Salk (who happens to be a public member of AIA's board of directors), made a deal with the doctor to keep the debate out of the convention if Salk and his trustees agreed to meet with her, AIA Gold Medalist Kevin Roche, Nathaniel Kahn (the architect's son), and representatives of the National Trust for Historic Preservation. Salk agreed, but the meeting plans later fizzled, and AIA's board didn't pursue the matter.

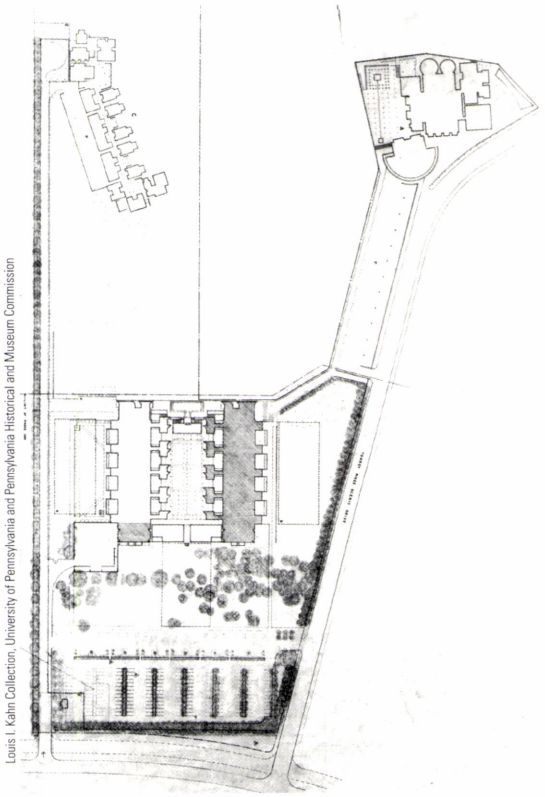
Salk has met on the building's design with Richard Meier, Venturi, and Frampton, and some changes resulted: it was moved farther east; a

Architect David Rinehart's perspective drawing (1) depicts the view of Kahn's building from the entry court of the new addition. A site plan (3) from the original Salk working drawings indicates no landscape planting in the eucalyptus grove and a site for future expansion to the east of the central court. Replanted eucalyptus in the addition's site plan (2) indicates thinning at the center, over an underground auditorium (4).



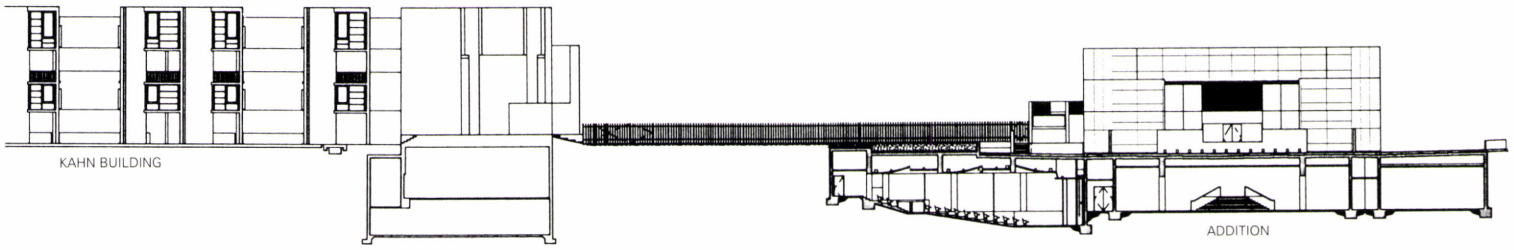
2 EAST BUILDING SITE PLAN

N → 100'/30m



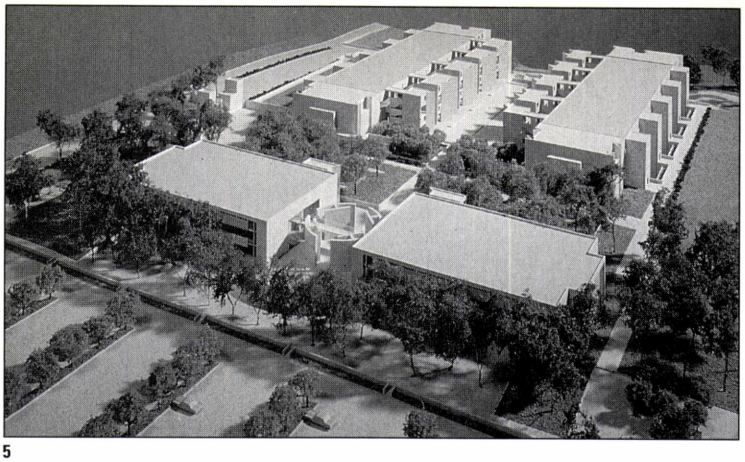
Louis I. Kahn Collection, University of Pennsylvania and Pennsylvania Historical and Museum Commission

3 ORIGINAL SITE PLAN N →



4 EAST BUILDING SECTION LOOKING NORTH

40'/12m



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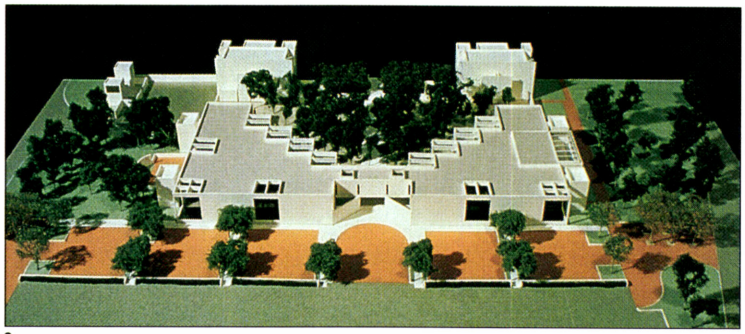

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Michael J. Crosbie

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A model of an early scheme (6) for the new addition demonstrates how the design has been scaled back (5) and moved farther east. The central drum element and bridge between the two wings was removed. At the construction site (7) test panels are being studied for the color and detailing of the new building's concrete.

bridge connecting the two wings that would have blocked views was removed; and a central rotunda was axed. The building's location in the grove remains a bone of contention.

In May, when bulldozers arrived to remove the grove, no architects lay down to stop them. Instead, some tried to tie the Institute's purse strings. Emmons wrote to 30 of the Salk's principal donors, alerting them that the addition would damage Kahn's masterpiece. About a half-dozen responded, saying they didn't want to get involved in design decisions. Salk, however, told me that at least one major donor to the building has backed out. "They didn't want to be part of anything controversial," he said. Meanwhile, the National Trust has asked the National Institutes of Health to investigate whether Federal funds are slated for the construction ($24 million, 70 percent of the Salk's annual budget, comes from NIH and other Federal agencies). The National Historic Preservation Act requires such agencies to review Federally funded projects that may adversely effect historic properties. As yet there's been no investigative action by NIH.

Ignoring the Salk's Lessons

San Diego's architects support Salk and his plans. It's a conservative community according, to Ann Jarmusch, an architecture critic for *The San Diego Union-Tribune*. "Dr. Salk is a revered figure, and no one wants to question this project." The addition sailed through the city and state approval process. Jarmusch adds that there isn't a strong interest locally in preservation. Local politics and economics whittle away at it. In a region that's trying to move its defense-based economy to biotech and medical research, no one objects to a new lab building.

There should be concern among both architects and scientists, however, because the new building is a poorly designed laboratory. Concrete wraps this Salk wannabe to mimic the original. But its labs and support spaces, which account for half its floor area, ignore every lesson about lab planning that the Salk teaches.

For example, its two levels of labs are sprinkled with two-foot-square concrete columns, which will make them difficult to change. The top floor lab has a 7-foot-deep suspended interstitial space, accessed by catwalks, that can't house noisy or bulky lab equipment. The basement has no interstitial space. It's intended for "dry" labs that contain computers and require fewer utilities. Mechanical systems will be routed across its ceiling, disrupting lab work when they are changed. There is no indication of raised flooring under which to route computer cables.

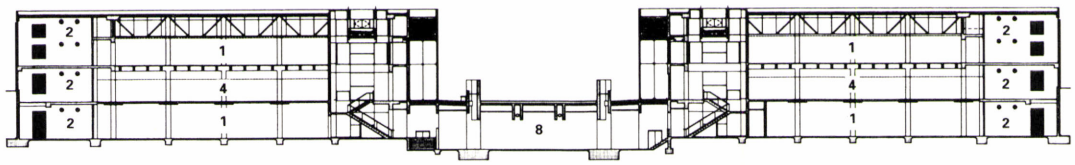
The basement labs have no windows. They have no direct access to offices or meeting rooms, nor do the top-floor labs. The top floor has all-glass walls that face east and west. There's an overhang, but early morning, late afternoon, and winter sun will be brutal.

The scheme has no generous stairways for scientists to engage in serendipitous exchanges; there are just fire stairs. The two lab levels are separated by an administration floor, which will thwart any communication between them. The two wings are linked only at the basement level, and a walk from one lab to another will be a 166-foot-long trek. The basement-level labs are actually closer to the Kahn building than they are to each other. To reach the Kahn building, scientists will walk through a 160-foot-long windowless tunnel.

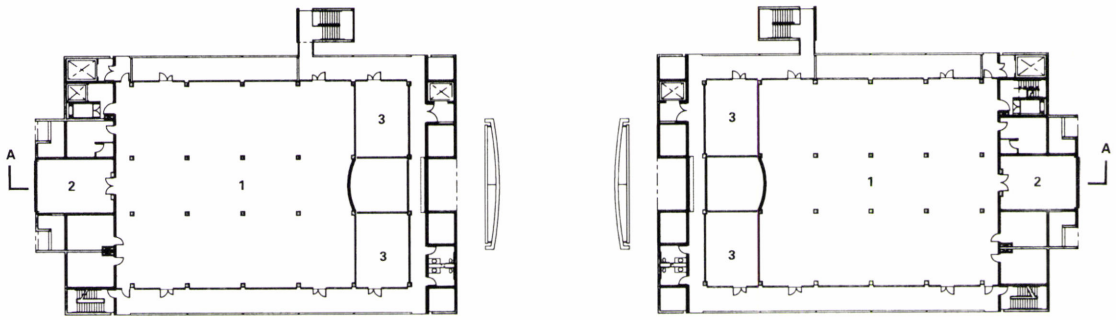
Dr. Richard Rietz, a lab programmer and consultant who reviewed Anshen + Allen's design for P/A, says that the lab layouts and their relation to each other appear "compromised." Indeed, architect David Rinehart admits that many of these shortcomings are the result of cost cutting.

Challenging this addition on aesthetic grounds – to preserve a pleasant stroll through the grove – is like speaking a foreign language to scientists. The people who will work in the building, however, should comprehend the new building's functional flaws, which are numerous, and will impede the conduct of science at the Salk Institute.

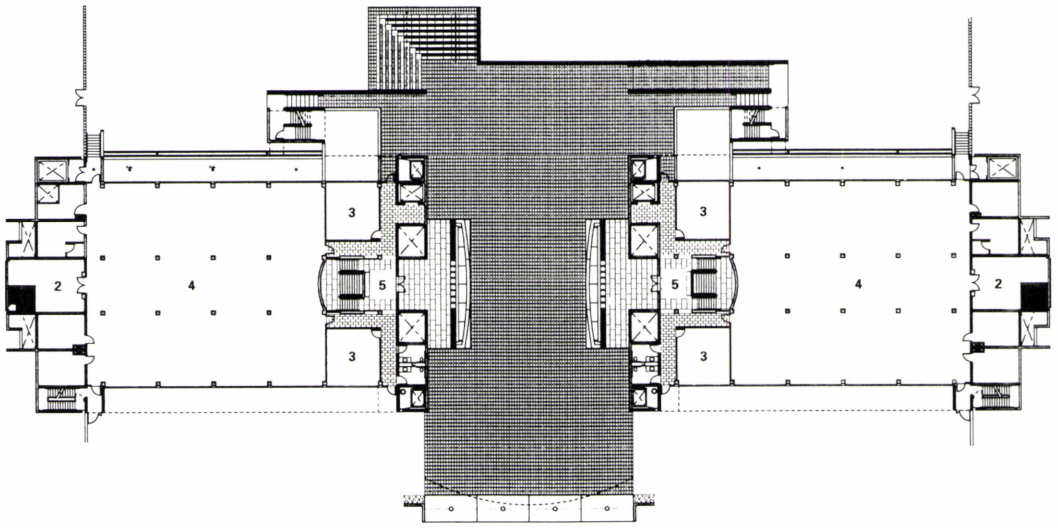
Michael J. Crosbie ■



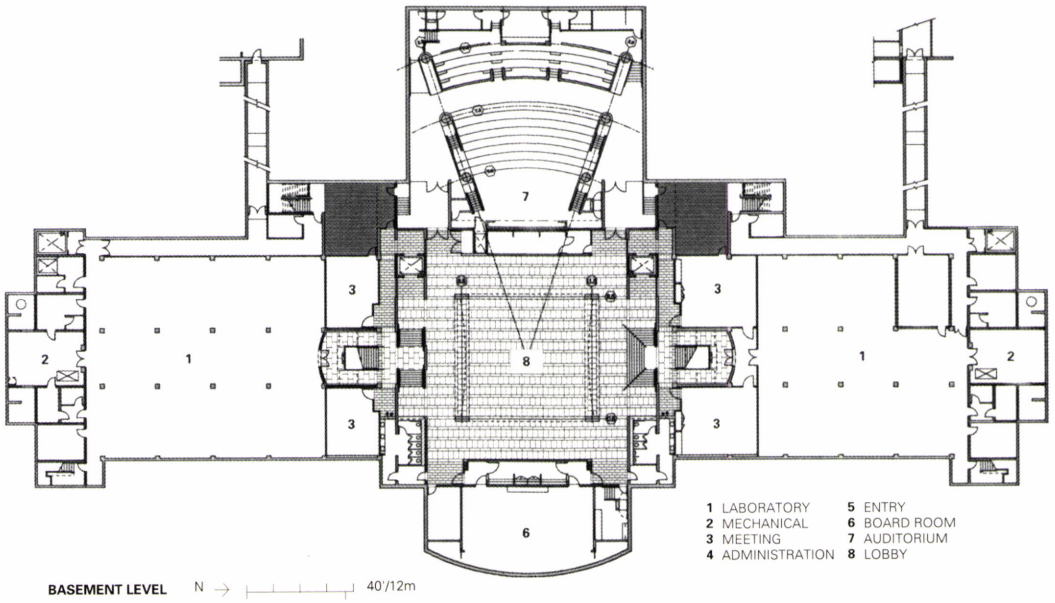
A-A SECTION LOOKING WEST



SECOND LEVEL



GROUND LEVEL



1 LABORATORY
2 MECHANICAL
3 MEETING
4 ADMINISTRATION
5 ENTRY
6 BOARD ROOM
7 AUDITORIUM
8 LOBBY

BASEMENT LEVEL N → 40'/12m

Whether it is Gwathmey Siegel at the Guggenheim, Mitchell Giurgola at the Kimbell, or David Rinehart of Anshen + Allen at the Salk, the problem of adding to a Modern masterpiece at once invokes two worlds, two perspectives. The first belongs to us all: it is the perspective of culture, art, and architecture; it is about a masterwork's unique place in those histories, and about the way it also transcends them. The second perspective belongs to the masterwork's client/owners, to the people, that is, who manage the institution it houses, who come to know the building's inadequacies and dream of solutions to those inadequacies, who feel the need to expand and, in so feeling, begin to resent the very walls that so idiosyncratically contain them. These two worlds, these two perspectives, are almost bound to come into conflict, with the former cast as conservative.

This problem is especially acute when adding to Louis Kahn's buildings. For Kahn explicitly made "offerings to Architecture" and designed working buildings for real and specific clients. In so doing, Kahn almost preordained the split. Of course, Kahn did not want it this way. In 30 years of socially engaged practice – this before the Yale Art Gallery – he had become architecture's exemplary "metaphysician of the practical," committed, as no one else seemed to be, to the all-but-impossible mission of showing how architecture should and could unite the transcendent with the workaday worlds. Thus motivated, and through a hundred revisions, Kahn's better projects arced to that gravity-less point where, caught in curious irresolution and built, they came as close to perfect as any architect can hope to come in "solving" the problem.

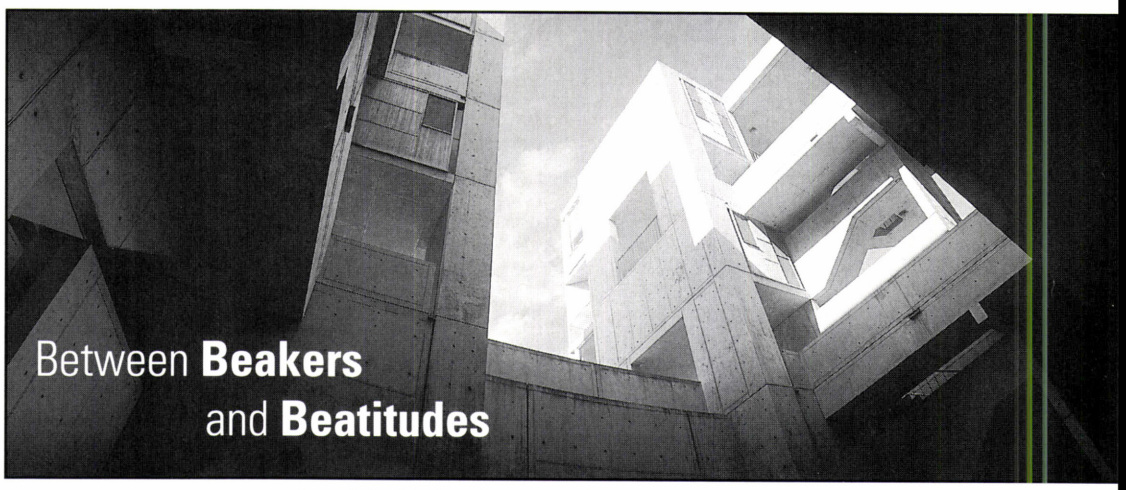
As though to make matters worse for would-be amenders and adders to Kahn, his later works, especially the Kimbell Art Museum and the Salk Institute, seem to have been designed with an open-endedness and modularity in mind which invites extension. They were also remnants of larger schemes, and might therefore – though built – be viewed as works in progress. More temptation. However, the open-endedness, the repetitions, symmetries, absences, and abrupt truncations of the Kimbell and the Salk turn out to be essential to their effect. The invitation held out to complete or to continue the work is only an apparent one, perhaps most wisely turned down.

We might say, then, that there are "two" Salk Institutes in La Jolla, and that we are adding to both. The "first" is a monument to the science of Life, standing proudly on the last hills of the last frontier and baring itself to the Pacific. The "second" is a place for the life of Science, a place of work carried out in a building designed in consummate consideration of its nature.

The "first" Salk Institute – with its magnificently open plaza "joining sky to earth" and "earth to ocean," with its shouldered stair-and-study towers of immaculate concrete and teak gazing out upon the setting sun with the inscrutable dignity of the statues on Easter Island, with its spring of life-water, begun miraculously at the foot of the orange groves of Eden cutting into the high desert plaza – has become talismanic to two generations of architects, the source, the touchstone of what is possible for us. This, as Kahn would say, is the domain of Form.

In the "second" Salk Institute, people in the cafeteria talk animatedly about genomes, heterozygotes, and the results of irradiation during meiosis. Their laboratories sparkle with uncountable flasks and pipes, digital counters, optical analyzers and curiously swaying little mixing tables, all bathed in the light of parabolic reflectors. Six floors of interstitial service space, nine feet high and once considered extravagant, have come into their own. At the east end and under the Chinese Orange grove, a tall machine room, worthy of a ship and as lovingly tended, thrums its concrete floor. This is the domain of Design.

The "first" Salk Institute is surrounded by photographs and talk of architecture. Its context is the history we all know. Its context is the spell woven by Kahn's words and the way they addressed the ache we all feel to build meaningfully, cosmically, in tribute or in critique of man, his modern soul, and his institutions. The "second" Salk Institute is short of



Between **Beakers** and **Beatitudes**

One of the Salk's stair towers (above), seen from the floor of a light well, contrasts in space and light with the clutter of the labs (facing page).

space, and choked by parking and development that encroaches upon it from all directions.

Let us now look at Anshen + Allen's additions to the "two" Salk Institutes, both now under construction. As for the "first," we know this: one does not fool with a talisman. It brings luck and power, harboring our dreams, and no apprentice can presume to improve upon its design: only the wizard who set the spell can do it right, the apprentice's sanctioning by the commissioning king, here Jonas Salk, notwithstanding. The sacred configuration – the Form – of the "first" Salk Institute simply cannot be tampered with.

Such, at any rate, was the impulse informing the furor that greeted David Rinehart's design for the new East building and, in particular, his proposed handling of the terminus of the plaza axis with a mildly heroic circular concrete drum and bridge. For lost thereby would have been the mysterious, absent Center; and answered, mildly, would have been the question: whence this axial energy? Only a trace of the drum remains in the current design, in curiously reversed form.

And what of the eucalyptus grove that once (magically) confused the axial entry to the plaza, and that is now decimated by construction? This will be replanted, as it once was transplanted, except where there is no room for roots (as over the shallowly buried auditorium) and of course, in the space actually occupied by the new building.

Do any offenses remain to the "first" Salk Institute? Unfortunately, I believe so. Consider the question of "facing." Though their bulk runs east-west, the two wings of Kahn's Salk do not face each other: they face westward, to the sea, radically polarizing the eastward and westward experiences of the plaza. This is one of the most powerful gestures the building makes. Rinehart's buildings face each other, nose to hulking

nose, creating a central point of convergence from which still radiates the geometry of the auditorium (and, less directly, a suite of arcuate forms in the plan), a central point barely more subtle than the drum and bridge structure once proposed there. Exacerbated by the dual convexity of the skylights, one need not be mystically inclined to predict the "pressure" that will be felt here, nor to regret – all intervening distance and trees notwithstanding – how this indeed tampers with the Form of Kahn's axis. The new building(s) should have "faced" east.

Consider the question of access. With the moving of the visitors' center to the new buildings, Kahn's plaza will no longer be come upon from any and all directions, but, rather, it will be properly entered, and

Michael Benedikt speculates on how an addition to Kahn's Salk Institute can bridge this landmark's dual role.

Photos: Michael Benedikt

the whole procession normalized. There are arguments to be made on the practical level here, certainly, but the making of what amounts to a large gate to the precinct is most un-Kahnlike and quite at odds with the Form of the institution he sought to bring to light. (One is reminded of the "proper" entrance of the Kimbell which is not the parking level and its constraining east door, but the park level to the west and its broad approaches to the open vaults.)

Perhaps, then, Kahn's Salk Institute, conceived as a symbolic order and as a single institution under the guiding desire of a single man, Jonas Salk, simply could not and cannot be added to felicitously. One wonders, indeed, if there would have been any controversy at all had the new building, situated physically exactly where it is now, been separated from the other by a public street and therefore on another "property" as another institution: so great is the power of the knowledge of civil law in the symbolic realm. As it stands, the durable dream – the Form – that is Kahn's Salk Institute as built, is now inviolable.

Now let us look at the "second" Salk Institute, that is, at the building as designed, at the whole complex as designed in its full circumstantiality and specificity. A selection of observations: Where Salk-Kahn's design is generous in providing "useless spaces," as in the studies and the open terraces between them, in the below-grade patios, in the interstitial service areas, the new buildings are abstemious, form fitting function as a sock fits a foot. Where the earlier design is porous to breeze and sunshine, like a dried piece of coral, Salk-Rinehart's is tight, its balconies well shaded, its shadow play reduced to a minimum.

Where Salk-Kahn's design could be traversed in every place, along every balcony, up and down its 20 staircases and 14 elevators, its plaza criss-crossable in 31 combinations, the Salk-Rinehart design, providing 80 percent again of existing laboratory and office space, offers six staircases (two of which serve all levels), four elevators (two nonfreight) and a plaza crossable five ways, one underground.

Where the original building, around its fountain and on its plaza, offers a variety of configurations and surfaces, high and low, narrow and wide, for sitting on, eating at, and leaning on, the sculpture of the addition's skylights emerge shoulder-high and higher, nowhere affording a place to linger. The transition west to higher ground, again an opportunity for place making, is treated in similarly indifferent if not inhospitable fashion.

Where the Salk-Kahn design brought natural light down to what would otherwise have been basement – indeed, going far beyond that to create generous and cool patios alongside the lowest levels, the Salk-Rinehart buries its lowest level, marked "Laboratories," solidly in the ground. Perhaps these levels are not for people. Had they been destined to house anything living, Kahn would not have let this happen.

Kahn would rarely leave columns in a deep space, simply "helping out" with the span above: if he could not span a single space a single way, the necessary intermediate columns would have three-dimensional consequences everywhere. Rinehart does the more economical thing. The new laboratories sport a double row of columns down the center of the space. Ceiling and floor are oblivious to their presence.

In sum: where Kahn thought of a building as a geographical setting, as land form, as nature-reconstrued not as a plant or body or organism but as an ecological condition intrinsically generous in the way it provided for life, exceeding in number of possibilities the number of ways it was actually inhabited, and resisting, thereby, complete subjugation to "program," the Salk-Rinehart design derives from another metaphor – perhaps machine, perhaps container– and cleaves to its program, to the what-is-needed, only.

But what have I shown here? Louis Kahn did not design the new building. Not only the architect, but the program, the budget, and even the client have changed at the Salk. It may be that both the life of Science and the science of Life have changed too, becoming more businesslike, more computerized, and perhaps this explains the new design's honest adoption, Kahn-concrete notwithstanding, of familiar commercial/industrial forms. For these reasons we ought to look at the new building again – that is, in its own right, when completed, and in full cognizance of the fact that it is possible to do fine buildings contra Kahn.

What, then, might we look forward to? By all accounts of the process so far and by the evidence on the ground already, the new East building will be up to Anshen + Allen's reputation for unusually high standards, crisp detailing, and forthright functional design. The money seems to be there for excellent materials and craftsmanship, and so does the motivation. Indeed, from the young construction worker to Salk himself, everyone on the job is acutely aware of the power of the original buildings and of what is at stake. For Kahn's legacy consists not only in his ideas about Form and Design, Order, Desire and the rest, and not only in what is imitable of his built work. His legacy is a particular spirit and seriousness about the making of a building and an optimism about how science, creativity, and good work in all its forms can fashion one generous world in which the numinous and the ordinary are identical.

This spirit is what lives on, as it should. **Michael Benedikt** ■

Michael Benedikt is the director of the Center for American Architecture and Design at the University of Texas at Austin, where he teaches design and design theory.

A Values-Added Practice

Equal measures of conviction and city smarts underlie the success of Harlem-based Roberta Washington Architects.

Roberta Washington directs her twelve-person architectural practice from modest offices in a five-story building adjacent to Harlem's best-known cultural institution, the Apollo Theater on 125th Street. The low-keyed, plucky 45-year-old Washington is a self-professed do-gooder, though not of the self-promoting or dogma-rattling kind. Almost all of her firm's clients are public agencies or nonprofit organizations that are funded by city or state agencies. And while Roberta Washington Architects has recently started to design new buildings in association with other architects, virtually all of the firm's completed projects have salvaged neglected buildings and transformed them into facilities for often neglected human beings.

© Cheryl Klauss

Roberta Washington at her Astor Row project.

Washington's practice in the heart of Harlem puts her squarely in an area whose future "is far less bleak than it may seem," she says. Some residential and commercial clients, in search of an architect familiar with Harlem, find their way to Washington via the telephone company's Yellow Pages, others via *The Big Black Book*, which lists black-owned New York City businesses. The majority of public clients, however, call Washington upon hearing that she successfully completed a project for a kindred organization. Some are referred by a contractor, others by a larger, too busy architecture firm. Washington, meanwhile, learns about prospective work through a similar network.

For many years Washington eschewed the help of set-aside programs for minorities and women in business, or goals, as they are now called in New York City. She recalls feeling "crushed" upon realizing that she "was being counted" and was receiving RFPs only for projects that were reserved for minority or women architects. But since she "*was* part of the goals game," says Washington, she decided that she would play to win. The policy of setting goals will not last, she reasons, so while it endures she is using it to demonstrate her ability, obtaining work from which her firm would otherwise be excluded because of its size, lack of comparable experience, or because of prejudice. Washington relates that some clients have doubted her abilities, but only at the beginning of the design process.

Washington says that most queries from majority white firms wanting to ally themselves with hers in order to meet goals usually begin (and often abruptly end) with a phone call. She is not interested in proposals that sound condescending and "want just to get our names on a piece of paper so that they will qualify. "By now," she says, "I can usually tell pretty fast if it's someone I don't want to work with, and usually I have to decide then and there whether I'm interested." She will consider only arrangements that either give Roberta Washington Architects an identifiable piece of the design or include the firm as part of an integrated team. Thus, in her agreement to work with Pasanella & Klein on the New Utrecht School in Brooklyn, Washington secured approximately 35 percent of a team involvement for her firm. As associate architect with HOK/Ellerbe, meanwhile, Washington's firm is responsible for distinct portions and phases of the renovation and extension of Kings County Hospital in Brooklyn.

Washington has also entered into associations with African-American-owned firms to obtain work she could not get on her own. Her first New York City hospital commission, which was also her first stab at designing new construction, came about through an association with Robert T. Coles of Buffalo. While Coles had the requisite experience, he needed a partner who was on the scene and knew Harlem well. For the renovation of the huge (2,000-unit) Bradhurst Phase 1 Housing, on Eighth Avenue between 145th and 146th streets, it was the developer, Consortium Central Harlem Development, that teamed up Washington's firm with the white-black partnership of Hirsch & Danois.

Despite having broken into the new-construction market, Washington intends to continue seeking renovation projects. Rehab has the advantages, especially for public clients on tight budgets, of usually being cheaper and faster than new construction. But the rehab process can also be perilous and can require compromises, she warns.

Among the problems are bureaucratic inefficiencies and the fact that the city, which owns a large proportion of the area's buildings, tears down any structure that looks the least bit deteriorated. For example, Washington recalls arriving on a job site one morning, after workers had gutted the structurally sound dwelling that she was preparing for renovation, to find that "the house wasn't there. There was a vacant lot, not even rubble." The city had been sending warning notices to the owner for a year – but to the wrong address.

Even more destructive, explains Washington, is a city practice that has led to the razing of whole blocks of salvageable old structures. In areas where the municipality owns a number of contiguous old buildings, it will often move all occupants and services into one of the structures and board up the rest, which it then neglects, precisely because the buildings are empty and boarded up. If problems of wear and tear become serious, as they inexorably do, "the city will just pull the building down," says Washington. What is needed is a workable way to transfer city-owned buildings to the private sector, she says, "but the government hasn't found a fair process to do so."

To illustrate client-related obstacles, Washington cites her firm's first commission, the renovation of the Hotel Cecil. Although gutting

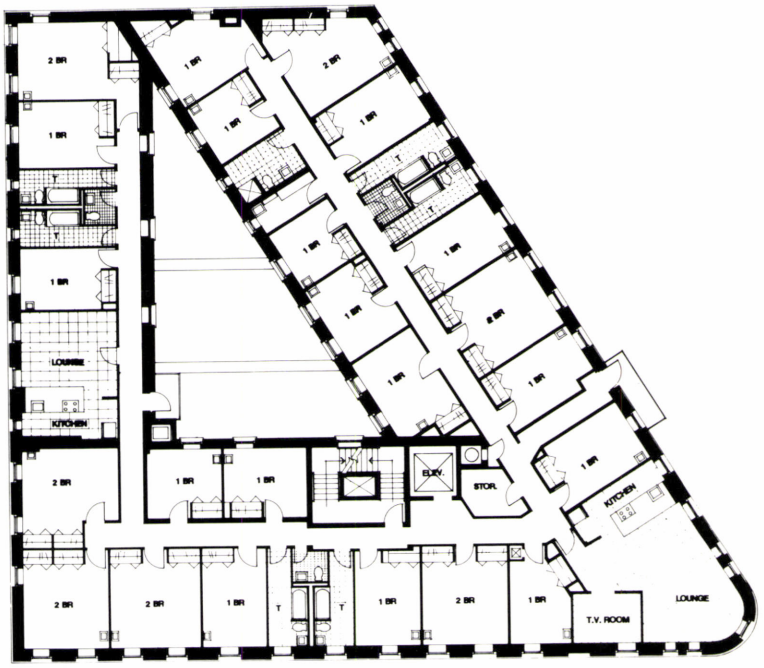
Photos: John J. Gallagher

Hotel Cecil

An abandoned hotel in Harlem was reclaimed as a single-room-occupancy hotel for 112 residents. The new scheme includes single and double rooms, shared baths, and shared lounges with kitchens (see typical floor plan). Supportive services are grouped with the reception area on the first floor. Complete renovation, including new elevator and mechanical systems, was required. Because the building was the site of a famous 1940s jazz club, it was a designated city landmark and had to be treated as such.

Total area: 36,000 sq ft

Renovation cost: $4 million



HOTEL CECIL – TYPICAL FLOOR PLAN (2–5)

Photos: John J. Gallagher

Astor Row

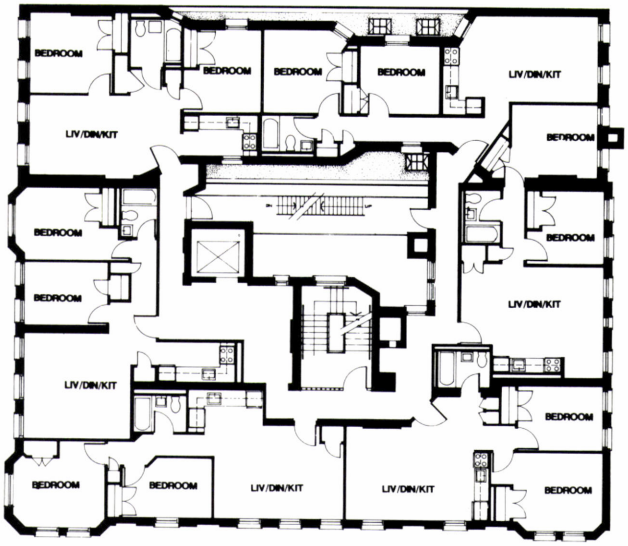
Dating from 1883, this landmarked row of 28 houses in Central Harlem is unique in Manhattan for its configuration – paired houses with front and side yards – and unusual for its wooden porches in the Eastlake style. The rehab project, supported by a philanthropic foundation, includes gut rehab of one pair of houses, to provide eight coop apartments, and restoration of all the porches. The project is scheduled for completion in December.

Total cost: $1 million.

John J. Gallagher

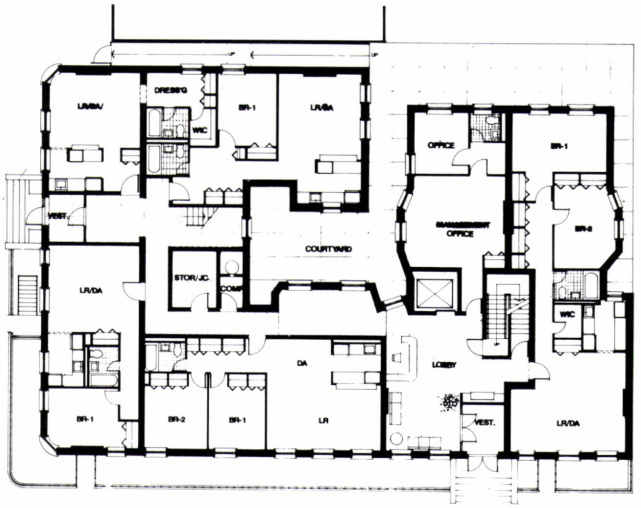
Sarah P. Huntington House

Two existing early 20th-Century structures in Manhattan's East Village were joined in this project to provide 28 apartments for formerly incarcerated women being reunited with their families. A childcare center, a multipurpose room, and offices are on the first floor. The smaller midblock building required gut rehab to adjust its floor levels to those of the principal, streetcorner structure. A new elevator was installed, and a new fire stair replaces exterior fire escapes.
Total area: 28,000 sq ft.
Cost: $3 million.



HUNTINGTON HOUSE – TYPICAL FLOOR PLAN (2–5) N 20'/6m

John J. Gallagher



HALE HOUSE – FIRST FLOOR PLAN N 20'/6m

Hale House Homeward Bound Residence

A handsome turn-of-the-century block facing Morningside Park in Harlem (originally two apartment buildings, despite its unified appearance) has been converted as part of Mother Hale's nationally known program for children born of drug-dependent mothers. Apartments house mothers being reunited with their children in a semisupervised environment. Besides remodeled apartments, the complex includes homework rooms, a community room, and a laundry at basement level, all lighted by generous areaway windows. An elevator was added, and a ramp to basement level provides access for the handicapped.
Total area: 30,500 sq ft.
Cost: $2.6 million.

"Washington says that most queries from majority white firms wanting to ally themselves with hers in order to meet goals usually begin (and often abruptly end) with a phone call."

and reconfiguring it would have produced a better building, the client decided at the outset to use as much of the original fabric as possible and to duplicate the existing plan to save money. That remained the strategy even after a four-year delay, during which rain falling through an ever-widening hole in the roof had ruined the walls so that they had to be replaced anyway.

With rehabs, Washington asserts, "you never know what complications you'll find until you start the operation." She tries to protect herself from costly surprises by assuming the worst and including worst-case-scenario clauses in contracts. "A client gets very upset," she observes, "if you come back and say you found problems you hadn't planned on." Despite the obstacles, however, Washington has rehabbed some twelve brownstones and an equal number of apartments and says, "I think the idea that old is better has caught on here."

A problem that comes with the territory when trying to shoehorn programs for poor and sometimes ill people into existing buildings is neighborhood resistance. The Not In My Back Yard (NIMBY) reaction is as pervasive in Harlem as in other communities. Before Washington commits herself to a project she tries to determine the chances that the program will be accepted. For instance, by the time the architect was ready to convert an old factory on 126th Street into the Central Harlem Alcoholic Treatment Center, "manufacturing areas were about the only place anyone would let you put a treatment center anymore," she says. After a year of unsuccessfully trying to obtain a special permit from the city planning commission, Washington asked what she could do to obtain the needed approvals. She was told the building "would be legal as a hotel," she recalls. "So, in the end, we took out all the words that made the building look like a health center – 'nursing station,' 'patients,' 'examination rooms' – and we just called it a transient hotel. The project was approved the next week."

Since most agencies have no building experience, programming often requires extensive research, explains Washington. Government guidelines provide minimum requirements, but the designer needs to understand the client's particular needs and problems. Washington enjoys this part of the work, feeling that "most program directors are interesting people who are really trying to help their clients." Among her frequently conflicting design challenges is that of providing security – both within the building and on its exterior – without making the structure feel confined or fortresslike. Similarly, agencies want their buildings to look pleasant but not too expensive, nor so comfortable that residents will want to stay longer than may be good for them.

Slowly and deliberately, Roberta Washington has also been building up an expertise in the design of healthcare facilities. Her interest in medical buildings began when she worked summers for the District of Columbia Department of Health and Human Services while attending Howard University. It was reinforced in her M.Arch. program at Columbia University, where she specialized in the design of healthcare structures; when she subsequently worked for firms with expertise in the building type; and during a four-year stay in Mozambique from 1977 to 1981. Her accomplishments there included the design of a prototype medical center for mothers and their children.

Obtaining design commissions for healthcare facilities in New York has required not only teaming up with larger, more experienced firms but, of course, hiring and training accomplished architects. Washington's staff of nine architects, most of whom are black and female, consists mainly of designers who have experience with healthcare, renovations, and CAD. (Her senior associate, Diana Peeples, also holds an M.Arch. from Columbia.) Although Washington's office is flooded with résumés, she says that when she needs people with a particular expertise they're usually not to be found. She has advertised in newspapers, even used an employment agency, but has usually ended up "using someone I knew from school, from firms I've worked for, or through friends – someone I thought I could mold into what I needed."

Roberta Washington Architects relies on a team approach when working on larger projects, while on smaller jobs "people will fade in and out as the lead person needs help," Washington explains. She herself is involved in every project. She does the marketing and writes the proposals, conducts initial client meetings, introduces the client to the project architect, and trouble-shoots throughout the project. Among Washington's quandaries is how to keep her mid-sized firm large enough to win big projects yet small enough to manage comfortably, which, she believes, means having no more than 12 people on staff.

Washington opened her own firm in 1983 "without much of a plan." In fact, she says, she probably wouldn't have taken the risk of starting a practice if she had known what is actually entailed in running a business. Her firm, which began as a one-person practice operating out of her apartment, got its first break with a cast-off project from a larger minority-owned firm. By 1990 it had grown to its current size, generating gross revenues of approximately $700,000.

Washington's overriding concern is with scheduling projects and maintaining cash flow when agencies don't pay retainers and are slow to pay fees. "It takes a lot of organization and juggling," she says. Washington thirsts for business advice, has taken management courses (wishes she had done so even before printing up stationery), and is beginning to test computer programs – Wind2 and Sema4 – that promise to help analyze and manage her firm's finances. "We hope," she quips, "that they hold the secret to life."

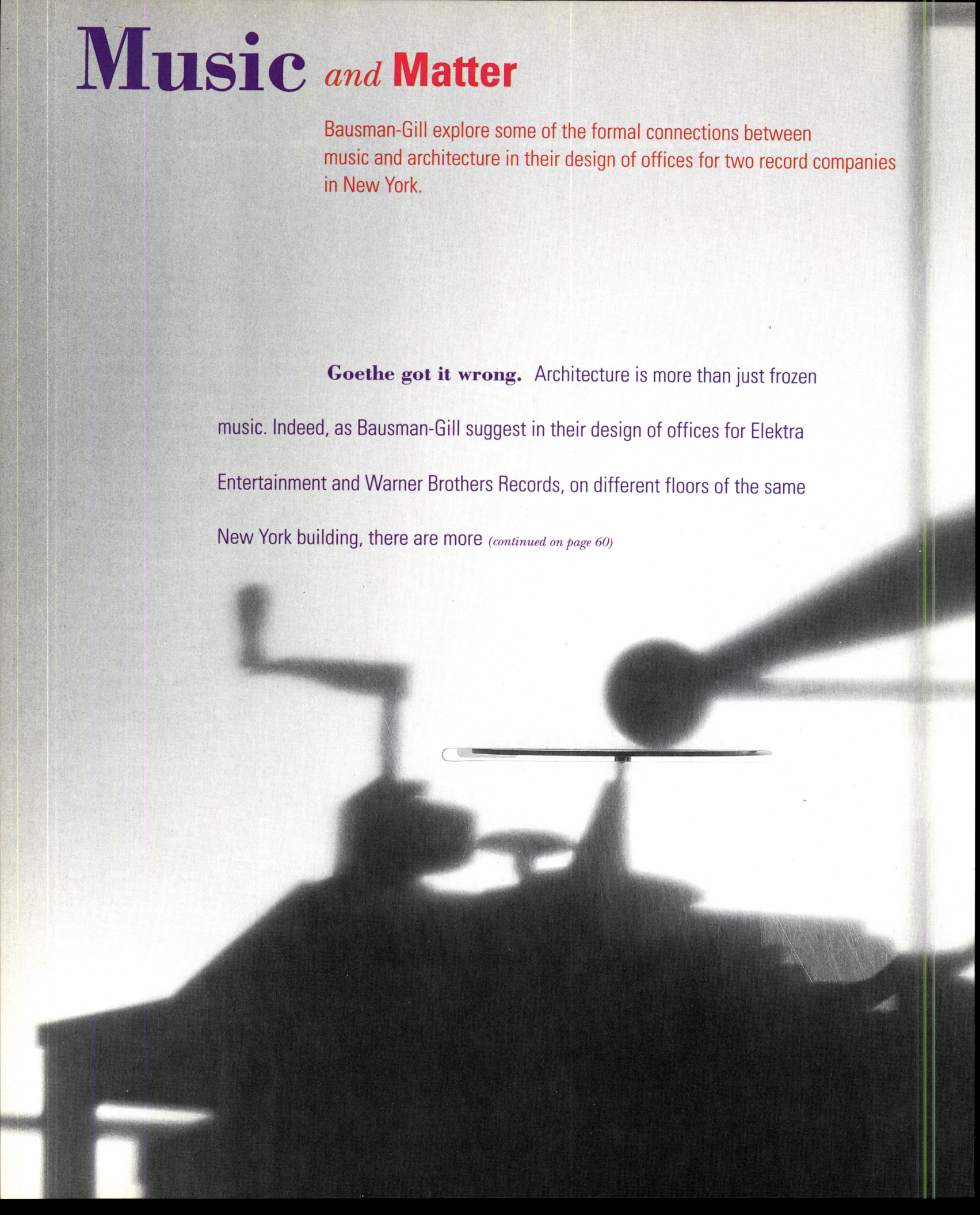
What it takes to succeed in public sector work, Washington says, "is a lot of patience and stamina and really wanting to do what you're doing and wanting to do it well." Judged by her own tough standards, Washington is doing well by doing good. **Andrea Oppenheimer Dean** ■

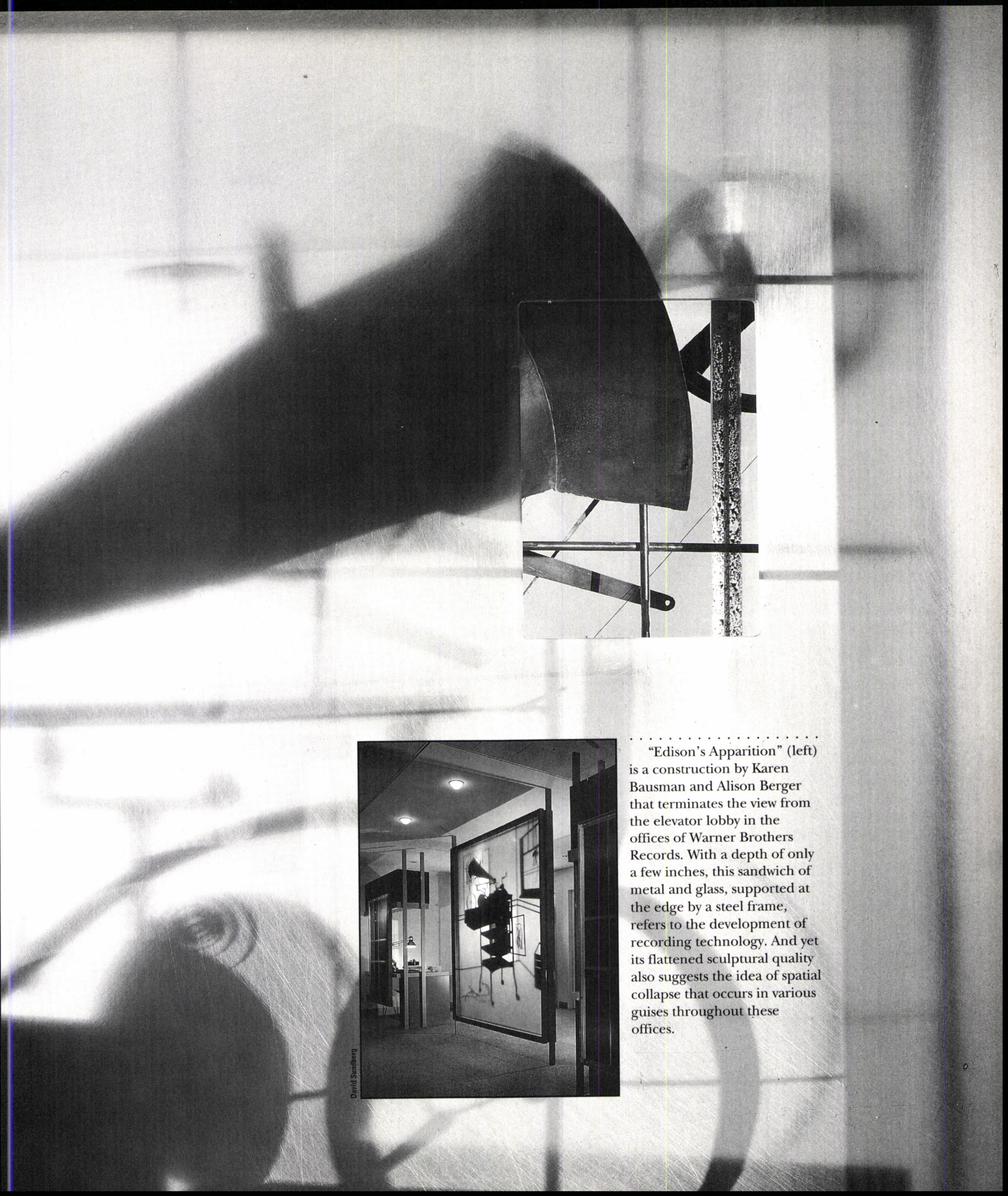
The author, a former Exective Editor of Architecture *magazine, is Editor-at-Large of* Historic Preservation.

Music *and* Matter

Bausman-Gill explore some of the formal connections between music and architecture in their design of offices for two record companies in New York.

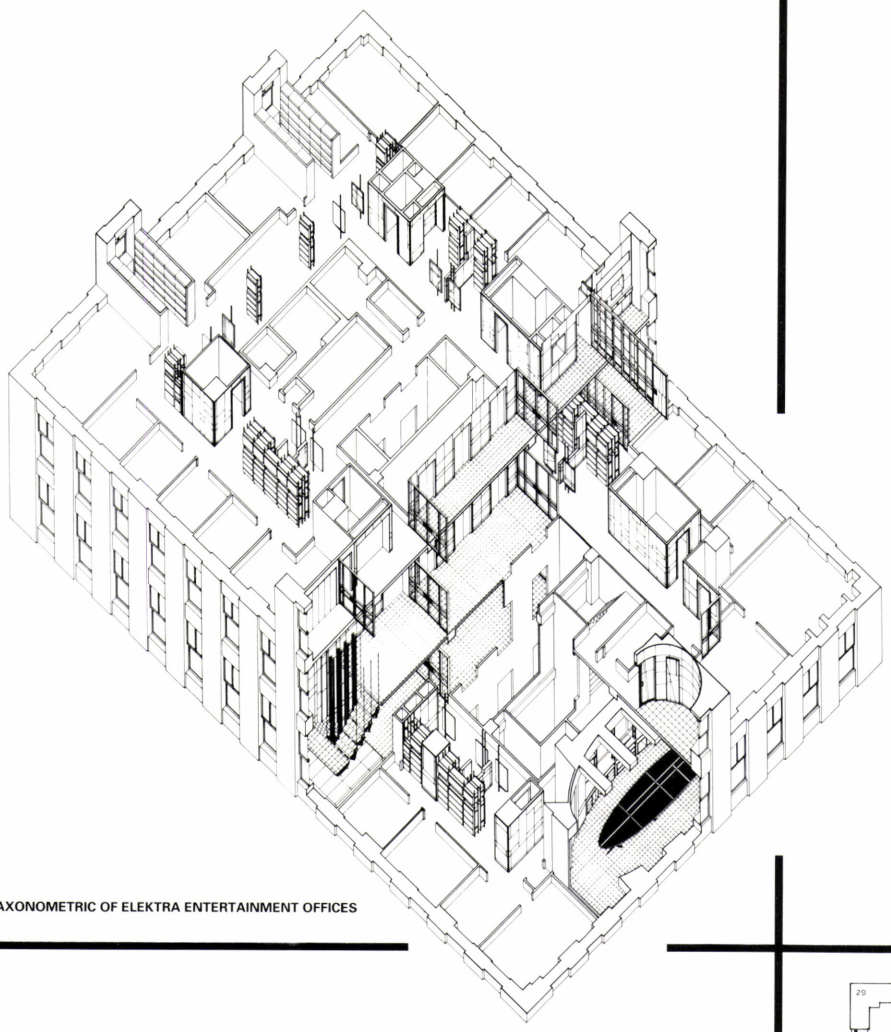
Goethe got it wrong. Architecture is more than just frozen music. Indeed, as Bausman-Gill suggest in their design of offices for Elektra Entertainment and Warner Brothers Records, on different floors of the same New York building, there are more *(continued on page 60)*





David Sundberg

"Edison's Apparition" (left) is a construction by Karen Bausman and Alison Berger that terminates the view from the elevator lobby in the offices of Warner Brothers Records. With a depth of only a few inches, this sandwich of metal and glass, supported at the edge by a steel frame, refers to the development of recording technology. And yet its flattened sculptural quality also suggests the idea of spatial collapse that occurs in various guises throughout these offices.



AXONOMETRIC OF ELEKTRA ENTERTAINMENT OFFICES

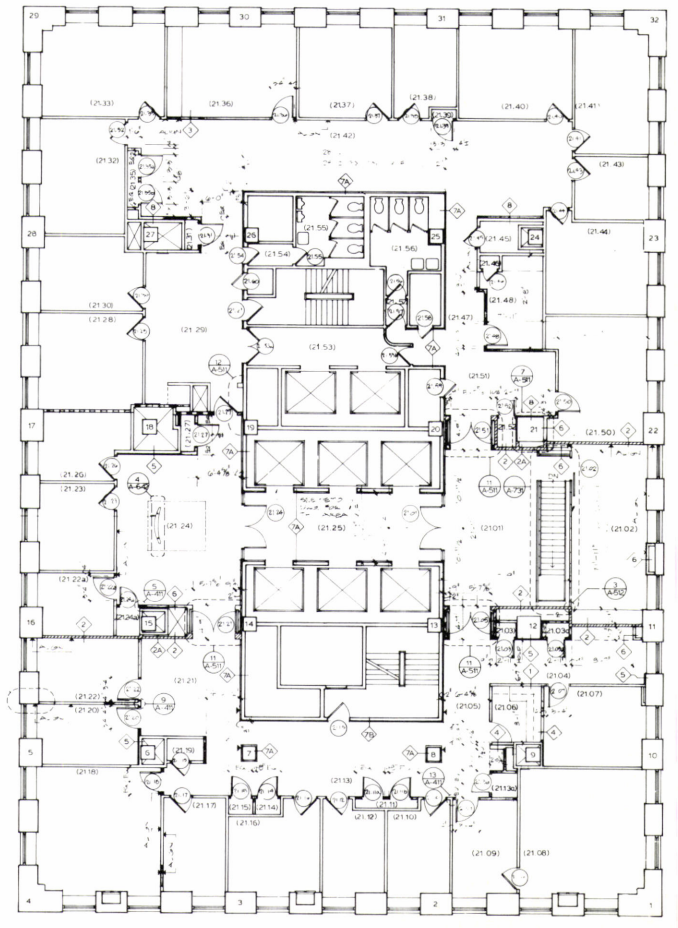
parallels between music and architecture than first meet the eye – or ear.

Consider the plans of these two projects. Like compact discs, entirely predictable in shape and size, the plans adhere to the standard office layout, with enclosed rooms along the perimeter wall, a central core, and an intermediate zone containing secretarial areas, reception space, files, and other support functions. But just as compact discs are infinitely varied in content, these apparently predictable plans are richly layered and surprising in their detail.

Bausman-Gill, for example, have used the repetitive rhythm of perimeter offices, which are conventional in finish, as a kind of background beat, against which they play a more rapid tempo of desks, panels, screens, cabinets, and files along the circulation route. They interrupt that rhythm with cross-axial entry sequences that run through the elevator lobbies and culminate in internal stairs within the reception areas.

Overlaying these rhythms are intensely colored materials and complex, asymmetrical forms. Here, Bausman-Gill's performance is most memorable. You move through these offices in a swirl of wood paneling stained a brilliant green or purple, past metal doors and file cabinets shorn of their paint, across floors covered in red leather tile or variegated flagstone, along walls of thin metal reveals of silver or gold.

Photo, right: Peter Mauss/ESTO



FLOOR PLAN OF WARNER BROTHERS RECORDS OFFICES

N 20'/6m

1

The plans of the Elektra offices (facing page, top) and those of Warner Brothers (facing page, bottom) both contain private offices along the perimeter and more public spaces around the core. However Elektra's plan creates office "neighborhoods," with secondary corridors that loop behind the secretarial stations and files along the main circulation route (1). At Warner Brothers, there is a single path (2), along which stand banks of files, secretarial alcoves, and racks of CD's. The workstations and files use stock elements (steel file cabinets, plywood paneling) whose finishes (clear coatings or stains) emphasize their natural surface character or grain.

Although sometimes brash, this visual jazz is not undisciplined. The rigor in these offices stems from several sources. First, there is Bausman-Gill's own research, especially in the finishing of materials. They experimented, in the Warner Brothers project, for example, with metallic paints, trying to get just the right shade of gold, and spent time with metal cabinet makers, trying to get them to deliver units without a factory finish.

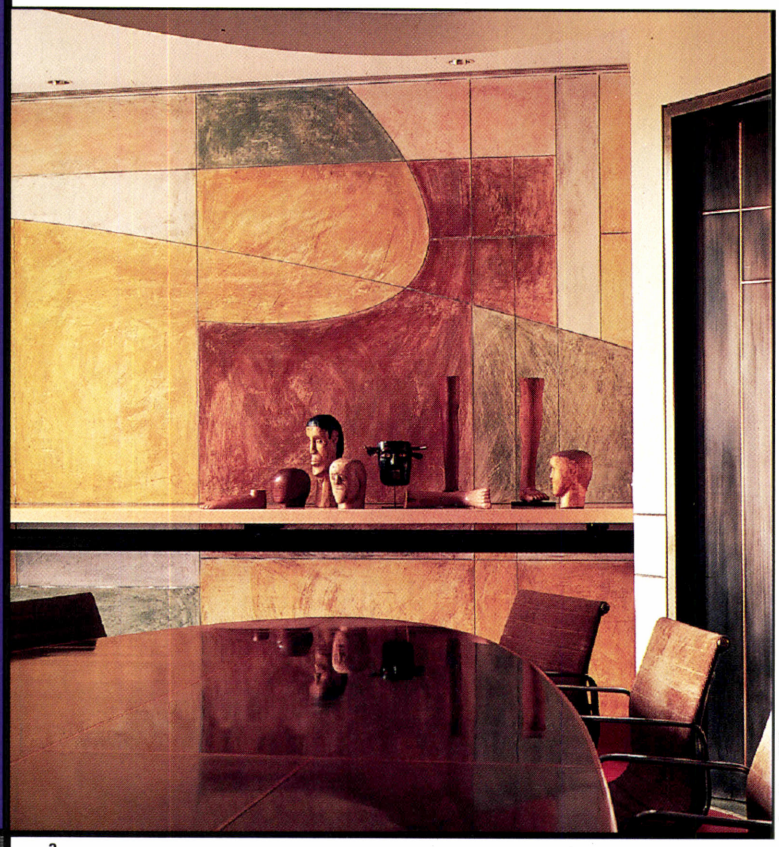
Second, there is a clear social agenda behind these two projects. Bausman-Gill sought, in the Warner Brothers offices, to "illuminate and celebrate the creative individual internalized within an American corporate hierarchy." To achieve this, they designed the zone between the core and the perimeter offices as a kind of public space, with circulation loops to encourage interaction among people and desk-side screens that help maintain their privacy. There are places for personal items at every workstation and placards for displaying the company's latest compact discs, ready to be played.

Third, but no less important, is Bausman-Gill's intellectual rigor. In both their architecture and

Scott Frances/ESTO

2

The way in which Bausman-Gill draw the entries – elevator lobbies, reception space, stair – in the offices of Elektra (facing page, top) and Warner Brothers (facing page, bottom) reveals their interest in the flattening and abstracting of space. This Modernist approach to space is echoed in their detailing, such as the Cubist-like composition of shapes in the integrally colored plaster walls of the Elektra conference room (3) and in the layering of channels, paneling, and fasteners in the corridor walls at Warner Brothers (4).



Peter Mauss/ESTO

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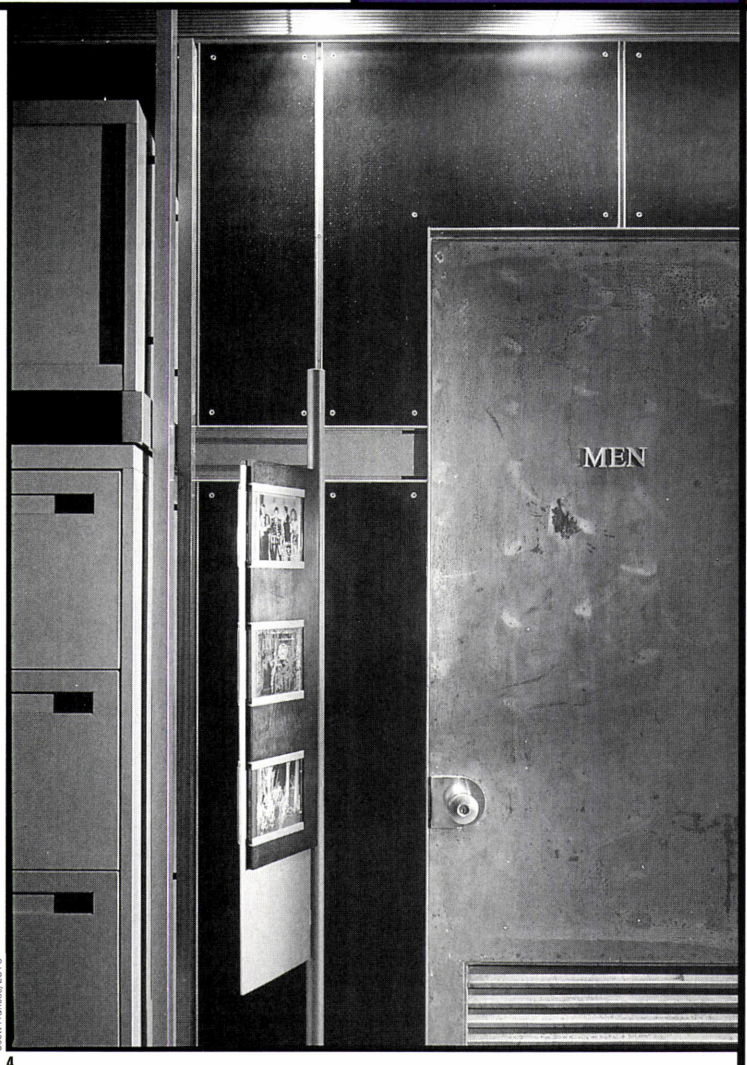


Scott Frances/ESTO

4

their art, they have pursued the Modernist idea of space as something that is fluid and continuous, as in the free plan; and also flattened and phenomenally transparent, as in a Cubist painting. In these two projects, they make a further connection between that spatial idea and the act of recording music. A compact disc, notes Karen Bausman, "has no A and B side; it is a Möbius strip of sound like the Modernist notion of space." At the same time the recording of music involves a flattening of layers of sound – and the acoustical properties of the space in which the music is performed – onto the surface of a disk: a kind of auditory Cubism.

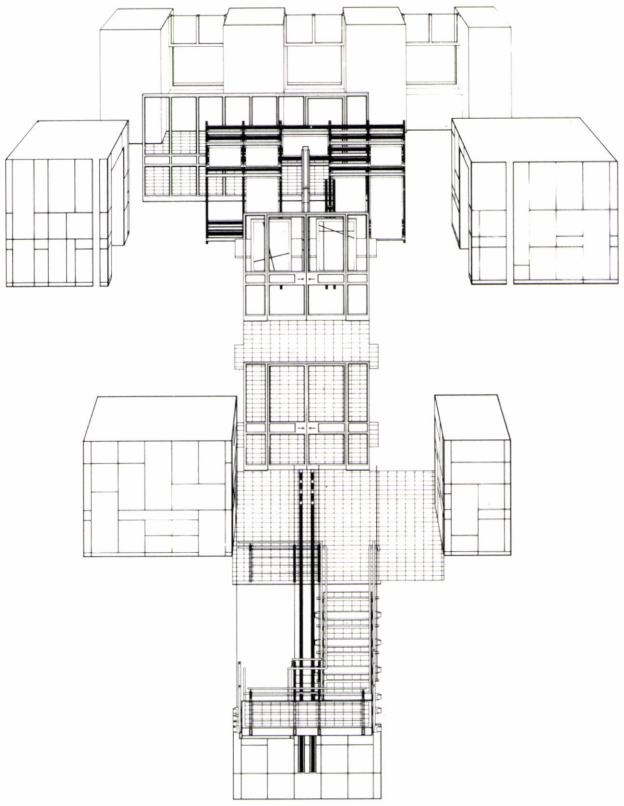
Bausman-Gill explore these connections between music and Modernist space in various ways. Most obvious is the screen, entitled "Edison's Apparition," that terminates one end of the entry axis in the Warner Brothers offices. Consisting of sheet steel pinned between two layers of translucent glass and set within a three-inch steel frame, this "shadow box," says Karen Bausman, is "a collapsed volume of space," depicting images of recording history – a gramophone, a turntable, an amplifier, a speaker – in silhouette. There are other, less explicit references to these spatial ideas as well. The corridor walls, for example, with their wood panels layered on top of a metal substrate or divided by metal reveals, appear at once to be a continuous plane and a series of discrete elements, at once a deep surface and a flattened space.

There is a certain gap, however, between the ideas explored in these projects and functional reality, over which Bausman-Gill had little control. It is ironic, for example, that companies, whose very

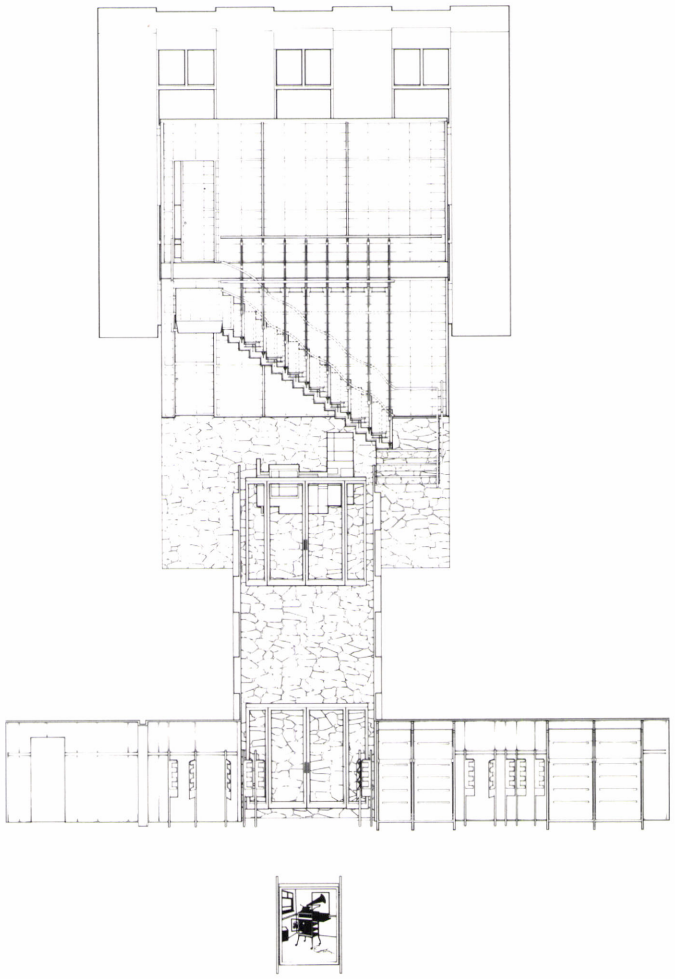
product is the compact disc, still inhabit offices with banks of file cabinets, the contents of which could all fit on a few discs. Bausman-Gill allude to the idea of collapsed space in the detailing of these offices, but the plans of these offices have yet to reflect the collapse in the size of office space and in the amount of storage made possible by the compact disc and the computer chip.

Bausman-Gill are right in recognizing that the flattening or collapsing of space is as central to Modernism as spatial continuity. But the realization of this collapse may be more literal and more radical than the early Modernists had in mind: what began as a compositional strategy in Cubist art may end up, because of electronic technology, becoming a physical reality.

Music seems to be thriving in our increasingly a-spatial, electronic world. Architecture, however, is more than just frozen music, and how this, the most spatial of the arts, will fare in this new world is a question provoked by these two projects, but not fully explored. **Thomas Fisher** ■

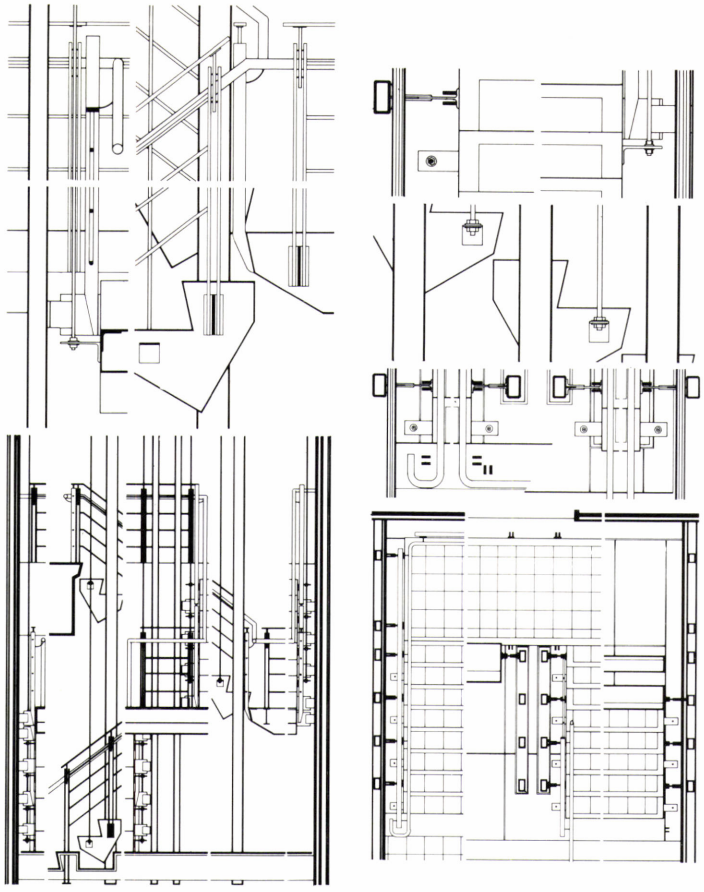


PARTIAL PERSPECTIVE OF ELEKTRA ENTRY SEQUENCE



VERTICAL PROJECTION OF WARNER BROTHERS ENTRY SEQUENCE

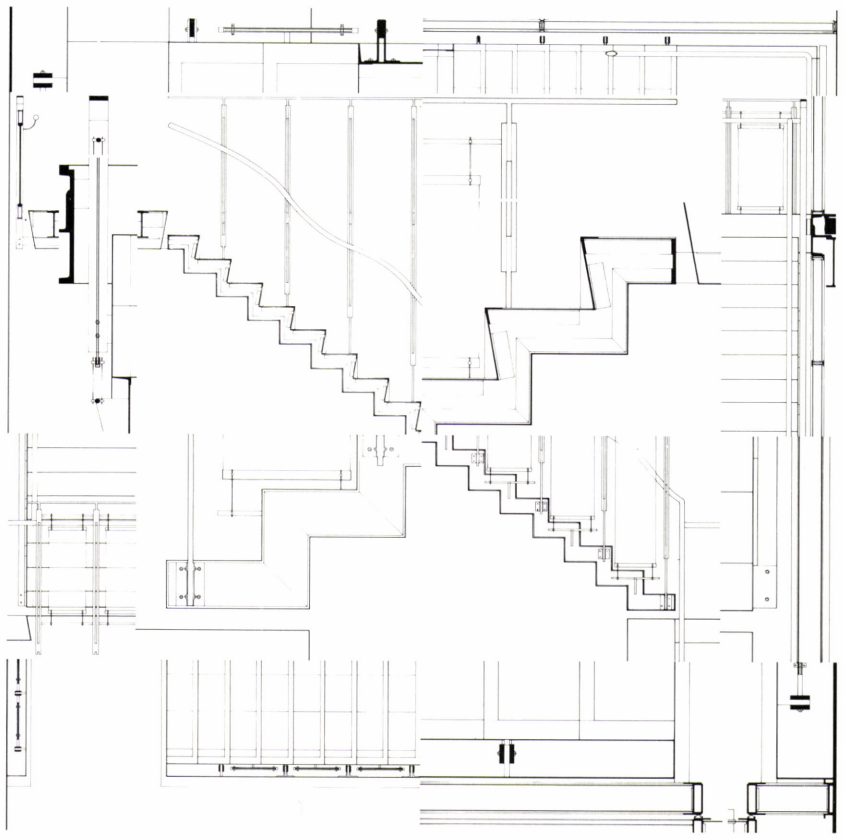
Project: *Elektra Entertainment, New York.*
Architects: *Bausman Gill Associates, New York (Karen Bausman, Leslie Gill, partners-in-charge; Bryce Sanders, Adi Shamir, design team; Bryce Sanders, project architect; Alison Berger, John Blackmon, John Ginocchio James Hicks, Tim Lenahan, Clarissa Matthews, Bette Miller, Jackie Pilliciotti, Tim Schollaert, Gary Shoemaker, Mable Wilson, Dan Wood, project team; James Hicks, Homa Shojaie, presentation drawings).*
Client: *Elektra Entertainment (Robert Krasnow, chairman/CEO; Aaron Levy, vice chairman/COO).*
Site: *four floors of a New York office building.*
Program: *office and support space for a record company headquarters.*
Major materials: *wood paneling, steel framing, leather tile flooring, sisal carpet tiles, stucco panels.*
Consultants: *Edwards & Hjorth, structural; Hartmann & Concessi, electrical/mechanical; RAH Associates, acoustical; Construction Spex, specifications; Audio Video Crafts, audio video; Pentagram Design, The Sign Company, signage.*
General Contractor: *Clark Construction.*



PLAN AND DETAILS OF INTERNAL STAIR AT ELEKTRA

Both offices have a main reception space and stair, through which light from the perimeter filters into the center of the floor. At Elektra (5) the concrete, switch-back stair, with its red leather tile treads and landing, is supported by or hung from a complex web of steel rods (left). In contrast to the density of the Elektra stair is that of Warner Brothers (6), where a straight- run, concrete stair, hung from a series of steel rods, steps up in front of a translucent, back-lighted wall. Here the elements (below) have been reduced to the few essentials: tread, riser, rail, support.

Project:: *Warner Brothers Records, New York.*
Architects: *Bausman Gill Associates, New York (Karen Bausman, partner-in-charge; Alison Berger, Adi Shamir, design team; David Wilbourne, project architect; John Blackmon, Denise DeCoster, John Ginocchio, Alicia Imperiale, Rob Luntz, Kevin McClurken, Ann O'Dell, Jackie Pilliciotti, Bryce Sanders, Gary Shoemaker, Mabel Wilson, project team; James Hicks, Nandini Bagchee, presentation drawings; Edison's Apparition: Karen Bausman, Alison Berger, artists; Karen Bausman, Alison Berger, Robert Mantho, Charles Stone, fabricators; Jorge Perez, David Weinstock, crucible).*
Client: *Warner Brothers Records (Murray Gitlin, executive vice president/treasurer).*
Site: *two floors of a New York office building.*
Program: *branch office for a record company.*
Major materials: *wood paneling, aluminum reveals, steel framing, flagstone lobby flooring, sisal carpet tiles, Kalwall screen.*
Consultants: *Edwards & Hjorth, structural; Hartmann & Concessi, electrical mechanical; Construction Spex, specs; Audio Video Crafts, audio visual.*



PLAN AND DETAILS OF INTERNAL STAIR AT WARNER BROTHERS

Peter Mauss/ESTO

Bausman-Gill Offices

5, 6

CRITIQUE

NON-PARALLEL PARKING

TWO DIVERGENT APPROACHES TO URBAN PARKS IN PARIS

Thomas Vonier

"There are few things in human history," wrote Walter Benjamin in 1927, "that we can know as well as the history of the city of Paris." Citing the multitude of works "consecrated exclusively to the study of this minuscule corner of the earth," he quoted another observer: "Paris is a landscape composed purely of life itself."

Yes – and to judge from just a few accounts, one aspect of Paris has long been thus: leave an open space somewhere – anywhere – and it will soon be filled up.

But if Parisians today seem too inclined to fill their few remaining empty spaces with cars, buses, trucks, and motorcycles, they also show sustained commitment to better pursuits: in a pattern begun centuries ago, the city still makes way for large parks and then faithfully fills *them* up – with people.

While fundamentally different in conception and execution, Paris's largest new parks, the Parc de la Villette and the Parc André Citroën, invite comparison due to their commonalities of scale, origin, popularity, critical attention, and strategic locale.

Visitors to this city, who stay mainly near its older and best-known parks – Montsouris, Buttes-Chaumont, the Tuileries, Luxembourg, Monceau, and the Champs de Mars, or the big *bois* (woods) of Boulogne and Vincennes – would have difficulty imagining Paris without great parks and gardens close by. But such imagining was easy for residents and habitués of the city's northeast and southwest sections, longtime sites of major industrial facilities and unrelieved warrens of working-class housing.

Removed both physically and in spirit from "green" Paris, these areas of the 15th and 19th arrondissements remain important residential centers, long lacking ready access to large parks. Thus, although both parks have already joined the ranks of starred sites in Michelin's green guide and are firmly established tourist shrines, they were also intended to serve – and have begun to meet – recreational needs of their immediate neighborhoods.

Parc de la Villette

As this park's management will say, there's no arguing with numbers: La Villette hosted a record 8.4 million visitors in 1992, of whom 2.5 million visited outdoor areas only (which constitute about three-fifths of the park's total area). These numbers will probably rise this year, despite France's lagging tourist trade.

A profusion of rain-or-shine, free, and low-cost attractions make use of the park less vulnerable to the vagaries of Paris weather. The big draws include Adrien Fainsilber's conversion of an unused slaughterhouse into the "City of Science and Industry," several bandstands and concert halls, conference and exhibition facilities, and Christian de Portzamparc's nearly-completed "City of Music." They provide strong pull; somebody is almost always in the park (even if only en route to a building in it), and something is almost always doing.

The predominance of families (many of them tourists) and exuberant local elementary school groups among La Villette's visitors lends a wholesome and festive air to the place, although it is also known as a hangout for gangs of young toughs on mopeds, rollerblades, skateboards, and bicycles. (This summer, two Czech tourists were found with their throats slit in a nearby square where they had camped overnight.)

Park managers say that 50 percent of all visitors to La Villette arrive on foot (this includes riders of public buses and the Métro). About a third of all visitors come from surrounding neighborhoods for free concerts, fireworks displays, outdoor dances, and other events. The managers also say – and it is evident – that users of the park constitute a broad demographic mix.

Writing in November 1989, P/A editor Ziva Freiman described a disturbing vacuousness to parts of the place; this aspect has improved over four years, but the site still has a few gloomy and even menacing corners. Calling Bernard Tschumi's master plan "a powerful but thinly spread framework," she quoted the architect as seeking a "recognizable identity as strong as the British telephone booth."

Tschumi's architectural vision and system have proved to be extraordinarily tenacious, flexible, variegated, lively, and forgiving. The scheme accommodates intense usage, sudden (even panicked) adaptation for special events, and a wide variety of more or less sympathetic, more or less permanent interventions by other designers.

Remarkably, the visual and cultural cacophony created over these years seems to fulfill and even enhance the promise of Tschumi's original ideas. His framework of red structures known as "follies," regularly spaced among geometrically planned gardens, has indeed proved to be powerful, and – with the completion of more follies and gardens – it is now much less thinly spread. The 125-acre park will continue to fill in. More follies are planned to welcome tour groups arriving by hired bus, to sell souvenirs, and to display information. And when the new museum of music opens in 1995 and a historic lion fountain at the Porte de Pantin entrance is restored, this desolate and windswept corner of the place will be better.

Once inside La Villette, people sense that they have landed in quite a different kind of place and many act accordingly. As could be expected, children readily swarm over huge, imaginative climbing toys and race around the follies' multiple stairways and towers. But there is also genuine spectacle in seeing adults stumble through and marvel at such features as the fog garden (in which blankets of foglike vapor are dispensed over a moorlike landscape), the wind garden, the mirror garden, and the bamboo garden.

This sense of spectacle is helped by increased passenger traffic on the working canal that neatly bisects the park. A water taxi and several charter boats regularly ply the narrow route between La Villette and central Paris; when sand-and-gravel barges occasionally pass, they, too, become attractions.

An imitation Philippe Starck café that had operated in one of the main follies along the canal has closed. ("They just couldn't find equilibrium," says a park official. "It was full to overflowing on sunny weekends and empty at all other times.") But small concession stands have opened and there is always the "Quick" folly, a fast-food hamburger stand. One hears no complaints that you can't get a drink or a snack.

Day and night, against odds, the jumble remains unified, interspersed with Tschumi's curious and likable little red buildings, all more or less connected by paths and by the late Peter Rice's undulating shelter-spines. Still, the park is marred by several such distinctly non-folly buildings as the Pavillon Tusquets, an oddity designed by Spanish architect Oscar Tusquets. This leaden,

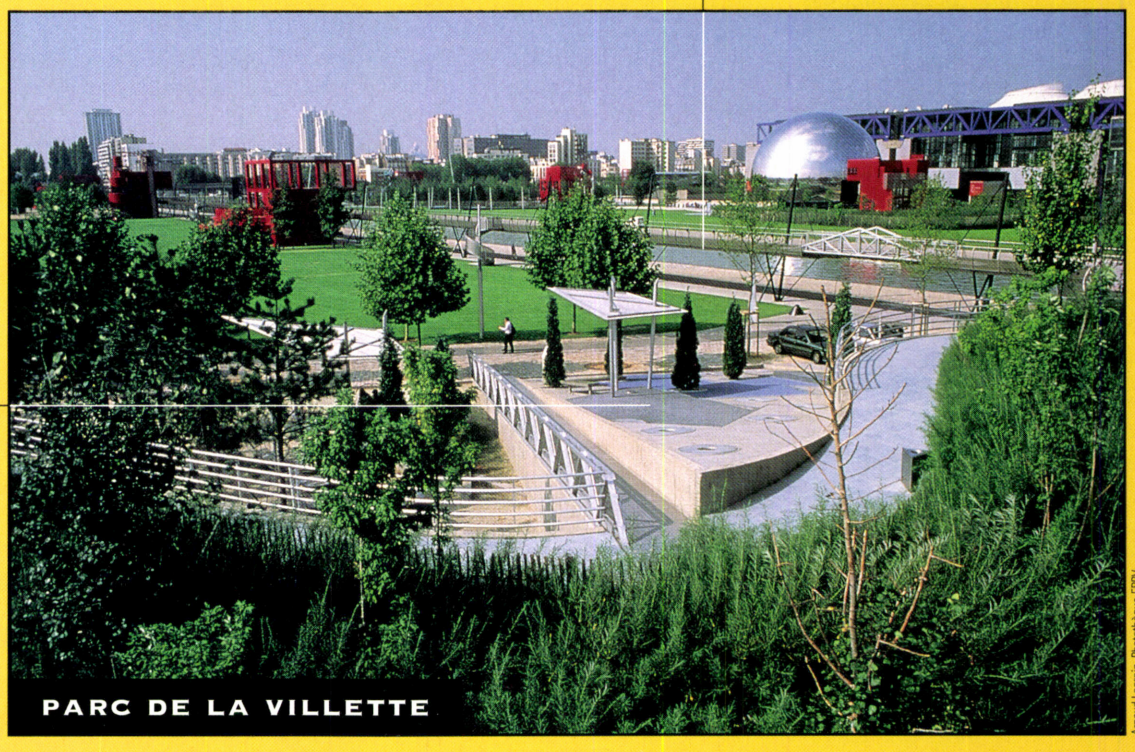
PARC ANDRÉ CITROËN

One of Parc André Citroën's twin greenhouses has been empty for months; like six smaller greenhouses in the park, these have inadequate circulation space.

The formal lawn that is the centerpiece of Parc André Citroën is interrupted only by one diagonal path. Unlike most Paris parks, this one allows people to walk and play on the grass – to the shock of some visitors.

Part of the entertainment at La Villette is the working canal – with its water taxis, charter boats, and barges – which bisects the site.

The "garden of acrobatics" is one of ten special gardens that encourage visitor participation at Parc de la Villette. At upper right is one of the park's indoor attractions, the City of Science and Industry.



PARC DE LA VILLETTE

Arnaud Legrain, Photothèque EPPV

squat, vaguely Mesopotamian gallery is badly miscast here, looking like a temporarily parked Expo leftover or a real estate merchant's gauche field office.

La Villette at its best is a vibrant locale, if very hard-edged – and even the hardness seems right for at least one kind of "urban park of the 21st Century." In any case, the place's no-bones-about-it urbanity imparts much of its allure and uniqueness. When busy and in fine weather

"Tschumi's architectural vision and system have proved to be extraordinarily tenacious, flexible, variegated, lively, and forgiving."

(factors that tend to go together), it is a very nice place to see and be seen; it works, holds together, and by most accounts is a great success.

Parc André Citroën

Generally to their benefit, neither park has been spared the French penchant for institutionalizing culture, or making it official. But at the Parc André Citroën, this imprint is more subtle; where much of La Villette is about edification and participation (with didactic overtones in the museums and the outdoor environmental interventions), André Citroën is about the making of deliberately impressive vistas and the experience of being in a park.

Like La Villette, the Parc André Citroën is the result of a competition. A 1985 competition jury selected two separate schemes, one by architect Patrick Berger with landscape architect Gilles Clément, the other by landscape architect Alain Provost with architects Jean-Paul Viguier and Jean-François Jodry. The two teams then combined efforts with planners and architects from the city of Paris to produce the final design. The park opened in September 1992.

The competition brief for this 35-acre river-edge site, purchased from the Citroën automobile company in 1970 after its offices had moved, called for all buildings to be subordinate to the park itself. They are.

Large, delicate twin greenhouses anchor one end of the central lawn, but don't dominate. The structures are somewhat puzzling; one has remained empty for months and both suffer from insufficient circulation space when the park is busy. One can look into them from the outside, but not easily.

Even more puzzling are six much smaller greenhouses built in the same style. Each one is so small that it barely accommodates more than three persons and, worse, the plants they contain look jaundiced. They are really more like glass gazebos and are fine on slow days but unusable when the park is busy.

The architects say their intention was to explore and illustrate four related themes: nature, metamorphosis, architecture, and artifice. They sought to accomplish this through the device of multiple, distinctly different types of garden spaces. They have certainly succeeded in making visitors feel that they are in a garden, always.

There is the "black garden" (somber, leafy, surrounded by walls), the "white garden" (more open, planted with species that blossom), the evenly-spaced serial gardens (through and past which one walks to see diverse botanical environments); the vast central

"Despite its classical qualities and strictly enforced geometry, [André Citroën] can also be a place where kids cut loose."

lawn (surrounded by a narrow canal that can be crossed only in a couple of spots); and the surprising "garden of movement and change."

This latter garden surprises – and is welcome in the otherwise formal, rectilinear setting – because it is rather wild and prairielike, with the scrubby plant growth and character of, say, a tract along some abandoned railroad tracks. The park's gardeners alone decide what to do in this realm; what to grow, how to tend it. They seem to be letting nature take its course and, although one botanist says rare and marvelous species are growing there, the result seems wild, but just fine.

Visitors to André Citroën are fewer and tend to be older than visitors to La Villette; there are fewer foreign tourists, more plant lovers. Garden clubs and botany classes make pilgrimages to the park *en masse.*

On cool or wet, gray days, one may find André Citroën completely deserted. On nicer days, though, the place is often dense with people who stroll, pause, admire, sunbathe, read, picnic, embrace, or study. Despite its classical qualities and strictly enforced geometry, this park can also can be a place where kids cut loose.

Some visitors seem shocked and even angered to see youngsters play soccer, throw frisbees, or tumble on the park's vast and mostly unobstructed central lawn. Yet – speaking in Hippocratic terms, as if such behavior were understood to be essential therapy for urbanites – a park guard remarked, "Well, it does no harm."

A recent Air France in-flight magazine feature on André Citroën pictured its terrific fountain – the "peristyle of water," where hundreds of jets spring erratically and unpredictably from holes arrayed in a grid on the ground plane – and said: "Children just can't resist the pleasure of getting sprayed." Their reporter obviously hadn't been there recently, however. Garish green signs now insist that people keep out of the fountain, and guards enforce the edict.

So heavy is park usage that some planted areas were damaged – the fault in part of confusing circulation patterns, some of which are slowly and awkwardly being corrected. More troubling is the doubtful quality and obvious vulnerability of some construction details, particularly in the park's many features given over to containment and movement of water. But these are probably shake-down-period problems, compounded by the pressures of unanticipated popular success,

"Neither of these new parks will become places where one weaves into or out of the city on promenades past historic shrines, as happens with the Tuileries or the Champs de Mars."

and should be correctable.

The park suffers by not yet being connected to the Seine; a freeway has been placed underground, but the river remains cut off by regional rail lines and a cement and building materials depot on the levee. Plans call for a bridge to be built over the railroad, connecting the park to promenades that will be extended along the Seine between the Bir-Hakeim and Mirabeau bridges.

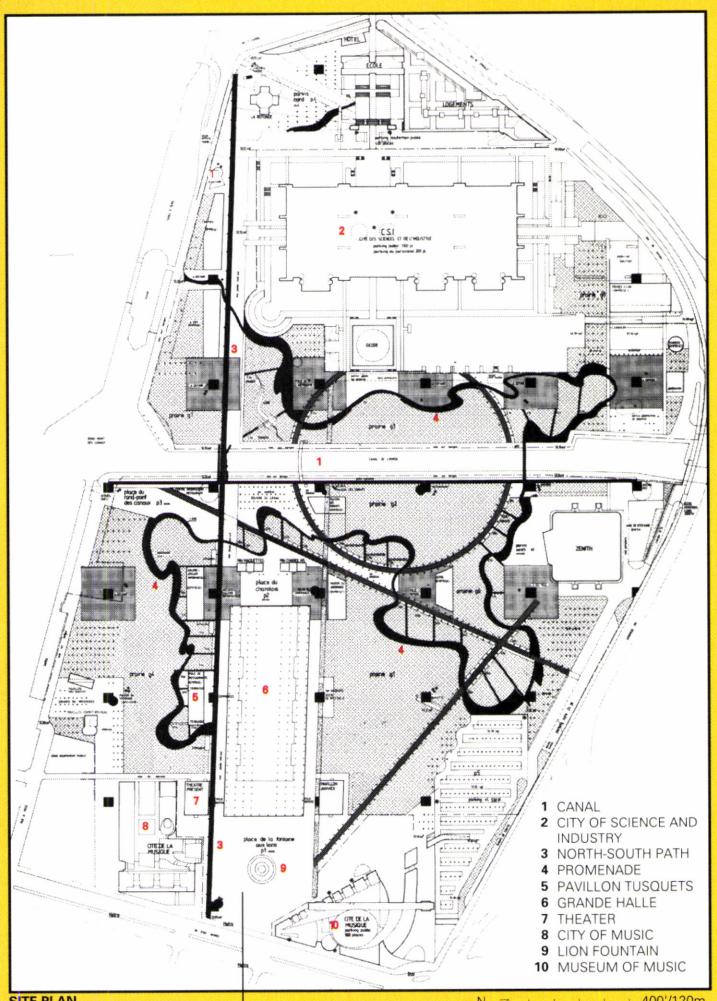
Parks as Destinations

La Villette, and, to a lesser extent, André Citroën, underscore a view that successful contemporary parks must accommodate a wide variety of uses. They must also compete on a popular level with the spectacles and diversions available in commercial amusement parks – as American city parks once did in the era of Vaux and Olmsted – by offering experiences and attractions that may be at odds with the conception of parks as exclusively green or tranquil settings.

Although almost nowhere in the U.S. do urban densities approach those of Paris, these two world-class parks convincingly reaffirm the view that large concentrations of city dwellers – and cities themselves – are well served by vast recreational spaces, rich in variety and potential settings for a range of human activities.

Paris's two newest grand parks owe at least some of their origins to the efforts of Napoleon III and two notable subalterns, the Baron Haussmann and Alphonse Alphand. Inaugurating the park

PARC DE LA VILLETTE



SITE PLAN

The Porte de Pantin entrance at the park's south end is as yet rather desolate, but will improve with the restoration of a historic fountain and the completion of the second part of Christian de Portzamparc's City of Music.

The "Quick" hamburger stand, one of Bernard Tschumi's curious and likable red follies, stands near the park's north entrance. Against all odds, these follies unify the park's jumbled composition.

Jean-Louis Berger, Photothèque EPPV

Michel Lamoureux, Photothèque EPPV

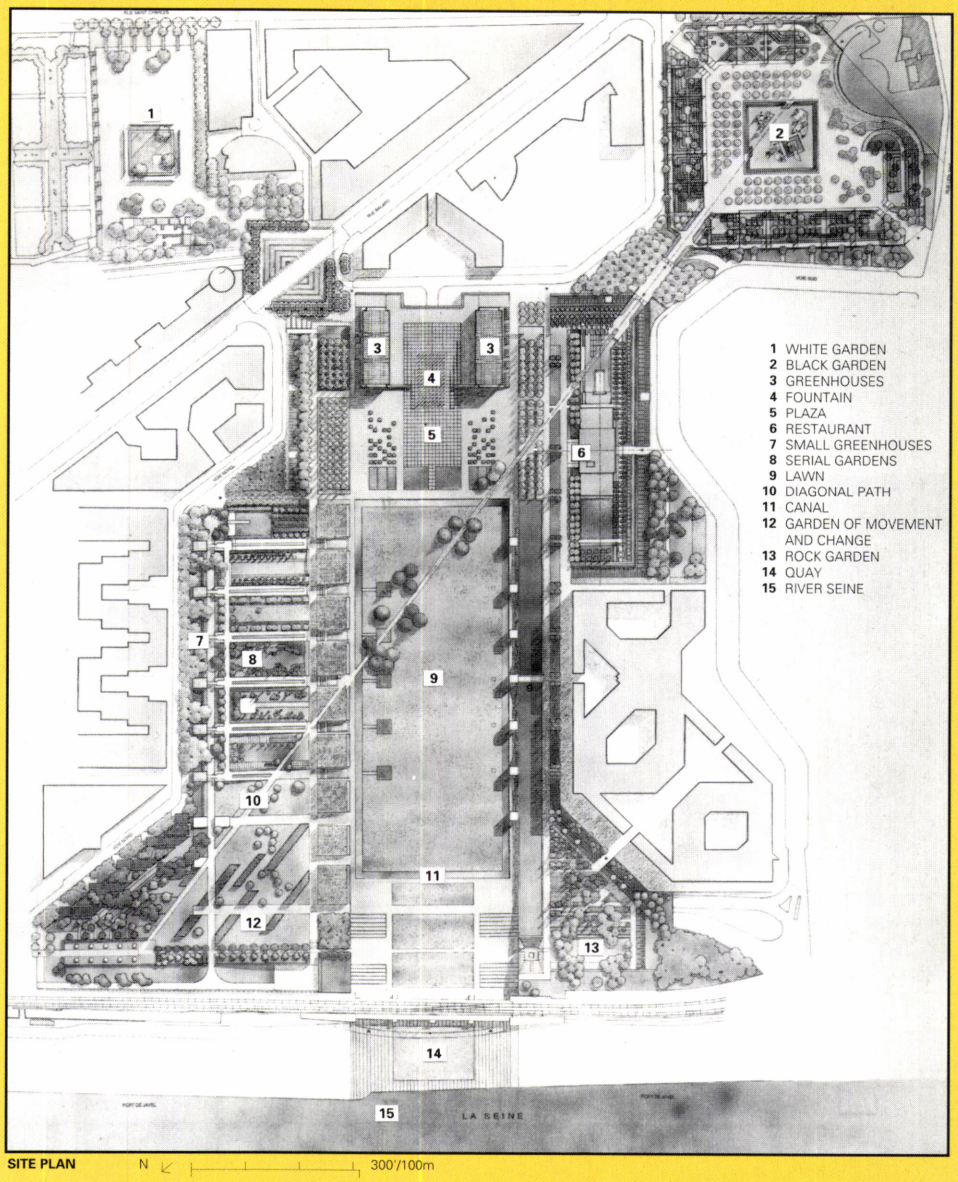
Visitors entering and leaving La Villette via Métro use this major north-south pedestrian path, with its distinctive canopies designed with the late engineer Peter Rice. The park has had great success in attracting people.

at Buttes-Chaumont in 1867, they spoke of new "lungs" for the city, vast green spaces that would allow Parisians and the city itself to breathe. Neither of these new parks will become places where one weaves into or out of the city on promenades past historic shrines, as happens with the Tuileries or the Champs de Mars. Both André Citroën and La Villette are places where one feels "inside" – remote from the city – and they can be perceived only from within; they are places one goes purposely to see and then leave. But – as the Michelin guide says – they are worth the trip. ■

The author is P/A's correspondent in Washington and Paris.

Project: *Parc de la Villette, Paris.*
Architects: *Bernard Tschumi Architects, Paris, New York.*
Consultants: *Colin Fournier, planning; Setec-TP, landscape; Tschumi-Erhel Architectes Associés, interiors; Peter Rice, RFR, Hugh Dutton, Setec-Batiment, Tetra-Batiserf, structural; Setec-Batiment, mechanical.*

Project: *Parc André Citroën, Paris.*
Architects: *Patrick Berger, Jean-Paul Viguier, Jean-François Jodry.*
Landscape Designers: *Gilles Clément, Alain Provost.*
Photos: *F.X. Bouchart/Archipress, except as noted.*



SITE PLAN N 300'/100m

The site for the park includes two tenuously connected auxiliary spaces, the somber "black garden" (top left) and the flowering "white garden" (top right).

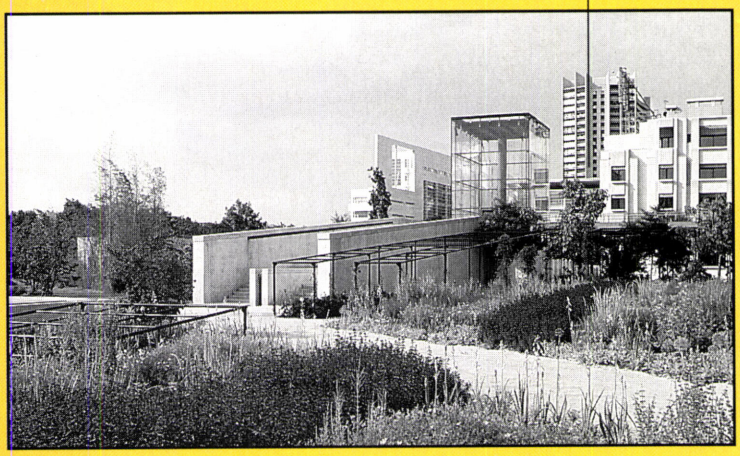
Access to the central lawn is limited by the canal that surrounds it, which can be crossed at only three points.

PARC ANDRÉ CITROËN

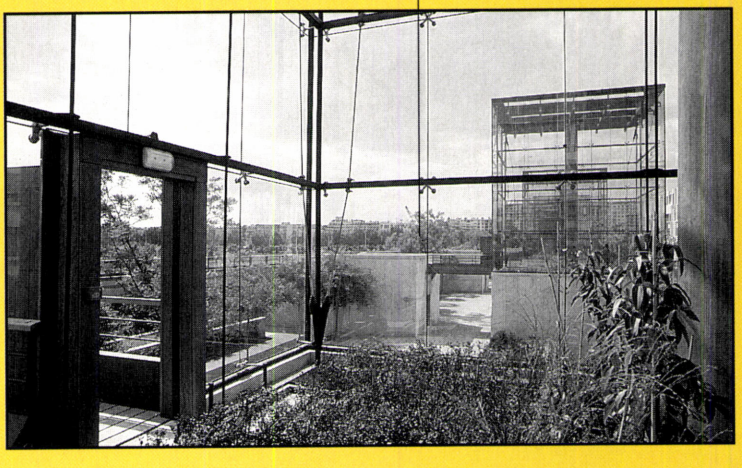
The great fountain between André Citroën's greenhouses, with its unpredictable sprays of water, looks inviting, but visitors are kept out of the fountain by park guards.

S. Couturier, Archipress

André Citroën is foremost a park to look at, with six "serial gardens" devoted to different botanical environments. Each has its own small greenhouse.



The six small greenhouses in the serial gardens barely accommodate three people; further, the plants inside them do not seem to be faring well and appear jaundiced.



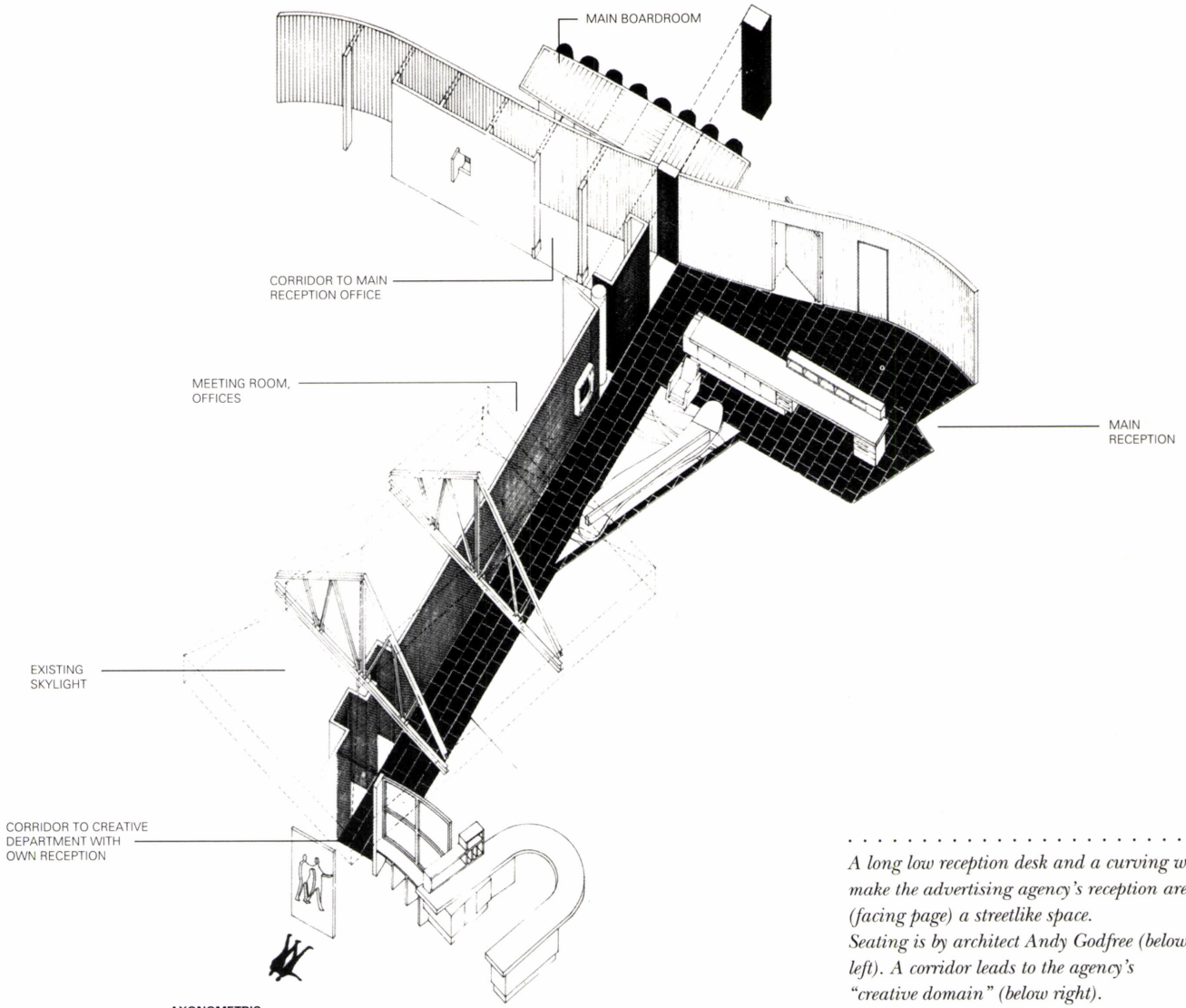
LONDON AD AGENCY

Formidable time and budget constraints were imposed on the design of office interiors in a refurbished 1920s building for Delaney Fletcher Slaymaker Delaney Bozell.

Given £403 per square meter (equivalent to about $56 per square foot when the project was completed in 1989), and an unforgiving schedule of eleven weeks from commission to handover, Harper Mackay Architects of London came up with a bold – and suitably simple – strategy. Though the architects were responsible for the entire office installation on two floors, they concentrated much of the "statement" on the first-floor public spaces, the better to define the entrance to the agency and to make explicit the intersection of its creative, client-servicing, and administrative components.

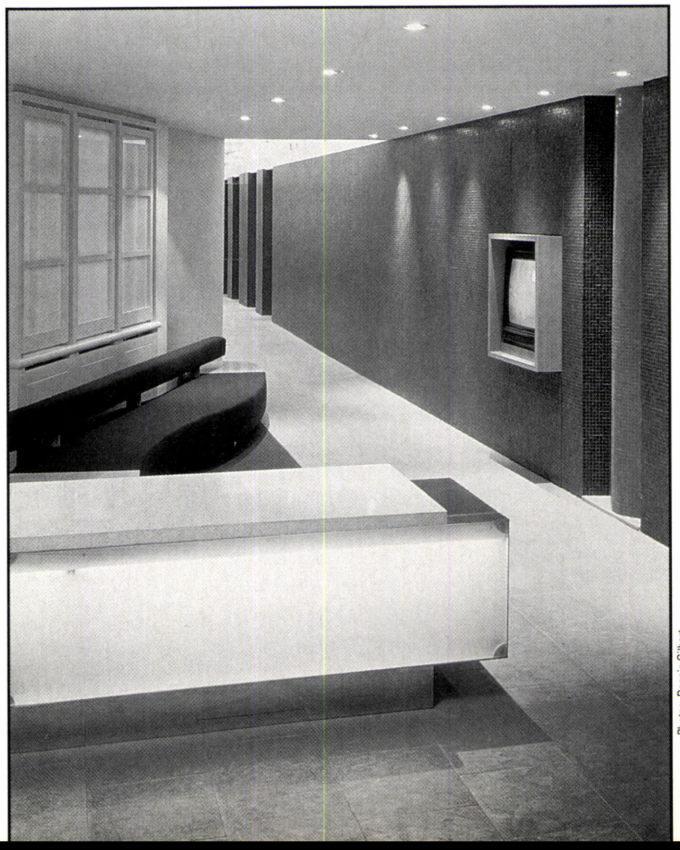
An undulating oak partition screens a series of meeting rooms arrayed along an entrance path paved with Portuguese limestone. (The extended wood, frosted glass, and terrazzo reception desk and curvaceous seating were designed by project architect Andy Godfree; the wedge of carpet by Helen Yardley). A second axis, distinguished by a color-saturated mosaic tile wall, leads into the creative domain of the agency, where enclosed work spaces are concentrated around a preexisting skylight and a secondary reception desk. Offices for management are located at the far end of the entrance corridor, and are differentiated from the other zones with wood block flooring and plaster screens and pilasters.

According to Godfree, the fast tracking was facilitated by Harper Mackay's association with a contractor who was familiar with the firm's work, and who was able to step in "on day two." Another mitigating factor was the fact that the existing building, an erstwhile flower market, required no major structural changes or additions; only a suspended ceiling and some "horrible carpeting" had to be removed before construction began in the third week. **Ziva Freiman** ■



AXONOMETRIC

A long low reception desk and a curving wall make the advertising agency's reception area (facing page) a streetlike space. Seating is by architect Andy Godfree (below left). A corridor leads to the agency's "creative domain" (below right).



Photos: Dennis Gilbert

LAURISTON STUDIO

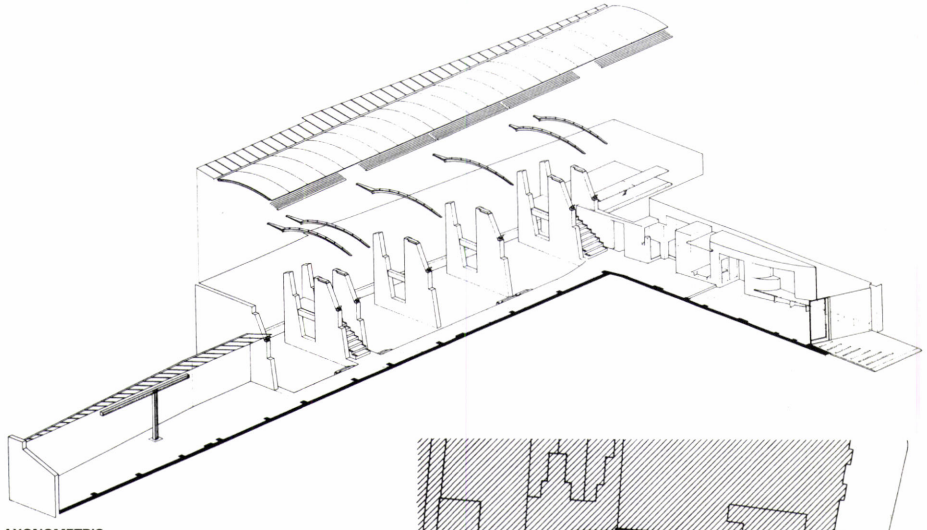
When you work in one of the mezzanine studios of this rehabbed stable, you might imagine yourself between the wings of a biplane. The concave metal roof and the convex underside of the mezzanine suggest an aerodynamic installation in a 19th-Century enclosure. The London architects who designed it, Pankaj Patel and Andrew Taylor, positioned the mezzanine so that the original brick walls on the periphery are barely touched by the new structure: the modern is slipped gracefully within the old.

The new roof is bordered by clerestories on one side and by a row of skylights on the other; curved steel beams, tapered in proportion to the shear force, keep the walls from caving in. The rest of the new structure is wood: the pine timber floor, tapered at the edges, seems to float on the massive, gypsum-clad piers. Spaced five meters apart, they align the work bays with the rowhouses that separate Lauriston Studio from the street. Each of the *enfilade* studios can be individually leased: this is an airy, yet intimate work space, ideal for start-up design firms. **Philip Arcidi** ■

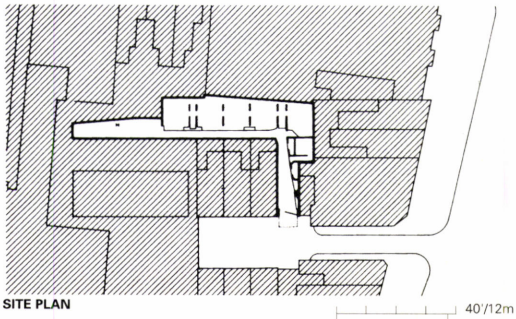
Album

Design studios available: piers separate individual studios leased at Lauriston. Mezzanine detail (inset).

Photos: Peter Cook



AXONOMETRIC



SITE PLAN

40'/12m

Albert Pope writes that skyscrapers aren't the only empty shells left by the Texas real estate crash.

BlackmonWintersKuhner

The See-Through Years: Creation and Destruction in Texas Architecture and Real Estate, 1981–1991. *by Joel Warren Barna, Rice Univeristy Press, Houston, 1992, 304 pp., $27.50.*

It is difficult to imagine how a book about Texas urbanism could appeal to anyone, save a handful of the most hardened social cynics. The Houstonization of the American City has long been decried as the ultimate urban decline: the loss of regional/historical identity, of stable communities, and of the "man on the street." The post-war collapse of Elm Street and Main Street is followed by "Houston," the production of an endless and anonymous sprawl of freeways, office parks, subdivisions, and malls. This is the city that unchecked consumer capital really wants to make. As a paradigm of development for late-20th-Century urbanism, Houston is bad news. It would seem that whatever there is to learn from it, we would rather not know.

Yet the truth of the matter, like it or not, is that by now "Houston" is everywhere. With the pace of contemporary urban construction proceeding unabated for over 40 years, the Contemporary City has outgrown the ability of the traditional prewar city to anchor it. Just as the historical city can no longer stand as an alibi for a "fringe" development of questionable standards, it can no longer stand as an alibi for architects and urbanists who prefer (who wouldn't?) the more humane and civilized virtues of traditional urbanism. What should be made of an urban discourse that posits an upper-upper-middle-class beach resort, a "town" on the Gulf Coast of Florida, as a relevant urban paradigm? Each January in the pages of this magazine, most if not all urban design awards go to ersatz squares or reconstructed streetscapes, seemingly desperate attempts at revival, and clearly inadequate in the face of demands made by contemporary capital.

It is painfully clear that the forces of development do not want, and cannot afford, traditional urbanism unless it is economically simulated, confined to commodity centers such as malls and amusement parks, or purchased as "surplus" in exclusive enclaves by the wealthiest members of the population. A "festival marketplace" in every American city will not obscure the massive economies of scale characteristic of contemporary development. These preempt the fundamental qualities – an anthropomorphic scale and a craft that bears witness to the human hand – so cherished in the traditional humanist city. If architects and theorists are unable or unwilling to abandon their pretensions in order to be reconciled with contemporary economic and political reality, then others will see a way to help. And recently they've been doing just that.

Which is why someone might actually be interested in a book on Texas cities. For all the time we have been preoccupied with various urban "revivals," the Contemporary City has gone through some dramatic changes that present tremendous new problems and unprecedented potential as well. "Houston" is not what it used to be, or even what it continues to stand for; dramatic proof of this may be found in the pages of *The See Through Years* by Joel Barna. In the book, Barna examines the folly of Texas urban development in the 1980s in great detail. His chapters are arranged according to building type; each reads like a stand-alone article. Office buildings, single-family houses, schools, hospitals, housing, museums, and corporate campuses are evaluated in light of the frighteningly irrelevant and frivolous criteria by which fundamental decisions concerning our environment are made. The attempt to paint a "self-portrait of our society" through our built production is perhaps a little naïve on Barna's part, but he is nevertheless successful in evaluating the decade's building from a wide range of social perspectives.

This wide social perspective perhaps makes up for the lack of a consistent critical focus in the organization of the chapters. The long introduction and conclusion, by far the best writing in the book, take on broader issues and draw out more general observations.

The story picks up in the boom years of the early 1980s where the coincidence of high oil prices and the deregulation of lending institutions led to an unprecedented pace in urban development. The breakdown of the Texas economy in the mid-1980s seemed to prefigure the national/global recession of the turn of the decade, but in fact it was a very different downturn, and much more severe. To cite some of Barna's statistics, the collapse of the Texas real estate market caused, by 1990, *(continued on page 106)*

Books of Note

The Architectural Index 1992 *edited by Ervin J. Bell, The Architectural Index, Boulder, Colorado, 1993, 116 pp., $24.*
A valuable reference tool, this yearly publication includes articles from nine architectural, interior design, and builder magazines indexed by building type, location, architect or designer, and subject.

David Chipperfield *introduced by Kenneth Frampton, Editorial Gustavo Gili, Barcelona, 1992, 96 pp., $28.95.*
Trained in the offices of Richard Rogers and Norman Foster, Chipperfield designs interiors and small-scale commercial buildings in England and in Japan that are shaped by a rigorous Modern vocabulary.

How to Photograph Buildings and Interiors *by Gerry Kopelow, Princeton Architectural Press, New York, 1993, 127 pp., $24.95.*
Technical, aesthetic, and practical advice is provided in this step-by-step guide for architects and designers.

ReBuilding *by Daniel Solomon, Princeton Architectural Press, New York, 1992, 142 pp., $24.95.*
Architect and town planner Daniel Solomon's book is a tripartite offering: journal, monograph, and polemic on the past and future state of town planning and design. This writer/practitioner from San Francisco does not mince words; he is a convincing advocate for change.

Perspectives | The Progress of Architecture

In an ambitious analysis, **Dr. Sharon Sutton** traces the trajectory of American architects against the backdrop of the socio-economic shifts that have shaped this country in this century.

A newly globalized economy has destroyed the nation's equilibrium, and architects have been particularly ravaged by the tides of change. In the face of high unemployment, alternatives to traditional practice are being explored in professional circles across the country. Sadly, the options seem to depict architects not as agents of change but rather as powerless actors in a sociopolitical drama – a view elaborated in 1970 by Robert Venturi, who alleged: "The architect is essentially a craftsman who can do what the society allows him [sic] to do. You can't get mad at the architect for a social failing."[1]

Now, consider the physicians whose battle with the tobacco industry in the 1930s led to smoke-free buildings 50 years later. Consider psychologist Kenneth Clarke and lawyer Thurgood Marshall, who sparked a revision of the Constitution in the 1950s by shattering the myth of equality in segregated schools. Consider the labor activists who established the right to organize for improved pay and working conditions. Consider sociologist Frances Moore Lappé, who challenged the belief that world hunger was caused by overpopulation. Consider any instance of social progress, and imagine what would have happened if those who assumed leadership had abdicated their commitment to mending imperfections in the nation's moral vision.

Is there something inherent in the practice of architecture that limits its scope to that of artisanry? Are we needlessly succumbing to an outdated image of product-oriented practice? Is it possible to reinvent a field in which we not only design buildings but also seek to mold the public's conception of built environments? To answer such questions requires an understanding of the role that architects assumed over the course of this century, as the legacy of the industrial era expired.

In this article I will make a critical analysis of the 20th Century[2] to establish how the transition – from a small-scale, land-based economy to one that is dominated by multinational corporations – affected architects' sphere of influence. I will show how the commodification of real estate has relegated us to the role of "servant" for venture capitalists, a role that has proved especially elusive for black architects. I will demonstrate our failure to become powerful players in the corporate culture as a specialized knowledge-based profession, despite our tremendous growth in numbers. Finally, I will make suggestions for a bolder practice of architecture, in which we acquire the intellectual, political, and economic resources to implement social change.

The Twilight of Self-Reliance

A profound transformation of the nation's socioeconomic structure took place after World War II as self-reliant communities began to be eclipsed by omnipotent corporations.[3] At the time, 30 percent of all working adults were independent entrepreneurs (farmers, artisans, professionals);[4] and 74 percent of the land was privately owned, with about 1 percent belonging to black people, who were concentrated in the rural South. Indeed, almost half of the populace lived in rural areas on a boundless frontier that nurtured individualism and a passion for automobiles. As a mighty car industry coalesced in Southeastern Michigan, copious off-street parking in the rear of neighborhood-based shopping centers[5] forecast that vehicle's impact on the country's landscape.

During this era, professionals made up 7 percent of the workforce, including 18,185 architects who were struggling to escape the Beaux-Arts style of design. Frank Lloyd Wright, Paul Revere Williams (the first Negro member of the AIA), and Julia Morgan (the most prolific pioneer woman architect) practiced in the vestiges of a land-rich society in search of luxury. Inexpensive construction and technological advances created grandiose mansions, palatial skyscrapers, and collegial rapport with aristocratic clients, since the divisions between work, home, and leisure that would result from industrial capitalism were not yet in place. An anonymously written article appearing in the *Century Magazine* in 1917 characterized these architect/client relationships: "There is one side of architecture not commonly commented upon that is to me one of the most interesting things about the profession. I mean the relations which the architect enjoys with his [sic] clients. I have met so many pleasant people and have been so many delightful places in the course of my work that that alone is almost enough to repay me for my efforts."

Architecture was becoming more formalized with the founding that year of the National Council of Architectural Registration Boards and the publication of "standard minima" by the Association of Collegiate Schools of Architecture.[6] *Pencil Points* (the forerunner of P/A) began in 1920, its editorship aiming to promote fine rendering techniques, modelmaking, and construction details. In particular it championed the clubs that socialized young men into a profession which reflected the dominant class structure – a hierarchy beautifully portrayed in the same article.

"The heads of the firm were two young men, both of them wealthy and of good social connection, who had gone into architecture partly because they liked the work, but more, I think, because it was a nice, light job suitable to a gentleman. Neither of them had any knowledge of construction, and though both had good ideas as to design, they were not sufficiently skilled as draftsmen to be able to work them out. The work, therefore, was handled by the head men.... The average architectural draftsman worked seven hours a day in the office unless he had overtime work, and two or three hours besides at night on his own work in the ateliers or perhaps helping out some other architect. ... The salaries they got were below those of the bricklayers and carpenters who executed the work from the drawings they made."

Although elsewhere in this article greater technical competence is ascribed to architects, the stratification between the unprofitable art of architecture as practiced by well-connected gentlemen, and the dirty work of building a developing country as practiced by over-

worked technicians and well-paid builders, was already in place, as was the role of "servant" to speculators.

Apartment houses and office buildings were ground out by "specialists" in a series of stock solutions, for fees so low that they prohibited any study or research. Drafting rooms were full, salaries were fairly high, and charrettes were continuous.[7]

The Growth of Suburbia

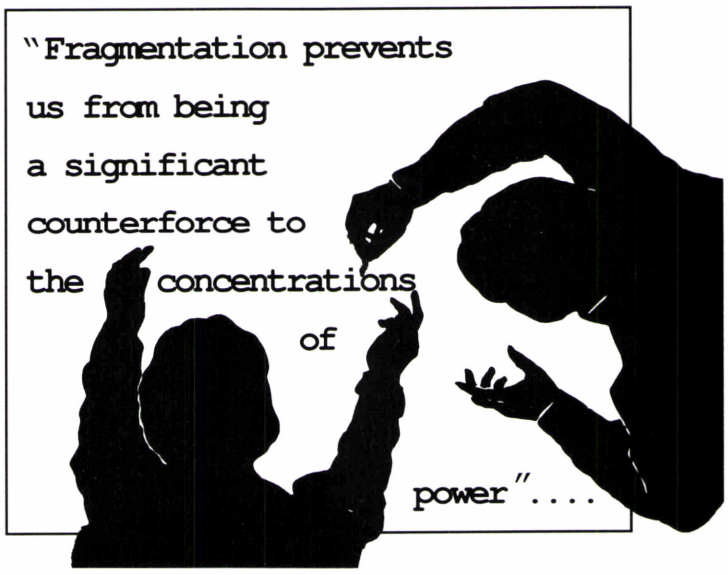
In the aftermath of World War II, construction of a highway system launched the geographic distribution of the races that still exists, as 43 percent of all Negroes were lured to older cities to supply unskilled labor for industry while whites moved out to populate 94 percent of newly-built suburbs. In fact, the suburbs surrounding a city like Detroit were almost entirely white.

Armed with the Highway Act of 1954, "the government financed construction of a huge freeway network. And the Federal Housing Administration insured loans for new suburban homes while often redlining older areas in the central city."[8]

With one car per five persons, a regional shopping-center prototype with a 4,000-car parking lot, encompassing about three-fourths of a 50-acre site in Seattle, began to propagate. With the spread of car ownership, "construction of shopping centers, in tandem with the expansion of suburbs, began in earnest; the total went from about a hundred centers nationwide in 1950 to about 3,700 a decade later."[9]

During this period, residential construction was front-page news alongside General Douglas MacArthur and civil rights. Bankrolled by legislation that kept mortgage money flowing, the construction industry produced one million middle-income residences yearly while churning out two-billion-dollars' worth of modest-income homes, as well as untold luxury initiatives. According to P/A's Business Survey, educational facilities provided the highest dollar volume to architects, with commercial buildings coming in second; in the real world, home-building was the winner, at 53 percent of the market.

Even worse, architecture has allowed its subdisciplines to splinter off into other fields, such as urban and regional planning, urban design, landscape architecture; and its continued distancing from the dirty work of building has given rise to project managers, who further diffuse our authority.



Modernists Walter Gropius, Marcel Breuer, and Anne Tyng were among 25,000 architects, the bulk of whom were being produced by 38 schools of architecture – now accredited by the National Association of Accrediting Boards – including the first fully accredited school for Negroes at Howard University. In 1954, almost half of P/A's first design awards and citations went to sprawling suburban buildings; furthermore, both urban and suburban designs suggested not only the dominance of cars but also the distended reach of powerful investors such as the Stevens Development Corporation, based in the Midwest but controlling major developments on the East and West coasts.[10]

Within this context of growth, there was little motivation to question the sageness of replacing small-scale activities with big business, since there were so many examples of poor people who had risen to the middle or upper classes. Whatever was lost to an impersonal corporate culture was compensated for by the possibility of upward mobility. As individuals embraced the trend toward concentrating goods and services in the hands of large corporate and government entities, they accepted the idea that they would work for someone and use their income to fulfill basic needs.

The Collapse of Industrial Capitalism

In 1970, three years before the Arab oil embargo caused half of New York's architectural firms to go out of business, 90 percent of the U.S. workforce was salaried and only 32 percent of the population was rural. Agribusinesses supplanted family farms, factories replaced workshops, bureaucracy substituted for goodwill among neighbors as private land ownership waned. Workers derived most of their income from salaries, but the wealthiest people realized almost 95 percent of their revenue from landholdings, with those leasing property to the corporate sector realizing the highest returns.[11]

Fear of crime, school desegregation, and continued infatuation with cars – every other person had one – fueled more suburban development. As the middle class fled cities (inhabited by 58 percent of all black people), HUD secretary George Romney slashed urban renewal grants, thus unwittingly ensuring Federal ownership of faltering and abandoned inner-city housing. With the government footing the bill for their excesses and mistakes in Federally subsidized housing, developers moved on, leveling more of the natural landscape for projects such as Gerald Hines's Galleria in Houston, with its 1.5 million square feet of retail and commercial space, year-round skating rink, and privatized public squares.[12]

Unlike the racial prejudice that spurred suburban sprawl was the public's awareness of the pillaging of natural resources that resulted in the National Environmental Policy Act of 1969, Earth Day, and Paolo Soleri's Arcosanti, a compact city proposed for the Arizona desert. Chastised by Whitney M. Young for their lack of social responsibility at the AIA's 1968 national convention, architects assumed the national ethos. The 1970 jury for P/A's design awards looked for "design solutions involving renewal, conservation, advocacy, and immediate answers to the social crisis."[13] Trapped in the role of artisan, architects discovered that social and environmental justice could not be remediated solely through building design, and therefore abandoned their short-lived affair with social responsibility.

> "Stuck in a technocrat's straitjacket, we were unable to affect the configuration of the landscape that was etched by racism, as well as by real estate and automobile tycoons for whom we created façades of success."

An Era of Greed and Poverty

By the time Michael Graves was filling the glossies with colorful pastiche in the 1980s, investors had increased their real estate holdings so that only 59 percent of the land was privately owned, with the equity of African-Americans plummeting to .03 of 1 percent. Cities like Detroit were abandoned by business, while others became high-powered financial centers flanked by teeming ghettos and barrios. By 1985, 43 percent of poor people lived in central cities, up from 27 percent in 1959, often in neighborhoods characterized by crowding, unemployment, substandard housing, and the absence of transportation.[14]

A 1991 issue of *Architecture* showcasing women's commissions portrayed design as "the mark of the human hand in its search for order,"[15] but it was all too evident that the nation's social order was coming apart. Violence among youth reached an all-time high; white-collar workers comprised 40 percent of the newly unemployed; one in four children lived in poverty; homelessness was spreading, and housing prices continued to increase almost 40 percent a year. As developers devoured 12 square miles of farmland daily, their insistent overbuilding caused a miniature savings-and-loan debacle.

In this writer's view, the L.A. rebellion of 1992 was a next step in the transition from a land-based entrepreneurial economy to a highly mobile corporate one, in which individuals were licensed – even encouraged – to get as much as they could for themselves. The mania of speculative growth had destroyed living communities, and everyone was (and is) paying a huge cost of social injustice in the form of increased law enforcement, lack of personal safety, and diminished national productivity.

Their craft dependent upon large sums of money (the cost and size of projects had increased), architects were indentured to venture capitalists who manipulated "building futures in a lucrative and ruthless market, wielding enormous influence over governments, running cities with cavalier disregard, altering the landscape with equal nonchalance."[16] P/A's award-winners in 1980 and 1990 were corporations and joint ventures rather than the lone project architects honored in 1970, with most 1980 awards going to private residences. Of the submissions that manifested the nation's distancing from social justice, one juror commented: "I almost don't know how to talk about these projects because so many of them are trying to keep up with the latest style, or finding out what the next style is that will go out there on the streets. There is not a serious evolution of an idea."[17]

The Progress of Architecture: Change and Continuity

Help Wanted - Male; New York Times, *January 1, 1920:*

Draftsman, architectural, first-class for apartment house work. Good opportunity for thorough man.

Help Wanted; New York Times, *January 1, 1990:*

Architect/interior designer – assist in small practice, excellent drafter and versatile for detailed hi-end residential work.

The preceding discussion, alongside these almost identical ads printed 70 years apart, confirms what Dana Cuff has pointed out, namely that design methodology remained constant while the context of practice turned upside down. Clearly our potential circle of clients decreased as the salaried workforce increased, our influence further compromised as land was commodified and consumed by corporations or the government. Instead of providing services among equals "when the architect could call the turns,"[18] architects became service-providers for national and multinational entities.

For black architects, the transition to a corporate culture not only meant that there were vastly fewer black landowners who might be clients, it meant that they had to access corporate empires in which social networks and personal style determine success. Despite early inroads into the profession during its formative years by women and blacks, despite affirmative-action gains during the Civil Rights Movement, African-American architects fell behind. Today they are the most underrepresented group, comprising 12 percent of the population but only about 1 percent of all registered architects.[19] Of that group of about 877 persons, no more than 60 are women and only four have advanced research degrees. The faculty at accredited architectural schools includes a mere 77 black professors, nine of whom are women, with only three of those women being tenured and none being a full professor.[20]

Another change that occurred is in the sheer number of architects, whose ranks swelled eight times in a population that only doubled. Determining the number of licensed architects is difficult because census data do not account for multiple registrations or noncredentialed "architects," and the AIA's membership includes unregistered associates. However, architecture grew more rapidly than any other major profession,[21] with registered architects (according to the Bureau of Labor's inflated statistics) increasing 4.3 times from 30,000 to 130,000 between 1960 and 1990; and the number of accredited archi-

tectural schools expanding from 28 in 1945 to 93 during the 1990–1991 academic year.

"These people could not have been absorbed and the demand for services would never have expanded without the adaptability of professionals to new roles in the building industry and to new styles of practice,"[22] especially since the amount of space constructed yearly grew fourfold between 1929 and 1969, but has remained relatively constant ever since. Despite these new roles and styles of practice, however, the profession has not become a specialized knowledge-based field comparable to law, where subdisciplines range from litigation to environmental law; to medicine, which spans from biomedical research to psychiatry; to engineering, which extends from aerospace to mechanical; or to business, which reaches from accounting to public policy.

Even worse, architecture has allowed its subdisciplines to splinter off into other fields, such as urban and regional planning, urban design, landscape architecture; and its continued distancing from the dirty work of building has given rise to project managers, who further diffuse our authority. Such fragmentation prevents us from being a significant counterforce to the concentrations of power in the auto, real estate, and building industries, all of which wield a more profound influence on the shape of the built environment than we do. Fragmentation also deters us from developing a sustained program of Federally backed research and development.

"Clearly our potential circle of clients decreased as the salaried workforce increased, our influence further compromised as land was commodified and consumed by corporations or the government."

Future Visions

Architects were all but invisible in responding to the built-environment challenges of the 20th Century. Stuck in a technocrat's straitjacket, we were unable to affect the configuration of the landscape that was etched by racism, as well as by real estate and automobile tycoons for whom we created façades of success. When unsurpassed resources were available in the 1950s for housing, we failed to provide innovations comparable to those taking place in communications and transportation, thus missing an opportunity to become indispensable to the average citizen. In the 1980s, we were silent partners in housing policies that led to homelessness and urban decay. Although professional practice was altered by the growth of a corporate culture, we did not counter those effects by concentrating our resources into an "industry" with its own political and economic clout, despite our vastly increased numbers.

Shedding this straitjacket requires not only that we address social failings, but also that we tackle those issues that have been the most resistant to change in this country, namely, racism and the commodification of land – interrelated phenomena that have resulted in the abuse of physical and human resources. It seems unreasonable that a more sustainable approach to development can be achieved in the next century without confronting those explicit and implicit policies that honed the double-edged dagger of overbuilding and decay. To do so would simply shift environmental and human degradation from one place to another without solving the problem of housing an expanding, multicultural, and progressively out-of-work populace.

A bolder practice of architecture requires that we not only cultivate a political voice but that we become catalysts for a more coherent built-environment industry, in which coalitions of design professionals develop collective resistance to policies that create poverty, inequality, and environmental blight. Addressing built-environment challenges in the 21st Century demands that we augment our heritage as master builders with a vision in which the many persons who are needed to achieve truly humanistic environments – policy specialists, human relations experts, building materials researchers, community development advocates, and so forth – lock arms as committed agents of change. **Sharon E. Sutton** ■

The author is Associate Professor of Architecture and Urban and Regional Planning at the University of Michigan, where she is a member of the Program on Conflict Management Alternatives. She holds degrees in music, architecture, and psychology; and was formerly a Kellogg National Fellow.

1. *Progressive Architecture*, January 1970, p. 107.

2. The historical data that follow were taken from the 1920, 1950, 1970, 1980, and 1990 *New York Times* (January and July issues) and from the *Census of the United States.*

3. Bellah, R.N., Madsen, R., Sullivan, W.M., Swidler, A., and Tipton, S.M., *Habits of the Heart: Individualism and Commitment in American Life*, New York: Harper and Row, 1985, pp. 41–43.

4. Bowles, S., and Gintis, S., *School in Capitalist America: Educational Reform and the Contradictions of Economic Life*, New York: Basic Books, 1976, pp. 90–91.

5. Rybczynski, W., "The New Downtowns," *The Atlantic Monthly*, May 1993, pp. 98–99.

6. Maudlin-Jeronimo, J., "History of Accreditation: Chronology of Significant Events in the Development of the Profession and NAAB."

7. *Progressive Architecture*, January 1950, p. 75.

8. Darden, J.T., Hill, R.C., Thomas, J., and Thomas, R., *Detroit: Race and Uneven Development*, Philadelphia: Temple University Press, 1987, pp. 16–17.

9. Rybczynski, "The New Downtowns," p. 100.

10. *Progressive Architecture*, January 1954.

11. Bowles and Gintis, *School in Capitalist America.*

12. Rybczynski, "The New Downtowns," p. 101.

13. *Progressive Architecture*, January 1970.

14. Goldsmith, W.W., and Blakely, E.J., *Separate Societies: Poverty and Inequality in U.S. Cities*, Philadelphia: Temple University Press, 1992, pp. 44–103.

15. *Architecture*, September 1991.

16. Stanton, M., "Hedged Bets: Practical and Theoretical Equivocation during the Reagan Years" in *Modulus 21: Politics and Architecture*, New York: Princeton Architectural Press, 1991, p. 98.

17. Scogin, M., *Progressive Architecture*, January 1990, p. 78.

18. *Progressive Architecture*, January 1950, p. 75.

19. Kay, J.H., "A Look at How Minority Architects around the Nation Are Faring in the Profession." *Architecture*, April 1991, p. 106.

20. Grant, B.C., and Mann, D.A., *Directory of African-American Architects*, Cincinnati, Ohio: The Center for the Study of the Practice of Architecture at the University of Cincinnati, November 1991.

21. Gutman, R., "Emerging Problems of Practice" in the *Journal of Architectural Education*, July 1992, Vol. 45, No. 4, p. 199.

22. Ibid.

New Media

1

Richard Buday, AIA, discusses the various ways in which architects and illustrators are using computers as presentation tools.

This computer-based image of the Bull Wharf office/retail project (1) in London, by Kohn Pedersen Fox Associates, was produced by Panoptic Imaging for a client presentation. Michael Sechman & Associates produced the client presentation drawing (2) of the One Market development in San Francisco, by Cesar Pelli & Associates.

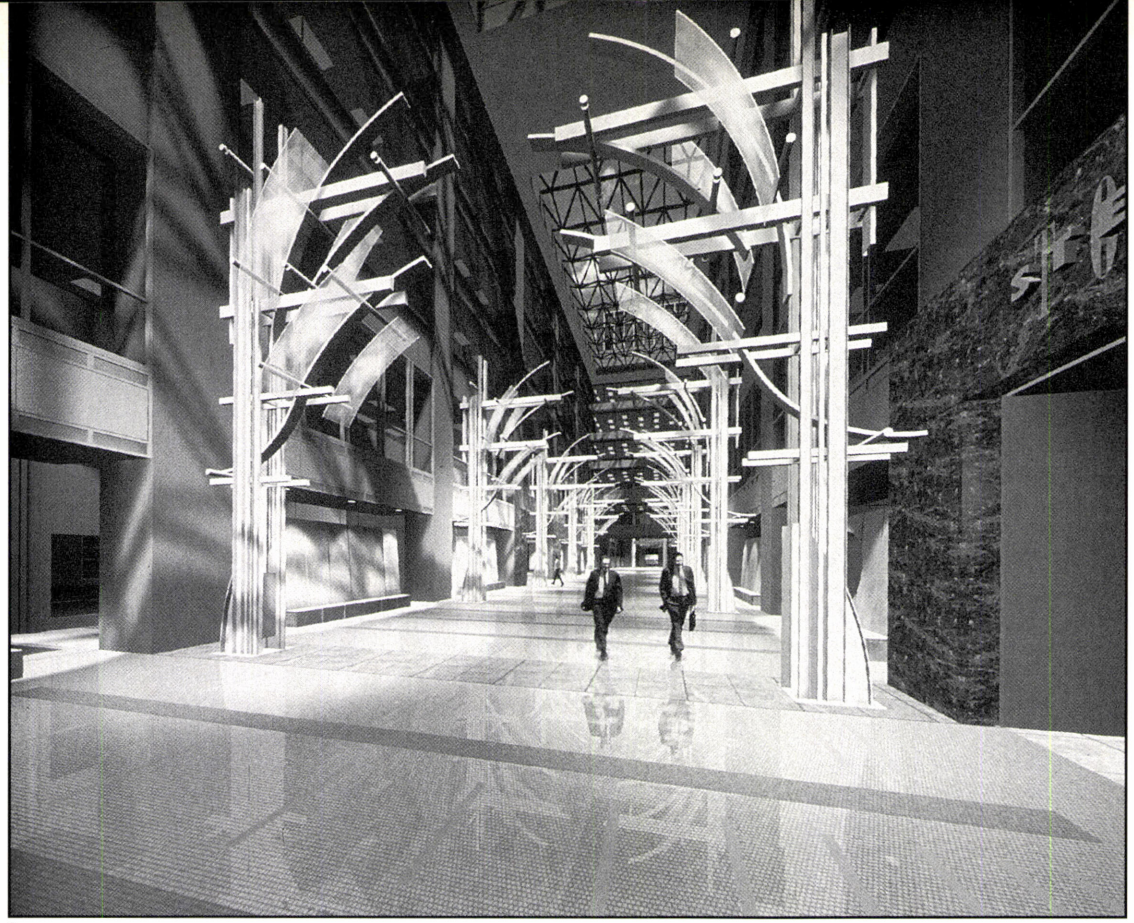
Although the proper role of computers in design may take years to sort out, the use of these machines as presentation tools is reaching a critical point in the profession. High-performance computers have reached new price levels, and capable presentation software has narrowed the quality gap between commissioned renderings and in-house illustrations. Some have even turned computer presentation tools – the latest name for which is New Media – into a rich, expressive, and sophisticated art form.

Architects still complain that computers place too many constraints on designers. Successfully applying New Media to architectural presentation, however, involves more than improving the user interface or modifying old habits. No single, all-encompassing, easy-to-use presentation software package is for sale yet. None may ever be; there are probably too many computer technologies to fit comfortably into one tidy package. To compensate, New Media artists are inventing a host of new presentation techniques. Some combine hand-drawing technology with computer graphics. Others are learning to mix software packages in ways publishers never imagined.

CAD Wireframes and Collages

If you are using CAD for construction documents, you already own a superb presentation tool. An overlooked but elegant technique for rendering floor plans, elevations, and building sections is a computerized variation on the old blueprint collage technique. Print collages are drawings run through the blueline machine at different speeds to create images of varying tonality; cut out and pasted together, print collages allow a simple line drawing to become the basis for a highly rendered monochrome illustration. A color version of the same technique uses a CAD file plotted several times on different color art paper. Trimmed and spray mounted to presentation boards, these plot collages are finished illustrations in the best tradition of ink and color film. Broad, consistent areas of color can be applied to drawings quickly and easily, and unlike the use of color film and ink, the method is virtually foolproof. Plotted color collages can also be updated, modified, or radically changed without starting over. Anyone who ever tried repositioning color film, went crazy burnishing bubbles, or cursed a splattering technical pen will think the approach miraculous.

The most popular computer presentation techniques employ CAD's ability to create accurate perspective views of buildings or spaces. This capability has become almost universal in PC-based CAD systems. Once a 3-D model is constructed, views from any position using any lens can be quickly generated. AutoCAD Release 12 creates perspectives rendered as wireframe or hidden-line removed drawings, and rudimentary shaded renderings are also possible. Most architects would agree that CAD line drawings or simple shaded images are not equal to traditional hand renderings, lacking even the detail and character of thumbnail sketches. Wireframe drawings, though, make excellent starting points for hand drawings. Output to an 8½" x 11" laser printer, then enlarged on a copy machine, all the information needed to create multiple view per-



2

spectives is in the wireframe. With clip-art people, cars, and trees, wireframes make for fast pencil or felt-tip renderings. Many commercial artists have given up constructing perspectives or using photographic approaches in favor of computer wireframes, even if they're preparing traditional airbrush or watercolor renderings.

3-D Modelers and Photorealistic Renderers

Building an intricate 3-D computer model is not a trivial task. Though the idea behind computer models is the same as physical paper or plastic models, construction techniques are quite different. Several products have been developed to ease the transition from 2-D computer screens to 3-D databases. Autodesk's 3D Concepts is a Microsoft Windows modeling package intended for designers. Primitives such as cubes, spheres, and planes can be drawn directly in perspective, instead of relying on multiple orthographic views as most 3-D CAD packages do. Even better is Alias's UpFront. Available either on Macintosh or Windows, UpFront allows architects to draw intuitively in perspective on what looks like yellow tracing paper. The program applies shadows based on the sun's true solar angle and can align 3-D views to the perspective of scanned photographic backgrounds. UpFront is an amazing package, although it is limited to models of modest complexity, and its flat shading will never be mistaken as photorealism. However, UpFront models and renderings can be exported to other programs for further development.

Programs like Autodesk's 3D Studio and Crystal Graphics Topaz have set the standard for PC photorealistic rendering packages. Release 3, the newest version of 3D Studio, has added ray-traced shadows, new shaders for metallic objects, and network rendering capabilities to an already overwhelming array of sophisticated tools. 3D Studio and Crystal Topaz incorporate model-making environments, renderers, material editors, and animation modules. For those not interested in animation or looking for a less expensive package, Crystal Graphics also offers 3D Designer, a package created solely for the output of photorealistic still images.

All these products work essentially the same way. Cladding materials such as brick, metal, or glass are used to sheath model elements, and lights are used to simulate incandescent or fluorescent illumination. The power of these tools to communicate design intent to clients is obvious. Accurately cast shadows alone may be worth the price of a good 3-D rendering package.

Digital Darkrooms

Photorealistic rendering packages output images as raster files containing up to 17 million colors, and images intended for videotape or screen presentation can often be generated in a few minutes. However, images for large-format printers or high-resolution transparencies may take hours, and completed raster files often need touching up, much like conventional photographs in a darkroom.

Adobe's PhotoShop for the Macintosh has the ability to manipulate images, fix rendering mistakes, combine renderings with scanned photography, and incorporate special effects. Similar capabilities are available to Microsoft Windows users with

Products Mentioned

Illustrator, $695 (IBM and Mac)
PhotoShop, $895 (IBM and Mac)
Adobe Systems Incorporated
1585 Charleston Road
P.O. Box 7900
Mountain View, CA 94039
(800) 833-6687

UpFront, $995(Windows), $895 (Mac)
Alias Research, Inc.
110 Richmond Street East
Toronto, Ontario
Canada M5C 1P1
(800) 267-8692

Freehand Graphics, $595 (IBM and Mac); PhotoStyler, $795
Aldus Corporation
411 First Avenue South
Seattle, WA 98104
(206) 622-5500

AutoCAD, $3,750
(IBM, Mac and other platforms)
3D Concepts, $295 (IBM)
3D Studio, $2,995 (IBM)
Autodesk, Inc.
2320 Marinship Way
Sausalito, CA 94965
(415) 332-2344

CorelDraw!, $595 (IBM)
Corel Corporation
1600 Carling Avenue
Ottawa, Ontario
Canada K1Z 8R7
(617) 728-8200

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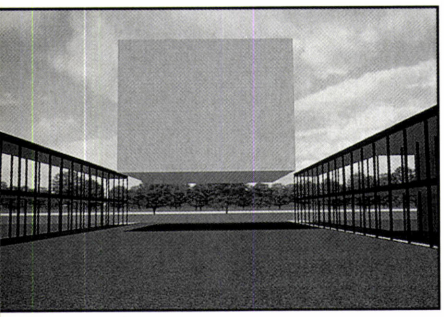
Santa Clara, CA 95054
(408) 496-6175

Painter, list price: $399 (IBM and Mac)
Fractal Design Corporation
P.O Box 2380
Aptos, CA 95001
(408) 688-8800

CrystalEyes, list price: $2,800
(IBM, Mac and other platforms)
StereoGraphics Corporation
2171 East Francisco Blvd.
San Rafael, CA 94901
(415) 459-4500

This series of photos (3–6) was created by Archimage to show a "build" sequence of the proposed chapel at the University of St. Thomas, Houston, by Philip Johnson. The images were created for a fund-raising campaign.



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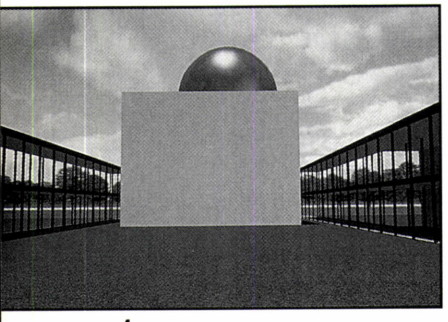

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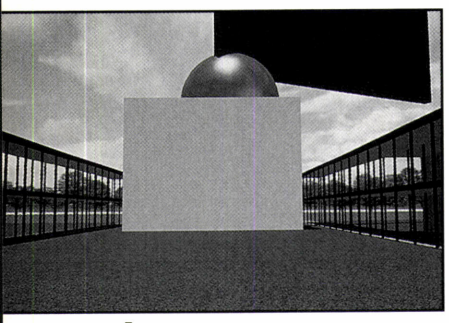

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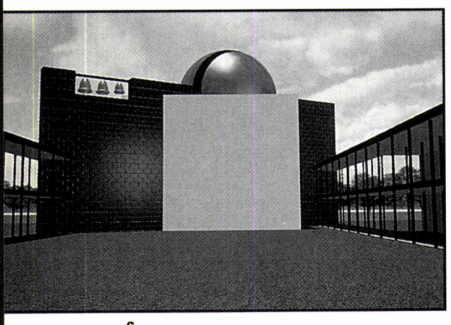

6

Aldus PhotoStyler. Digital darkroom software is now widely used in advertising design and pre-press applications, and you are likely to find PhotoShop or PhotoStyler manipulated images in most print media, from *Progressive Architecture* to *Time Magazine.*

Aldus also makes Gallery Effects, a kit of plug-in filter modules for PhotoStyler, PhotoShop, and other digital darkroom software. Gallery Effects allows computer renderings to look as if they were handcrafted with watercolor, pencil, or pastel. The results are, for all practical purposes, indistinguishable from the real thing.

In a class all by itself is a product called Painter by Fractal Design. Painter is the first truly fine art tool available on a PC or Macintosh. Like Gallery Effects and PhotoShop, Painter has the power to simulate different traditional media. But Painter offers much more control. Users can dial in Monet-type brush strokes or Picasso-ish effects, and pressure sensitive digitizing pens are used in almost the same way real brushes are.

Non-Animated Animations

Today, the relationship of 3-D computer animation to stunning and unforgettable visual images is well established. If *Terminator II* didn't convince you of computer animation's ability to sell an idea, *Jurassic Park* will. Minicomputers and workstations were the traditional sources of these celebrated images. However, until programs like 3D Studio came along, undertaking this kind of imagery for architectural presentation was difficult, expensive, and time-consuming. Now, it is merely time-consuming. Animated motion works by laying sequences of rendered images, 24 to 30 frames per second, onto film or videotape. Architectural animation's best asset – visualizing something over time – is not confined to real motion, however. Linear story-telling is possible without animating by rendering selected frames as slides or photographs; three or four images will often be enough. Projects can be presented as a series of storyboard images: flyovers, walk-throughs, or build sequences.

Final Assembly

Architects have traditionally relied on illustrations exhibited on conference room walls to present design. Though all New Media images can be output and mounted on foamcore or illustration board, one last step is often needed: annotation. Project title blocks, notes, north arrows, or drawing scales are not easily created in 3-D modeling or rendering packages. Completed renderings can be imported into PostScript illustration software to add high-resolution text graphics. CorelDraw! and Freehand Graphics for Windows and Adobe Illustrator on the Mac are three of the best-known packages. With literally hundreds of fonts to choose from, final renderings can be composited with text, logos, and key maps, then output again for printing and mounting. PostScript illustration software is also useful for publishing reports and books.

Viewing

The output options for computer generated images are many and growing. Reprographic houses frequently offer inexpensive color printing from computer files. Probably the least expensive technology is the Canon CLC-500 color laser copier. With the optional computer interface, floppy disks can be sent to a service bureau for color laser paper output up to 11" x 17". Large format bubble jets and electrostatic color printers can print the same files to mural size. For higher-quality output, dye sublimation prints almost indistinguishable from photographs are available in sizes up to 11" x 17". Images can also be rendered to digital film recorders for output as 35mm slides, 4" x 5" chromes or negatives.

An exciting new presentation option involves 3-D stereoscopic views. The process of generating stereo pairs has been around since the Victorian age. Separating stereo pairs has traditionally been based on anaglyphic (red and blue) or polarized glasses. Generating stereo pairs from 3-D computer models is theoretically easy, just a matter of making two images slightly offset from each other, and today, it's possible to see stereo views directly on your computer screen. StereoGraphics' CrystalEyes uses liquid crystal shutter glasses synchronized to a computer monitor, allowing one or more people to view computer stereo images simultaneously. Technology is also evolving for autostereoscopic viewing, or stereopsis without the need for special glasses.

New Opportunities, Old Problems

Proponents of New Media argue that architecture has always been a three-dimensional art, suffering from the limitations of two-dimensional tools. Computer imagery promises to bridge that gap. It provides a way to project isometrics, create finished perspectives, or produce color plans and elevations. Digitally-based presentations also allow architects to go beyond the capabilities of traditional media.

Because of New Media, many traditional illustrators and model makers are beginning to worry about the possibility of extinction. But most of the computer illustrations used in this article were created by professional delineators, not by the architects commissioned to design the buildings. Architectural presentations are usually created within unforgiving time frames, and few architects have the time to perfect new presentation techniques, let alone get all of these systems to work together. So there will always be a need for presentation specialists. But, if the illustration community's fear of extinction is unfounded, the evolutionary trend away from conventional techniques is very real. New Media, in the words of one architect, "is the new pen." **Richard Buday** ■

The author is President of Archimage, a Houston-based design firm. He also serves on the national AIA Task Force for CAD Layer Guidelines, teaches at the University of Houston College of Architecture, and writes frequently on the use of computers in architecture.

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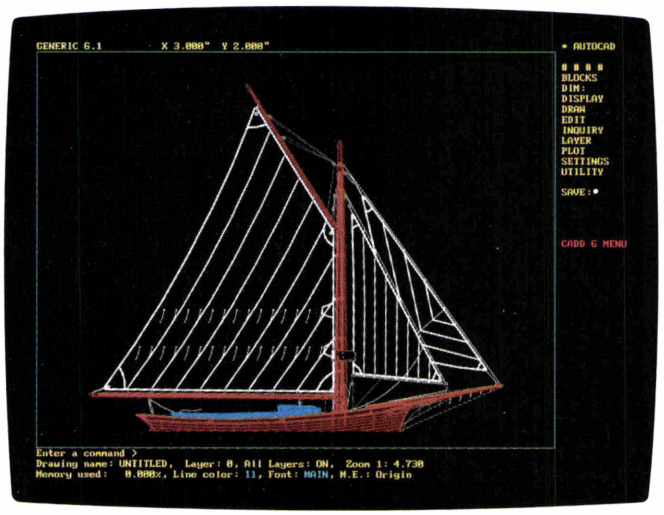

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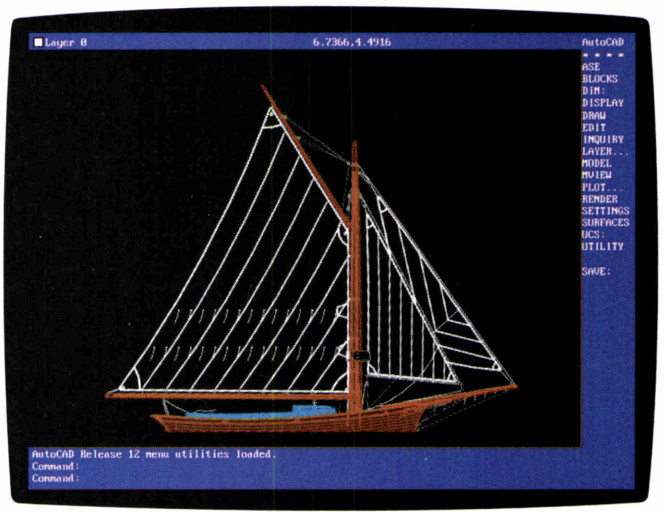

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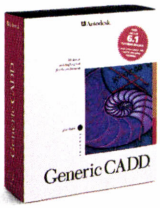

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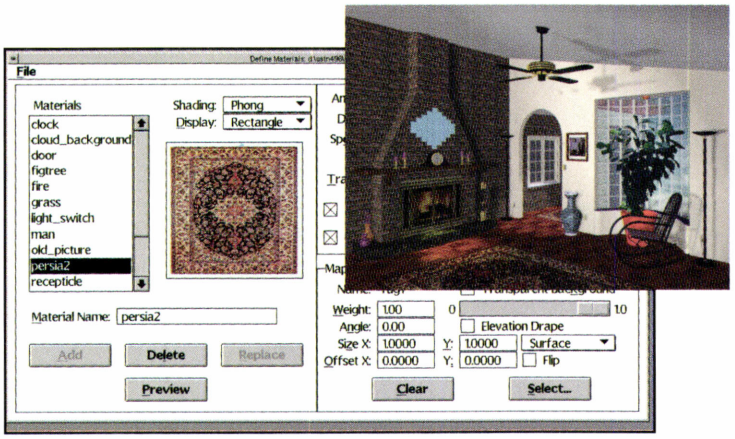

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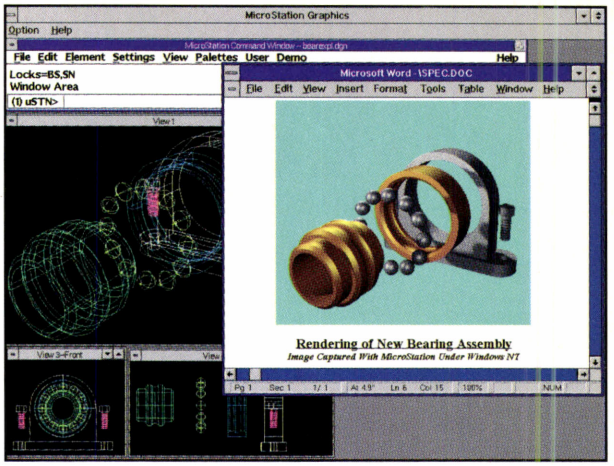

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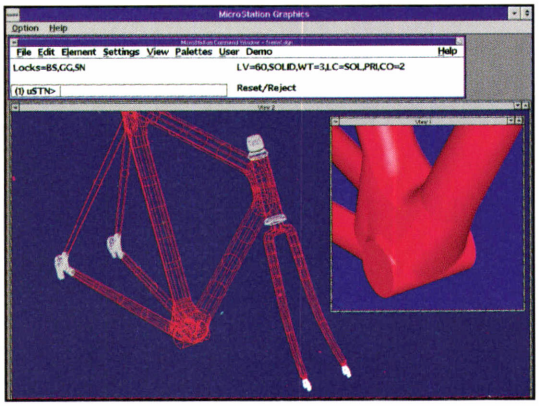

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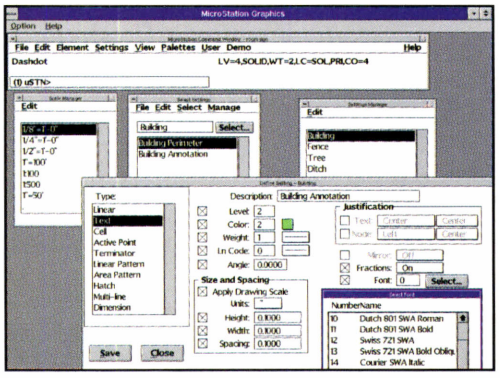

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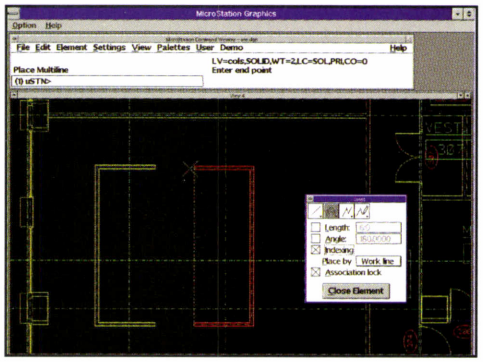

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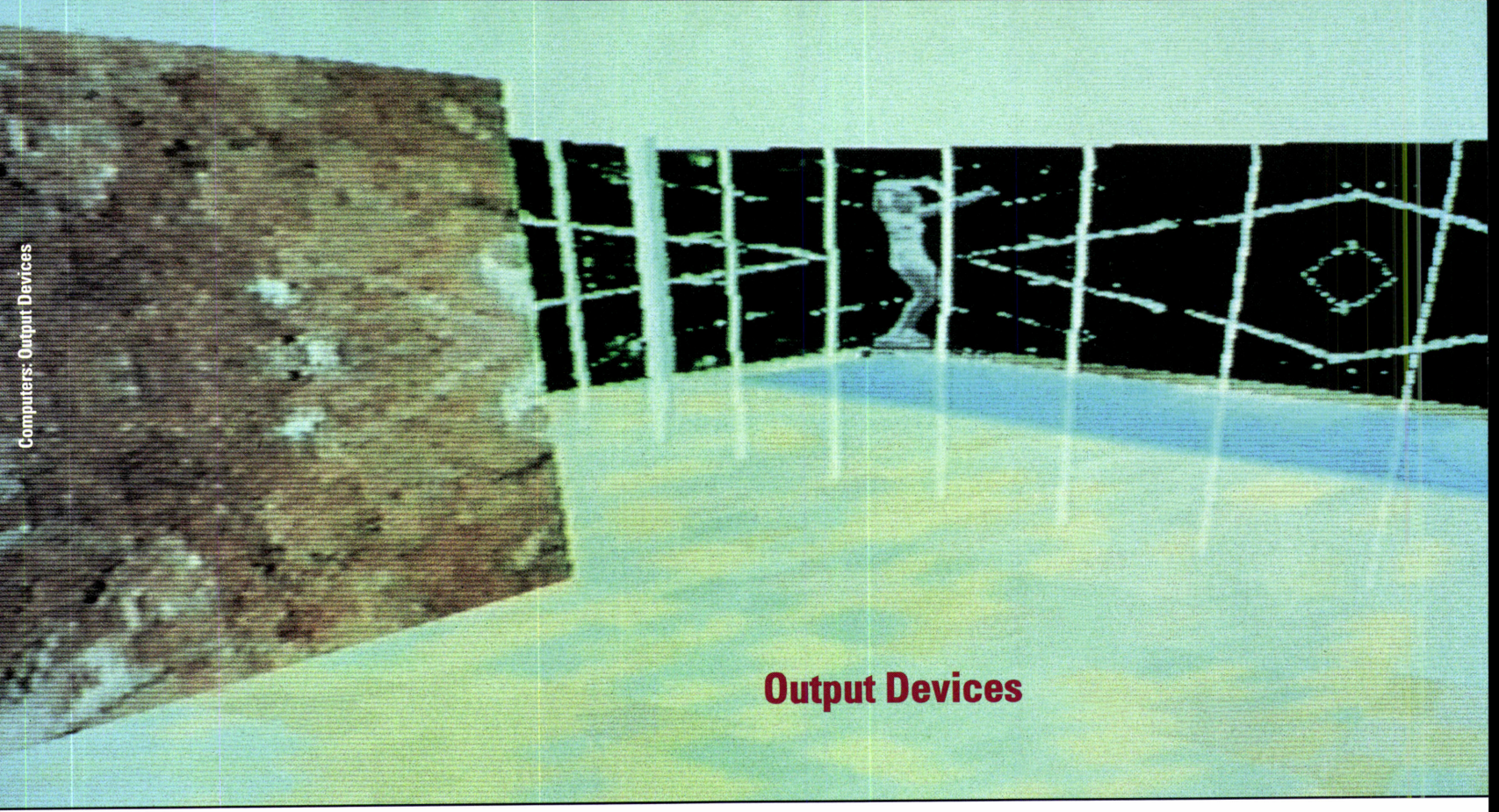

Output Devices

1

Douglas MacLeod examines the effect various computer devices are having on presentation drawings and the practice of architecture.

Let's face the facts: most output devices produce the kind of presentation drawings you wouldn't want to show to your dog, let alone your clients. They're small, crude, and garish, and they are printed on the kind of paper that curls if you look at it sideways. Only now are the devices and services becoming available that can provide the quality that architects demand for client presentations.

Pen plotters were once the primary means of outputting drawings from CAD systems, and today you can still hear them clanking away in most offices, but they have limited value in the creation of presentation drawings. They do have one advantage, however, and that is size. Of all the devices available today, they still provide the largest format drawings for the cheapest price, and sometimes plotters can even be combined with other approaches to produce attractive hybrid drawings. A pencil plotter, for example, can output a drawing using a light lead onto a heavier paper stock and the resulting image can be colored by hand.

Ink jet printers

A radically different device, however, holds much promise for the profession: the IRIS ink jet printer. It works by spraying very fine droplets of vegetable-dye inks onto paper or other materials that are wrapped around a revolving drum, producing what appears to be a continuous tone image.

To appreciate what this means, it is important to understand that output devices are classified as halftone or continuous tone. Halftone devices produce images that are made up of dots, and the resolution, or fineness, of these images is measured in dots per inch or dpi. A laser printer is a good example of this type of device. In a color halftone image, cyan, magenta, yellow, and black dots are overlaid to produce different colors. In a continuous tone device, on the other hand, the inks are blended to achieve a smoother, more photographic image. A dye sublimation printer, such as the Kodak XL 7700, is an example of a continuous tone device. The point of all this is that the IRIS sprays dots, but the resulting image looks photographic.

The device has other important features as well. The largest model in the series, the 3047, can take sheets as large as 34" by 46" and the material can be anything that can wrap around its drum. It works on watercolor paper, rice paper, linen, cotton, and canvas as well as on more typical stocks such as bond and photographic paper. Since the dyes are sprayed on, even rough-textured substrates can be used (unlike pen plotters which skip across rough spots). And the color is rich and vibrant.

Of course, all of this comes at a price. The 3047 costs over $100,000, and even a service bureau may charge $300 or more for a single large print. But the cost of these prints is small compared to the $10,000 you might spend on a rendering.

If these ink jet printers catch on, you can expect less expensive models to appear and the price per print to decrease. In the meantime, you can get a list of service bureaus that use these devices by calling IRIS Graphics Inc. at (617) 275-8777.

Typesetting devices

Architects can also profit by thinking of devices outside of our conventional palette of tools. One

often ignored tool is typesetting equipment such as the Linotronic product line. Typesetting machines are usually used to generate high-resolution type on paper or film for printing and they can achieve resolutions of up to 2500 dpi. They can also be used to reproduce line drawings created by a computer. Even a program as simple as MacDraw can be used to produce a high-quality rendering. Or you may choose to assemble drawings, photographs, and type, using a program such as QuarkXPress, and print out an entire presentation board.

Video and CD-ROM

Outputting an animation to video is becoming an increasingly viable way to view a design. With this in mind, a number of CAD software manufacturers are now adding limited animation capabilities to their packages. Very creditable walkthroughs, for example, can now be completed in packages such as ArchiCAD and transferred to tape.

Don't forget, however, that additional equipment must also be purchased. To record a computer animation on videotape, a board is needed to convert from the RGB (Red/Green/Blue) signal of the computer to the NTSC signal (the one television stations use) of the videotape machine. A board such as a DyQuest DQ50 or a NuVista+ will perform this function and also act as a means of controlling the VCR from the computer itself. Also, don't forget that video animations take enormous amounts of RAM and storage space. For storing even a few minutes of video animation, you should think about storage devices such as hard drives, with capacities of 1 Gb (gigabyte) or more.

Video, however, may be just a transition to completely computer-generated presentations. Some architects are using PowerBooks or laptop computers to carry their presentations to clients' offices, where they plug into monitors, video projectors, or whatever equipment is available. Other architects are actually taking their entire systems to the client.

It is also possible to transfer slides or images of your work to CD-ROM and then play back these images through a television set or computer monitor. This involves the Photo CD technology that is currently being marketed by Kodak. For approximately $100 you can have 50 slides transferred to one of these disks. The advantage of such an approach is that it offers a great deal of flexibility. With CD-ROM or other computer technologies, it is very easy to move from one part of the presentation to another in any order; slides demand that you move in a more linear fashion. These techniques also allow you to incorporate sound and animations into your presentations. The disadvantage is that, as everyone knows, the more sophisticated the technology, the more likely it is not to work at critical moments.

Film recorders

This is one of the reasons that slide projectors are likely to remain in demand for a long time to come, but even the process of making slides has been changed by computerization. A film recorder is a device that allows you to save your computer image to film. In most film recorders, a beam of light traces over the film in much the same way that a light beam scans across the front of your television screen. Often when a computer image is being prepared for presentation, it seems foolish to make a hard-copy print, photograph it, and then make a slide of it. A film recorder eliminates that intermediary step. The resolution of such units is usually about 1200 dpi and they cost $15,000 to $20,000. Here again, architects are more likely to use service bureaus than to purchase a recorder. Depending on the complexity of the image it may cost between $20 and $30 for a slide of your drawing.

Virtual Reality

The ultimate device for architectural presentations, however, is virtual reality, where your clients, equipped with goggles and gloves, can wander through the building at their own speed. Some virtual reality systems even run on IBM-PCs and compatibles, but here again you need a great deal of other equipment (and programming expertise) to have a fully functional VR system. In fact even a starter system could cost you more than $30,000.

2

This interior view of the Barcelona Pavilion (1) is as it would be seen in virtual reality. The walk-through was created on a 486 computer using Sense8's WorldToolKit software. Note the rough edges and the lack of smooth color gradations. The plan view of Toronto's harbor (2) was produced by the author using Adobe PhotoShop on a Macintosh II and was first output as a 35 mm slide by a Lasergraphics LFR Mark II Film Recorder. The same image, with text and graphics added in Adobe Illustrator, was then output onto watercolor paper by an IRIS 3047 Inkjet printer.

Don't go out and buy a virtual reality system – or any other device – until you have carefully considered your needs and have first done a test. Print out one of your own files. Check out what modifications you may need to make to your computer system so that you can attach and use the new device. And consider kinds of files and formats you want to print.

These various output devices also test our ideas about design and architecture. When a drawing can be output to a printer, a film recorder, and a computer monitor, which device is producing the "real" drawing? Which one is the "original"? The basic premises of copyright, ownership, and even what constitutes a contract document are all being undermined by these technologies. And new media such as videos and virtual reality don't produce drawings at all, introducing the notion of time into a profession that has always focused on space.

Our profession is changing. In the past, we drew in order to design and our presentations reflected the importance of drawing. Can we develop a similar feedback loop with these new tools? Can we use video as a design and presentation tool? Can we learn to design in virtual reality and present our work there? These new output devices may do more than change the way we make presentations; they may bring even greater changes to the way we practice architecture. **Douglas Macleod** ■

The author is a registered architect in the State of California and is currently the Project Director of The Art and Virtual Environments Project at the Banff Centre in Banff, Alberta. He is also the principal of Byter Corp., a design group focusing on the development of virtual reality applications.

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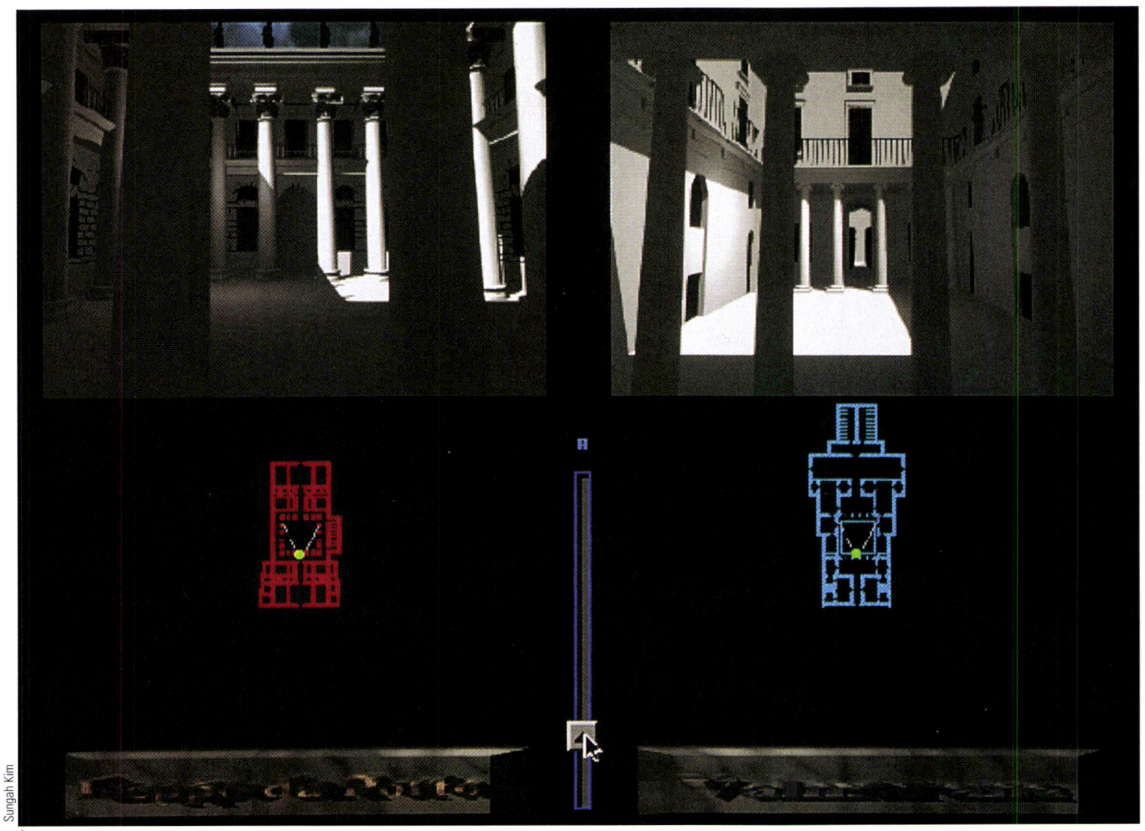


Sungah Kim

1

The Promise of Multimedia

Eric Teicholz and Larry Yu describe two case studies of multimedia use by architects and academics.

The term "multimedia" is receiving quite a bit of "hype" in the trade journals these days. In contrast to an architect's traditional multimedia tools (such as physical models and sketches), computer-based electronic multimedia usually consist of some combination of computer graphics, sound, scanned photographs, digital animation, video, renderings, and text. This technology is now embedded in a host of application-specific and generic (database, spreadsheet) software products. In addition, the "authoring" programs that let you intertwine these technologies together (provided you adhere to certain standards), are getting pretty powerful.

Before now, the price (in computer memory) extracted for using such multimedia products on a computer has been steep. But today's PCs are being shipped with enough computer and disk memory to make multimedia technology practical. Given Moore's Law (every 18 months, computers become two times more powerful or, conversely, the same computer power can be purchased for half the price every 18 months), the trend towards cheap and fast memory will make multimedia the norm .

So far, architects have used multimedia in somewhat limited fashion – combining animation (such as a computer walk-through or a photograph) with a three-dimensional computer model to make the design appear more photorealistic. Current multimedia functions, however, promise to change fundamentally the nature and services architects can provide their clients. Below we will explore the potential of multimedia at a university and in a design-build firm, and show how the uses of these technologies can profoundly improve the architectural process.

Multimedia in Academia

This software aids not only data access, but also the communication process. Communication is an often ignored benefit of computerization: firms often install computer networks for shared use of hardware and software, as well as for drawing files. However, an unexpected bonus is that internal electronic mail communication is a fast, nondisruptive method of conferring with colleagues, as demonstrated at Harvard's Graduate School of Design.

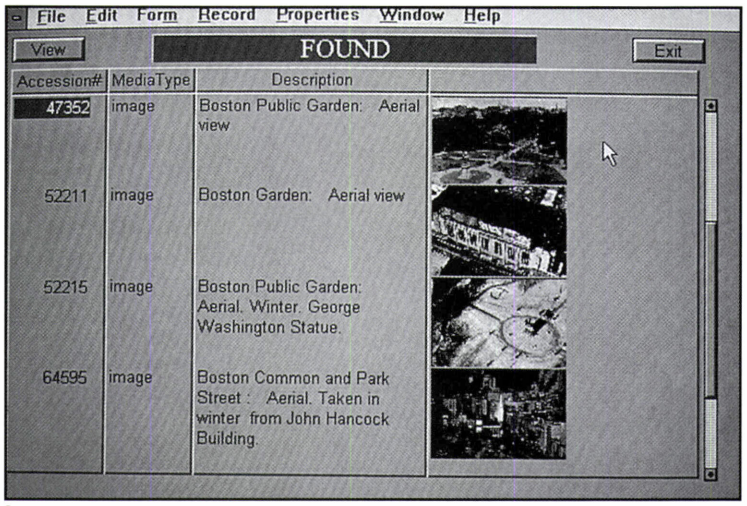
"What [multimedia] is all about is communication," says Erin Rae Hoffer, Director of Computer Resources at Harvard's GSD. But "we need to learn how to communicate better with these tools," she adds. Networked computers transferring multimedia material allow for a more non-linear communication process so that meetings can be held remotely, but everyone must have access to all related materials, whether they are photographs of precedents, videos of site locations, or CAD plans and elevations of works in progress. Hoffer says the GSD encourages students and faculty to utilize new techniques such as multimedia technologies. "More and more people are taking the investment [in time] to learn the systems," she says.

Hoffer sees multimedia's role as two-pronged: impact and access. Impact is related to presentations and high-quality renderings and animations. Access is an enhanced way of gathering related information in different forms.

Multimedia Presentations

Currently, multimedia technologies are most often applied to presentations of graphic material. Although computer imaging is just one aspect of

This custom-designed interface (1) allowed a Harvard student to compare the interiors of the Palazzo Iseppo da Porto (left) and the Palazzo Valmarana (right).



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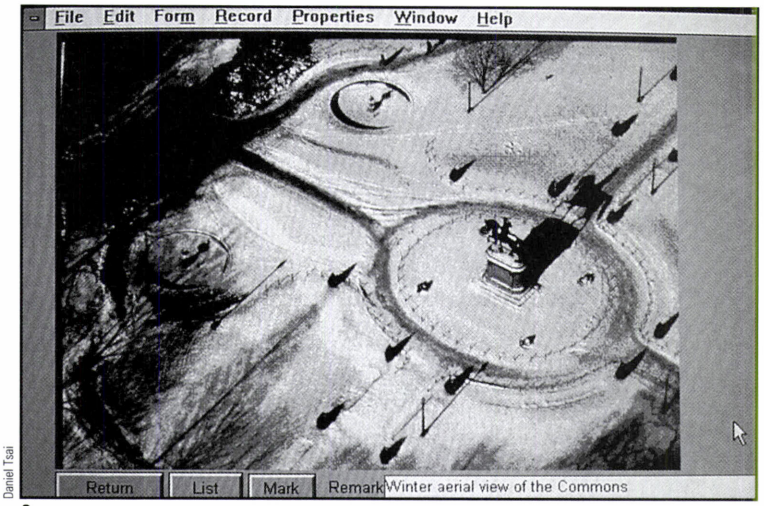


3

These two views show a query to the DOORS database at Harvard for aerial views of Boston's Public Garden (2). Once the desired view has been found, it can be displayed on the full screen (3).

multimedia, it is perhaps the form most often used. Some manifestations include renderings of interiors, daylighting studies, and superimposition of proposed buildings on sites to assess neighborhood impact. Many service bureaus are adept at producing these materials, using designs that are given to them, and these functions are increasingly used in house by design firms as they continue to automate. The danger is that the sizzle sells without the steak. It is not uncommon to see brilliant presentations of substandard material, or instances where the presenter is overshadowed by the presentation. At Harvard, multimedia presentations are common in courses, but "I've seen multimedia presentations [where the] presentations are better than the drawing," says Hoffer. Students who spend more time learning to present their material than on the actual design may not be creating their best work. Nevertheless, Harvard both supports and encourages staff and students to experiment with new techniques and applications.

The jury presentation process might best exemplify the potential impact of multimedia on presentations. Malcolm McCullough, Assistant Professor of Architecture at the GSD, sees the effects of multimedia in juries, including an overflow of visual representations and explanations of materials instead of projects. All of these serve, for better or for worse, to change the process of jury critiques by modifying the focus of discussions, as well as by limiting time and locations.

Multimedia's role in presentations can take various forms, depending on the output desired. While images go directly to slide film from a computer, other effects can be gained by adding "painterly" qualities to renderings, by printing on porous watercolor paper, or by "authoring" interactive on-screen presentations or videotapes. Walk-throughs or fly-bys of designs are also increasingly seen.

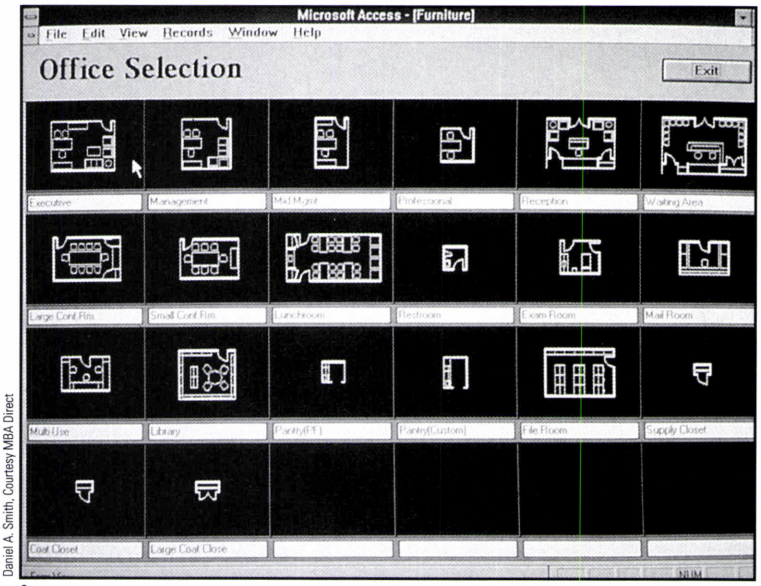
Videos can provide added perspectives from different angles or different times of day, or even speculative insights. For instance, Sungah Kim, a recent graduate of the GSD, with little experience with CAD and multimedia technologies, was able to draft, render, and print to videotape a walkthrough of Le Corbusier's Carpenter Center of the Arts, in one semester. The next semester, in a course entitled "CAD Studio: Palladio and the Virtual Museum," he created a comparison of speculative designs for the never completed Palazzo Iseppo da Porto and Palazzo Valmarana based on completed façades and other work from Andrea Palladio (1). This virtual museum included computer models of the interiors and a navigational interface that allowed the designs to be compared interactively.

Information Access

Access, the other side of multimedia, consists of providing references to information from a computer. Commercially available forms of information access include the growing number of CD-ROMs in a variety of formats. For instance, a query to reference Martin Luther King's "I have a dream" speech from a CD-ROM encyclopedia will result in an audio playback of the speech, in addition to the text and/or background information. CD-ROMs more specific to architectural practice provide furniture specifications or catalogs on-line, including rendered images, pricing information, and technical data. The advantages of on-line access over traditional media include faster and more effective search routines (as opposed to an index at the end of the catalog), greater variety of multimedia data types (including sound and/or video), multiuser access (as opposed to the single user of a catalog), and integration of the data with other software (such as spreadsheets or CAD systems).

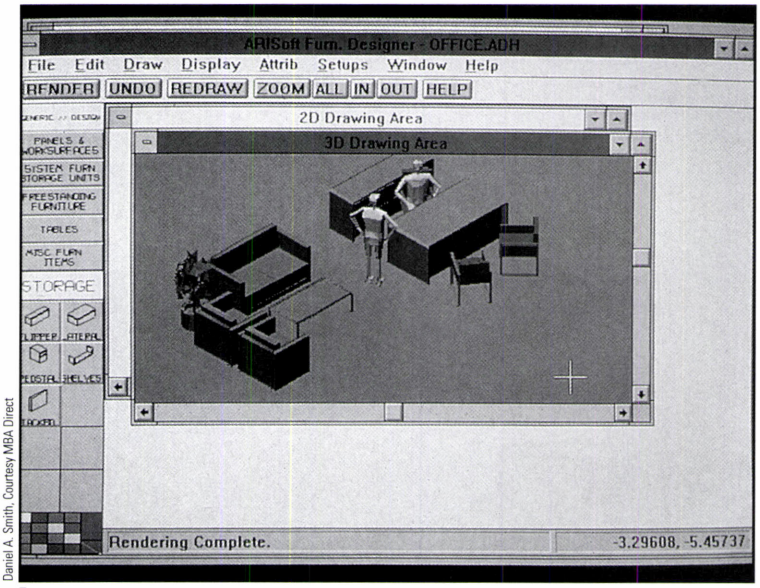
Opening Doors

Multimedia's access role is exemplified by DOORS (Design-Oriented On-Line Resource System), a GSD project designed to "make the visual resources of the school more available," says Hoffer, who is one leader of the development team. DOORS is envisioned as a database of multimedia information, culled from slides, maps, video clips, text, CAD drawings, and other sources accessible across the network on Harvard's campus. The GSD



Daniel A. Smith, Courtesy MBA Direct

4



Daniel A. Smith, Courtesy MBA Direct

5

The MBA Direct software contains a module that shows room prototypes for office renovations (4). An executive office is then retrieved (5) showing the color, cost, and furniture preferences of the client.

already has the infrastructure for this type of tool, the Daedalus computer network. Daedalus integrates a wide variety of software and hardware for access by faculty and students alike, and is flexible enough to incorporate a range of applications and support for future development such as DOORS.

DOORS on the Daedalus network will benefit students and faculty in several ways. One benefit will be an on-line reference of images and other data available from the desktop at all times. For instance, says Hoffer, a student could be working on a project in CAD that incorporates a specific design element, and someone might come by and mention some precedents. The student can call up those precedents on screen (2, 3), instead of trudging back to the library, which might not be open at the time. This access may be useful for professors as well, since they will be able to call up images on the spur of the moment during class discussions.

Extending access a little further, if three-dimensional designs or CAD drawings are also available through DOORS, someone could just as easily "look at a Gehry design, pull it apart and use it to create new designs," says Hinda Sklar, Librarian of the Francis Loeb Library where DOORS is being developed. This live access not only to images, but also to data allows precedents to be easily integrated into the design process.

Another benefit will be an archive of past and present projects of both professors and students. Currently, students are using a variety of media in their thesis projects, but it is difficult to store and archive them for reference. By capturing data electronically, future students can look up projects to see how others may have presented past theses. Original materials are also saved from additional wear and tear regardless of how often access is provided via the computer network.

The current pilot prototype contains about 800 items, mostly scanned slides, but including two video clips. The prototype, running on a standalone PC, will be moved this fall to the network. Additional images will be entered for one class, the first to make use of this ambitious reference project. Also, some three-dimensional designs will be integrated next year. "You can create 3D [designs] fairly rapidly," explains Sklar. "and they can both enhance and change the design process."

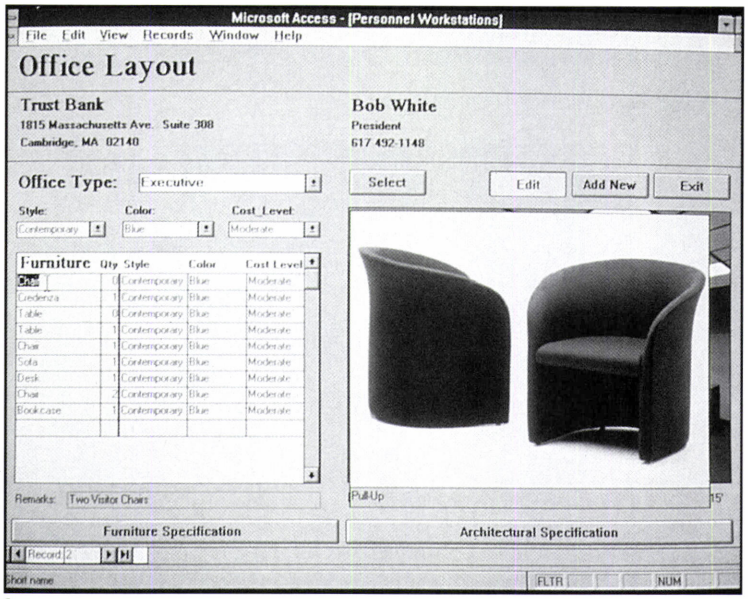
Copyrights and Multimedia

Copyrights for all scanned images is a key issue for not only the DOORS developers, but also all multimedia publishers. Legal issues surrounding distribution and access for multimedia are still a little hazy. For this reason, Harvard is using only material that it knows it has copyright access to – slides taken by professors or students for design projects, for example. "We're sure none of it is from books or periodicals. [In the future] we may have to go out and get some [copyright permissions], but we're staying away from it," says Sklar. Multimedia publishers seem to be waiting for a test case to define copyrights for electronic material, and Harvard does not want to be involved in such a suit.

The key to DOORS is access, but public access will not be available; DOORS will remain an internal Harvard reference. "It's a tremendous chore to manage [public] access," says Sklar. As the project continues, the complex database that handles indexes and searches for all the images will have to be refined. Front-end software will also have to be written to give varying levels of searches and data manipulation depending on the context of the query. Not only will data access tools be provided, but also presentation composition or authoring tools. Sklar explains that this software must be very "user friendly, and also somewhat damage proof."

Selling Design Services With Multimedia

Multimedia is also having an impact on the practice of architecture. MBA, a design-build firm specializing in corporate office renovations, approached our company – Graphic Systems Inc. – to help develop a prototype multimedia software program for selling the firm's design services. The basic concept underlying the MBA software is that a salesperson could visit a potential client with a portable PC, show the client standard rooms, modi-



Daniel A. Smith, Courtesy MBA Direct

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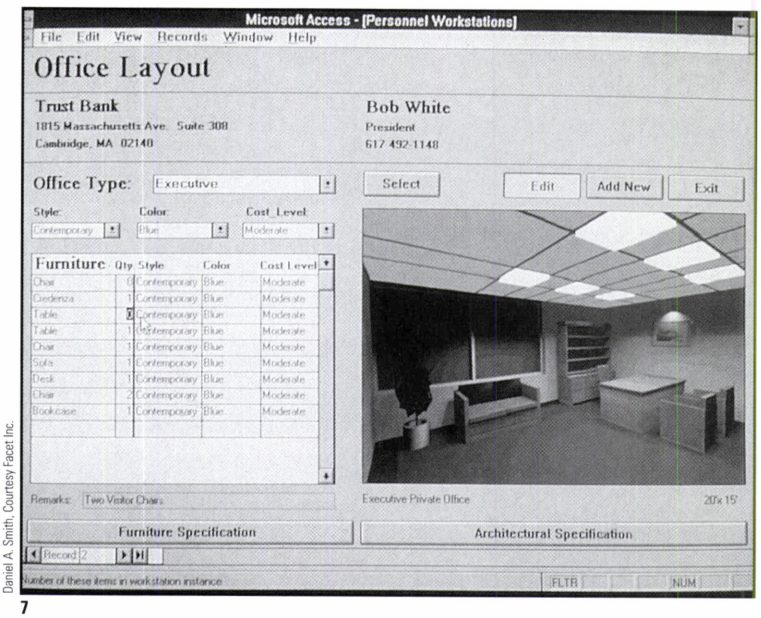

Daniel A. Smith, Courtesy Facet Inc.

7

The client can look at various furniture selections, using manufacturer's electronic product libraries (6). Once the design is complete, a render command allows the client to visualize the office (7).

fy them to fit a specific program, generate optimized stacking and blocking plans, browse through furniture catalogs, order furniture, and perform a host of other design-related services.

The multimedia software effort involved as much integration of third-party products as actual development. The use of Windows as the common environment eased the linking of various software packages, which were glued together with Microsoft's Access database. The initial client module collects data about the needs of a potential client. Various qualitative preferences are entered relating to cost, color schemes, or furniture style. These preferences are subsequently used to define the design and furniture vocabulary of the client's choices.

The next module develops the program for a specific renovation. This is done by retrieving images and associated databases of prototype spaces (4). These spaces, when initially retrieved, reflect the cost, color, and furniture-type preferences specified. The client can select and view the prototype or customize the rooms by changing the décor or the amount and types of furniture in the prototype space (5). The client can click on any furniture item to view the furniture components of a particular room (6).

A similar module handles open plan workstations from a specific furniture manufacturer's electronic database (7). This software, developed by Facet, Inc. (Pepperell, MA), has computer routines for graphic construction and rendering that define furniture and component choices via mouse clicks.

The furniture data from the room design and open plan modules will be linked to electronic catalogs so that specification and cost information can be generated. When the design is completed, a bill of materials can be extracted from the drawing and the furniture module. An underlying database records all choices and stores information related to both furniture and space prototypes to develop a finalized specification and cost estimate. As the client makes decisions, the underlying furniture, construction, and cost databases are likewise updated. When finished, a fairly complete graphic and electronic record has been accumulated. The summary module then accumulates database information and generates a series of standard reports for the client.

Other aspects of the renovation process have also been included in separate modules. For instance, building requirements data, such as the numbers of each space type and the room sizes from the room and open plan design modules, are passed to another software package, also developed by Graphic Systems. New information on desired adjacencies between spaces and a schematic floor plan are added, and the software generates optimized bubble diagrams and stacking and blocking diagrams for the client. Another module currently consists of a list of generic furniture types that are linked to scanned images. A user can select a certain type of chair and view it, and the database gives you feedback about style, color, and cost level. The purpose of the software is to:

- market services to the client;
- involve the client in the design process;
- give the client design and cost feedback at the front end of the design process;
- generate furniture specifications and orders;
- gather data for traditional design-build services that would be performed.

If the prototype becomes a product, it will also include additional real estate and facility management services. The fundamental question raised by this multimedia product relates to defining the role of architect and contractor vis-à-vis the "intelligence" that can be built into the software. The traditional "line" defining designer and machine is going to change because of such technology.

Although no one can expect these types of applications to be available to everyone in the near future, they exemplify the promise that multimedia holds, and the potential future of computing and architecture. **Eric Teicholz** and **Larry Yu** ■

Eric Teicholz is President and Larry Yu is Editor of Graphic Systems, Inc., a Cambridge, Massachusetts, technology consulting firm.

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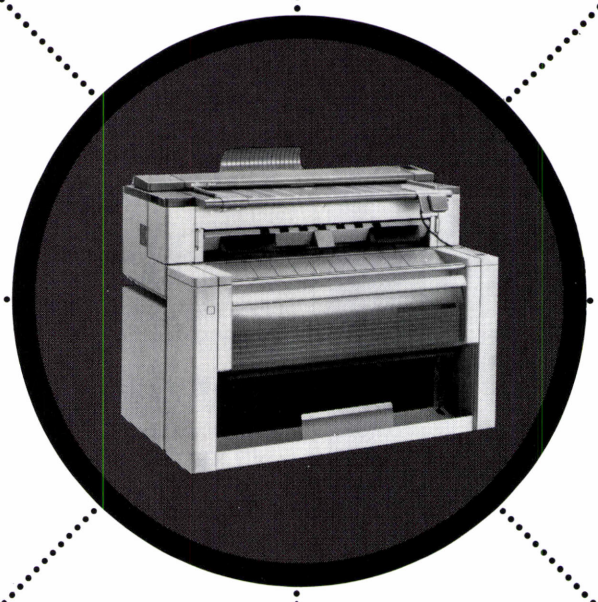

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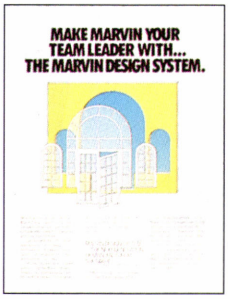
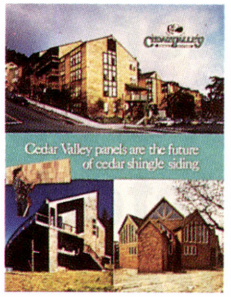
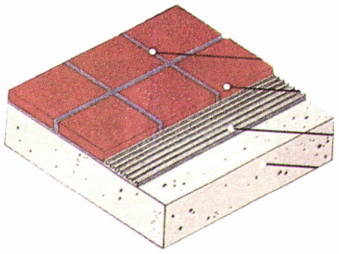
Ketiv Technologies offers four software packages for architects: ARCH T, a complete CAD package that runs with AutoCAD Release 12; ARE-24, an advanced rendering extension with animation capabilities; Ketiv editor, an ADS text editor; and a 2D and 3D architectural block library.
Ketiv Technologies, Inc. Circle No. 357



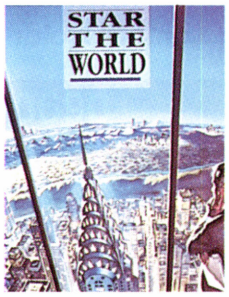
New from Marvin Windows & Doors, the Marvin Design System is the most complete design and specification software available from a window and door manufacturer. To meet the needs of the entire design team, the system can be operated by both CAD- and non-CAD users. The program runs with Microsoft Windows, AutoCAD, and DXF systems.
Marvin Windows & Doors. Circle No. 360



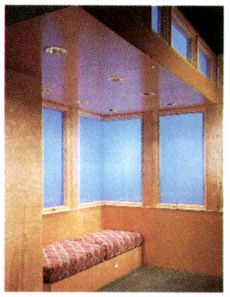
The future of cedar shingle siding is the theme of Cedar Valley's new brochure detailing the panelized exterior siding system. Included are specifications, product descriptions and illustrations, finishing and application information, and nearly four pages of color photos of significant projects by leading architects using conventional and decorator shingle panels.
Cedar Valley Shingle Systems. Circle No. 363



LATICRETE International, the leading manufacturer of installation materials and systems for ceramic tile, brick paver, marble, and stone, has developed an innovative computer program designed to answer questions such as 'How much mortar is needed to install ceramic tile or stone for a specific project?'
Laticrete International. Circle No. 358

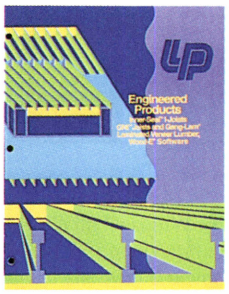


STAR is an advanced CADD solution that integrates design, production, and communication capabilities with modules for costing, facilities management, terrain, vegetation, and animation. STAR takes full advantage of today's most advanced graphics workstations; it also supports features such as multitasking and work group computing.
Star Advanced CADD Technologies. Circle No. 361

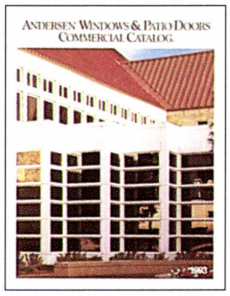


With a CornerView window, a room's corner seems to disappear. This effect is achieved with mitred insulating glass that forms a nearly invisible seam at the corner. The specially formulated sealant is UV-cured and resists deterioration even under conditions of extreme heat or cold. The window is framed by Architect Series wood sash, available with or without exterior aluminum cladding. **Pella Corp.** Circle No. 364

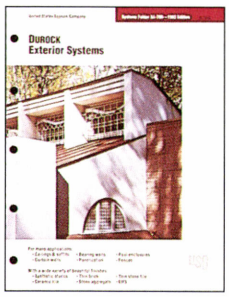
Other Products Literature Digest



Engineered wood products are designed to eliminate the problems associated with solid sawn lumber. Our catalog for Gang-Lam LVL, LPI-Joists, and GNI Joists (all are designed to be stronger, more stable, and easier to handle than solid sawn lumber) includes span and uniform load charts and information about two new CAD engineering software products called Wood-E® Cut and Wood-E®.
Louisiana-Pacific. Circle No. 359



Detail drawings, color photographs, specifications, size tables, technical data, and descriptions of all Andersen windows and patio doors for nonresidential applications are included in this 92-page catalog. To create large Andersen Feature Windows for nonresidential applications, information on Andersen Reinforced Joining Material is also included in the catalog.
Andersen Corp. Circle No. 362



This revised 20-page brochure from USG provides a detailed description of Durock Exterior Systems. The lightweight, fire and moisture resistant assemblies deliver design versatility and quick, cost-effective installation. Finishes include ceramic and thin cut stone tile, thin brick, stone aggregate, and EIFS.
United States Gypsum. Circle No. 365

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Photographer: Ed Gohlich

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Architect: Golba Architecture, San Diego, CA

Tile Contractor: Klaser Tile, San Diego, CA
Product: 12×12 717 Brilliant Black

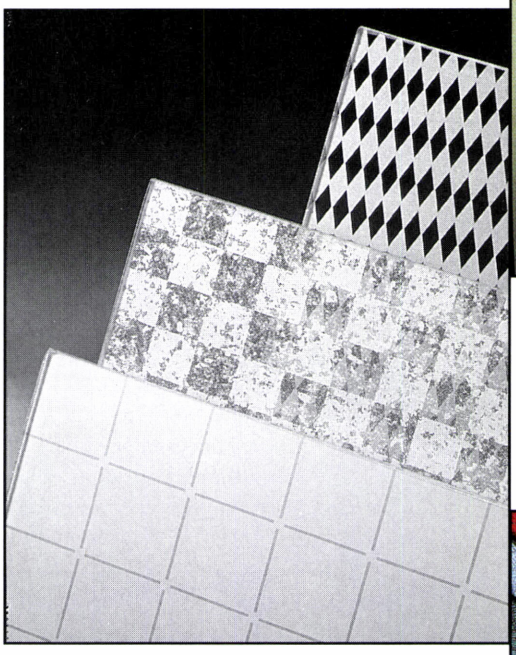
BUCHTAL CERAMICS

Circle **No. 311**

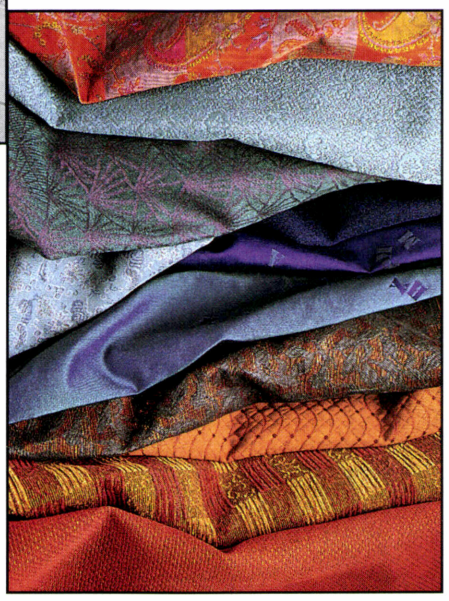
◆ ◆ ◆

New Products and Literature

A Stacker from Starck
Philippe Starck's Dr. Glob Stacking Chair for Kartell has a polypropylene seat and steel tube frame; it is available in black with a black or silver frame and in gray, coral, sky blue, aqua, or green with a silver frame. Super Glob Stacking Armchairs and Hi Glob Stacking Stools are also available. Modernage.
Circle 100 on reader service card



Architectural Graphic Glass Products
Available for architectural and interior design applications, these graphic glass products are available in three different constructions, each with an extensive selection of standard and customized patterns. Chroma Fusion® is a laminated interlayer between two glass plies for interior partitions, panel systems, and wall or workspace surfaces. ChromaFusion® Sandblasted Shades has a laminated interlayer that duplicates the appearance of sandblasted glass without the rough surface. ContraVision® is a unidirectional graphic glass that provides one-way viewing with panels that are optically opaque from one side and optically transparent from the other side. Cesar Color.
Circle 101 on reader service card



A New Textile Collection
To produce the 3 BY 5 Collection, F.S. Contract approached five interior designers and architects to design three textiles each in an effort to capitalize on their experience. The team included Debra Lehman-Smith of Lehman/Smith/Wiseman, Washington, D.C.; Gregory Landahl of Landahl Design Studio, Chicago; James Northcutt of James Northcutt Associates, Los Angeles; Biana Quantrell of Quantrell Mullens Associates, Atlanta; and Scott Strasser of Houston. Textile designer and consultant Kristie Strasen coordinated the project and produced two solid-color textiles for the collection. The 17 patterns are constructed of various combinations of cotton, wool, rayon, and polyester. There are 175 colorways. F.S. Contract.
Circle 102 on reader service card

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New Products and Literature

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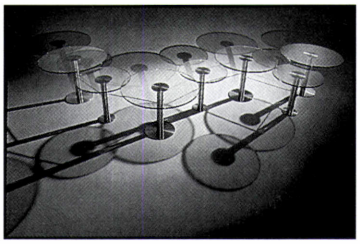


Tables in Motion

Kotaro Shimogori's Tango coffee tables, with their rotatable stainless steel tube legs, can be configured in an infinite number of arrangements. Groupings of three, five, or seven half-inch, clear-glass table tops may be specified in two sizes: a 14 ¾"-high leg with a top 16" in diameter or a 15 ⅔"-high leg with a top 22" in diameter. The stainless steel crossbars are 16" long. idT.

Circle 103 on reader service card

Wood Veneer Wallcovering

Ajiro, designed by textile designer and artist Maya Romanoff of Chicago, is a new, flexible wood veneer wallcovering. Micro-thin strips of Palonia wood are woven and adhered to a paper backing for easy installation. The material can be wrapped around columns and corners, custom colored, or finished on site. Maya Romanoff®.

Circle 104 on reader service card

Restoration Brochure

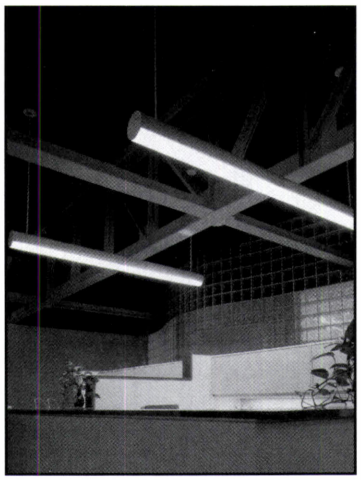
This brochure describes Linetec's refinishing and restoration capabilities. It offers an overview of the painting processes and restoration techniques they use on aluminum, steel, glass, plastic, wood, masonry, brass, and bronze column covers, panels, curtain walls, and storefronts. Linetec.

Circle 200 on reader service card

Elastomeric Waterproofing Brochure

The primary uses of this company's elastomeric waterproofing system, including primers, sealants, wall and roof coatings, and water repellents are documented in this brochure. All of the products are produced with nontoxic, nonflammable water-based materials. VIP Division of the Flood Company.

Circle 201 on reader service card



Fluorescent Fixtures Brochure

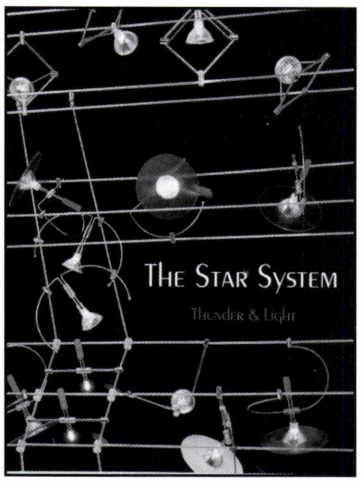
This new 28-page, four-color brochure documents the full line of linear fluorescent fixtures for commercial applications. Round, oblong, square, rectangular, and V-shaped designs are offered. Specifications and custom capabilities are also included. Precision Architectural Lighting.

Circle 202 on reader service card

Coffee, End Tables

The Laske Collection of coffee and end tables, by industrial designer Lawrence Laske of Chicago, is offered with multi-leg (shown above) or curved-leg bases. The base finishes include light and dark gray maple; the curved leg is also available in aluminum. Both versions are available with a choice of seven wood, slate, and aluminum table tops. KnollStudio.

Circle 105 on reader service card



Wire Lighting System Brochure

The Star System is a halogen lighting system energized by a miniature wire adapter. Sixty-seven components can be configured into 290 different system variations. The fixtures, securing devices, insulated and noninsulated wire, and accessories are documented in a new four-color brochure. Thunder & Light.

Circle 203 on reader service card

Transitional Office Furniture

Architect James Evanson's new High Rise Collection is designed to bridge the gap between home and office furniture. Constructed of wood and powder-coated steel, the collection includes a desk (64" x 35" x 29"), a console (64" x 17" x 29"), a low side table (19"x 25" x 25"), a high side table/cabinet (19" x 25" x 48"), and a stacking chair (25" x 22" x 29"). Evanson Studios.

Circle 106 on reader service card

1993 CRSI Software Catalog

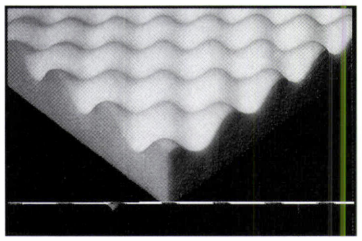
The Concrete Reinforcing Steel Institute has announced the release of its *1993 PC Software Catalog*. The 20-page catalog describes over 100 programs and is divided into General-Reinforced Concrete Design, Transportation, CRSI Software Development Competitions, and Ordering and Information sections. CRSI.

Circle 204 on reader service card

ADA-Compliant Elevator Control Panels

The Deco Series of decorative elevator control plates and matching hall accessories are ADA-compliant and come in two styles, Fanfare! and Encore!. They are made of four layers of stainless steel or bronze and are available with satin, mirror, and antique finishes. Adams.

Circle 107 on reader service card



Flame Retardant Acoustic Panel

Fireflex is a new acoustic panel made of a highly porous melamine foam. It is said to have a flame spread rating below five, a smoke density rating below 40, and a noise reduction coefficient of 1.00. The 24" x 48" panels can be painted and cut to any size and thickness and are appropriate for industrial, commercial, and institutional applications. NetWell.

Circle 108 on reader service card

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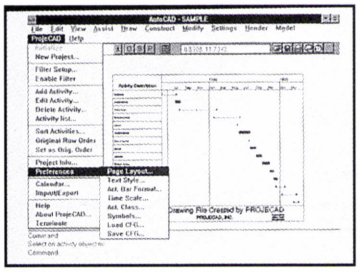
Computer Products



PROJECAD

PROJECAD for both DOS and Windows versions of AutoCAD® release 12 has been introduced. It operates within AutoCAD, offering a quick method for creating and formatting scheduling bar charts. Sorting, filtering, and global change tools to update and rework bar charts are featured. PROJECAD imports and exports ASCII delimited files, and exports DBF files formatted for Primavera Project Planner®. PROJECAD.

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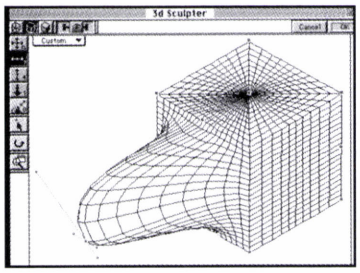

Strata StudioPro™

Created for design and animation professionals, Strat StudioPro™ is a new, expert-level 3D program for Macintosh. It offers the spline-based 3D Sculptor™ modeling tool; the RayPainter™ rendering technique to create images that appear as though they were hand-rendered using traditional media; and the Event-Based Animation system to allow users to explode, shatter, and atomize animations. Strata.

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Vellum® 3D for Windows™

Running under Microsoft Windows, Vellum® 3D for Windows automates geometric alignments to free designers from complicated commands. After creating a 3D model, the software automatically creates four associative views (isometric, front, right, and top). Changes in any view are automatically updated in all others. Ashlar.

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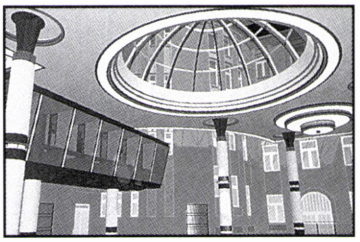

ArchiCAD®, Plotmaker™ Upgrades

Version 4.12 of ArchiCAD® and Version 1.32 of Plotmaker are now available to all registered Archi-CAD users. The upgrades include support for ADB type key protection; improved vector font handling, ATM compatibility, and Worldscript support; compatibility with bubblejet printers; and improvements to the source code. Graphisoft.

Circle 112 on reader service card

Slick!

Version 6.4 of the Slick! drawing management software for AutoCAD has been shipped. Features of this new version include support for viewing .RLC and CALS Group IV raster files, increased database access time, and the ability to create Word-Perfect graphic files directly from any of the supported formats. Slick! is a fully integrated drawing management product with viewing, redlining, stand-alone plotting, and database capabilities. CAD Systems Unlimited.

Circle 113 on reader service card

LaserCAMM

A high-speed alternative for model-making, LaserCAMM is a turnkey laser cutter that fully integrates with many CAD systems. The LaserCAMM connects directly to a host CAD system through an RS-232 serial port and DXF files. A menu-driven interface allows the user to choose standard materials, depth, and width of the cut; from this point, all of the laser controls are set automatically. Though the LaserCAMM is a two-dimensional system, three-dimensional relief can be built up with the laser-cut parts. The laser cutters are Class I, ETL-approved for office use. Scale Models Unlimited.

Circle 114 on reader service card

ArcCAD

ArcCAD Release 11.3, the latest version of the GIS/CAD software combination, supports the Microsoft Windows operating system, allowing users to perform simultaneous sessions with other Windows-based applications. One new feature is "hot links"; it allows the attachment of a variety of different data mediums to a user's geographic features. Another feature is the implementation of a dialogue box for use with the polygon overlay function to facilitate spatial analysis procedures. Environmental Systems Research Institute.

Circle 115 on reader service card

Virtus WalkThrough Pro™

Virtus WalkThrough Pro™ is a 3D drawing and visualization program that combines the world-building tools and real-time rendering features of Virtus WalkThrough® for the Macintosh with new texture mapping capabilities that add realism to set designs, residential remodeling, multimedia presentations, and other 3D representations. Architects can now display woodgrain walls and brick walkways. Texture libraries offer a variety of surfaces and design elements from carpeting to trees and grass. Virtus WalkThrough Pro™ supports all PICT-format images. Virtus.

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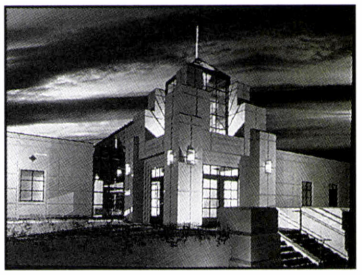

ModelView 3.2

ModelView 3.2 is the latest version of this model rendering and animation software; shadows, materials, reflections, refractions, translucency, and lighting can be realistically rendered using features such as ray tracing. The software's photo-matching capabilities can be used to accurately position CAD models within photographs of construction sites. In addition, the Pixie tool provides an intuitive interface for interactively changing colors and patterns of an existing rendered image. Intergraph.

Circle 117 on reader service card

New Products and Literature

(continued from page 100)

New Metal Laminates

The Vortex Collection of decorative aluminum, copper, and brass laminates has been expanded. Two aluminum and two copper patterns have been added. Available in sheets and strips, the laminates are suitable for use on furniture casegoods, display cases, and wall and ceiling panels. The October Company.
Circle 118 on reader service card

New Expansion Joints

C/S Flush Thinline Joints have a patented thermoplastic gasket with rigid edges that are friction-locked to an aluminum frame. A flexible core allows full multi-directional movement of the joint cover; 1" and 2" joint covers are available. The gaskets are offered in six standard colors, although custom colors may be specified. C/S Group.
Circle 119 on reader service card

Clay Roof Tile

The Valoise flat profile clay roofing tile, with a 1 1/4" butt, has double-interlocking side and head channels for weather-resistance. The tiles are produced by Huguenot Fenal in France. Northern Roof Tile.
Circle 120 on reader service card

Outdoor Luminaires Introduced

Architectural Outdoor Lighting (AOL) is a new line of outdoor luminaires available in several models, including single-pole-top, wall-mount, or bollard. The line's MTR Refractor is patterned after the light-bending characteristics of a prism and combines the physical effects of refraction and reflection. Each is designed with a UV-stabilized polycarbonate shield and countersunk stainless steel screws for increased vandal resistance. The luminaires accept fluorescent, metal halide, and mercury or high-pressure sodium lamps. Staff.
Circle 121 on reader service card

Carpeting for Kids

Kid's Art™ is a new loop pile carpet manufactured with Dupont® CTMF continuous filament nylon. Available in teal, green, peach, and blue colorways, the carpeting is treated with DuraTech® for soil resistance and has a moisture-proof backing and wraparound antimicrobial protection. Bentley Mills.
Circle 122 on reader service card

Recessed Lighting Fixture

Air-Loc IC® is a new recessed lighting fixture that was designed to prevent air leakage, minimizing heat and cooling loss in the home. A single fixture is said to conserve up to one million BTUs of heating and cooling energy in a year. The sealed aluminum housing has no perforations or openings; the VaporAir™ foil gasket, designed specifically for the Air-Loc IC, seals the fixture housing to the ceiling. A selection of diffusers, decorative trims, and baffles is available. Juno.
Circle 123 on reader service card

Radiant Heating Catalog

Goodyear Tire and Rubber Company and Heatway™ have reported receiving the first UL listing for any hydronic floor heating hose or pipe.Their new product, Entran 3, is a composite, engineered hose made of layers of rubber and plastic. This catalog describes and illustrates the basic components of the Heatway™ Radiant System. Heatway.
Circle 205 on reader service card

Structural Glazed Facing Tile

This new horizontally cored structural glazed facing tile (SGFT) has two large vertical holes for steel or concrete reinforcement for enhanced security and seismic resistance. As with the manufacturer's other structural glazed wall products, the new facing tile has a baked-on ceramic surface, providing vandal, stain, and abrasion resistance. Stark Ceramics.
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Stockley Park, Heathrow
Architects: Arup Associates

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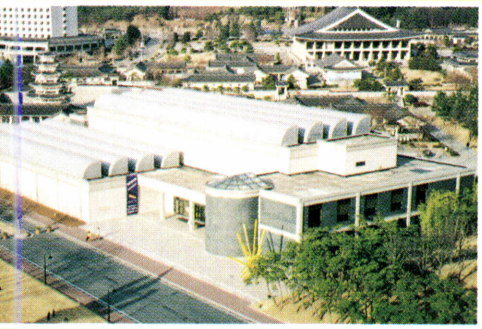
Dazaifu Treasures Museum
Tokyo, Japan
Architects: Satoh Total Planning and Architecture

KOREA



Keishu Art Museum
Seoul, Korea

UNITED STATES

International Airport
Pittsburgh, Pennsylvania
Architects: Tasso Katselas Associates

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Books *(continued from page 75)*

the closure of no fewer than 168 S&Ls and 340 banks. In 1987 there was more unrented office space in the city of Houston than there was total office space in Atlanta and Denver combined. One million men, women, and children lost homes throughout Texas between 1985 and 1990.

The collapse reached far beyond these stunning statistics. It destabilized the meaning of contemporary urban development, the meaning of "Houstonization" itself. Confidence that the machinery of commerce could construct a viable city was shattered; contemporary urban development suddenly came to stand for something else. Barna writes:

> So much money had been gambled and lost in real estate that the decade left significant parts of the private realm, and most of the public realm in Texas, hollowed out ... all those see-through office buildings helped create a society in their own image.

As it was soon to be when the rest of the country woke up from the Reagan years and discovered that everything had changed, things in Texas suddenly looked very different. The "see-through building" came to represent a dramatic collapse. An increase in substandard construction, dilapidated infrastructure, abandoned development falling into ruin, and a belt of valueless real estate surrounding the city all were the specters of an enormous breakdown and of soured investments from which developers or buyers simply walked away.

What exactly was the idea of "Houston" that had so suddenly caved in? In an influential essay of 1981, "Towards a Critical Regionalism," Kenneth Frampton identified post-war urban development as the ultimate celebration of something called "universal value." He wrote:

> The typical downtown which, up to twenty years ago, still presented a mixture of residential stock with tertiary and secondary industry has now become little more than a *Burolandschaft* cityscape: the victory of universal civilization over locally inflected culture.

Frampton's reference to *Burolandschaft* suggests that the transformation of active mixed-use urban cores into an innocuous zoned "officescape" is the realization of the Modern City as it was conceived in the 1920s: a "Universal Space" empowered with technical rationality which (like the capital it served) knew no political, historical, religious, or class boundaries. Extending Frampton's argument, it would be safe to assume that corporate development in Houston seemed to infiltrate and homogenize the American City.

What we have witnessed since 1981, and what Barna describes so well in his book, is dramatic proof that this process could stall and even stop. But Barna's book begs the most compelling question: what is to be built in the hollow space produced by the collapse of Houstonization?

The answer may be elusive, both for Barna and for us. But we do know through his and others' efforts that this "hollow space" is no *tabula rasa*, no blank slate for highly aestheticized urban visions of either the city past or the city future. It remains to be seen what recovery will be made from the excesses of the 1980s, but the social and economic landscape will be dramatically changed. The requirements of capital which produced the *Burolandschaft* have certainly not disappeared. If anything they have been leveraged to the point where they cannot be dismissed by nostalgic designers. Which is to say that the architecture of the city is thoroughly preconditioned by the collapse of the universal value which preceded it. Through Barna's book, we might understand the "hollow space" we've created, and eventually figure out how to work with it.

Albert Pope ■

The author practices architecture in Houston and is Director of Graduate Programs at Rice University's School of Architecture.

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ASSISTANT/ ASSOCIATE PROFESSOR

The School of Architecture is conducting a search for expected full-time tenure track positions in Architectural Design at the Assistant or Associate Professor level beginning Fall 1994. Teaching responsibilities include design studio and one of the following specializations: structural design, computer aided design, drawing or theory. Candidates should demonstrate a capacity to teach undergraduate and graduate studios, possess a professional degree in Architecture with experience in professional practice, and have an interest in pursuing intellectual goals through scholarship and/or practice. An advanced degree in architecture and/or professional registration is desirable. Applicants should explicitly state their secondary area of expertise.

Candidates should send curriculum vitae, a maximum of ten photocopied samples of design work (not to be returned), a statement of interest and goals, and the names of at least three references, by Friday, December 31, 1993 to: Chair, Faculty Search Committee, 103 Slocum Hall, School of Architecture, Syracuse University, Syracuse, NY 13244-1250. Ethnic minority and women applicants are encouraged to apply. AA/EOE.

Iowa State University Dean of the College of Design

We invite nominations and applications for the position of the Dean of the College of Design. Candidates must have an outstanding career in education and research and/or practice and a distinguished record of scholarship or creative achievement; a terminal degree in a relevant field, Ph.D. preferred; and must be qualified for appointment to the rank of professor with tenure in a department of the college. Review of applications will begin on Nov. 15, 1993. For complete application information and requirements contact: **Chair, Design Dean Search Committee, Provost Office, 107 Beardshear Hall, Iowa State University, Ames, IA 50011, phone (515) 294-9591, fax (515) 294-8844.**

Iowa State University is an affirmative action/equal opportunity employer and encourages the applications and nominations of women and minority candidates.

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The University of Illinois at Chicago, School of Architecture, is seeking a distinguished architect and architectural educator with strong leadership and administrative skills for the position of Director of the School effective July 1, 1994.

Qualifications: professional degree in architecture, recognized accomplishments in scholarship, practice, and/or research, and professional and civic contributions. The applicant should be able to meet the university criteria for Professor of Architecture with tenure.

Send application, vitae, a list of five academic and professional references, and a statement on architectural education to:

Chair, Director's Search Committee
Office of the Dean, College of
Architecture, Art, and Urban Planning
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Drury College

The Hammons School of Architecture is inviting applications for the position of director. This is a tenure track administrative and teaching appointment effective June 1, 1994. Faculty rank and salary are competitive and based on qualifications and experience.

The Hammons School of Architecture is an accredited five-year professional program. Established in 1985, the school of architecture provides a special blend of liberal arts and professional education.

The college seeks applicants who can provide visionary and effective leadership. Applicants should have a liberal arts background and hold a graduate degree in architecture. (Professional registration is desirable.) The successful candidate will be an effective administrator, a successful teacher, and someone with significant professional experience. Candidates should have a commitment to the integration of architecture and the liberal arts and be able to express a clear and coherent philosophy of education consistent with those institutional values.

Candidates are asked to submit: a current curriculum vitae; names, addresses, and phone numbers of at least four academic and professional references; a portfolio with examples of professional and academic work; and, a letter of interest describing their more recent academic and professional accomplishments, experience in leadership positions, and educational philosophy.

Applications and inquiries should be addressed to: Dr. Stephen H. Good, Vice President for Academic Affairs, Drury College, 900 N. Benton Avenue, Springfield, MO 65802. Telephone: (417) 873-7225.

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University of Virginia
Assistant or Associate Professor of Architecture, Design and Theory

Candidates should have a professional degree in architecture and teaching experience in design studios. Additional expertise in areas such as building technologies and/or architectural theory will be of particular interest to the Search Committee.

The School of Architecture invites applications for this faculty position which is available in the fall of 1994. The successful candidate will have demonstrated excellence and a strong commitment to teaching.

Minorities and women are encouraged to apply. Applications in the form of a letter of interest, curriculum vitae, and the names and addresses of three references should be submitted by November 15, 1993. Screening of applicants will continue until an appropriate candidate is selected. Applications should be sent to Kenneth A. Schwartz, Chair, Search Committee, School of Architecture, University of Virginia, Charlottesville, Virginia 22903. The University of Virginia is an Equal Opportunity/Affirmative Action Employer.

Dean
School of Architecture
Auburn University

Applications and nominations are invited for the position of Dean, School of Architecture, Auburn University, Auburn, Alabama, a multidisciplinary school composed of Architecture, Building Science, and Industrial Design. The successful applicant must have appropriate terminal degree, qualify for appointment as a tenured professor within the school, and a distinguished career incorporating both professional and academic experience.

The Dean is the chief administrative officer interacting with the University and is the School's liaison to the design and construction industries.

A letter of application, vitae and list of five references should be sent by November 1 to:

Gordon C. Bond, Chair
Architecture Dean Search Committee
2046 Haley Center
Auburn University, AL 36849-5223

Position is available January 1, 1994. Auburn University is an EEO/AAE. Women and minorities are encouraged to apply.

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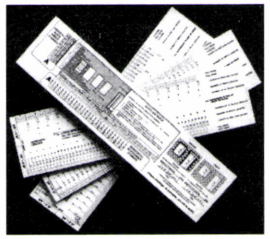

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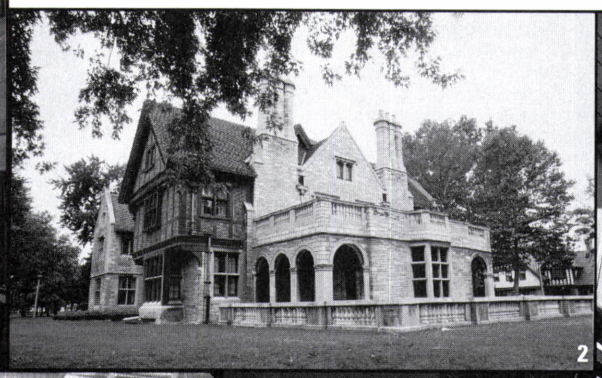

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Lucas Rios-Giordano

And What About Stamford, Connecticut?

Our June Question of the Month *("What city is most underrated for its architecture?") brought out the hometown booster in many readers. Read on for some unexpected travel tips. Philadelphia architect Kenneth Mitchell proposes* **Ballenberg, Switzerland**, *(1) home of a "collection of rural vernacular architecture ... reerected in surroundings that are similar to their native regions within Switzerland." Jerome Baillargeon nominates his city of* **Windsor, Ontario**, *for its concentration of Albert Kahn buildings (2: Kahn's 1904 Willistead Manor). "We are not just noted for chicken wings and snow," says Richard Fitzpatrick of – you got it –* **Buffalo, New York**. *He cites an impressive list of master architects with works there: Wright, Sullivan, Richardson, the Saarinens, and native son Gordon Bunshaft. Stephen Schreiber of* **Albuquerque, New Mexico**, *bemoans the fact that "The question most often asked at the information booth at the airport in Albuquerque is 'How do I get to Santa Fe?' " despite the city's "eclectic array" of pueblos, plazas, commercial strips – and the presence of Antoine Predock and Bart Prince (3). Kanti Patel of Trozze & Co. Architects, Binghamton, New York, sent snapshots of* **Jaisalmar, India** *(4), touting the "infinite stone carvings" on most of the city's buildings. Lucas Rios-Giordano of Los Angeles nominates his hometown of* **Montevideo, Uruguay**, *(5) citing in particular a concentration of 1930s Modernism that he says "has no parallel."*

Of all the questions we've asked so far, this one has attracted the most interest. But, to avoid further igniting hometown passions, we'll refrain from asking who has the best hamburger.

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Question of the Month

"Who would you cast in a T.V. mini-series about Frank Lloyd Wright?"

Wright's life was done as high art in the recent opera Shining Brow. *But doesn't such a tumultuous, scandal-plagued life just cry out for an epic television event? Before December 15, send us your suggestions for the roles of Wright and the supporting players in his life to* Furthermore Editor, P/A, 600 Summer Street, Box 1361, Stamford, CT 06904. *We'll publish the most intriguing responses in Furthermore in February.*

P/A in November

Next month, we take our annual look at houses, but with a twist: this year, we will feature pairs of houses by selected architects, better to understand their varying approaches to this building type. The issue will include:

- **two houses in Greenwich, Connecticut, by the Classicist Allan Greenberg;**
- **a new house and an addition, both in California, by former P/A Young Architects O'Herlihy & Warner (P/A, July 1990, p. 74);**
- **a Maryland hunting lodge and a house on Martha's Vineyard, Massachusetts, by Mark Simon of Centerbrook Architects;**
- **two houses with special custom furniture by Daly, Genik Architects of Santa Monica;**
- **two traditional shingled houses by James Volney Righter of Boston.**

Also in November will be a report from Berlin, examining that city's struggle to redefine itself in the wake of the Wall and in its new role as capital, and a Technics Focus on advances in residential construction. ■