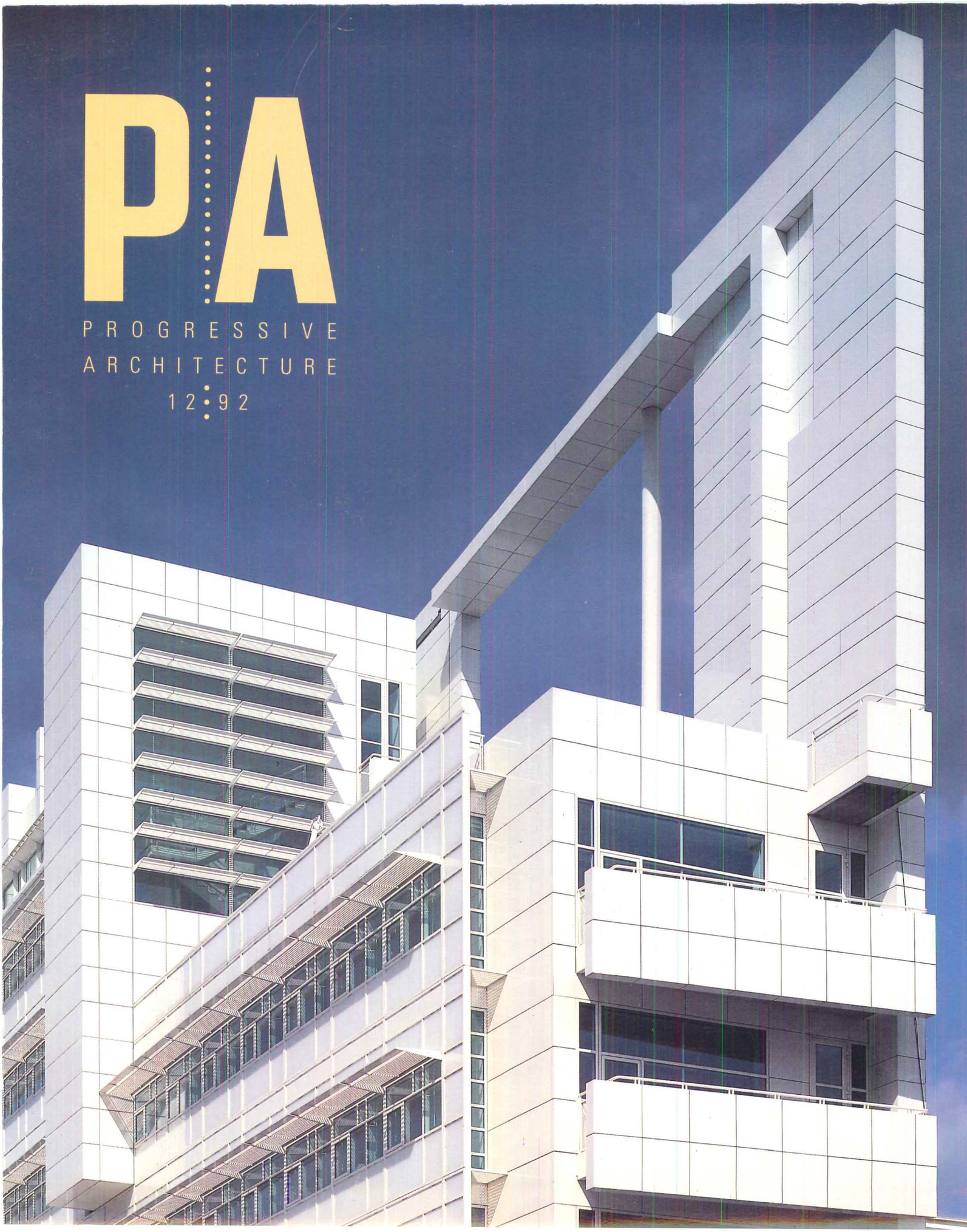

PA

PROGRESSIVE
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12:92

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cession by breaking into banks. from their example.

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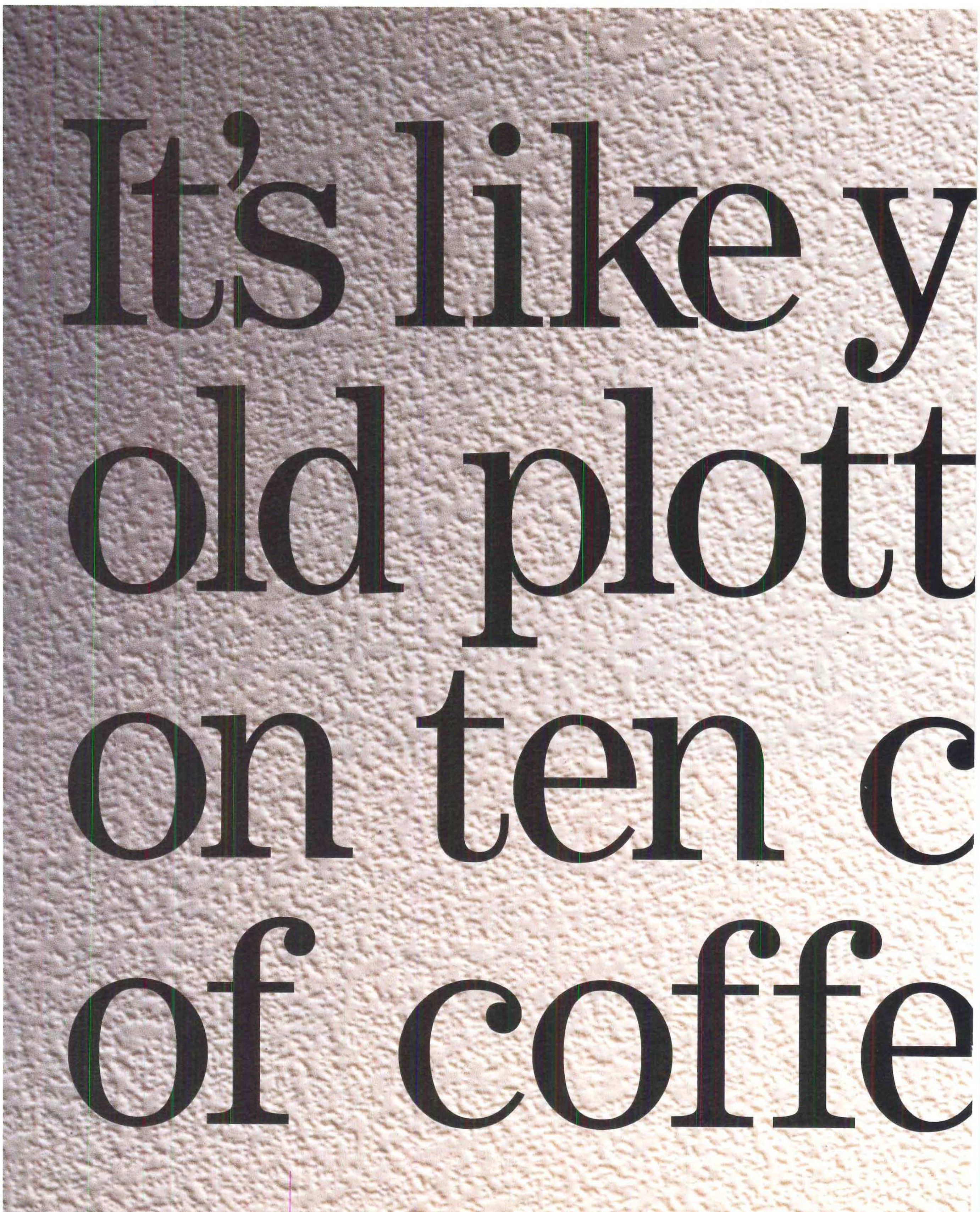
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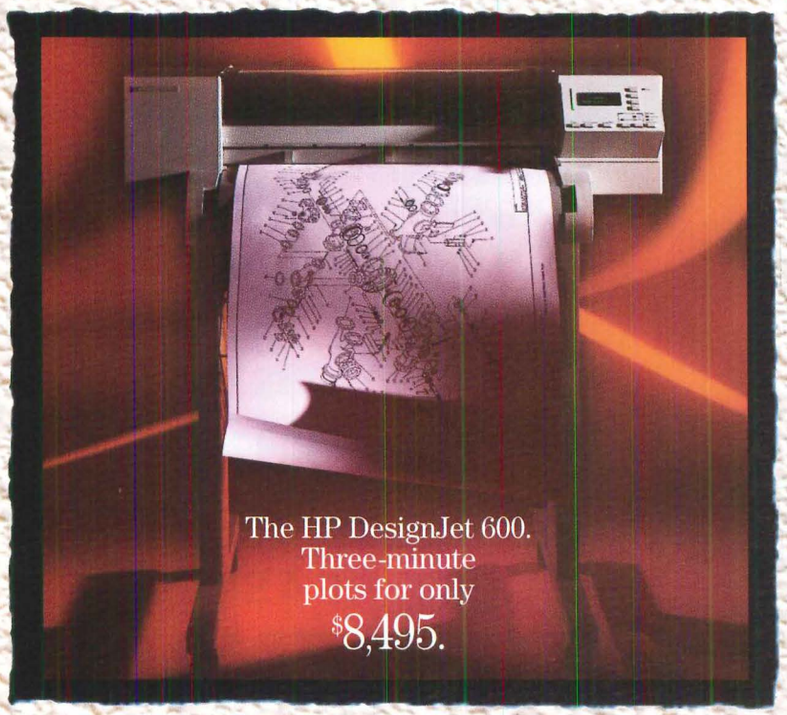

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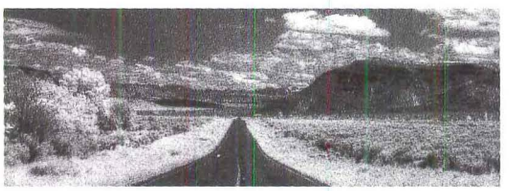

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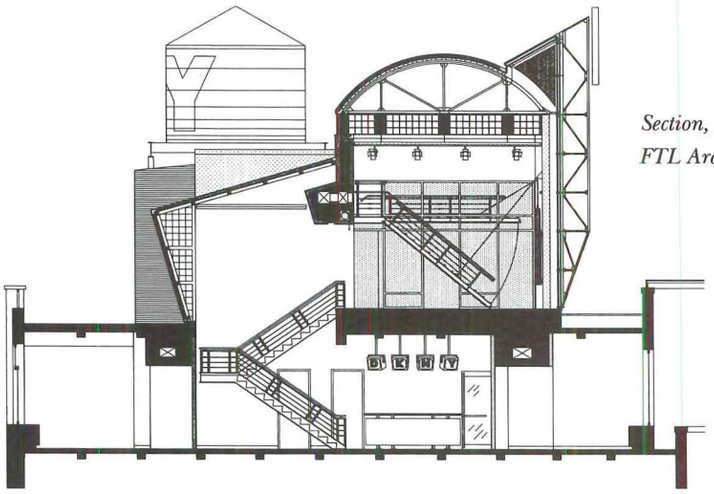
Progressive Architecture December 1992

P/A

Design Editor in charge: Thomas Fisher



Section, DKNY Showroom, FTL Architects, p. 54.

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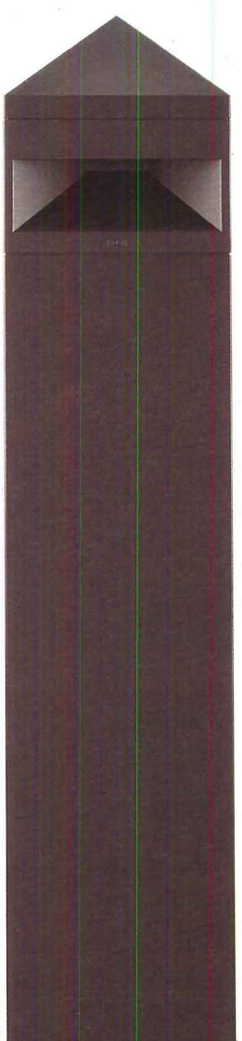

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Editorial
A Modest Proposal for the Profession

The current recession is forcing larger changes in the architectural profession that may, in fact, be long overdue.

There is growing recognition within the profession that, for us, this recession is not just another cyclical downturn in the economy, and that, when prosperity returns our troubles may not be over. This thinking stems not just from the severity of the recession, in which thousands of architecturally trained people have been laid off and thousands more are graduating each year with little prospect of finding work in the field; but more and more people now see that things were not going well for the profession even before the economy went sour. Despite the availabilty of work in the mid-1980s, many firms were having to provide more service for the same amount of money in ever shorter periods of time, while their liability exposure was increasing and their authority on the jobsite eroding. Even during the building boom, profit margins were too tight, incomes too low, and market growth too slow.

The economy, in other words, has been trying to tell us something. As we look beyond the short-term problems of this recession, we are facing a long-term discrepancy between what our society needs and values and what we, as a profession, are used to providing. Such a mismatch between supply and demand is not new in the history of professions. There is an inherent conflict between the rapid changes within free-market economies and the established procedures of professions, which resist change through the accreditation of their schools and the licensing of their members. But some professions have adapted better than others.

About 100 years ago, for example, the legal profession made a gradual but dramatic shift in its self-conception. As the supply of lawyers started to outstrip demand, they began to see their education not just as preparation for practicing law, but as a particular way of thinking. Legally trained people thus began to enter a wide number of fields in business and government, that were growing rapidly and needed legal expertise. Although the influx of lawyers into these fields has created its own problems, the legal profession has clearly adapted well to the changing needs of our society.

The architectural profession, I think, is on the brink of a similar transformation. There are simply too many architecturally trained people competing for too little work as it has been traditionally conceived. At the same time, there are too many social ills whose solutions demand the sort of generalist, cross-disciplinary approach to problems that pervades almost everything architects do. One response to the oversupply of architects, as Professor Robert Gutman suggests in our series on Architects and Power (p. 39), is to accept shrinkage in the size of the profession and in the types of problems we address. But I think the other response – expanding our opportunities rather than limiting our numbers – not only is more politically acceptable, but is truly better for the profession and for the public in the long run.

By expanding our opportunities, however, I do not mean simply becoming more involved in closely related fields, such as furniture design or facilities management. A more radical shift is needed; like the legal profession's transformation, it would greatly broaden the definition of what it means to be an architect. The architect, for example, might be the best person to help solve the messy, seemingly intractable problems that now plague our society – problems whose solutions may or may not involve making changes to the physical environment. Just as there are architects now trying to solve problems such as affordable housing or homeless shelters, there might, in the future, be architecturally trained people leading teams of specialists trying to reduce crime or improve transportation systems or direct urban growth. If solutions to these problems included constructing buildings, then the architects, as building design specialists – from the team or from outside – would deal with that aspect. But there might be many cases in which no buildings would be built and no physical changes occur.

Over the last two decades, we have been narrowing the concerns of the profession. Except for a relatively small group of star architects, however, that approach has neither greatly increased the demand for architectural services nor provided much additional space for the growing number of architectural graduates. I think the time has come to change course, to broaden our concerns and to expand our definition of what it means to be an architect. This kind of talk may sound far-fetched, as it must have to law students 100 years ago who couldn't conceive that, as lawyers, they might never write a brief or try a case. But I am convinced that if this profession is to survive as more than a shadow of its former self, we must begin to see ourselves as capable of offering a type of problem-solving rather than simply a type of design service. We should do this not only for our own sake, but for the sake of a public that, I think, has been ill-served by the myopic specialization of most professions – including, up to now, our own. **Thomas Fisher** ■

Views

P/A Housing Initiative

The following letters were among many received in response to the prototype affordable house sponsored by P/A and featured in the August 1992 issue (pp.43–51). We conclude with a response from Abacus Architects & Planners, who designed the house.

Design Is Not The Problem

I read with interest the article on the completion of "The P/A House." Unfortunately, the report reminded me of our work on manufactured housing ten years ago when we worked with a manufactured home builder, developed new multifloor plans, dramatically improved the architecture, and master-planned a 300 manufactured-home community set in a mature avocado grove. We designed seven floor plans and multiple elevations for 1200- to 1800-sq.-ft. homes. They would have sold for less than $75,000, considerably under the 1982 Southern California home market. The project died after the construction of seven model homes (in 30 days) when the developer, a savings and loan development subsidiary, sensed a market downturn in Southern California.

So what's my point? I don't think that the P/A competition proved anything except that the key to affordable housing or any other kind of housing in this country is not design. Constantly architects are being challenged to design the country's way out of our housing crisis. Unfortunately, the solution to our housing crisis does not involve design of the home; rather it involves the system by which this country produces and maintains its housing inventory, which includes the speculative/investment basis of the private home, tax structure, cost of construction, local planning and zoning, public will, and mortgage financing.

As with the current "environmental" movement within the AIA, architects should not accept the responsibility to design this country's way out of the housing crisis. The solution is not some new (which doesn't exist) way to build a 1000-sq.-ft. home cheaper, but a fundamental way to cut the cost of renting or owning that home. Consider one simple fact, that the cost of owning a home, expressed in the monthly payment, can be reduced by 25 percent simply by lowering the mortgage interest rate from 10 to 7 percent, which appears to be the amount the Cleveland home achieved. I could go on with numerous ways to reduce the cost of constructing new housing and, unfortunately, none involve the design of the housing.

In summary, the competition resulted in nice pictures, a good innovative design, and little relevance to the nation's housing crisis.

Richard Bundy, FAIA
Richard Bundy & David Thompson, Architects, San Diego

Defending Manufactured Housing

The article in P/A by Abacus Architects reminds me of the three blind men asked to describe an elephant, each man having touched only certain and separate parts. The architects' impressions of the industry need to be qualified inasmuch as theirs is only one description of the animal.

Affordability is a difficult issue to deal with in architecture. Ideologically one could argue the purist's position where true beauty is not a function of money or an item of cost. One could also argue that one needs beauty of space as much as space itself. In affordable housing, defined as housing one can afford, these discussions are secondary. One starts with the issue of cost and never loses sight.

Initially mundane, fundamental issues such as the ratio of envelope to usable space contained, or the ratio of circulation to other usable space, or the principle of "more bang for the buck," when pursued with the required discipline, eventually yield their own authentic aesthetic. Ever fascinating issues such as imagery and allusion lie in wait, like so many tricks from a bag otherwise devoid of the wherewithal to truly invent and explore new territory.

The very nature of the systemic design process and subsequent fabrication is companion piece to the economic imperatives. Artistic caprice yields to a substantially different methodology, not a better methodology but simply the rules of the game. Arguing that this in some way hinders the creative process is to fail to understand the basic kit of parts available – modern day Froebel Blocks if you will.

The architects are quite correct in their assessment of some companies in the industry who are locked in their thinking and overly dictated to by the level of competition they face daily. However, there are others who believe that the future of this industry and the realization of its potential rests with its redefinition.

To cite one example, Chelsea Homes has for the past thirteen months, been producing the very roof, more or less, so painstakingly re-invented for your project. One of the minor differences being that we long ago dismissed the literal hinge, since the roof is generally raised but once. This is just one of numerous developments which continue to redefine our kit of parts to a more basic, less task-specific type.

If I have interpreted the list of costs correctly, this affordable house incurred approximately $28,000 in professional fees. Given the small margin of profit in the industry (one of the reasons it is affordable to begin with) the rationale that these are legitimate research and design costs is flawed. To recover those costs, an unreasonable number of units would have to be ordered with absolutely no changes. It is my experience that this will not happen, but more particularly, the architect will certainly not get the manufacturer to speculate on that eventuality, any more than you did in this project.

In view of such fees, one has to speculate as to the greater "bang for the buck." Had the architects rethought their position, they might have managed to cover the costs for a cellar or at the very least, storage/mechanical space (no small loss on many different levels).

If the architects are implying that the present regulations are at fault for any of the industry's problems, they are mistaken. In my discussions with the people who represent the states, Mr. Mecoczi from Ohio included, I have found them to be conscientious and professional. Generally, these representatives and I agree that the regulations serve a vital interest, just as we agree that some regulations should be revised or deleted. The fact is that certain manufacturers have not done their homework, and try to cut corners regarding various regulations. This only perpetuates the public perception of the industry as being questionable, which in turn promulgates even more regulations.

My feeling is that one cannot dabble in an industry so potentially profound as systems building, any more than an eye surgeon would attempt open heart surgery. Those of us who truly believe in this potential see a future wherein this industry can indeed provide the very housing seen to be in such short supply by others. It is not a process by which, after having learned five rules or five hundred rules, one can set out with a theory of design. Its simplicity belies a level of complexity capable of a powerful elegance.

David Chase Martin, RA, AIA
Director of Engineering, Chelsea Homes
Marlboro, New York

Housing Not A Blank Slate

It is really remarkable that an architectural magazine would sponsor construction of an experiment in housing for non-traditional households. Yours is an important demonstration and something that in my experience builders and government will not risk. However, I think it would be helpful if you were clearer about what this house and images of it represent, as opposed to what its

construction represents.

Anne Tate begins her August editorial (p. 9) by reiterating two of the three demographic/economic trends that were the basis of A New American House design competition in 1984, yet she does not advance the national discussions on housing within the architectural community at that time, for which A New American House was a catalyst. One of the reasons that Ms. Tate is able to write this editorial is that architects and others have been challenging the assumptions behind the American dream house for some time, and they have given language to that challenge.

The ideal of the self-sufficient family in our culture does foster family insularity. This ideal is engendered by images and environments that do not reflect back to us accurately or completely who we are as individuals and thus do not help us remember other possibilities for family life, home, and community, which may not be apparent in our culture. However, our "national mythmakers" are not really mythmakers; they are reflectors of aspects of our culture that are embodied in all of us. While these might be aspects we would like to change, I would restate the context by changing Ms. Tate's concluding aphorism to "the marketplace is us."

Ms. Tate's editorial should not be read out of the context of the cover photo of the P/A Affordable House, which bears strong resemblance to the vernacular "I" houses described by geographer Fred Kniffen in his article "Folk Housing: Key to Diffusion." These houses were a final step in the evolution from the English "log pen," and they were a primary artifact as well as symbol of the autonomous farm families who settled the Eastern and Mid-American landscape between 1700 and 1850. The "I" house was a symbol of economic attainment, a status symbol, and the Abacus house, as it is presented, is no less of a symbol of the autonomous family, of whatever type. These early vernacular houses were built by their occupants rather than by house builders, so there may have been a more direct translation of need and desire than there is today. Ms. Tate seems concerned for the interrelationships among individuals and families that housing can facilitate, yet counter to her underlying theme, she is in complicity in separating the artifact from the context of its meaning.

The statement that "it is possible to design housing that describes the strengths of other styles of life, without mandating any set of relationships or behavior patterns" is saying that a house can be a blank slate. Like a person, a house is not a blank slate and we are interwoven with our houses in ways that can't possibly not mandate some kind of behavior. This house may be simplified, but it is not invisible.

In misapprehending or dismissing context as she sees fit, Ms. Tate places herself directly within our culture of forgetfulness, which she criticizes, but through this clearly points out how the nature of our culture does affect the process of producing housing. This is a good place to start in translating housing need into houses.

Harvey Sherman
Homebase
St. Paul, Minnesota

Affordable House Costs

The August issue came today and after reading the article about the "affordable house" designed by Abacus Architects & Planners, I became convinced that this example of "architecture" proves once and for all that *Progressive Architecture* is completely out of touch with the real world and the profession of architecture.

While reading the article written by people who obviously teach rather than practice, I was immediately struck by the lack of consistency in the project. The house did not cost $65,000, as you said in your introduction. It cost $101,939. That amount is $36,939.99 over the budget set forth for this project. Not only is this not a good example of an "affordable" house that could be built by low-income individuals, it is 50% over the budget.

Secondly, I was shocked that for $101,939 the client would be purchasing a shotgun rowhouse which, other than the exterior clapboard, had nothing in common with its surroundings. Keeping in mind your magazine's stance on buildings that must fit in with their surroundings, it seems that placement of this house where it ended up is arbitrary. The "historical reference" is more in line with a farmhouse in central Texas. Lastly, I was very surprised at the 22.5% fee for such a boring box. This fee would turn any developer, individual,or institution away from the profession in a heartbeat.

During your competition, there were excellent examples of low-cost housing that had much more to offer than the structure that was built. I feel that the author of the article answered his own rhetorical question as to why more architects do not get involved in low-cost housing. One reason is that low-cost housing normally has dreadfully low fees of 8% or less which must include all engineering fees and require much more time than can be allowed in a firm. The last true reason is that most architects have given up trying to build good houses and are trying to make a living. I wish I had a teaching job to supplement my firm in an economic climate such as this. As the saying goes, if I were a millionaire, I could be an architect until I went broke.

Gary L. Hill, AIA
Hill & Frank Architects
Houston, Texas

Abacus Responds:

Several writers' concerns over the high soft costs for this project suggest a further examination of whether P/A's Affordable Housing Initiative represents a realistic model for research and development. In fact, many of these expenses were in peripheral areas, such as additional services related to project management (e.g., researching and evaluating manufacturers) or fixed costs ($1,876 for soils investigation, $6,000 for State of Ohio Unit Documents). As to the rest, we suspect that research, design, and development do make up a significant part of any successful manufacturer's overhead, and the main difference in this case is that the money went to outside consultants. More important, we believe that basic research must be thought of as an investment rather than a short-term expense, and funded as it is in other important disciplines throughout our society.

Richard Bundy's concern that architects should not accept the responsibility to design this country's way out of the housing crises is both true and unacceptably limited in its vision. For our own economic survival as much as the survival of our nation, architects must expand their influence into policy making (see Editorial, p. 7). To do this does not mean abandoning design for lobbying. We must use all of our tools and skills to increase awareness and alter perceptions, trends, and laws. Forms and images are powerful persuaders.

Harvey Sherman's letter about image and the vernacular "I" house addresses the relationships that exist between social and architectural structures. It is not coincidental that non-traditional households seek traditional houses, producing a sort of double-exposure of cultural meaning and redefinition through use. The word "household" is often used in place of "family" to make clear the point that many groups living together are not related by blood or marriage, or that they otherwise stretch some conventional definition of a family. However, in many ways these households do function as families, including their desire to occupy a free-standing house and the identity that that carries; of the automony, the economic attainment, and the status of which Mr. Sherman writes.

Rookery Credit

P/A's article about the restoration of the Rookery Building in Chicago (Oct. 1992, p. 90) should have credited Frank G. Matero, historic finishes consultant. Also photo 5 on page 93 shows the second-floor elevator lobby designed by McClier, not the first-floor lobby by Drummond.

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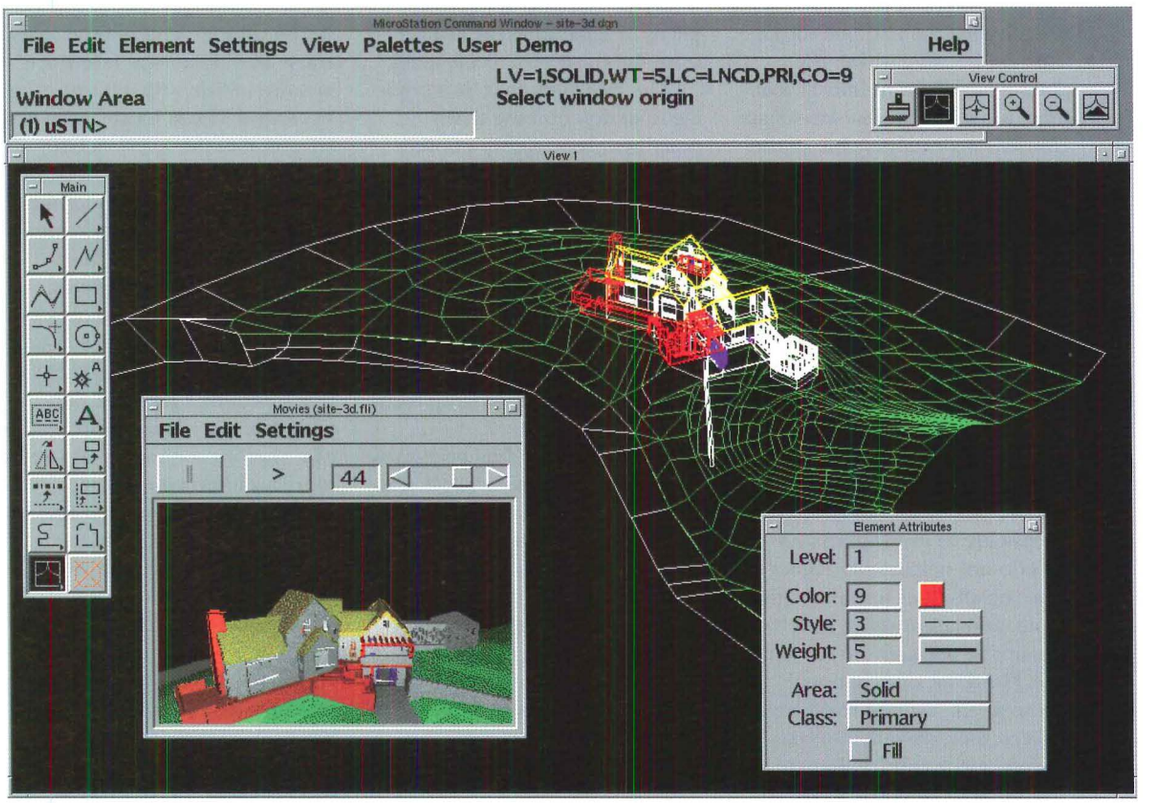

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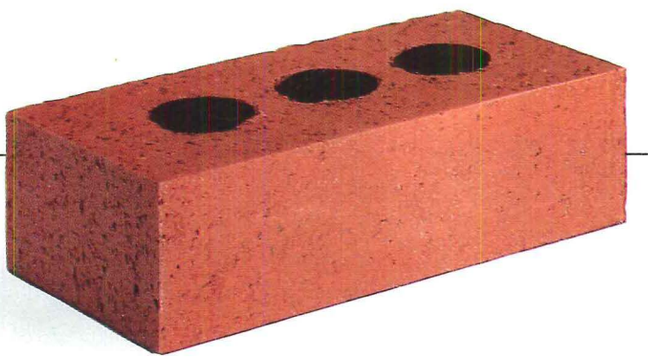

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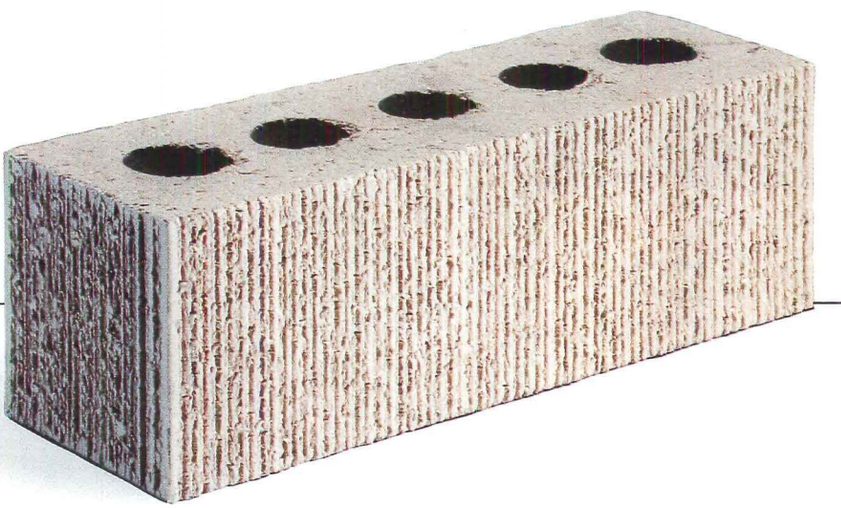

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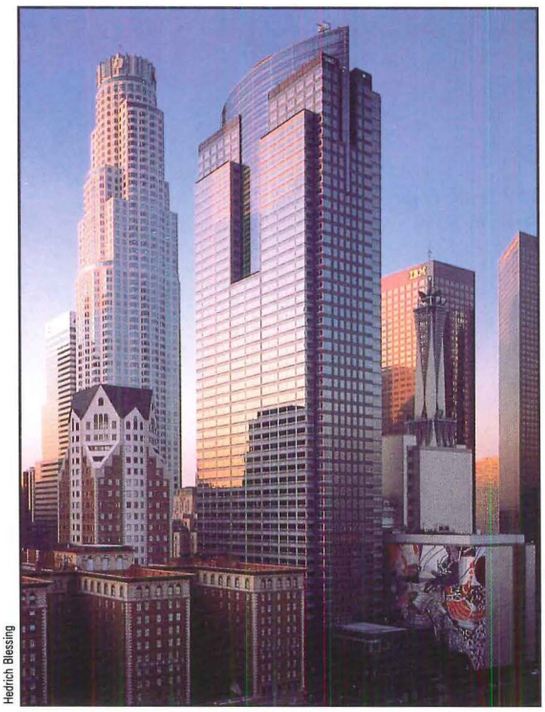
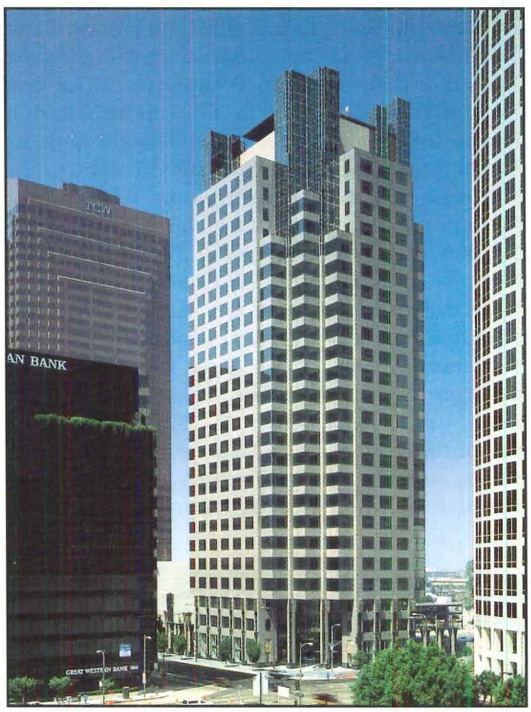

Hedrich Blessing



Tim Street-Porter

L.A. additions: Gas Company Tower by SOM (left) and 801 Tower by The Architects Collaborative (right).

L.A. Towers That Don't Forget the Pedestrian

Three new office towers in downtown Los Angeles represent some fresh thinking about the quality of pedestrian experience at the bases of tall buildings.

While it has been standard practice in recent years for architects to concentrate the detail of tall buildings at street level, the reconciliation of human scale to highrise scale has continued to pose problems, as has the provision of urban spaces and street walls that encourage pedestrian movement rather than intimidate it.

Conscious of these issues, the architects of these three L.A. buildings have taken pains to promote pedestrian movement and give passers-by something to look at. Even if the buildings themselves are not entirely successful, their architects have added something of value to an area sorely in need of walkable streets.

The 50-story Gas Company Tower was designed by Skidmore, Owings & Merrill's Los Angeles office, in association with former SOM principal Rick Keating. (He is currently principal of Keating Mann Jernigan Rottet.) From a distance, the building's gray granite looks cool and corporate. However, the building features some outward-leaning panels just above the heads of pedestrians, making it appear to be shedding its curtain wall, and offering passers-by an almost tactile sense of materials. To enliven the street, the architects have scooped out two corner entrances and widened the sidewalks at both corners. They have also provided an amenity unavailable in any other Los Angeles office building in recent memory: seating built into the exterior of the building. Making ingenious use of necessity, Keating extended the transfer plate of the parking structure through the sidewalk to create free-standing seating, and also provided a niche-like seat in the building itself. Pedestrians are also treated to an unusual handling of public art: the giant photorealist mural by Frank Stella actually covers an exterior wall of the building to the immediate north, so people passing on the street and in the lobby get a glimpse of the enormous painting. The lobby, designed primarily by SOM's David Epstein, is a simple corridor with a classic calm.

The 28-story 550 South Hope by Kohn Pedersen Fox occupies a tight, difficult site, blocked visually by tall buildings to the east and hemmed in by a lowrise cul-de-sac to the west. The Deco-derived design of the red granite building is elegant at a distance, but is less impressive up close, where the design appears more fussy than resolved, and where meticulous detailing attempts to compensate for a lack of compelling ideas. Despite those limitations, 550 South Hope is a good neighbor: its lobby juts forward to conform to the 40-foot street wall in the cul-de-sac, preserving a lowrise oasis in a highrise district. Its next door neighbor is Bertram Goodhue's Los Angeles Central Library, now undergoing renovation and expansion by Hardy Holzman Pfeiffer Associates. An exterior walkway off a second-level courtyard connects the building to a library garden, currently under construction, by Lawrence Halprin.

A third new building is 801 Tower by The Architects Collaborative of Cambridge, Massachusetts. Comparatively short at 24 stories, the building makes its mark on the skyline with four tower-like corners. Architect John Hayes says the intent of the towers is to make a memorable image,

In Perspectives (page 85): a tribute to British engineer Peter Rice, the "consummate craftsman" who died in October at the age of 57.


Clinton-Gore '92

Clinton's in: so now what? Architects speculate on the new President's first hundred days in Washington Report, page 15.

Pencil Points

Venturi Scott Brown Associates, Philadelphia, with Anderson Schwartz Architects, New York, have won the competition for the new Whitehall Ferry Terminal in Lower Manhattan. The new terminal is to be topped off with an enormous clock, 120 feet in diameter, hovering waterside over the arched ferry slips.

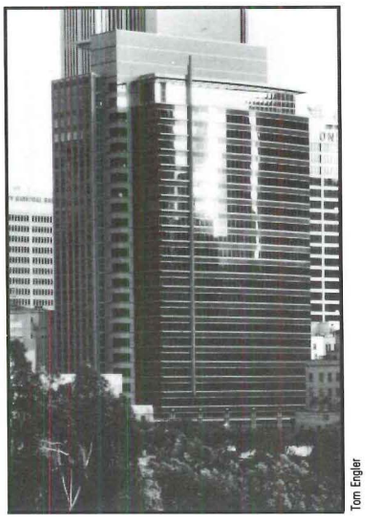
A financial crisis at the Chicago Institute for Architecture and Urbanism has resulted in the cancellation of several projects and programs (including the launch of a new journal called *Velocity*), and the dismissal of all staff members with the exception of director Janet Abrams. The CIAU operates without an endowment, relying instead on funds donated and raised by its board of directors and the SOM Foundation.

Skidmore, Owings & Merrill, New York, has won an invited competition for a mixed-use complex at Checkpoint Charlie in Berlin. The 500,000-square-foot project, for a site in the Friedrichstadt section of the city, is one of five buildings planned for the American Business Center.

Top Honor Awards in the Waterfront Center's Excellence on the Waterfront competition are Waterfront Park in Charleston, South Carolina, submitted by Sasaki Associates; and the Lowell Canalway-Downtown Inner Loop in Lowell, Massachusetts, submitted by the Lowell Historic Preservation Commission and the Massachusetts Department of Environmental Management.

The New York Chapter of Architects, Designers, and Planners for Social Responsibility has established the "Clearinghouse for Environmentally Responsible Design" to "build a network of people working on environmentally progressive projects." Contact ADPSR/NY, 175 Fifth Ave., Ste. 2210, New York, NY 10010 (212) 924-7893.

although the short, thin towers look awkward and tentative, and pink concrete walls surrounding the machine room at top spoil the effect. The best parts of the 801 Tower, by far, can be found at street level. The lobby runs diagonally through the building and provides a clear line of sight to the southwest, creating a refreshing transparency through the normally opaque elevator core. Even better is a sculpture courtyard, designed by Minneapolis artist Andrew Leicester and featuring three different orders of fanciful columns, four giant ornamental gates, and a quadrafoil fountain, all arranged with Beaux-Arts formality. Here sculpture and architecture are completely integrated in a single program. The result is an enchanting courtyard and a strong argument for public art in a city where such art is often an intrusive afterthought. **Morris Newman**



Tom Engler

550 South Hope Street by Kohn Pedersen Fox.

on the table New York/Tokyo

Kawamata's Roosevelt Island installation: a provocative site underexploited.

A Missed Opportunity on Roosevelt Island

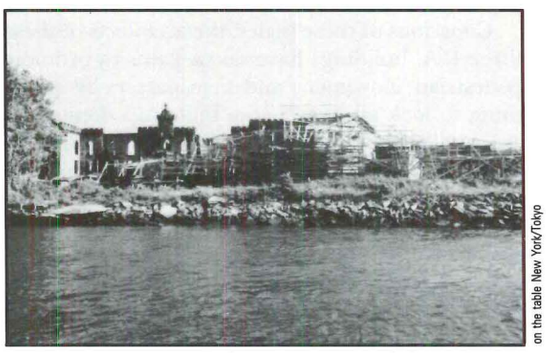
Japanese artist Tadashi Kawamata, known for his chaotic, seemingly ad hoc wooden constructions, brought his craft to New York this fall. But despite a fascinating site – the ruins of an 1854 hospital for smallpox patients on New York's Roosevelt Island – the project suffers from logistical compromises and the artist's architectural naïveté.

Project director Claudia Gould, a former curator at the Wexner Center and at New York's P.S. 1 museum, first recognized the potential richness of the hospital site; it was she who organized the project and called the site to Kawamata's attention. However, Roosevelt Island officials would not allow the site to be opened to the public (though frequent tours were run with small groups), minimizing one of the project's greatest assets, its bizarre, anomalous site. Just across the river from the U.N., the tip of Roosevelt Island is now an unpopulated, overgrown place, with its castellated Norman ruins looking like they stepped out of a Charles Addams cartoon. The official line was that Kawamata intended the project to be viewed from Manhattan, but little of its richness is apparent from a distance.

The project was also compromised in its relation to the site. Because of concern for the landmarked hospital ruin, Kawamata was required to work with an architect (Elizabeth O'Donnell) and an engineer (Peter J. Galdi). The pair designed a "primary structure," a three-dimensional wood grid to which Kawamata's installation was attached. Unfortunately for the project (if not the landmark), Kawamata was not allowed to "touch or otherwise impact" the hospital. This prohibition made what might have been a fascinating dialogue an awkward, tentative encounter.

As he has done in other cities, Kawamata and his crew scavenged lumber for the installation (though not the primary structure) from the streets of New York; pieces of New York – doors, plywood with bits of linoleum, moldings – were visible throughout the piece.

It is often risky for artists to edge into other disciplines. Kawamata's work is most successful at its least architectonic, as when he hammers up boards horizontally to resemble large-scale basketry. It is least successful when he deals with structure; then, the work compares unfavorably to that of architects like Coop Himmelblau, whose seemingly chaotic forms – carefully considered and informed by their knowledge of structure – are far more energetic and convincing. There is much that is seductive and compelling in Kawamata's work, but the Roosevelt Island project, his largest to date, needed more method behind its madness. **Mark Alden Branch** ■



on the table New York/Tokyo

Kawamata project from the East River, with hospital ruin at left.

Minority Architects Meet and Honor Members

Topics ranging from South Africa to South Central L.A. were thoughtfully covered at a recent Washington, D.C., meeting that combined the 22nd annual meeting of the National Organization of Minority Architects with the first biennial Congress of African American Architects, sponsored by Howard University. From October 7 through 10, some 100 practicing architects, plus more than 400 students and faculty members, attended the joint events, which included presentation of Honor Awards for design to NOMA members and prizes to students.

"Afrocentrism in Architecture" was the title of a lecture by architect David Hughes of the Kent State University faculty, who hypothesizes a characteristically African "manifestation of form, imagery, and space" based on his extensive documentation of modern work throughout the continent. Current practice in Africa was portrayed by a panel of contemporary African architects hailing from Kenya, Ghana, Namibia, Botswana, Lesotho, and South Africa – along with the African-American George E. Moose, our former ambassador to Senegal and Benin. One message of this panel is that African nations could – to widely varying degrees – offer opportunities for American architects (black or white), which few are pursuing.

A well-crafted videotape presented by members of NOMA's Los Angeles chapter examined what has been happening by way of planning and rebuilding in the five months since the rebellion. NOMA members were promptly consulted by city agencies and special organizations set up in the wake of the troubles; they remain much in demand as volunteers. The point was made that minority architects should also "be at the table when the dollars are being spent." There was much support for decentralized decision-making, as opposed to the centralized reconstruction agency already set up by the city. Birmingham, Alabama's, official procedure for delegating decisions to neighborhood groups was cited for its effective resolution of urban problems. A related discussion developed around minority participation in planning and design for the 1996 Olympics in Atlanta; NOMA members had been asked to assure concerned members of the international Olympic committee that they expected a fair portion of design commissions for the event, but they are not certain that expectation will be fulfilled.

Michael Houghton

Maumee Bay State Park by Moody/Nolan.

DOK

Northlake Community Library by R.L. Brown & Associates, NOMA winner.

Concurrent focus groups organized around the three-part theme of "accessing/sustaining/developing" took up such subjects as career alternatives, mentoring, non-traditional clients, and preserving archives. A packed room heard advice on "maximizing your voice" in AIA and in other organizations, from such experts as Howard's dean, Harry Robinson, who is now president of the National Council of Architectural Accrediting Boards. Attendees were warned that a "one-issue" committee member or officer is unlikely to earn the necessary cooperation. Even NOMA's own chapters, it was noted in another session, are stronger if they go beyond "one issue" by, for instance, organizing well-planned parties and trips to architectural landmarks. This meeting itself took that advice by including end-of-day social events in such settings as a city office building designed by a member firm and the Smithsonian's Museum of African Art.

NOMA's annual Honor Awards went to seven completed works by members from all over the nation. Three of the seven awards (all judged anonymously) went to Moody/Nolan, Ltd., of Columbus, Ohio, for the South Terminal Expansion at Columbus International Airport, for the Maumee Bay State Park in Oregon, Ohio, and for the remodeling of the Sawyer Tower apartments in Columbus. Another Columbus firm, Spencer & Spencer, was recognized for the Cosby Mass Communications Facility at Central State University, Wilberforce, Ohio – another remodeling. Honor Awards also went to the Ruggles Street Transit Station, Boston, by Stull & Lee (P/A, Jan. 1992, p. 23); the Northlake Community Library in Tucker, Georgia, by R.L. Brown & Associates; and the Apartments and Guest Center at San Francisco State University, by Bodrell Joer'dan Smith of San Mateo. Jurors for these awards were architects Wendell Campbell of Chicago, Stephen Lott of Los Angeles, David Hughes of Kent State University, Ohio, and me.

At the final session of the meeting, the NOMA presidency was passed from William Stanley of Atlanta to Robert Easter of Richmond, Virginia, (P/A, June 1991, p. 60) who has been elected for a two-year term. **John Morris Dixon** ■

Washington Report

As the reality of a Clinton Presidency sinks in, architects and others in the building industry are speculating on what the new President's first hundred days might bring in terms of building and infrastructure initiatives. Among those watching with interest are architects who actively aided the new President's campaign effort.

Richard Keating, a principal of Keating Mann Jernigan Rottet of Los Angeles, assisted the Clinton campaign in Texas, Keating's former home. In the final days of the campaign, he also penned a letter from "Architects for Clinton-Gore" (the letterhead also included Frank Gehry, Robert Venturi, and seven other well-known architects) to over 1000 architects, engineers, and contractors, urging their political participation. Keating expects an infrastructure program to be at the top of Clinton's list. "He's got to provide jobs, and the only way to do that is in the public sector," Keating says. Asked if he saw architects playing a role in shaping such a program, Keating allowed that his group "could be informative."

Robert Peck, who handles external affairs at the AIA – and who worked on the Clinton campaign – expects public works spending to come right away. The Surface Transportation Act is a likely conduit of funds, he says, since the money has already been appropriated. There is a question, though, as to how much work is ready for immediate implementation; Clinton may repeat the strategy used in the recessions of 1975 and 1982, when grants were given to cities for all kinds of capital projects, including architecture. Early this year, the United States Conference of Mayors identified $26 billion in projects planned and ready to go.

New York architect Richard Snibbe, who signed 42 AIA Fellows on for a pro-Clinton effort in New York State, wants to make sure housing is not forgotten in the rush to build infrastructure. His group offered a paper on housing policy to the campaign, arguing not only that the need for housing is more urgent than that for infrastruc-

(continued on next page)

Washington Report

(continued from previous page)

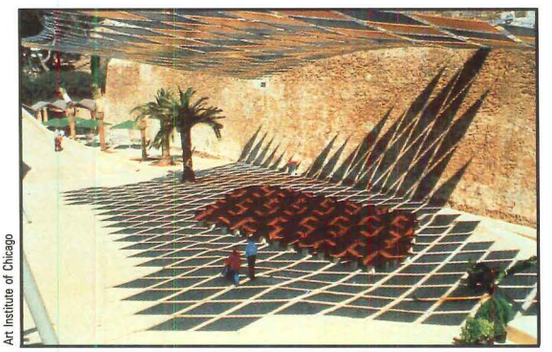
ture, but also that building construction provides more jobs, particularly for small business.

Like the New York group, San Francisco architect and planner Peter Calthorpe is contributing ideas to the new administration. Calthorpe recently wrote a paper on planning policy for the Citizens Transition Project, which he hopes will become department policy at HUD and Transportation. "Before they start throwing money at urban infrastructure, they've got to encourage more coherent regional plans," Calthorpe says. He sees the encouragement of mass transit as important, but argues that, in order to work, money for mass transit must go to areas whose zoning and planning will result in "transit-oriented development patterns." Calthorpe also hopes to see the federal government undertake demonstration projects to promote sustainable communities.

Peck is guardedly optimistic about the new administration's sensitivity to the role of design in urban policy. "The main difference between this administration and the last one," he says, "is that there are going to be grassroots community types in this one. But it's still hard to convince [policymakers] that we're not talking about fluff, that things like traffic congestion are clear consequences of design. This administration is likely to be more sympathetic, but it's got an easy act to follow."

At least two building projects may be expedited as a result of the election: George Bush's new Houston home and his Presidential library at Texas A&M University. The Bushes are reportedly still interviewing architects to design a house on a lot they recently bought in Houston. The library, which is being designed by the D.C. office of CRSS, was slated to open at the end of Bush's second term, but as the project's executive director said last month, "we may want to speed that up a bit."

Mark Alden Branch ■



Art Institute of Chicago

Outdoor theater at Palma by Lapeña Torres, seen in Chicago exhibition.

Envious Chicago Views New Spanish Work

For Chicago, there is poignancy in the exhibition, "Building in a New Spain." The handsome show, thoughtfully curated and on display at the Art Institute of Chicago through December, is a selection of some of the best architecture erected in Spain since Franco's death in 1975, much of it built for this year's Olympics and World's Fair. Spain has successfully capitalized on those events to rejuvenate urban centers and neighborhoods, in Seville and Barcelona especially, building public works projects – bridges, airports, train stations – new housing, sports facilities, and more. Admiration is tinged with regret in Chicago, which was to be the sister site for the World's Fair until the city lost its nerve and pulled out. After the tents and pavilions are packed up and gone, Spain will continue to enjoy the benefits of 1992.

The benefits are many, as this show demonstrates. Much of the exhibited work has been featured in these pages already (P/A, July 1992). Among the other projects is the restoration and adaptation of the Ronda Promenade and Bastions at Palma de Mallorca; it is a magical seaside park set beneath the city's ancient walls, with an outdoor theater sheltered by a harlequin patterned canopy of blue and yellow canvas. The architects for the promenade are Jose Antonio Martinez Lapeña and Elias Torres.

The presentation at the Art Institute is chaste: drawings, models, and photographs. Absent is an idea of how the designs evolved. The exhibition design is, by contrast, surprising and exuberant: bright fields of yellow, blue, green, and ochre are backdrops used to define projects within the show. The gallery, not much wider than a hallway, curves and angles eccentrically in a way that is ultimately endearing but must have been exasperating to anyone trying to lay out a show. One occasionally feels the strain of the space on the material.

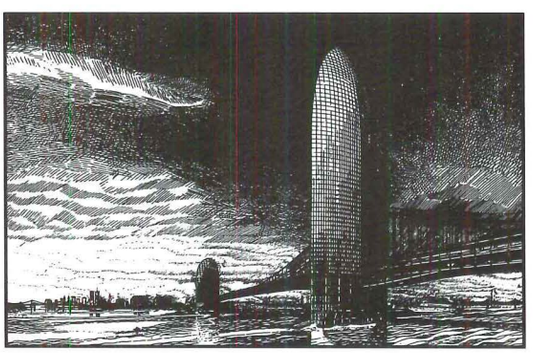
At least as important as the architectural quality of the projects shown, however, is the intelligence and courage this work represents on the part of Spain's leaders and planners who worked to turn the events of 1992 to their country's advantage. Once, Chicago made its reputation on projects comparable to what Barcelona and Seville recently undertook. Too bad Chicago cut itself out this time. **Cheryl Kent** ■

New Public Realm Traveling Exhibition Opens

P/A's "The New Public Realm" traveling exhibition premiered in Washington, D.C., on October 23. The exhibition, comprising the 10 competition winners (P/A, Oct. 1992, p. 73) and 20 other noteworthy public works proposals, was organized to engage the audience to whom the work is most important: the public. To this end, P/A collaborated with chapters of Architects, Designers, and Planners for Social Responsibility (ADPSR) to find venues and to set up symposiums in 11 cities across the country. The Washington, D.C., venue was provided by the Pennsylvania Avenue Development Corporation.

In addition to the submissions, 14 photographs documenting existing examples of neglected urban, suburban, and rural areas, are included in the exhibition to emphasize the tremendous gap between the problems and the solutions. Photographers Donatella Brun of New York, Stanley Greenberg of Brookyn, Addison Thompson of New York, José Camilo Vergara of New York, and José Ivey of Los Angeles, and architect William Wenzel of Wenzel & Associates, Tunica, Mississippi, all lent their photographs.

A symposium was held at the National Building Museum on October 25 to initiate a debate about what the public realm is and could be. Panelists included Raul Rosas of Raul Rosas Architect, New York, whose "Electronic Media Centers" was a



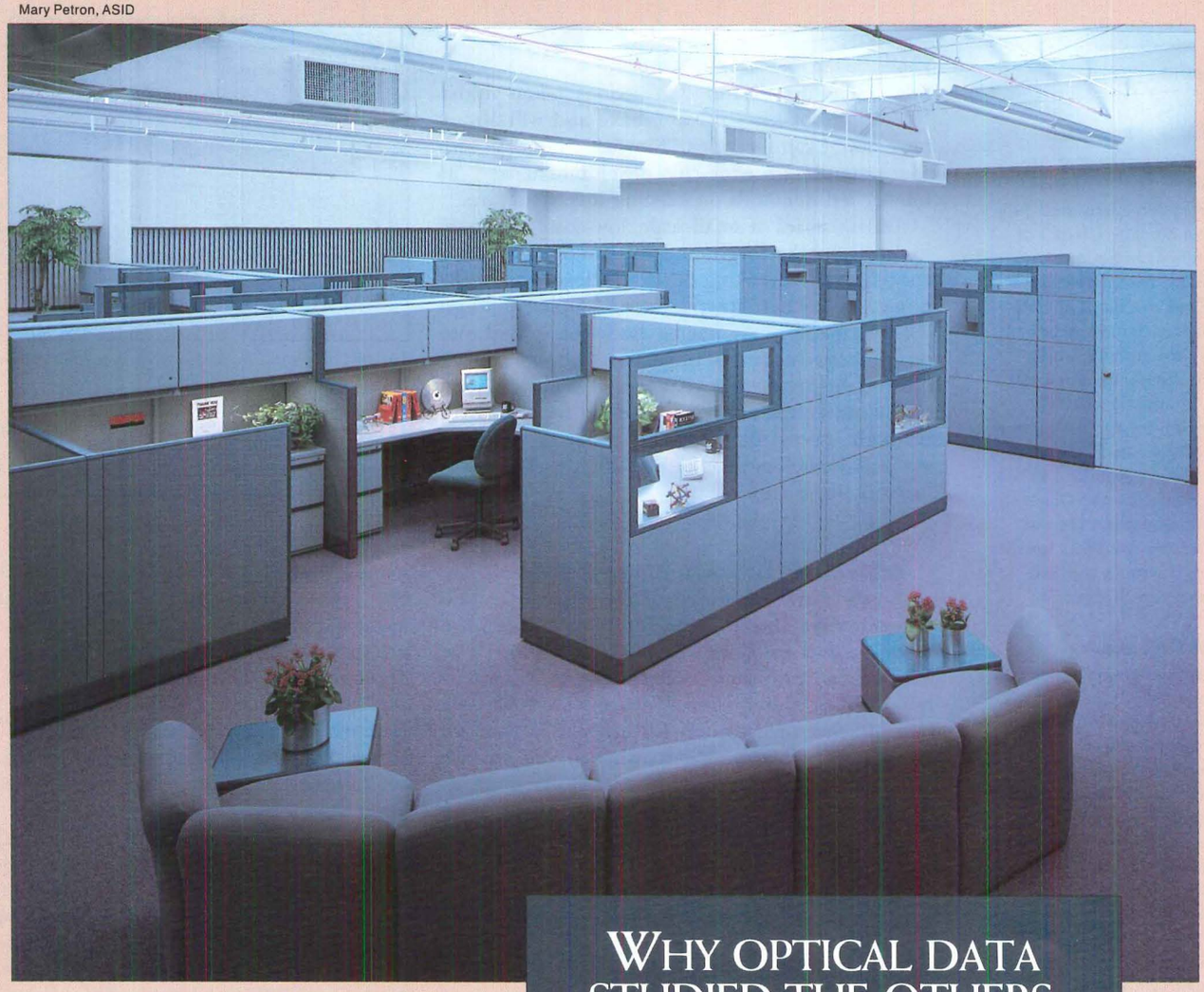
Kevin Woest's "Bridge Habitat," exhibited in Public Realm show.

competition winner (P/A, Oct. 1992, p. 87); architect Jennifer Davis of Los Angeles, an exhibitor; Susan Piedmont-Palladino, an architect, educator, and chair of the National Capitol Metro Area Chapter of ADPSR; and Janet Hathaway, an attorney at the Natural Resources Defense Council who has worked on the Surface Transportation Act. P/A Executive Editor Thomas Fisher was the moderator.

Piedmont-Palladino and Hathaway argued for fundamental reevaluation of the relationship between public and private spaces and natural and built environments. Hathaway contended that "our understanding of public and private holds a

(continued on page 18)

Mary Petron, ASID



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C E T R A G O E S E V E R Y W H E R E

Obituaries

William Stephen Allen

A founding partner of Anshen + Allen, San Francisco, William Stephen Allen died July 20. He was 80. The Chapel of the Holy Cross in Sedona, Arizona, and the International Building and the Bank of California, both in San Francisco, are among the notable works completed during his tenure at the firm; he retired in 1977. Allen, a Fellow of the AIA, was a member of the San Francisco Art Commission and the Public Advisory Board for the General Services Commission. He was also Consulting Architect for the San Mateo/Hayward and San Diego/Coronado Bridges.

August E. Komendant

Structural engineer August E. Komendant died September 14. He was 85. The Estonian-born engineer tapped into the structural potential of concrete to help realize several major 20th-Century buildings: Eero Saarinen's Stiles and Morse Colleges; Moshe Safdie's Habitat '67; Louis Kahn's Salk Institute and Kimbell Art Museum. Komendant was also an influential educator and writer. His books include *Prestressed Concrete Structures* (1952); *Contemporary Structures* (1972); and *Practical Structural Analysis for Architectural Engineering* (1987). He taught at the University of Pennsylvania, Pratt Institute and City College in New York.

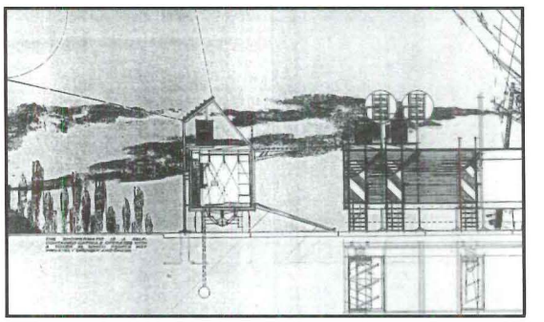
Larry Pond

Larry Pond, a founder and the first chairman of the Design Industry Foundation for AIDS, died in New York on October 9. He was 42. Pond helped to establish DIFFA in 1984 to raise funds for AIDS education, prevention, and support services; it now has offices in 13 U.S. cities and it has raised $10 million to date. In addition to work at three architectural and design firms, Pond was a director of sales and marketing at Herman Miller of Canada; vice president of Environmental Planning and Research in San Francisco; and senior vice president of Stendig International in New York. He also served as a board member of the Resources Council and Designer's Saturday.

Public Realm *(continued from page 16)*

false dichotomy," and that actions taken under "the rubric of [the] private, have and will always have public ramifications." She made her case with the example of edge-city development and its unchecked demands on existing infrastructure.

Davis's series of small-scale, low-cost "implants" to reactivate the forgotten spaces in our cities, was conceived by "breaking down the definition of the home." While her "Recyclerator," "Toiletron," and "Showermatic," may not be easily integrated into our collective notion of the urban landscape, Davis offered the project as a vehicle for the examination of the individual environments that we maneuver through every day. The project is oriented towards homeless people, but the idea has much broader implications. ■

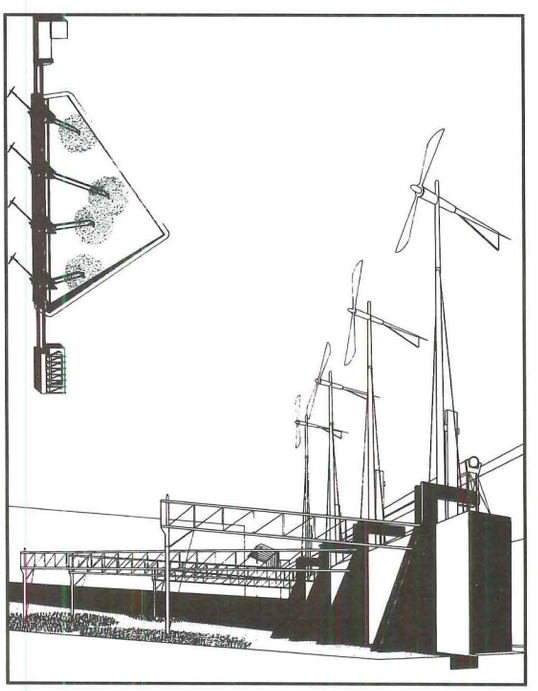


Urban "implants" by Public Realm exhibitor/panelist Jennifer Davis.

The exhibition will be at 425 7th St., NW, Washington, D.C., through December 12. San Francisco is the next stop, from January 7 through February 7, 1993 at CfCA/2AES, 1700 17th Street. Watch Calendar for future dates and locations.

Public Works Exhibition: Parks and Water

Fresh water aquifers under Brooklyn and Queens were the impetus for the Architectural League of New York's recent exhibition, "The Productive Park: New Waterworks as Neighborhood." This underground source would alleviate the immense pressure on currently used sources. In addition to tapping into what are in essence "vast underground reservoirs," the League, in conjunction with two city agencies, announced a call last March for proposals that integrate packed air stripping towers, for aerating water, into a much needed public amenity: parks.



Plan and perspective of Audrey Matlock's "Productive Park" entry for Bushwick.

The Architectural League's engagement of public agencies (in this case, the Parks Council and the New York City Department of Environmental Protection) is an ongoing endeavor; housing and schools preceded this design study. Theirs is not only a welcome example of private initiative, but, more important, an inroad to the realization of productive parks. The city's EPA completed a preliminary study of the aquifers in 1987 and is currently conducting a more in-depth study of contamination levels and purification requirements. The proposals submitted to the League will be published in a catalog and evaluated by the city for potential execution.

Alicia A. Imperiale's proposal for a large triangular site on the edge of an industrial area in Bushwick calls for a field of windmills (set on a triangular podium) that generate electrical energy to operate the air stripping towers; pools and streams of water are dispersed throughout. Brian Andrews and Beau Clowney also proposed a productive park for Bushwick: a massive stone wall, dividing the site into natural and mechanical sections, clearly defines the park's dual role. A "moat" can be flooded to make a swimming pool or used as a piazza; an elevated "grass highway" supports water towers and gardens above and covers a community car wash and laundry facilities below.

Audrey Matlock offered schemes for both the Bushwick and the East New York sites. For Bushwick, she has designed an "industrial oasis," where public works and public amenities co-exist: a "perfect green lawn" offers relief from the park's industrial context, and a 35-foot-high retaining wall holds the mechanisms that decontaminate the water; the drawn water irrigates a fern garden, supplies local industry, and feeds a public swimming pool. The second site, in East New York, is among the most inventive and logical in the exhibition. Here, a community vegetable garden, a canning factory, a flower garden, a plant nursery, a car wash, and a park are sensitively configured; water is distributed through an irrigation system and a canal. The park even has an orchard.

We have long used the term "mixed-use" to define the integration of commercial, retail, and residential – or some such variation – but it is now time to expand the concept to include a more publicly oriented variety. **Abby Bussel** ■

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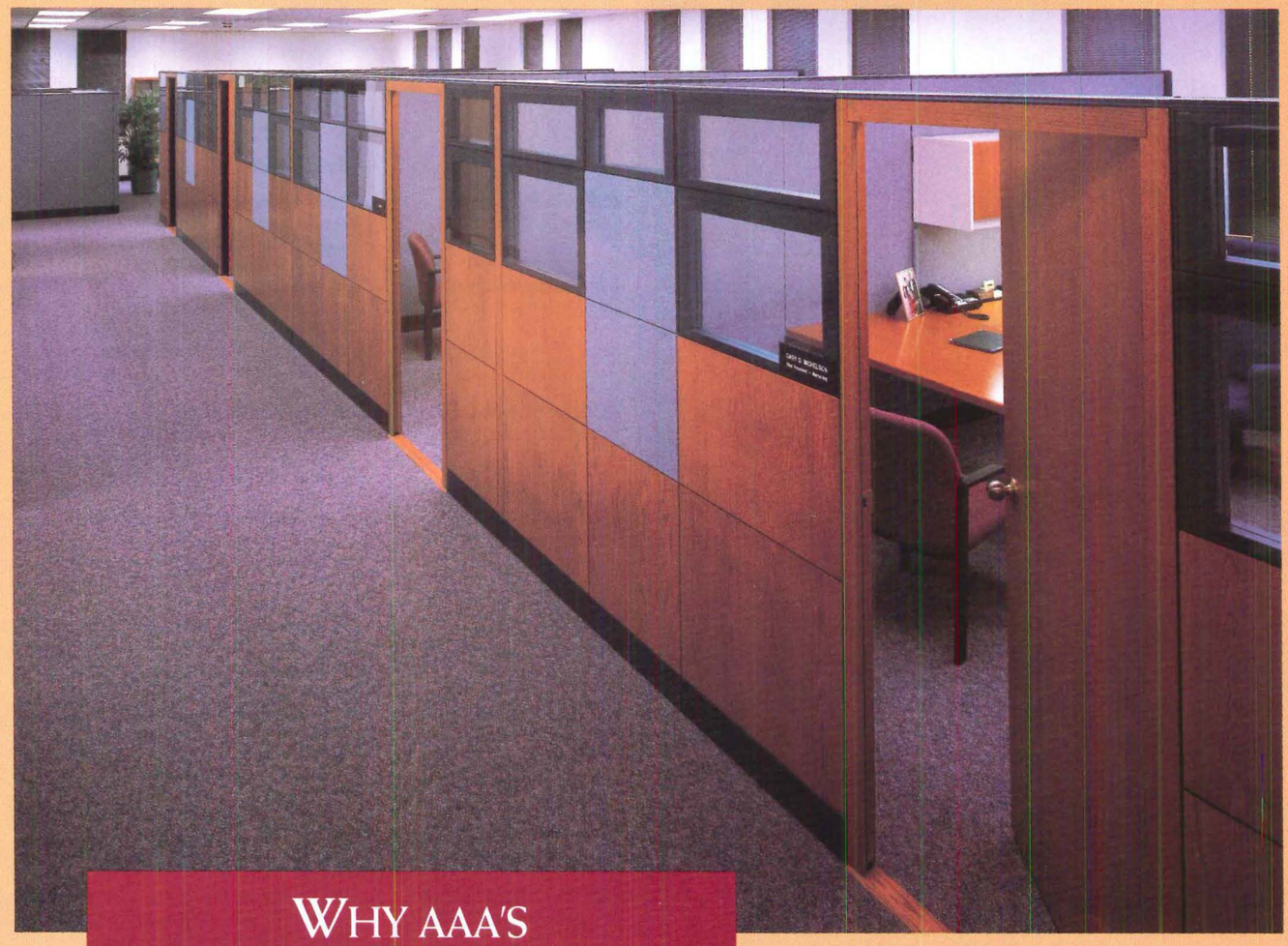

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C E T R A G O E S E V E R Y W H E R E

Calendar

Exhibitions

AIA/LA Design Awards
Through December 31

Los Angeles. Projects submitted to the AIA/Los Angeles Chapter's annual design competition are on display. Pacific Design Center.

18th-Century Montreal
Through January 17, 1993

Montreal. "Opening the Gates of Eighteenth-Century Montreal" – organized to celebrate the 350th anniversary of the city's founding – is divided into three sections, Fortifications, Towns, and Buildings. Candian Centre for Architecture.

Photos by Nick Wheeler
Through January 27, 1993

Washington, D.C. "The Indelible Image" is an exhibition of buildings documented by architectural photographer Nick Wheeler since 1977. AIA, Social Gallery.

Lutah Maria Riggs
December 5–January 17, 1993

Santa Barbara, California. Riggs' prolific career is documented with original sketches and drawings; archival and contemporary photographs of her completed buildings are included. Museum of Art.

Coop Himmelblau
December 15–April 12, 1993

Paris. A retrospective of the Austrian architects' work, from 1965 to the present, will be on view. Centre Pompidou.

Jean Nouvel
December 16–January 31, 1993

London. Nouvel's own design of an audiovisual installation projecting eight completed buildings will be complemented with a survey of works in progress. Institute of Contemporary Arts.

Renzo Piano
December 19–January 30, 1993

New York. Recent work by the Renzo Piano Building Workshop will be on view. Architectural League, Urban Center Galleries.

P/A's The New Public Realm
January 7–February 7, 1993

San Francisco. This traveling exhibition of public works proposals submitted to P/A's The New Public Realm ideas competition (P/A, Oct. 1992, p. 73)) is organized in collaboration with ADPSR It will be hosted in San Francisco by the Center for Critical Architecture/Art & Architecture Exhibition Space and exhibited at the California College of Arts & Crafts, 1700 17th Street. An opening reception is planned for January 7, 1993, from 5:30 to 8:00 p.m. Call CfCA/2AES for more information at (415) 863-1502.

Competitions

AIA Awards
Deadlines vary

Washington, D.C. Upcoming deadlines for AIA Awards programs include: Brick in Architecture Awards (entry forms deadline January 11, 1993, submissions deadline February 15, 1993); 1993 Interior Architecture Awards of Excellence (entry forms deadline February 5, 1993, submissions deadline March 12, 1993). Contact Frimmel Smith, AIA, 1735 New York Ave., NW, Washington, D.C. 20006 (202) 626-7390 or FAX (202) 626-7421.

ACSA Student Competitions
Deadlines vary

Washington, D.C. The Association of Collegiate Schools of Architecture has announced three competitions: "Environmental Summer Camp (and Open Submissions)," registration deadline February 26, submission deadline May 4, 1993; "ACSA/Dupont Company Student Design Com petition," submission deadline May 1993; "AIA/ACSA Research Council-Otis Elevator," registration deadline Feburary 26, 1993, submission deadline April 12, 1993. Contact Christine Hess, Project Manager, ACSA, 1735 New York Ave., NW, Washington, D.C. 20006 (202) 785-2324.

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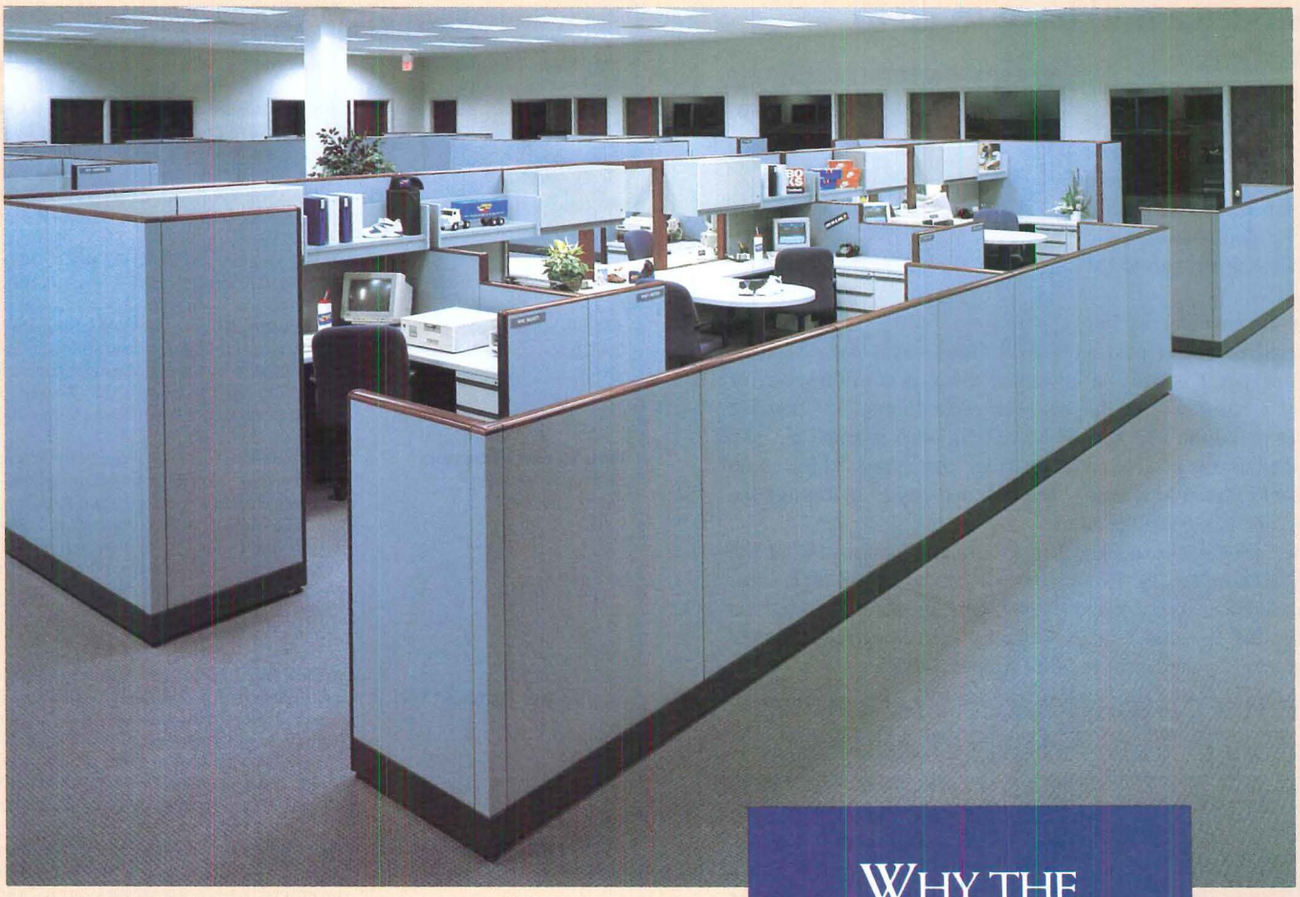

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C E T R A G O E S E V E R Y W H E R E

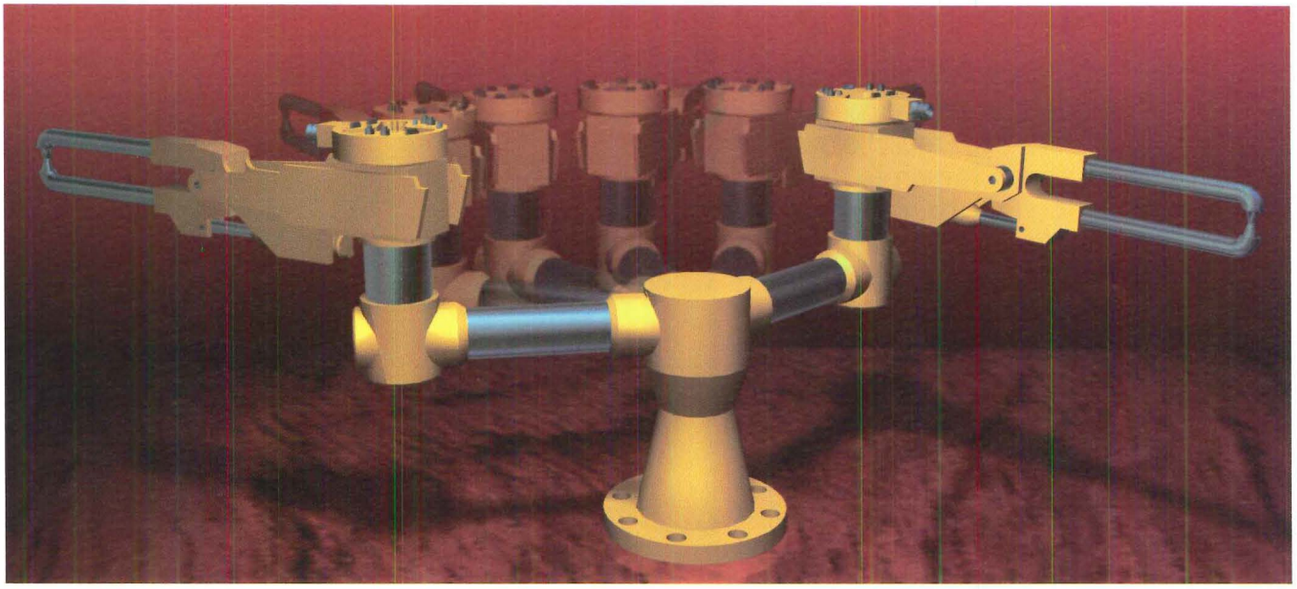
Calendar *(continued from page 20)*

NIAE Student Competitions Deadlines vary	**New York.** The NIAE has announced its annual travel/study fellowships for 1993. The two-stage 80th Paris Prize Architectural Design Competition/Lloyd Warren Fellowship must be prepared during any two-week period before February 28, 1993. The William Van Alen Architect Memorial Fellowship/22nd Annual International Student Design Fellowship must be designed during any eight-week period before May 7. Contact NIAE, Inside Delivery, 30 W. 22 St., 6th fl., New York, NY 10010 (212) 924-7000 or FAX (212) 366-5836.
AIA Education Honors Program Submission deadline January 15	**Washington, D.C.** The 1993 AIA Education Honors Program recognizes innovation in architectural education courses. Contact Joseph Bilello, AIA, 1735 New York Ave., NW, Washington, D.C. 20006 (202) 626-7358 or FAX (202) 626-7518.
Ideas for the Embarcadero Submission deadline January 30, 1993	**San Francisco.** "Call for Vision, San Francisco Embarcadero/Waterfront Competition" is an international ideas competition sponsored by CfCA/2AES and other community organizations. Entrants are asked to propose schemes for the revitalization of this neglected area of the city. A total of $30,000 in prize money will be awarded. Contact Pam Kinzie, CfCA/2AES, 1700 17th St., 2nd fl., San Francisco, CA 94103 (415) 863-1502.
Palladio Prize Entry deadline January 31, 1993	**Venice, Italy.** The biannual Andrea Palladio International Prize for Architecture, sponsored by Caoduro Rooflights SpA, is open to registered architects and engineers who will be no older than 39 as of January 1, 1993. Contact Caoduro S.p.A., Via Chiuppese 15, I-36010 Cavazzale (Venice), Italy tel. 444/45959 or FAX 444/945164.
I.D. Annual Design Review Entry deadline February 1, 1993	**New York.**Projects and products introduced to or intended for the American market in 1992 may be entered in I.D. magazine's Annual Design Review. Environments, consumer products, graphics, furniture, packaging, surfaces, concepts, and student work are the categories. Contact Design Review Editor, I.D. Magazine, 250 W. 57th St., Ste. 215, New York, NY 10107 (212) 956-0535 or FAX (212) 246-3891.
Young Architects Submission deadline February 12, 1993	**New York.**The 12th annual Young Architects Competition sponsored by the Architectural League of New York is open to entrants ten years or fewer out of graduate or undergraduate school. Projects may be theoretical or real, built or unbuilt. Contact Architectural League of New York, 457 Madison Ave., New York, NY 10022 (212) 753-1722.
Sustainable Communities Registration deadline April 1, 1993, Submission deadline May 5, 1993	**Washington, D.C.** The AIA and the UIA have announced a "Call for Sustainable Community Solutions." The competition program is now available. Contact Carl Costello, AIA (800) 365-ARCH or FAX (202) 626-7518.

Conferences

ACSA Technology Conference January 28–30	**Phoenix.** The Association of Collegiate Schools of Architecture's 1993 technology conference, "Body, Technology, and Design," will be held at Arizona State University School of Architecture. Contact ACSA Technology Conference, 1735 New York Ave., NW, Washington, D.C. 20006-5209 (202) 785-2324.
Yale Conference on Housing January 29–30	**New Haven, Connecticut.** Perspecta: The Yale Architectural Journal and the Yale School of Architecture have announced a housing conference and a curated exhibition. Contact The Yale Conference on Housing, The Yale School of Architecture, 180 York St., New Haven, CT 06520 (203) 432-2291. ■

These are typical AutoCAD drawings.



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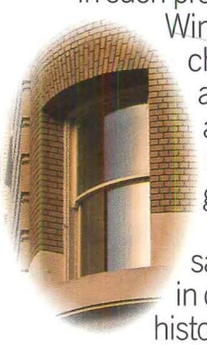
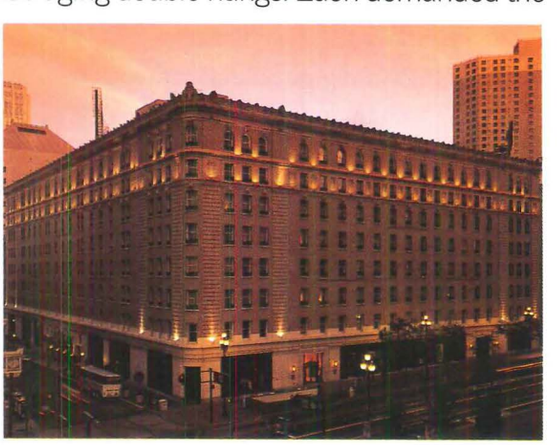
Since 1875, the Sheraton Palace Hotel has been one of San Francisco's most beloved institutions. So when its restoration was being planned in 1989, every effort was made to preserve the details of its original design. Among other things, that meant the replacement of nearly 600 windows. And because of their experience in such projects, Marvin Windows and Doors was chosen. First to receive attention from Marvin and their local distributor were the hotel's graceful curved glass windows, an area in which Marvin's expertise is particularly well known.



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.

So Marvin suggested Magnum Tilt-Pac replacement sash, known for their strength, energy efficiency and economic advantages. And went on to propose glazing them with a special laminated glass to further insulate the rooms from the noise of the busy streets below.

In all, close to 600 windows in over 30 different sizes were designed and built to exacting, historical



TOOK TO GET ALL 552 OF THEM.

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Technics: Thermal Bridges in Buildings

Adrian Tuluca of Steven Winter Associates, Inc., discusses methods to protect against heat loss through building envelopes.

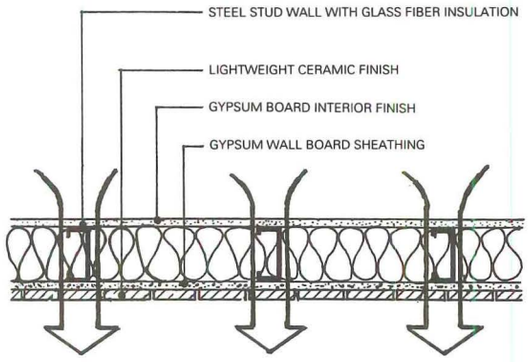
One of the biggest problems in buildings is also one frequently overlooked: the myriad paths by which heat can escape to the outside. "Thermal bridges," in particular, can greatly increase a building's operating costs over its life. Accordingly, the architect must know how and where thermal bridges occur and how to prevent them, when preparing the construction documents.

The term "thermal bridge" is generally used to designate the zone of a wall, roof, or floor that loses much more heat than surrounding areas during the heating season. To spot a thermal bridge, you must first understand the principles governing the movement of heat across floors, roofs, and walls, and know what happens when heat loss is concentrated in small areas of the envelope. The following discussion addresses the basic causes of thermal bridges, highlights the damage thermal bridges can cause, and suggests remedial measures.

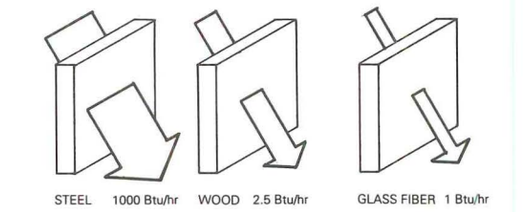
Consider two common wall assemblies. In an insulated steel stud wall with an exterior ceramic tile finish (1), the studs create thermal bridges, since close to 1000 times more heat flows through a piece of steel than through a piece of glass fiber with the same area and thickness (2). Even though the steel studs are spaced 24 inches on center and are made of very thin metal sheet, they still have a significant effect on the wall's R-value. The *total R-value* of the wall with studs is about 40 percent lower than the total R-value of a hypothetical wall without studs: R-7.75 vs. R-13.

In a wood stud exterior wall (3) the studs also may act as thermal bridges, since about 2.5 times more heat flows through a piece of wood than through a piece of glass fiber with the same area and thickness (2). Wood studs and wood plates, however, comprise only about 15 percent of the wall area. Thus the total R-value of the wall is 10 percent lower than the total R-value of an idealized construction, with 100 percent glass fiber insulation between gypsum board and plywood sheathing: R-12.8 vs. R-14.3.

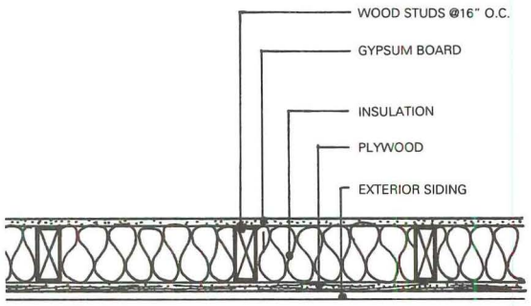
With only a 10 percent difference, should wood studs be classified as thermal bridges? There is no simple answer to that question. The designer must first ascertain whether the increased heat loss at the wood framing has serious consequences. Does the wood framing result in higher energy bills, occupant discomfort, moisture condensation, or cracking of the building envelope? If these prob-



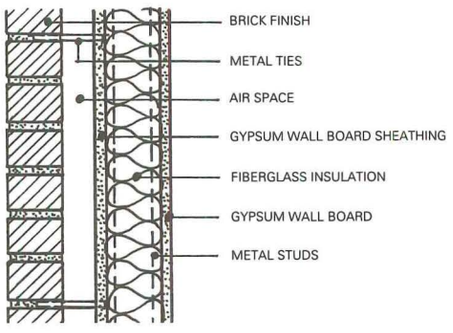
1. THERMAL BRIDGING ACROSS STEEL STUD WALL



2. THERMAL CONDUCTANCE FOR DIFFERENT MATERIALS



3. WOOD STUD WALL



4. STEEL STUD/BRICK VENEER WALL

Definitions of Terms

- The *British Thermal Unit,* commonly used under the acronym Btu, measures the amount of heat required to raise the temperature of 1 lb. of water by 1 F.
- The *thermal conductivity* of a material measures how many Btu cross one sq ft of a 1"-thick board made of that material, during one hour, when the temperature of one *surface* of the board is higher by 1 F than the temperature of the other surface of the board.
- The *thermal conductance* (C) of a board of material measures how many Btu cross one sq ft of that board, regardless of its thickness during one hour, when the temperature of one *surface* of the board is higher by 1 F than the temperature of the other surface.
- The *U-value* of a wall assembly (or floor, or roof) measures how many Btu cross one sq ft of that wall (floor, roof) during one hour, when the temperature of the *air* on one side of the assembly is higher by 1 F than the temperature of the air on the other side.
- The *R-value* of a homogeneous material is the reciprocal of the conductance: R = 1/C. R may be interpreted as a measure of how many hours it takes for 1 Btu to cross one sq ft of a homogeneous board, when the *surface temperature* on one side is higher than the surface temperature on the other by 1 F.
- The *total R-value* of an assembly is defined here as the reciprocal of the U-value: $R_t = 1/U$. R_t of a wall (or floor, or roof) may be interpreted as a measure of how many hours it takes for 1 Btu to cross one sq ft of that wall (floor, roof), when the *air temperature* on one side of the assembly is higher than the air temperature on the other by 1 F.

lems occur, the thermal bridging must be remedied. If not, classifying the wood studs as thermal bridges becomes academic.

The steel stud wall (1) can face all of the above problems, and thus offers a clear example of thermal bridging. But the wood stud wall (3) may have problems only in very cold climates, where the studs have a relatively greater effect on energy use and moisture condensation.

Some construction details create only one specific problem, such as condensation or cracking, under restricted conditions. However, if the problem affects the building use and if these conditions happen often enough, efforts should be made to mitigate the thermal bridging. For example, metal rods used to suspend tile ceilings in commercial spaces may be attached to steel trusses that, in turn, may be located in an unheated attic. The rods have no practical effect on the R-value of the ceiling, but, because they get very cold in winter, they may condense moisture, which can drip and stain the ceiling tiles. Since the stains affect the rentable value of a space, the thermal bridging of the steel rods should be addressed.

Heat Flow in Thermal Bridges

To understand how thermal bridges work, it is necessary first to grasp the basic principles of heat flow. Heat moves across the building enclosure through conduction, convection and radiation.

- *Conduction* requires an uninterrupted path of solid materials, which transfer heat from warm areas to cold areas.
- *Convection,* in contrast, takes place in gases. In a typical window, for instance, the air picks up energy when it comes in contact with a warm window pane – the interior glass surface during winter. The air expands, rises, and "pulls" down the cooler, denser air that has been in contact with the cold surface of the exterior pane. This process is known as *natural convection.* In *forced convection* a mechanical system or the wind pushes air against a surface; the air absorbs heat (cooling the surface) or releases heat (warming the surface).
- *Radiation* heat transfer requires a gap with at least two surfaces at different temperatures. To radiate to one another, the surfaces must "see" each other; any obstruction, even glass, impedes radiation. Both surfaces emit heat, but the cooler surface emits (radiates) a much lower amount than it receives. As a result the warm surface loses heat.

Damage in Steel Stud/Brick Veneer Walls

A "pure" thermal bridge transfers heat only through conduction, but all modes of heat transfer are often involved. Consider the example of a steel stud/brick veneer wall (4). The steel studs create strong thermal bridges: They conduct heat around the insulation, they radiate heat to the brick wythe and, if the wall has construction defects allowing air convection, they also aggravate the damage done by moisture condensation.

- *Increased Energy Use*: Heat loss through the steel stud wall practically doubles because of thermal bridging, since the total R-value of the wall is only R-11.5, even with its R-l9 insulation.
- *Damage to Interior Finishes*: The temperature of the interior flanges of the steel studs are low and they cool the gypsum wallboard strip attached to them. This can cause problems in residences, hospitals, nursing homes, restaurants, and museums, which tend to maintain a moderate humidity in winter. In extreme cases, the cool wallboard strips collect visible moisture. But most of the time water vapor condenses in an almost imperceptible film, which retains dust much more readily than the dry wallboard surfaces nearby. This produces dark vertical strips on the walls, corresponding to the steel stud locations.
- *Damage to Structural Components*:It is notoriously difficult to seal the interior conditioned space from the wall cavity. Polyethylene vapor retarders are not always specified, and even when put in place they often fail to achieve a good seal at the connection between the wall and ceiling, or between the wall and top of the slab. This is especially a problem with a hung ceiling. As a result of these poor seals, air from the building's interior can deposit moisture onto the cool surfaces of thermal bridges in the wall cavity. If indoor air penetrates into the stud cavity, moisture will likely condense on the outer flanges of the steel studs, especially at the coldest points where the brick ties are attached to the studs (see P/A, February 1992, pp. 113–116, and June 1992, pp. 47–50). Corrosion at those points may destroy the ties. Also, moisture may collect in the bottom stud track and rust it.
- *Damage to Sheathing*: Air can also move across the entire wall, from outside into the conditioned space (infiltration) and from the conditioned space out (exfiltration). If moisture-laden air enters the wall cavity, it will travel until it finds a crack to get out, perhaps at sheathing joints. And if the gypsum sheathing gets moist, it can deteriorate over time because of freeze-thaw cycles.

Note that the air movement through and around the wall cavity in this example has the effect of short-circuiting the insulation. The increase in energy use can be substantial and is *above* that of thermal bridging. Air convection can occur in any wall type, whether it has thermal bridges or not, but the *combination* of the two mechanisms is particularly damaging.

Damage in Masonry Walls

Steel stud walls are often given as examples of thermal bridging because the heat flow pathways are simple and the process easy to explain. However, thermal bridging can occur in any construction type. Consider an eight-inch concrete block wall with brick veneer and two inches of foil-faced polyisocyanurate in the wall cavity (8).

Case Studies of Damage due to Thermal Bridges

Anchors and Joints in Concrete Panel Curtain Wall

Building Description: A six- story office building in New York City has a gross area of 57,000 sq ft. The curtain wall uses five-inch-thick precast concrete panels insulated with two inches of foil-faced semi-rigid glass fiber, which is placed on the interior surface of the panel. Gypsum wallboard on steel studs forms the interior finish.

Moisture Problems: During a February cold spell with daytime exterior temperature averaging 15 F, staining and water was observed at soffits above the windows, and on the interior surface of concrete panels along all orientations of the building. Water vapor had condensed on the anchors of the precast panels. The insulation at panel joints was wet. Interior relative humidity during this time of year was 40 to 50 percent at a constant interior daytime temperature of 72 F, producing a dew point temperature of 47 F to 53 F.

Probable Cause: Bridges in envelope (anchors, joints, gaps in insulation) provided cold-temperature surfaces. The foil-facing of the insulation does not constitute a continuous vapor retarder and allowed moist air to come in contact with, and condense on these surfaces.

Corrective Action: Relative humidity levels were decreased by the mechanical system.

Comments: Any retrofit work on the exterior wall would have been very expensive. If the original design had a continuous vapor retarder behind the gypsum wallboard, it is less likely that such problems would have

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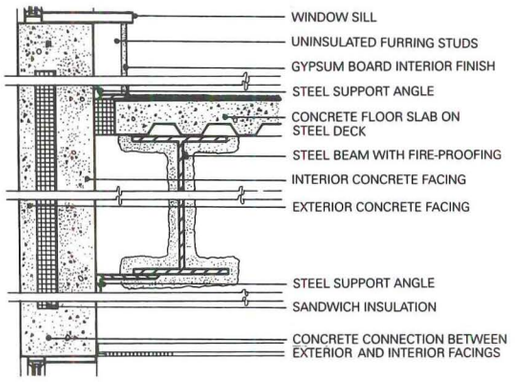

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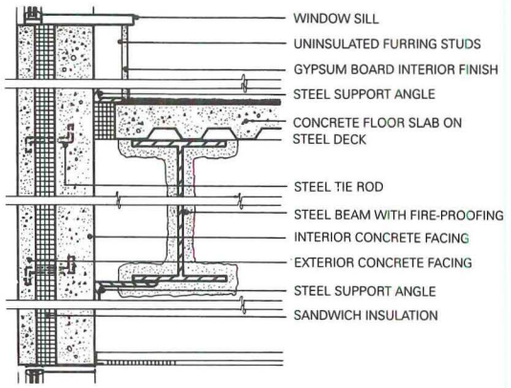

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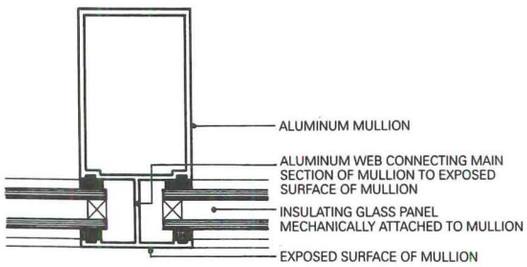

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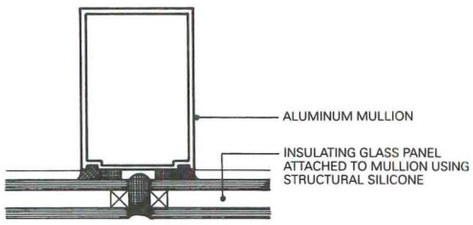

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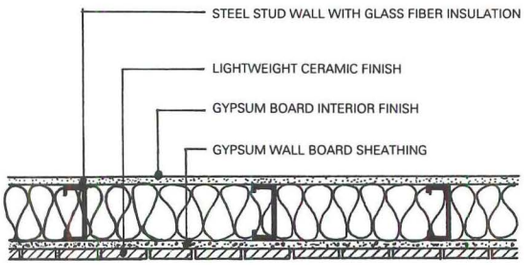

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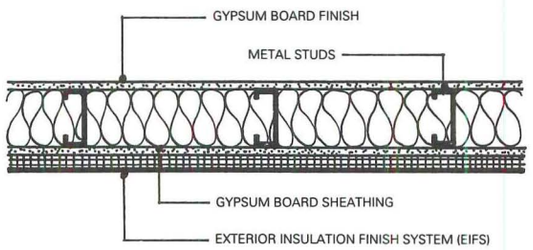

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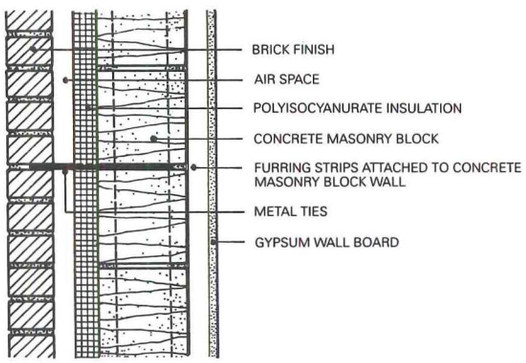

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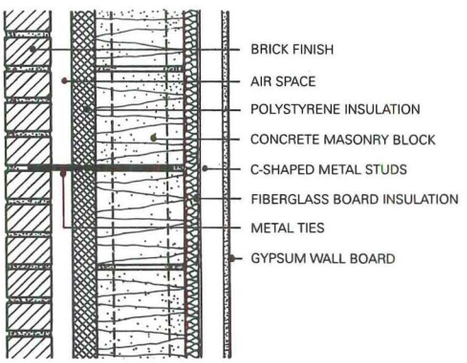


8b

Factory-produced components with high conductivity:
5 *Sandwich panel with the insulation fully encased in concrete (5a). The concrete has a conductivity more than 50 times higher than that of polystyrene and it reduces the total R-value of the panel by 65 percent: from R-16.4 to R-5.4. One possible solution: Connect the exterior and interior wythes of the panel with metal or plastic tie rods (5b). The total R-value of the panel increases to 15.1 or 16 respectively.*
6 *Metal sheet in a mullion without good thermal break design (6a). Steel has a conductivity that is 50 to 100 times higher than that of most plastic thermal breaks. The total R-value of a one-foot-wide vertical strip that comprises the mullion and glass is R-0.85. Possible solutions: Use a good, thermally broken mullion or, as a less common alternative, use structural silicone to keep the entire mullion within the conditioned space (6b). The total R-value of the one-foot strip increases by 50 percent, from R-0.85 to R-1.31.*

Assemblies that contain high conductance components:
7 *Steel studs in an insulated wall with ceramic tile exterior finish (7a). If the wall has R-11 insulation, the studs reduce the total R-value of the wall by 40 percent, from an ideal R-13 (without any steel studs) to R-7.75. One possible solution: Provide insulating sheathing. That increases the total R-value to R-14.5, or 1.87 times higher than the unsheathed wall with R-11 insulation. Some designers go one step further and place all of the insulation on the exterior surface of the steel studs (7b), keeping the studs at a temperature close to that of the conditioned space and practically eliminating the chance of moisture condensation on the studs. This radical solution merits special consideration in spaces with high relative humidity, such as kitchens, pools, and computer rooms.*
8 *Metal ties in a CMU/brick wall with insulation in the wall cavity (8a). If this wall has 2 inches of foil-faced polyisocyanurate (R-14.4) in the cavity, the total R-value without thermal bridges is calculated at R-19.1. Counting the tiles and furring strips, the total R-value is actually 17 percent lower: only R-15.8. One possible solution: Move some of the insulation from the wall cavity to the warm side of the CMU (8b). This can be done by replacing the polyisocyanurate (R-14.4) with extruded polystyrene (R-10) and by adhering 1 inch of fiberglass board insulation (R-4.3) to the interior surface of the CMU.*

(continued from page 28)

occurred. Also, it is possible that the curtain wall was experiencing air infiltration/exfiltration at joints, where most of the moisture condensation accumulated.

Uninsulated Concrete Elements at a Corner

Building Description: Two complexes with three story apartment buildings in Brooklyn, New York were studied by Haines, Lundberg, Waehler, P.C. The buildings have concrete columns and concrete slab edges that were exposed and uninsulated. The infill walls are made of 6 inch hollow tile backup with brick veneer grouted on the tile. The interior finish is plaster. The spandrel panels under windows are made of concrete, with brick grouted on the outside and plaster on the inside.

Moisture Problems: Mildew on walls, especially at corners and at the concrete spandrel panels; moldy odor.

Probable Cause: Thermal bridging at concrete elements and ceiling/wall junction, aggravated by relatively high indoor air relative humidities (roughly 30 to 60 percent on average, going as high as 70 percent).

Corrective Action: The moisture content of the air was reduced by creating a central laundry room rather than allowing washing and drying in apartments. Also, dehumidifier and heat recovery ventilators were recommended. The ventilators would increase air movement, reducing the possibility that cold spots would form at corners. Insulation on the spandrel panels was proposed.

Comments: The measures address all aspects of moisture conden-

(continued on page 32)

- *Higher Energy Use*: Because of conduction, the wall assembly has a total R-value of 15.8, which is 17 percent lower than the total R-value of 19.1 that would be obtained under ideal conditions, without any thermal bridges at the steel ties and Z-shaped steel furring.
- *Negligible Damage to Interior Finishes*: Since the insulation is placed on the exterior surface of the concrete block, this wythe and the steel furring are kept at temperatures approaching those of the conditioned space. The temperature of the gypsum wallboard strips in direct contact with the Z furring cannot be much lower than the temperature of other wallboard surfaces. Interior finishes are not likely to be damaged because of thermal bridging.
- *Potential Damage to Structural Components*: As with steel stud walls, it is difficult to isolate the cavity formed by the Z furring strips from the interior conditioned space. Convective loops are almost certain to develop. If the interior surface of the concrete block wythe is not carefully parged, air can cross the wall at mortar joints and leak outside. Moisture is then deposited within the concrete masonry units, where it accumulates at the bottom of the wall and damages the block during freeze/thaw cycles, and on the metal brick ties, promoting rust and their eventual failure.

Note, too, that the surface of the concrete block facing the cavity is rarely a smooth plane; thus the rigid insulation seldom adheres fully to the wall. Air can move between the block and the insulation, short-circuiting the effect of the latter. To avoid this problem it has been suggested to either carefully parge the cavity side of the concrete block wall or use semi-rigid mineral fiber, which better accommodates irregularities in the substrate. Keep in mind, however, that while mineral fiber is not as vulnerable to convection currents around it, its insulating value may suffer from the movement of air within the board itself.

Air convection, thus, can occur around and through insulation, regardless of the presence of thermal bridges. However, air moving through a wall does greater damage if it encounters the cold surface of thermal bridges. Likewise, the combination of conduction, radiation, and convection can cause substantial damage to the envelope in areas that have thermal bridges and increase heating expenses. For this reason, thermal bridges must be mitigated, and the technique used must take into account the heat, air, and, moisture exchanges occurring in the envelope.

Air Leakage

While this article focuses on reducing the *conduction* heat loss at thermal bridges, it is equally important to minimize the movement of air across the envelope. Air barriers are an excellent means of achieving this goal. For residential and small commercial applications, vapor-permeable materials are usually employed: the air barrier is placed on the exterior of the wall and a vapor retarder (usually polyethylene sheet) is placed behind the interior finish. In Canada and in cold locations in the U.S. the air barrier is sometimes located on the warm side of the insulation, and serves also as a vapor retarder. This method has the advantage of protecting the air barrier from thermal stress and minimizing the chance of moisture condensation; however, this assembly leaves the insulation unprotected from outside air.

In larger commercial buildings the air barrier is typically air-, water-, and vapor-tight and is located on the warm side of the insulation. For example, in a concrete block/brick veneer wall, with rigid insulation in the wall cavity, the air barrier is generally placed between the insulation and the concrete block.

The topic of air leakage is too extensive to be treated here, but it is closely connected to thermal bridge mitigation and deserves attention.

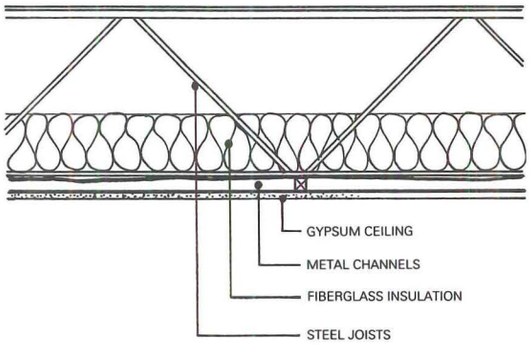
Design Recommendations

Some of the most important design considerations related to thermal bridges are listed below:

- *Always consider the combined effects of thermal bridging, air leakage, moisture condensation, and water intrusion.* When one of these mechanisms of heat and mass transfer is at work, it is common to find at least another one locked in a destructive synergy. In particular, when devising a solution for thermal bridging, make sure that moisture condensation is not increased. This is of special concern when insulation is placed on the interior (warm) surface of materials with low vapor permeance such as a wythe of concrete block or a steel beam.

Because many thermal bridges involve discontinuities in the building envelope, assess the chance that air will enter along these same paths. To do damage, inside or outside air need only intrude into the wall cavity. For example, if outside air enters a stud wall cavity, it can short-circuit the insulation and intensify the thermal bridging effect, after which the air may exit again to the outside. In another example, indoor air can move around the insulation and vapor retarder in a furred-out concrete block wall, raising the chance that moisture may condense on the surface of the block. Of all forms of air intrusion, exfiltration of moist interior air along thermal bridges can be the most damaging. Also note that the entry and exit points of air in the envelope can be distant, and still do damage.

It is particularly important to mitigate thermal bridging, air intrusion, and moisture condensation if a project has any of the following characteristics:
1 Uses that require, or that are likely to generate, a relatively high moisture content during winter, such as residences, hospitals, nursing homes, restaurants, kitchens, natatoriums, computer rooms, and bathrooms in hotels and motels.
2 Locations that experience cold winters, or sustained periods of cold spells during moderate



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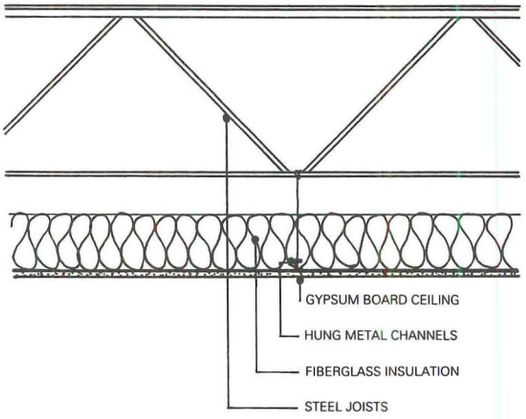

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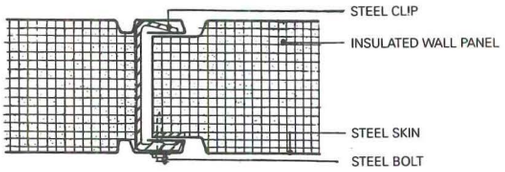

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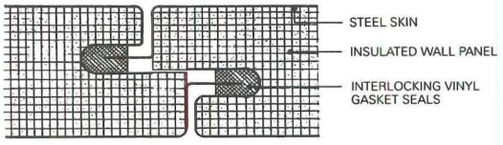

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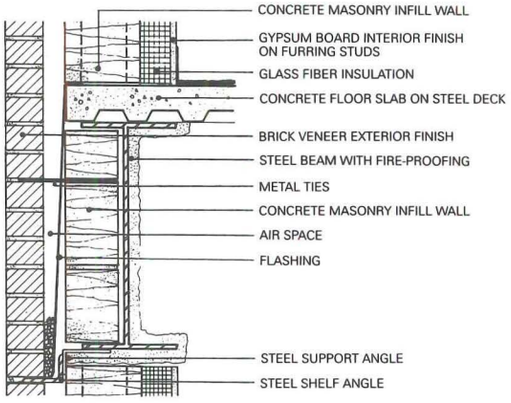

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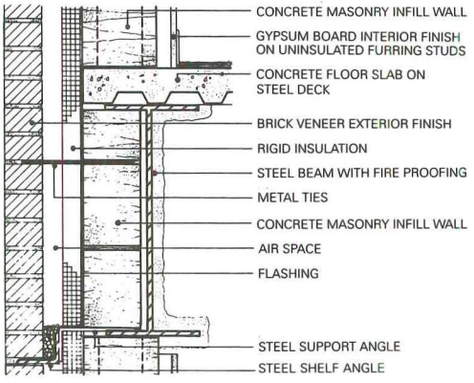

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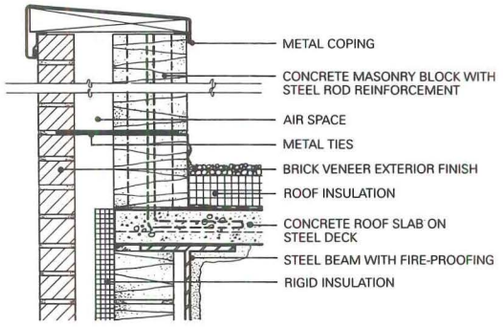

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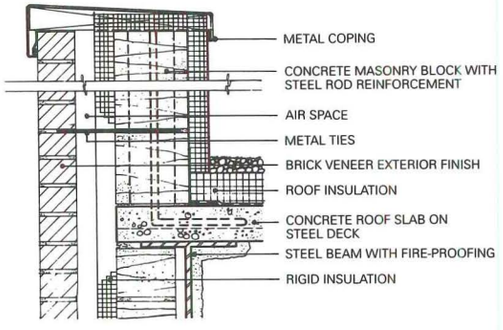

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9 *Steel trusses in an existing attic that is retrofitted with fibrous insulation at the ceiling (9a). When R-30 batts are placed between trusses located at 4 feet on center, the total R-value is only R-25.4, a 20 percent reduction from a thermal-bridge-free assembly of R-31.7. Also note that the bottom chords of the trusses are unprotected by insulation and, lacking a good vapor retarder, these can become significant sources of moisture condensation. One possible solution: Hang the insulation from the bottom chord of the trusses (9b). The total R-value of the assembly is now R-31.4, which is 1.24 times higher. If a tight vapor barrier cannot be installed, however, the problem of moisture condensation can only be alleviated if the insulation is placed above the trusses making the attic a conditioned space.*

10 *Junction between foam-insulated, metal-facing spandrel panels (10a). The R-value of the 3 inches of polystyrene insulation is R-15, but the total R-value of an area that comprises 2 feet to either side of the joint is only R-8.4. One possible solution: Select a thermally-broken, airtight junction (10b). This detail reduces both thermal bridging and air infiltration at the joint. The total R-value is 1.7 times higher: R-14.5.*

Junction between envelope systems, achieved with high conductance components:

11 *Uninsulated slab edge and metal shelf angle, at junction between CMU wall and concrete floor (11a). The R-value of the wall, which extends from the top of the slab edge to the shelf angle, is only R-2.3. One possible solution: Place R-10 rigid insulation in the wall cavity (11b). The perimeter steel beam is now insulated and only the shelf angle remains a thermal bridge. The new total R-value is R-5.3, or 2.2 times higher.*

12 *Uninsulated parapet/roof/wall connection (12a). The parapet conducts heat to the roof slab and to the perimeter beam, circumventing the 4 inches of extruded polystyrene insulation on the roof. A 3-foot-wide strip at the roof edge has a total R-value of R-6.8, versus R-21.3 for the rest of the roof. One possible solution: Wrap the parapet in insulation (12b). The total R-value increases 1.5 times, from R-6.8 to R-10.5.*

(continued from page 30)

sation – high humidity, low R-values and low air movement.

Metal Connectors at a Concrete Floor Deck and Aluminum Curtain Wall

Building Description: A 26-story office building, built in 1978 in Central Virginia.

Moisture Problems: During January 1982, the building experienced severe air infiltration problems: temperatures in the second floor mechanical room area dropped to 16 F, some return air plenums on the third and fourth floors were recording return temperature in the 40s F, while floor temperatures maintained 71 F. Condensation and frost developed on the uninsulated aluminum exterior wall panels and on the steel support members at the top floor mechanical room level.

Probable Cause: Thermal bridging from concrete decks through connecting metal support members to the edges of aluminum wall panels.

Corrective Action: The building designers advised placement of a heavy mineral wool fire-safing material to act as an air barrier between the second floor concrete slab edge and the exterior aluminum paneling. They also recommended the addition of layers of fiberglass insulation. However, apparently no action was taken.

Comments: This is a classic case where thermal bridging is very difficult to correct. The action proposed by the consultants constitutes a reasonable first step in solving the problem.

winters (New York City, Chicago, Minneapolis).
3 Locations that experience humid winters with subfreezing periods (Seattle, the New England coast line).

- *Consider the potential for thermal bridging and air intrusion during schematic design,* when important decisions about the envelope are made. Some envelope systems are inherently more difficult to insulate and airproof than others. It is much easier to implement changes early in the design process, when the budget is not firmly allocated, rather than later, when considerable design time has been expended on a particular building configuration. The highest levels of cost and difficulty are experienced solving thermal bridge problems *after* construction.
- *Use reasonably accurate methods* to determine the effect of thermal bridging. In many cases it is insufficient to examine plan or section drawings. Computer models of an assembly provide more accurate information on whether a thermal bridge will create problems. These analyses also estimate the dollar payback associated with thermal bridge mitigation.

To mitigate a thermal bridge, several techniques can be applied:
1 *Change the thermal bridge material to one with lower conductivity:* use plastic ties, for example, rather than metal ties.
2 *Decouple the thermal bridging elements from the rest of the construction.* Physically separating two materials of high conductivity, such as steel and concrete (11), can break the thermal bridge.
3 *Insulate the thermal bridge.* Using one-inch polystyrene sheathing, for example, can greatly reduce the transfer of heat through a steel stud exterior wall (7).
4 *Change the geometry that creates thermal bridging.* In mullions with deep exterior projections, for example, the projections act like fins during winter, enhancing the heat loss. One method to reduce the thermal bridging effect is to reduce the exterior projection; another approach is to have a very good thermal break within the window frame.
5 *Change the insulation system.* For example, a furred-out masonry wall with all the insulation located within the furring may be changed to a masonry wall with rigid insulation on the exterior (cold) surface of the concrete block.
6 *Change the construction system.* In a natatorium, for instance, structural silicone glazing may be a good solution to avoid moisture condensation (6).

Thermal bridges are a major source of post-occupancy problems in buildings and thus the basis for a considerable amount of litigation. But apart from the trouble they cause, thermal bridges are simply too wasteful and too costly to let stand. Checking for thermal bridges on the construction documents should be a regular task in every architectural office. According to Dr. George Courville of the Oak Ridge National Laboratory, "A good understanding of thermal bridging is essential to the design of an energy-efficient and moisture-free envelope. Thermal bridging can be avoided though the intelligent use of traditional materials and (usually) methods. Knowledge, as well as technology, makes the difference." **Adrian Tuluca** ■

The author is a principal at Steven Winter Associates of Norwalk, Connecticut, with specific charge of the Energy/IAQ Group. He serves on several ASHRAE committees on building envelope dynamics and thermal insulation and on the Passive Solar Industries Council. He has co-authored a number of publications including Affordable Manufactured Housing through Energy Conservation, *published by the U. S. Department of Energy.*

Acknowledgments

The *Catalog of Thermal Bridges in Commercial and Multi-Family Residential Construction* by Steven Winter Associates, Inc. is the source for the R-value, moisture condensation, and graphics of Figures 5, 6, 7, 10, 11, 12, 14, 15, and 16. The R-value and moisture data for these details were developed by Kenneth Childs under the direction of Dr. George Courville, both of Oak Ridge National Laboratory. Mr. Dinesh Kumar of Steven Winter Associates, Inc., was instrumental in collecting the information on thermal bridge configurations and performed all graphics work. The case studies of moisture damage are adapted from "Case Studies on Moisture Problems Attributable to Thermal Bridges in Commercial and Multi-Family Buildings" by Steven Winter Associates, Inc.

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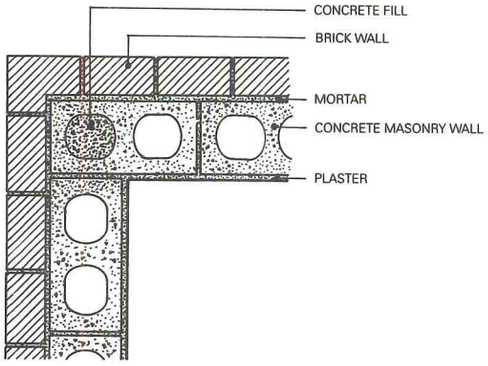

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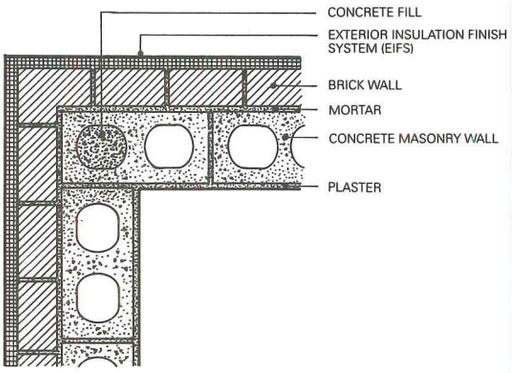

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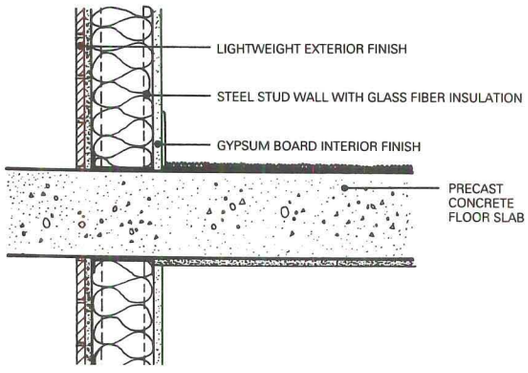

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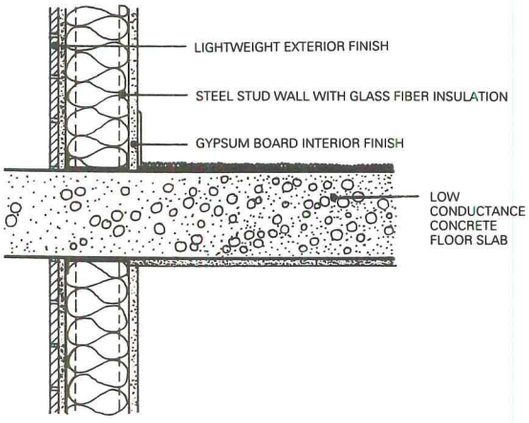

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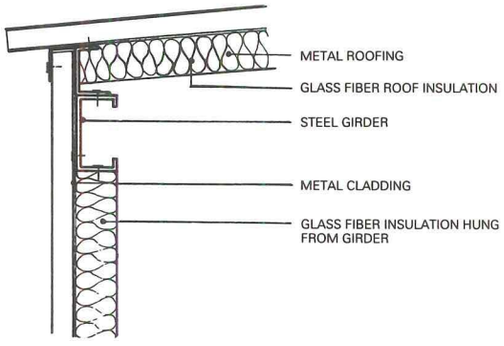

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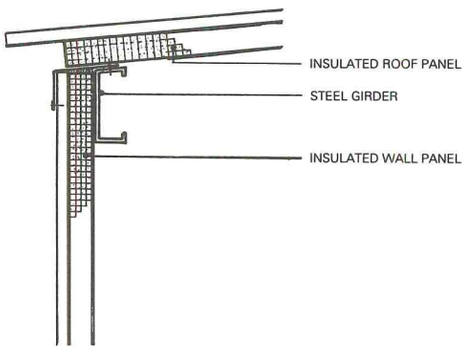

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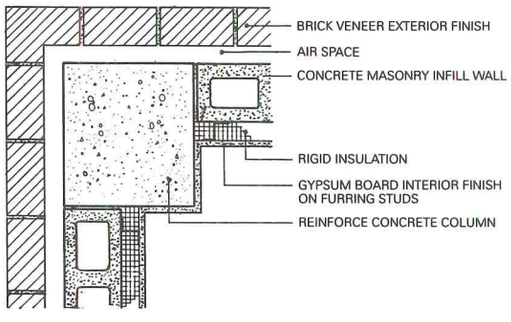

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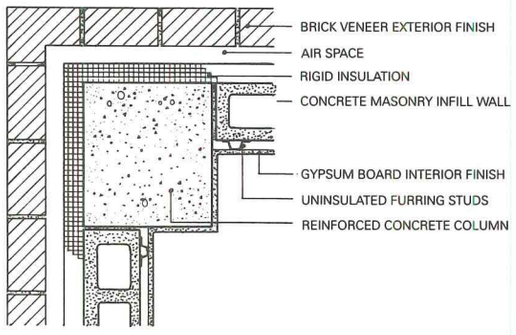

16b

Intersection of two exterior surfaces creating a geometry where heat loss is increased:

13 *Corner between two exterior walls made of CMU and grouted brick (13a). The total R-value of the corner is about R-1.3, versus R-2.7 for the wall. If this condition is coupled with lack of air movement, as in baseboard-heated apartments, moisture condensation and mildew may develop. One possible solution: If the brick cladding is in poor condition, apply an Exterior Insulation Finish System over the entire wall (13b). With 1 inch of extruded polystyrene, the corner R-value increases 5.5 times, from R-1.3 to about R-7.2.*

Configurations where exterior surfaces act as fins which lose heat:

14 *Balconies made with sand and gravel concrete (14a). The total R-value of the 4 feet of balcony and 4 feet of interior slab is only R-0.9. One possible solution: Use high R-value concrete with synthetic aggregates instead of stone (14b). This concrete has an R-8/ft, versus R-1/ft for the sand and gravel mix, and it can be ordered commercially. The total R-value of the balcony doubles from R-0.9 to about R-2. It is difficult to correct this condition on existing balconies. Insulating the underside of the slab, inside the conditioned space, is ineffective because the concrete will simply draw heat from the next uninsulated area.*

Combinations of geometry and high conductivity:

15 *Uninsulated metal beam at roof/wall connection (15a). The total R-value of the corner is only R-2.8, which is 60 percent lower than a condition in which there were no thermal bridges and the beam is simply assigned an R-value of 0. One possible solution: Use metal-clad insulated panels on the exterior of the beam (15b). This keeps the beam within the conditioned space and raises the total R-value 3.5 times, to R-9.8.*

16 *Column in a masonry wall with R-10 insulation located in steel stud furring (16a). The total R-value at the corner is R-6, which is 38 percent lower than the total R-value of the wall, at R-9.7. One possible solution: Move the insulation to the wall cavity (16b). The total R-value of the corner more than doubles, from R-6 to R-12.3.*

Technics Topics
Masonry Crack Control Design Check List

Masonry consultant **Clayford T. Grimm, PE,** lists steps you can take to minimize problems with brick and concrete masonry.

Tech Notes

The National Institute of Building Sciences (NIBS) has just released its first newsletter, *Metric in Construction.* It provides information about metrication and documents evidence of metrication in the federal government. For information, contact NIBS, 1201 L St., NW, Suite 400, Washington, D.C. 20005, (202) 289-7800.

Fifteen state and regional structural engineering associations met in September to form the Coalition of American Structural Engineers (CASE), a new "national organization" to foster coordination and communication among existing associations. For information contact Sally Keene, at (202) 682-4337.

The National Fenestration Rating Council (NFRC) has recently established a Fenestration Attachments Subcommittee. Meetings of NFRC committees are open to the public. For information, contact the NFRC, 962 Wayne Avenue, Suite 800, Silver Spring, MD 20910, (301) 589-6372.

The ideal shape for a column is two stacked hour-glass sections in vertical profile, according to researchers Steven J. Cox, and Mike Overton. The two used experimental mathematical techniques to analyze buckling load, and found that by taking a cylindrical column, and tapering it ¼ the distance from each end, they could achieve the maximum possible strength. The analysis did not take into account material efficiency or properties.

Not much happens to masonry. It cracks, leaks, stains, spalls, and sometimes falls down, but not very often. All of these deficiencies start with a break. Eliminate cracks and you will have one of architecture's most beautiful and functional materials. Here's how.

1 Control joints are located in concrete masonry walls to control the location of cracks that would otherwise occur because of shrinkage. They are intended to open. Control joints should not be confused with expansion joints in clay brick masonry, which are intended to close. Control joints may be filled with mortar or grout. Expansion joints must be compressible.

Vertical control joints in *concrete masonry* walls should be placed at or near:

- changes in wall height or thickness;
- one side of pilasters, recesses, *and* chases;
- wall intersections (corners);
- one end of lintels and sills for wall openings less than 6′ (1.8 m) wide and at both ends for openings 6′ (1.8 m) or more in width.

In lieu of a control joint at a wall opening jamb, provide additional joint reinforcement in two consecutive bed joints immediately above lintels and below sills, extending 2′ (0.6 m) beyond the jamb. Where a control joint occurs at the end of a lintel, provide a slip joint at the lintel bearing. A control joint at the end of a lintel may affect lintel loading.

The maximum horizontal spacing between vertical control joints in concrete masonry walls is determined by:

- the local average annual relative humidity;
- the type of concrete masonry units, ASTM C 90, Type I (moisture controlled) or Type II (non-moisture controlled);
- the vertical spacing of bed joint reinforcement;
- exposure to weather.

Spacing for control joints based on these four criteria is presented in the Army manual, *Masonry Structural Design for Buildings* (1).

Bed joint reinforcement is two #9, cold drawn, steel wires, one in each shell bed. Bed joint reinforcement may be replaced by bond beams reinforced with two #4 continuous reinforcing bars in 8″ wide bond beams and two #5 bars in 10″- or 12″-wide bond beams.

Maximum vertical spacing of bond beams, if used, is four times that required for vertical spacing of joint reinforcement. Bond beams should be placed at the top and the base of the wall, and below windows. Consult local weather records for annual mean relative humidity.

2 Vertical expansion joints in *brick masonry* walls should be placed at or near:

- changes in wall height or thickness;
- one side of pilasters, recesses, *and* chases;
- wall intersections (corners).

3 Expansion joints should be free of mortar, reinforcement, flashing, and debris. Joint thickness may be reduced by:

- closer spacing,
- increasing compressibility of joint sealant, or
- reducing spandrel beam deflection.

4 Long-term deflection of horizontal members supporting masonry should not exceed their span/1000 or 0.25″ (6 mm), whichever is less. Some building codes permit maximum deflections of span/600.

5 Do not paint over control or expansion joints. The paint film will crack. Don't laugh. Architects have been sued for such cracks.

6 Design cavity walls to "course out," so that adjustable ties are not necessary. A 1 ¼″ eccentricity in an adjustable masonry wall tie reduces tie strength 90 percent.

7 If masonry laid "overhand" is acceptable, specify rigid individual ties or bed joint reinforcement between wythes. Specify placement of individual wall ties perpendicular to wall plane. Diagonal placement weakens the wall. Otherwise specify adjustable ties with no eccentricity and a mechanical play of less than 0.05″ (1.2 mm).

8 The differential vertical movement between adjacent columns supporting masonry should not exceed the distance between columns/1000 or 0.25″ (6 mm), whichever is less.

9 The differential horizontal movement (side sway) within a story containing masonry should not exceed story height/1000 or 0.25″ (6 mm), whichever is less.

10 Detail flexible anchorage of walls to frames to permit horizontal and vertical in-plane movement, but not lateral dis-

Table 1 Maximum Horizontal Spacing of Vertical Control Joints in Concrete Masonry Walls, in feet.

Annual Mean Relative Humidity	Wall Location	Vertical Spacing of Bed Joint Reinforcement, Inches	CMU Type I Moisture Controlled	CMU Type II Non-Moisture Controlled
Less than 50%	Exterior	None	12	6
		16	18	10
		8	24	14
	Interior	None	16.5	9
		16	24	14
		8	31.6	19
Between 50 and 75%	Exterior	None	18	12
		16	24	16
		8	30	20
	Interior	None	22.5	15
		16	30	20
		8	37.6	25
Greater than 75%	Exterior	None	24	18
		16	30	22
		8	36	26
	Interior	None	28.5	21
		16	36	26
		8	43.6	31

placement of the wall.

11 Walls and frames move differentially. Enclose but do not encase beams or columns with masonry. Provide at least 2″ (50 mm) clearance from concrete or steel flange surface and 1″ (25 mm) clearance from the toe of a steel leg or flange. Require that the clear space be kept clean of mortar droppings and other debris.

12 Anchor exterior masonry to exterior face of columns and beams with wire anchors that are stiff in compression and tension, but flexible in shear. Do not use corrugated metal anchors.

13 If the top of a non-bearing wall or partition is anchored to a girder, beam, or slab, the anchorage must be flexible to provide for long-term flexural deflection without loading the masonry and to provide the masonry with lateral support.

14 The length of shelf angle shims should extent to the base of the vertical leg of the shelf angle.

15 Place an expansion joint under shelf angles. Masonry expands vertically as well as horizontally, and structural frames contract. Half-inch joints are not excessively thick. Thin joints for aesthetic reasons can result in law suits. Lip brick can reduce apparent joint width, but be careful that the lip brick is not accidentally different in color.

Clayford T. Grimm, PE ■

The author is a consulting architectural engineer who specializes in masonry structures in Austin, Texas.

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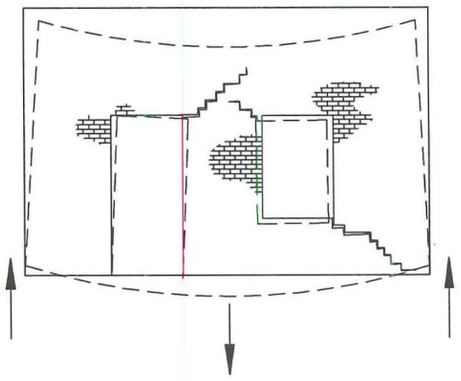
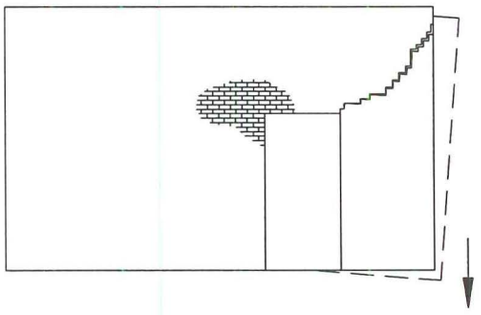
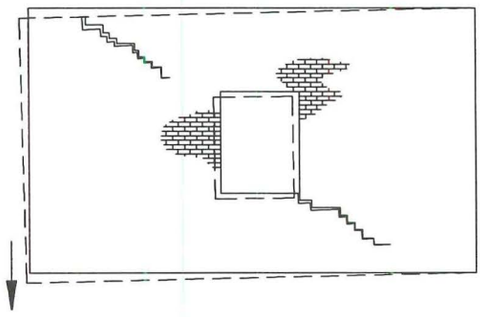


CRACKING PATTERNS WITH SOIL SETTLEMENT AT THE CENTER AND SOIL HEAVE AT THE CORNERS OF THE WALL



CRACKING PATTERN WITH FOUNDATION SETTLEMENT AT THE CORNER OF THE WALL



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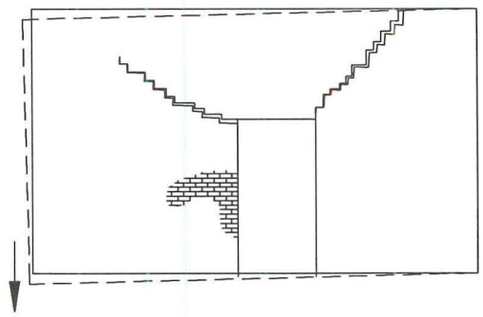

CRACKING PATTERN WITH SOIL SETTLEMENT AT THE CORNER OF THE WALL

Redrawn by: Evan L. Goldenberg

How AutoCAD s a million dollars o

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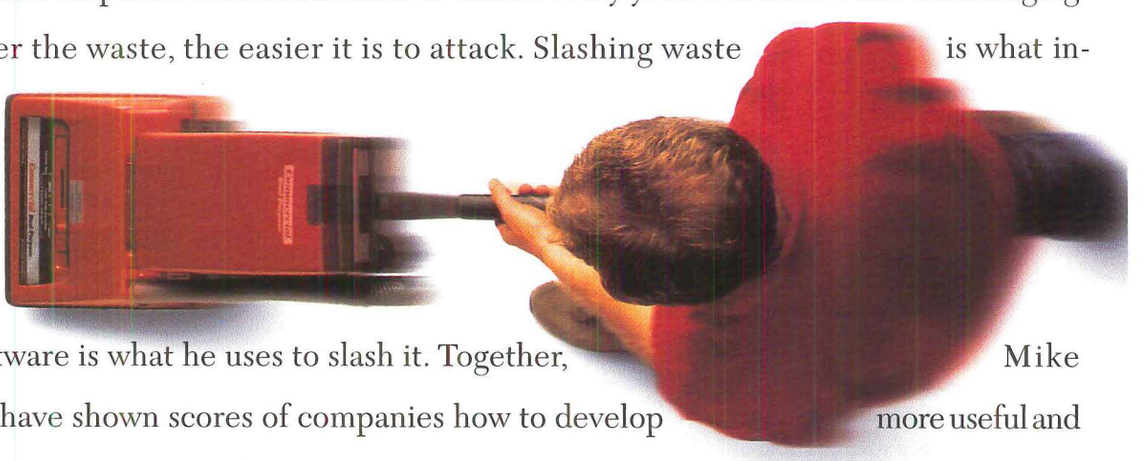

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Architects and Power
The Natural Market for Architecture

In this third article in our Architects and Power series, **Professor Robert Gutman** argues that the profession must recognize the limited, "natural market" for its services.

We welcome readers' comments on the position taken and the proposals made in this essay, and in the related editorial. Comments will be published in our March 1993 issue. –Editors

Architects are anxious once again about their lack of power. This is a startling shift in sentiment from just a few years ago when the profession was exhilarated by the unprecedented attention it was getting. In the mid-1980s, vast building complexes were going up, architectural firms were adding new offices, graduates were pouring out of the schools, jobs were easy to find, architects were celebrated in the media, museums were adding departments of design, and leading architects were becoming advertising props. Some of this momentum is continuing, but the bedrock on which architectural practice stands, the market for the design of buildings, is more depressed than at any time since the 1930s.

Statistics confirm this pessimistic sentiment. Data collected by the Bureau of Labor Statistics indicates that fifteen thousand architects have left the field for other lines of work in just the last three years. There are also perhaps seven thousand others who are currently unemployed. Taken together these data suggest that as many as 20 percent of architects, perhaps more, have no work of any kind or are not currently employed as architects. In some places, such as New York, there is reason to believe this percentage may be higher.

The distress in the profession is exacerbated by a trend that began long before the current recession: the steady growth in the number of organizations in the building industry that have taken over many of the functions once believed to be central to architectural practice, such as the construction management and project management operations now undertaken by general contractors and developers. This trend has accelerated as the traditional building work of contractors and developers has diminished. One result is that architects less often play the role they believe they deserve as the head of the building team and as the owner's representative.

Previous Difficulties

If knowledge gained from historical experience can provide comfort, it might be noted that the current situation is fully consistent with previous patterns. American architects in the past have frequently experienced high rates of unemployment, steady attrition from the profession, and shifting role relationship within the building industry. During the Depression of the mid-1890s, William Mead wrote to Charles Follen McKim expressing the opinion that if the situation continued, the partners of McKim, Mead & White would soon be in the poorhouse. During the 1890s, the largest architectural firm the country had known up to that time reduced its staff from 120 to 60 people. That same Depression contributed to the demise of Adler & Sullivan and eventually led Sullivan to concentrate on work that was more purely design.

In some years during the 1930s, as many as 90 percent of American architects were out of work or were doing other things, including working as graphic designers or construction coordinators for state and federal government agencies. It was during the Depression of the 1930s, too, that the construction industry developed its advanced production techniques, taking greater control of the building process and the design function. Jumping ahead to the 1970s, according to Judith Blau's pioneering study of the organization of architectural firms, 50 percent of the firms listed in the New York yellow pages in 1974 no longer were in practice in 1979.

Comparisons Among Professions

Men and women for whom economic security is the prime consideration do not usually choose a career in architecture. College graduates who focus on the issue of opportunity are more likely to get an MBA or a law or medical degree. The image of these other professions and how much better their members fare financially haunts architects. Not only do architects generally have lower incomes than those in other professions, but the demand for the services of lawyers and physicians is more stable, and they are able to exercise more control over the domains in which they work. The differences are very apparent now as the privileged position of lawyers and physicians has come under scrutiny. Critics, however, are finding it difficult to reduce the autonomy of these professions, while architects are continually losing out to clients and other parties in the building industry in the battle for hegemony.

Sensitivity about the power of lawyers is heightened as architects become more involved in complex projects requiring negotiations with assorted parties in the building process. Lawyers are

Practice Points

A recent survey of *Progressive Architecture* subscribers paints a gloomy picture of the state of the profession. Forty-two percent of respondents said that they or their firm did not have enough work to keep occupied 100 percent of the time. Forty-one percent of those questioned said that the profession's institutions (AIA, schools, magazines, etc.) are having little effect in responding to the economic difficulties.

The National Council of Architectural Registration Boards (NCARB) has published its *1993 Architect Registration Examination Handbook*. The updated edition features new information about Division B: Site Design - Graphic, and Division C: Building Design. The handbook is available for $85 from NCARB, 1735 New York Ave. NW, Suite 700, Washington, D.C. 20006 (202) 783-6500.

***Facilities Management Newsletter*, a new publication from Graphic Systems, Inc., will be distributed by R.S. Means, Co. The newsletter will focus on real estate and facilities management automation. For information contact R.S. Means at (800)-448-8182.**

The AIA has announced the availability of AIA*Online*, an electronic information network for architects. The network features E-mail, a bulletin board, and Forum. In addition, architects who subscribe will have access to over 850 databases. For information, contact the AIA, at (202) 626-7476.

"The profession should be making more effort to broaden ... its natural market."

also viewed as responsible for the escalating costs of liability insurance and programs for risk management. And, like other enterprises, architectural firms have been made aware of the critical importance of the medical profession, which for them is translated into higher rates for employee benefits, increased overhead, and reduced profits. The use of these other professions as a reference group for architects in judging their own status in the hierarchy of social influence is a relatively new development. It began in the middle of the 19th Century, with the emergence of the professionalization movement. This was the period when a large number of middle-class occupations in Europe and America pressed governments to grant them special protected status, through a system of licensing. As a way of making sure that they would be included under the licensing umbrella, architects began to emphasize those aspects of their work that most nearly resembled the thinking and skills of these other fields. For example, architects, like physicians, argued that their work affected public health and safety. The result was a shift in the definition of architecture from a focus on artistic accomplishment to expertise in dealing with the structural integrity of buildings, ventilation requirements, and the ability to interpret building and housing codes. The registration examinations still emphasize this component of architecture, even though that makes architecture resemble civil or mechanical engineering or city planning. That emphasis also defines architecture in a way that parallels what others in the building industry are better at handling than most architects. The special forte of the architect, which is to relate these objective requirements to the art of architecture, is thus overshadowed.

Architecture's Natural Market

Should architects keep berating themselves because they do not enjoy many of the social and economic rewards of the other major professions? It might be worthwhile if there were a good chance that architecture could become more like law or medicine, that is, more science-based and more fully in control of its domain. A great deal of effort continues to go into programs intended to achieve these objectives, but I am doubtful they can have much effect in transforming the fundamental existential condition of architecture. For example, even when architecture emphasizes its regard for the pragmatics of building, it still remains linked to the fate of the construction industry. Yet, as the current condition of the industry indicates, construction is notoriously volatile. Physicians face a much different situation, since illness and disease do not diminish during economic depression; indeed there is reason to believe morbidity rates increase. And lawyers, like accountants, provide service to a wide range of industries, so that when business diminishes in one sector, they are supported by others.

Furthermore, architecture is an art, one of the fine arts, or indeed, as is often said of it, the "mother of all arts." I am often amazed that architects don't do more to celebrate this condition of their field. There is no other profession that is able to achieve what architects historically have accomplished in the realm of building. More architects need to take pride in this record. No other building profession is so learned about how to relate light, mass, and structure to produce memorable visual and spatial experiences. Rare is the building, *not* designed by an architect, that represents the supreme values of a civilization. This has been true for temples, palaces, libraries, and city halls in Greece, Rome, and Europe during the Renaissance; and for museums, university structures, government buildings, and corporate headquarters more recently. The design of the great seminal monumental buildings is the unique province of architecture, its "natural market." No other profession was able to compete effectively for this market in the past, or is able to now.

Many practitioners seem embarrassed to present themselves as artists. They seem to fear it may encourage clients to regard them as no different from painters, sculptors, and other visual artists. They also appear worried that to promote this image will convey the impression that architecture is a luxury service, which, as the history of the profession's achievement shows, it usually is. Routine, ordinary buildings can be constructed without the benefit of architects. But instead of trying to compete in this market, where it is not particularly successful anyway, the profession should be making more effort to broaden what I have called its natural market.

I am aware that in many quarters this is not the standard view of what is wrong with the profession now. In one of the leading trade magazines, in programs put on by AIA chapters, and in conversation, one reads or hears endless complaints about signature architecture, the design culture, and the excessive commitment of many fashionable and celebrated architects to artistic concerns. However, so far as I can observe, these accusations apply to a minuscule percentage of the profession. The more pivotal problem is the large number of architects and firms who have abandoned the commitment to, even their respect for, design. It is understandable, of course, that the profession would try to reach beyond its natural market. This market may well constitute only five percent of buildings. This is too small a clientele to support the 20,000 practices we now have. The question is how to stretch the profession's capacity, without at the same time injuring its fundamental strengths and its acknowledged cultural role. The strategy of emphasizing their skills in building, which so many firms have adopted, puts architects in competition with other professions and parties that can do it just as well, if not better. It also discourages clients and the profession itself from recollecting the primary skill of the architect for which there is no peer: the design of buildings that have some value as art. This is the direction in which the profession must move if it is going to find greater employment in the decades ahead.

It is more an intellectual challenge than the decision to be just another building professional. It will require greater effort to develop a broader appreciation among prospective clients for the nature and purpose of architecture. It is a strategy that also

requires careful thought and splendid imagination in order to discover the new expression and forms appropriate to our changing civilization – precisely the area in which the architectural tradition has excelled.

Downsizing the Profession

The current problems of the profession stem, in part, from the fact that the natural market for architects, even in good times, is too small to support the size to which the profession has grown. But there may be another way to deal with this situation that is different from the strategies I have described. This is to find an equitable means of cutting back on the number and size of firms, and to reduce the number of graduates of architectural schools. There is tremendous need for serious debate about measures that could be used to achieve such an end. The current tendency is to allow the issue to be handled in the same old way of attrition. But this approach is not necessarily humane or responsible. It overlooks the casualties represented by men and women who have had to abandon careers for which they have been trained, and to which they have devoted some of the most productive years of their adult lives. Are there not better methods of avoiding the recurrent history of an oversupply of architects? Should architectural graduates, at the very start of their careers, be encouraged to consider ties to allied fields? Should the schools do more to address the connections between architectural art and the rigors of the building industry? At the moment, the schools are baffled when such questions are posed to them: they do not even have concepts for grasping the problem. As far as I know, other costituencies of the professional community are not doing much better.

Every profession creates its own type of vulnerability and frustration, but in the case of architecture, the frustrations can be cruel and overwhelming. In this sense, again, architecture resembles the other arts. Painting, music, and the theater are notorious for the casualties they produce: dedicated, talented men and women who are never able to realize the hopes and ambitions that drew them to the field in the first place. The educational process is wasteful. We overproduce artists in our culture. No wonder artists proclaim art to be its own best excuse for being. It is difficult to justify the arts by pointing to effects in other realms. Architects are actually somewhat better off than other artists, because the medium through which they achieve expression and form links their art to function and usability. Nevertheless, as we have seen, even for this profession, many different hazards emerge when it attempts to escape the boundaries of its natural market.

Robert Gutman ■

The author is on the faculty of the School of Architecture at Princeton University.

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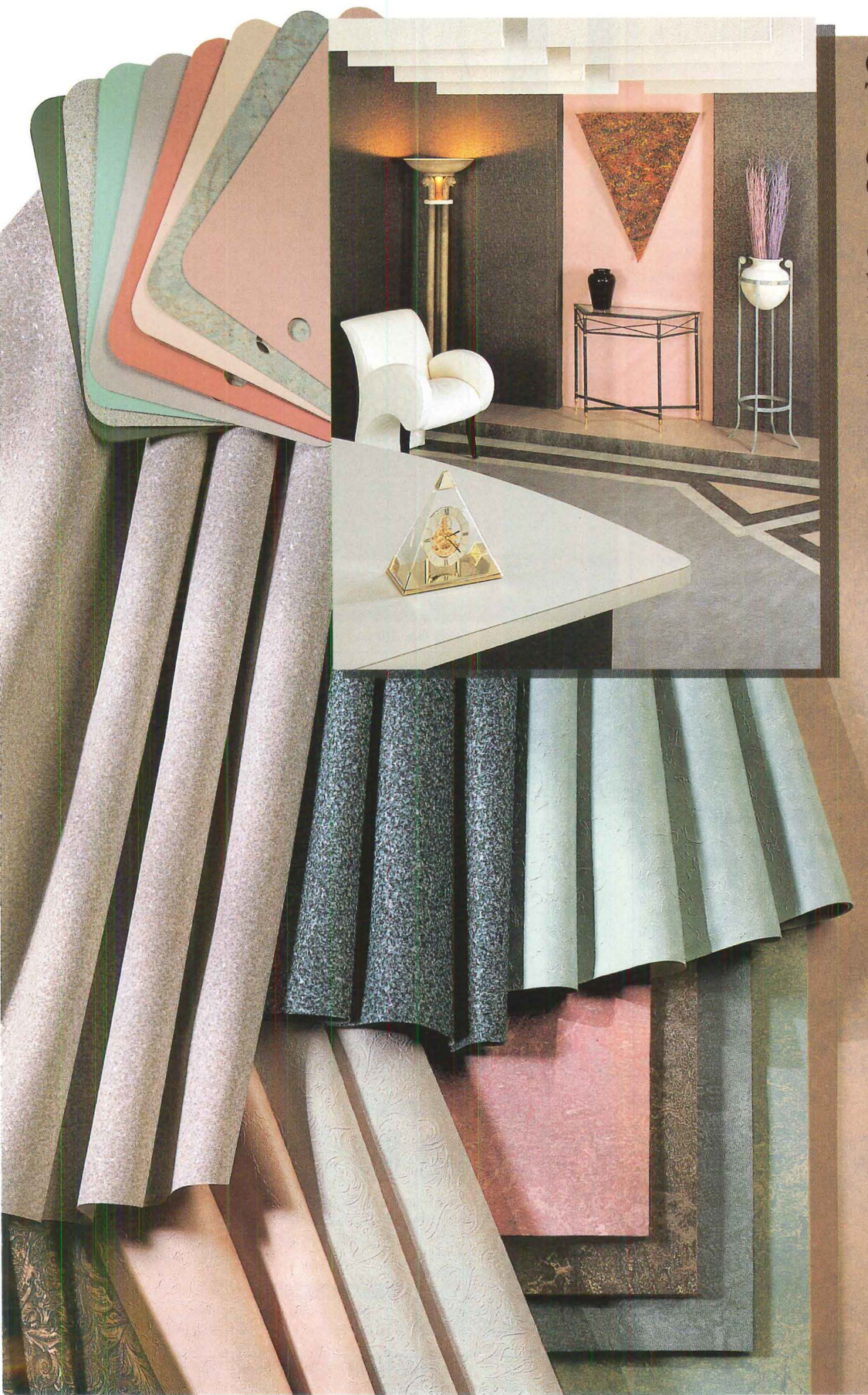

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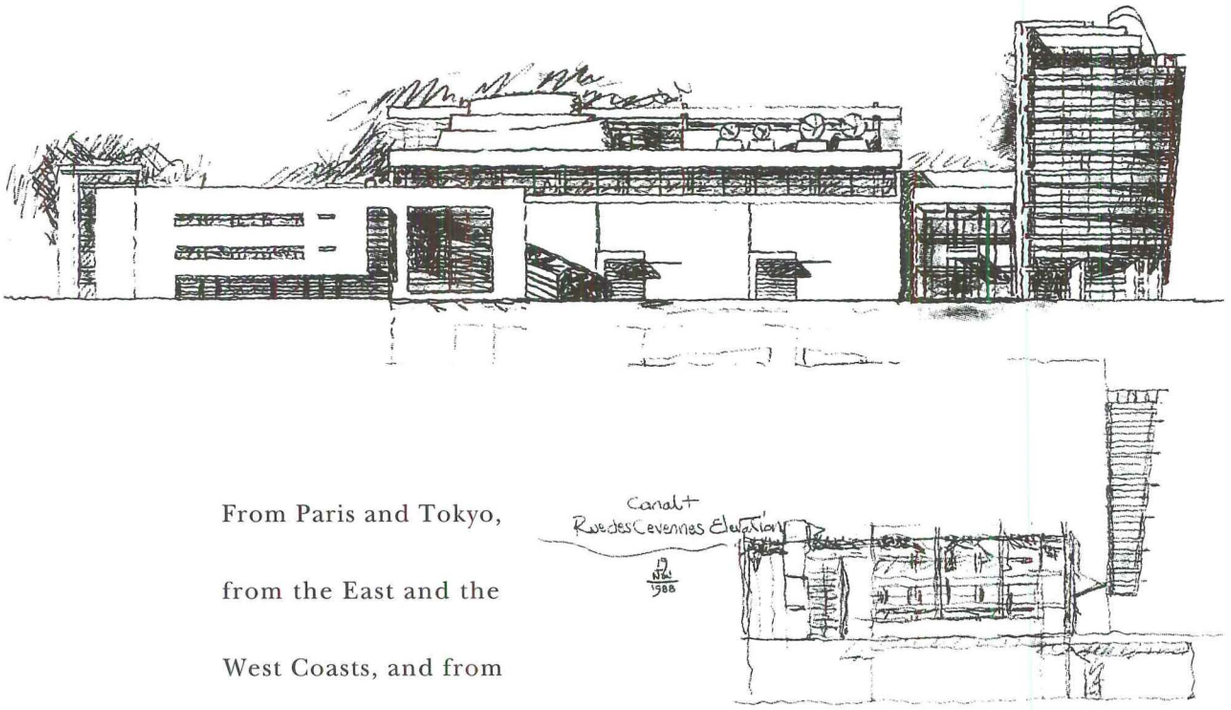
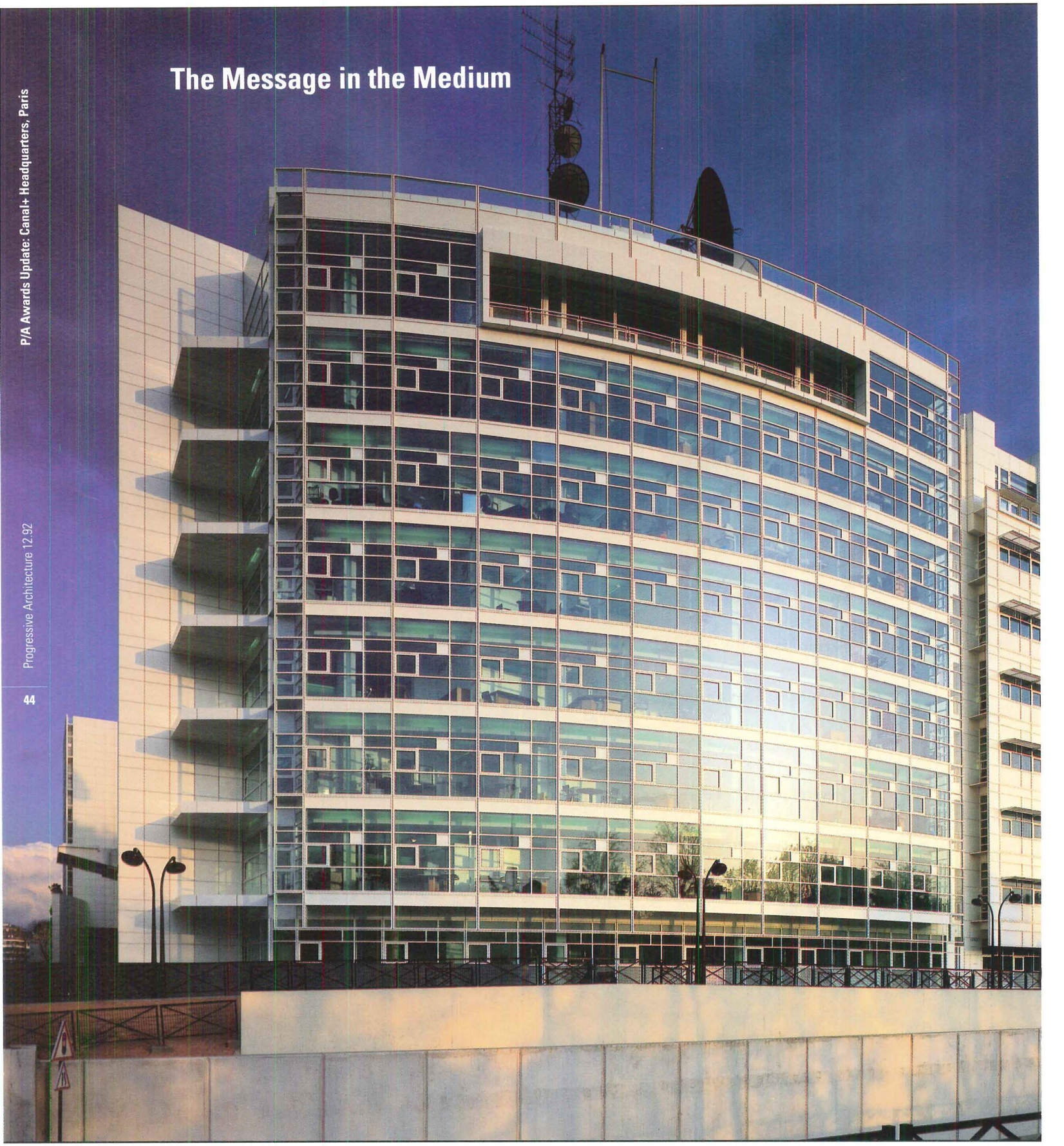


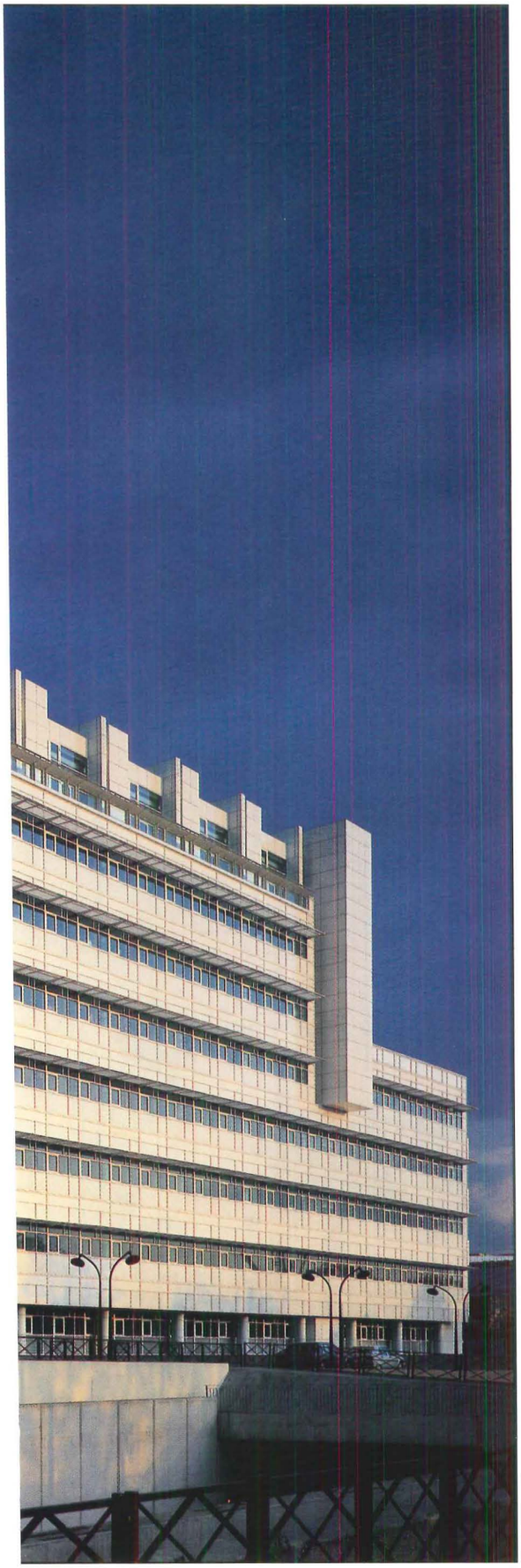
Early drawings of Richard Meier's Canal+ Headquarters in Paris, p. 45. The elevation of studio wing, top, and a section through the atrium lobby, above.

From Paris and Tokyo, from the East and the West Coasts, and from several points in between comes the work featured in this issue.

Also included here is a new type of article for P/A: a first person report on a place and the conditions that architects – and the users of architecture – face there.

The Message in the Medium





1

The Paris headquarters of Canal+ by Richard Meier & Partners

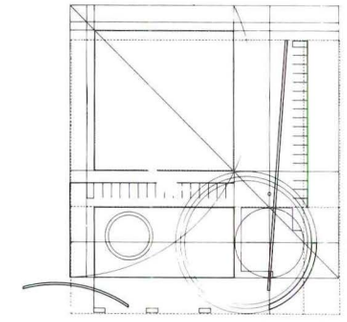
is characteristic, yet masterfully attuned to its site.

Within firing range of the Statue of Liberty is a building tiled in white and encased in glass, lighting up the city. But make no mistake: Richard Meier's latest display of his distinctive work is set not in Manhattan, but in Paris, where a scaled-down replica of Bartholdi's celebrated statue has stood for a century in mid-river. In 1981, Meier designed a vast office complex for the state-owned Renault corporation on the right bank of the Seine, a project which failed to go through; and given the vulgarity of recent constructions in this part of western Paris, the fact that it did not is certainly to be regretted. The Canal+ building, however, occupying a nearby site on the left bank, enables Meier to take his place in the serried ranks of foreign architects who have helped to update the face of Paris. And its accomplishment somewhat compensates for the earlier missed opportunity.

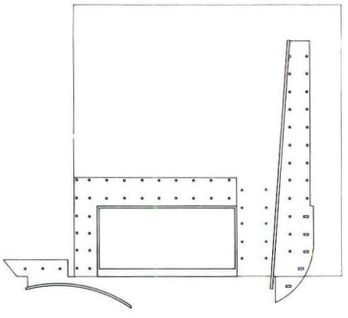
The popular success of Canal+ – a pay-television channel focused on cinema – called for an ambitious architectural commentary. A competition was duly organized for a site close to the old Citroën factories, which were cleared and recently transformed into a park surrounded by a completely new, largely residential district. In keeping with his consistent architectural strategy – of seeking to respond to specific site constraints – Meier's winning proposal (also the winner of a P/A Citation in January 1990) arbitrated between the lines of force of the urban environment and those of a disparate program that called for technical premises for the production of TV programs and offices for the channel's administration and management.

A measure of the painstaking "reconquest" of Paris's obsolete industrial sites, the plot selected for the building was bizarre in shape. Only a few paces from the Pont Mirabeau (the praises of which were sung by the poet Apollinaire), it took the form of an L embracing the square – and unbuildable – site of an underground telephone exchange. The problem was thus to stretch the program around this void while exploiting the very different qualities of the waterfront and the street perpendicular to it. The position of this corner plot was not unlike that of the Arab World Institute, also located on the river, where Jean Nouvel's solution took the form of a dynamic glass envelope.

Here the resemblance ends, however. Far from



GEOMETRY



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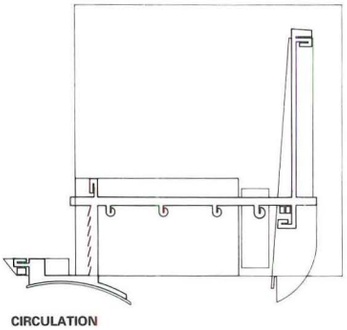

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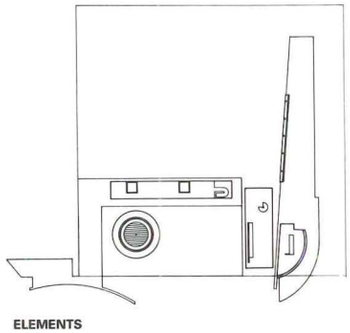


ELEMENTS

Mise on Seine: the office wing (1) presents a streamlined front to the river. Right, analytical drawings of the entire building.

fusing the different components of the building into a single unitary structure, Meier has achieved fertile articulations between serial elements (the offices) and singular ones (studios, film theater). Differentiation between the repetitive and the unique was one of the cornerstones of Le Corbusier's studies in the 1920s; but whether in the Salvation Army building or at Centrosoyus, he had always exploited the repetitive in terms of regular orthogonal forms, reserving the more plastic configurations for singular functions. In Meier's building, Le Corbusier's reassuring classification has been subverted, if not inverted.

Significant Fragments

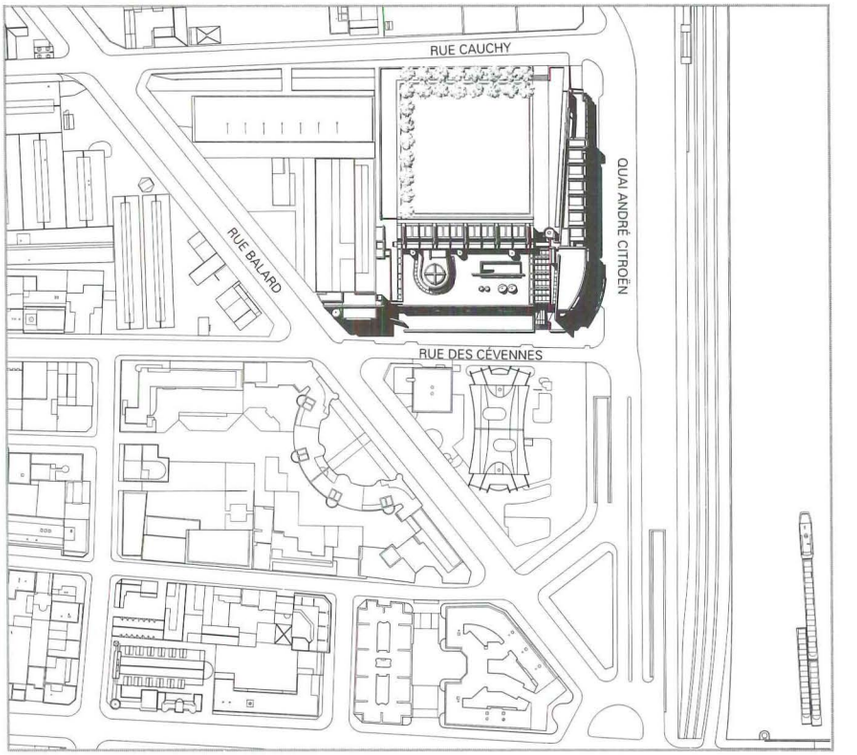
The fragmentation effected by Meier in response to the demands of the program and to the constraints of a delicate urban context is counterbalanced by a major structural device, consisting of two intersecting vertical planes that form an obtuse angle. These planes, which determine the building's horizontal datum lines, also work as surface markers for the distribution of the channel's vital activities within the wings of the L.

Running parallel to the river, the office wing is treated as a lamellar assembly offset by highly specific details, such as the curved volume of the corner, or the superstructures whose cadenced aedicules evoke Le Corbusier and Pierre Jeanneret's Salvation Army hostel, or Pierre Patout's "ocean liner" on the boulevard Victor. The telecommunications masts on the roof of this wing stand out against a sky framed by an "urban window" that forges a link between the low-level offices and increased general height of the rest of the building.

The two production units are ranged on either side of the wall-plane perpendicular to the Seine. Three recording studios on the rue des Cévennes are housed in a quasi-blind box, whereas the production wing, facing the inner garden, boasts a large façade punctuated with horizontal sunbreaks.

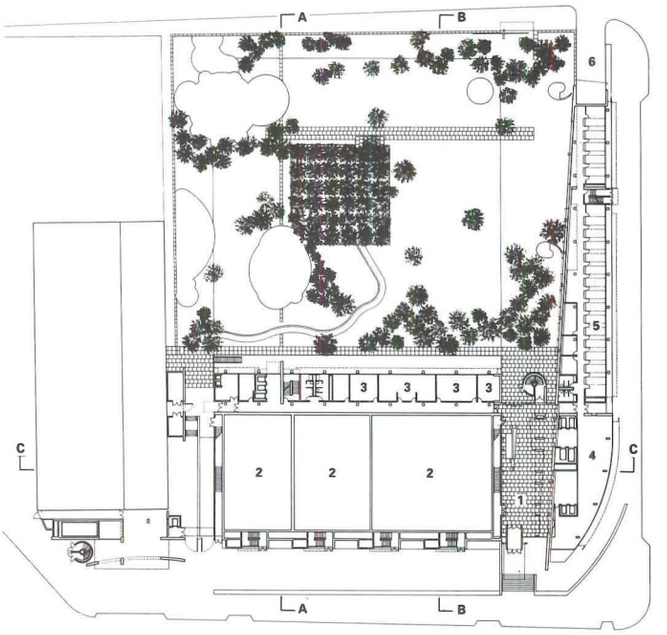
The fragmentation of the program's various components, which Meier has put into practice on less exiguous sites, ran the risk of swamping a fragile site and destroying the company's cohesive image. And yet unity the building certainly has, in that the presence of the two reference planes is always perceptible, but also because of the dynamism of a number of unifying devices such as the "airplane wing" atop the studio wing, which elegantly contains the ventilation and air-conditioning

(continued on page 52)

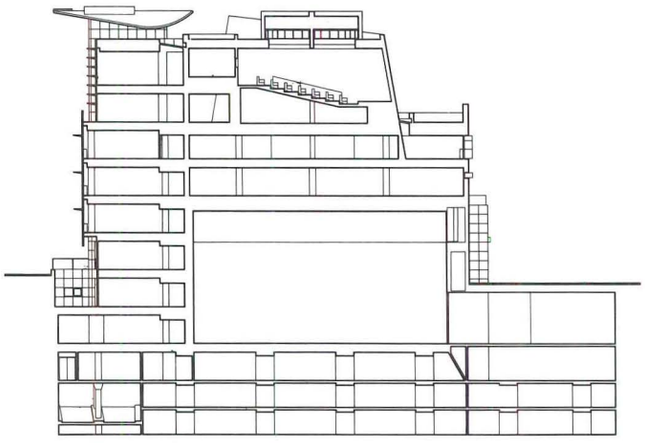


SITE PLAN

1 ATRIUM LOBBY
2 UPPER STUDIOS
3 TECHNICAL/PRODUCTION
4 SECURITY
5 OFFICE SPACES
6 RAMP TO PARKING
7 CONFERENCE ROOMS
8 TERRACES
9 CINEMA
10 PRESIDENT'S DINING ROOM
11 KITCHEN
12 RECEPTION ROOMS



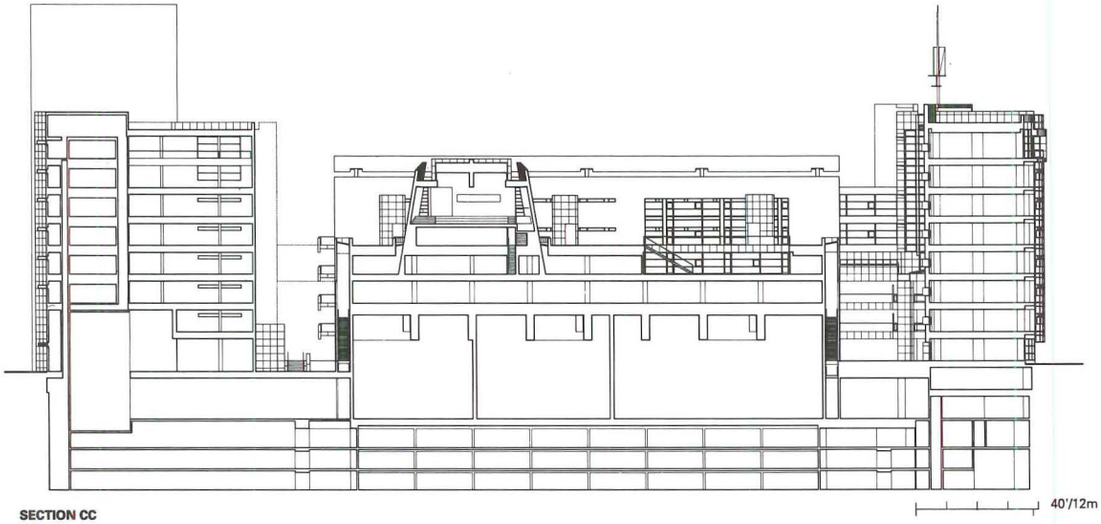
GROUND FLOOR PLAN



SECTION AA

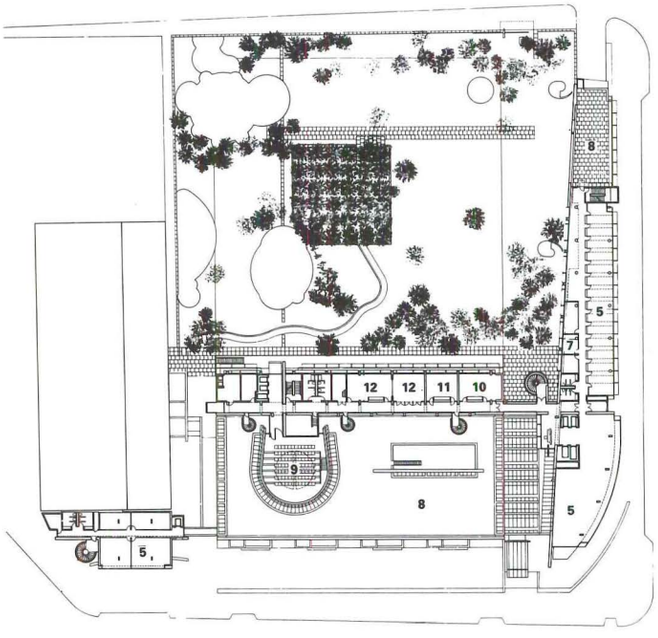
40'/12m

SECTION BB

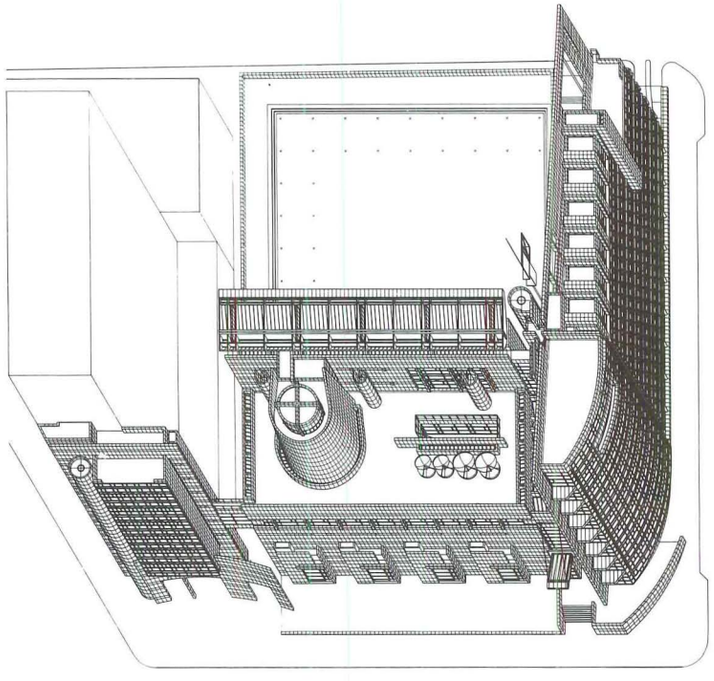


SECTION CC

40'/12m

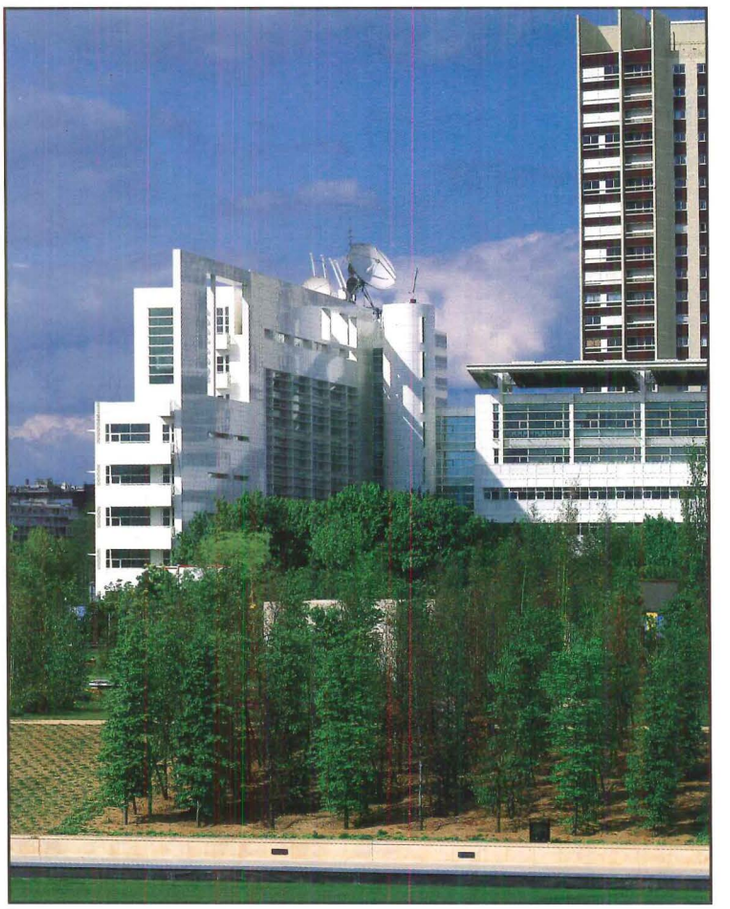


FIFTH FLOOR PLAN



AXONOMETRIC

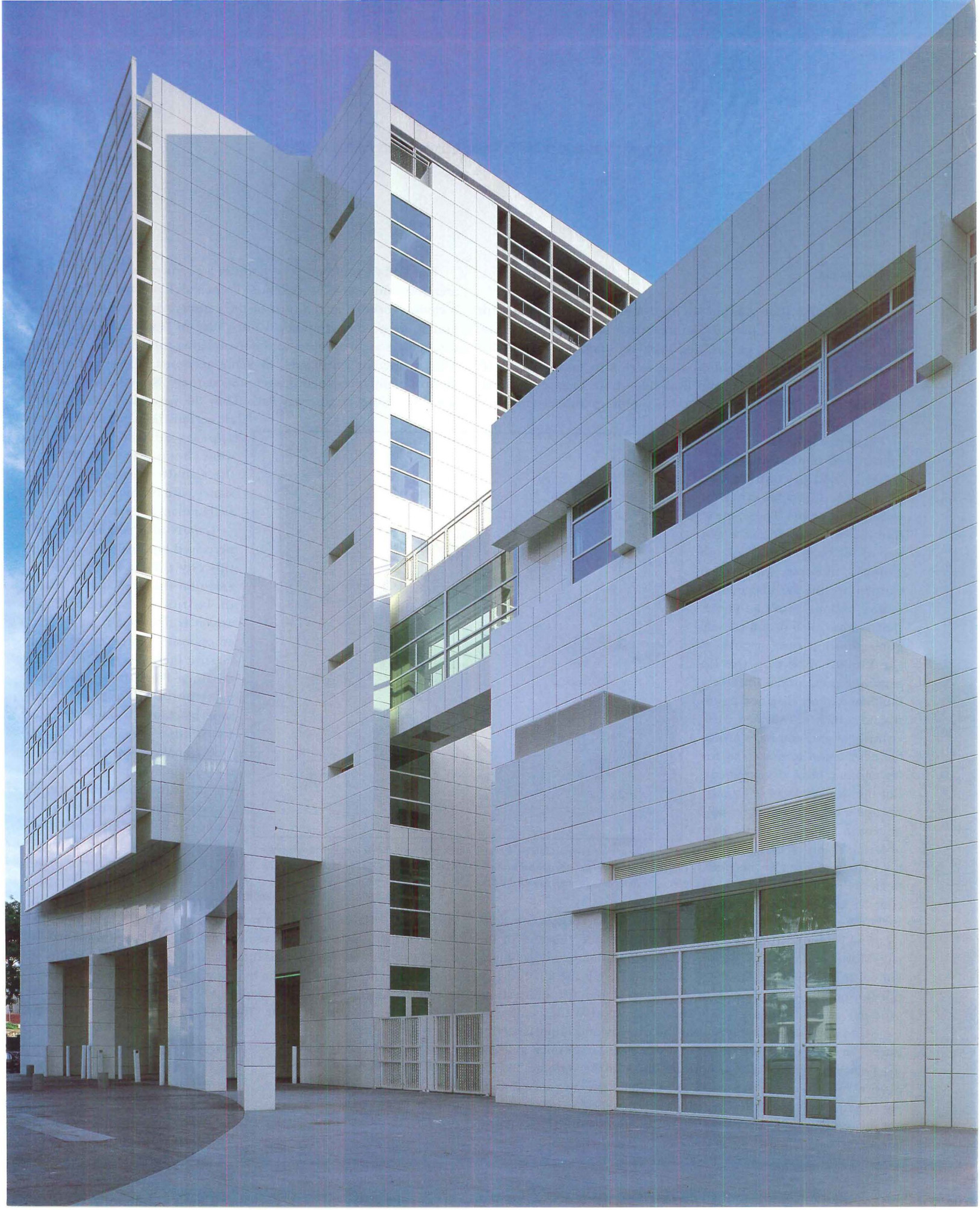
2



3

4

Canal+ Headquarters as seen from the river (2). The façades of the building facing the inner block park (3) are outfitted with lightweight aluminum brise-soleil. *The cylindrical, tiled stair tower nestles in the angle between the metal-clad spine of the office wing and the glazed production wing. A curtain-walled tower (5) containing staff offices and other services abuts on the gable end of a 1960s housing block by Jean Dubuisson, an elegant French functionalist. A curved aluminum-tile-clad wall (4) bridges between the tower and the studio wing on street level. The entrance to the atrium lobby is identified with a suspended canopy.*

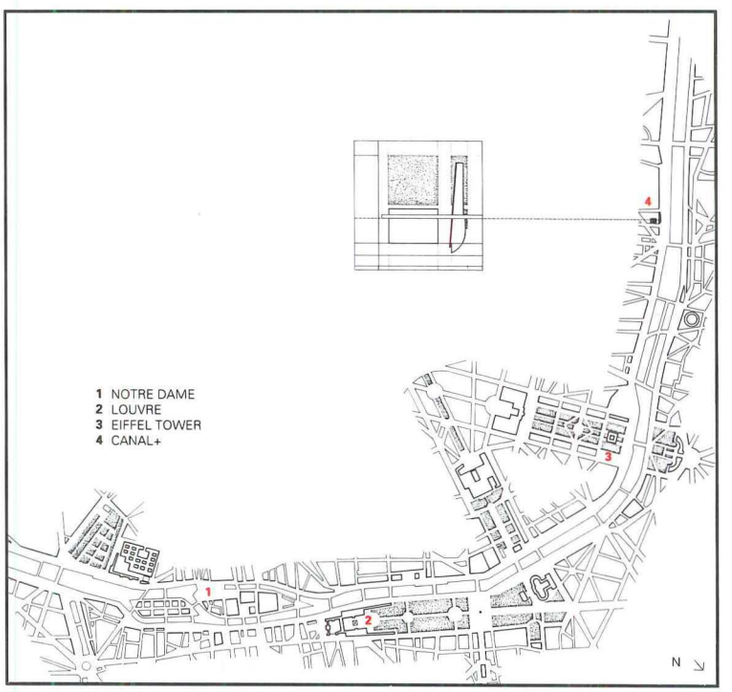


Thomas Vonier sets Meier's new building in its Parisian context.

Bien Venue

The welcome that greeted Richard Meier's headquarters for Canal+ is explained in part by the dread that preceded it: over the past 25 years too many parts of industrial and popular Paris – vital elements of the city's economy that were also important to its non-monumental character and livability – have been eradicated, replaced mostly with awful speculative buildings and ill-conceived public spaces.

Given its site's history on the Seine's left bank, Canal+ too, could be said to contribute to the steady disappearance of working-class Paris. There, once, had been factories, freight depots for barge traffic, a large gasworks; its name, Quai André Citroën, for the Paris-born automotive tycoon, recalls an epoch that is now all but completely gone. Another case in point is the Renault plant on the Ile Séguin, a great ocean liner of a building a short distance downstream, which was vacated earlier this year and now faces probable destruction to make way for yet another huge development. But the headquarters of Canal+, Europe's biggest, visionary pay-television company, forms part of a new vision of industrial life for Paris and has also become, perhaps unwittingly, its most effective advocate.



A drawing of the riverfront, above, locates Canal+ a short distance downstream from the Eiffel Tower. The opaque, conical cinema rises from the roof terrace (6) of the production wing, with its aerodynamic HVAC housing (7).

The headquarters for a major segment of the French entertainment and broadcasting industry have gravitated to this end of the city. Movie studios had long been in nearby Boulogne-Billancourt, but construction of the Maison de la Radio during the 1970s began transformation of the area into a modern center for audio-visual production. One urban planner here suggests that these edges of the Seine in western Paris may gain the identity and importance for European broadcast media that London's Fleet Street once held for the British press. Not all the new buildings in the putative "media district" are successful, but unlike the bloated, gauche, inward-looking headquarters for TF1, a recently "privatized" government channel on the opposite side of the river, Canal+ demonstrates a more positive scenario.

The Canal+ building is very white, a predictable choice for this architect, with ample precedent in French architecture. In Paris, this includes works from the turn of the century when tile-makers promoted, at an almost fanatical pitch, use of "rain-washable" white ceramic tile as an antidote to the then-raging tuberculosis epidemic. That particular white sale, by some accounts, also explains the Metro's many white-tiled tunnels and stations. Nonetheless, Meier's white is unusual in latterday Paris. Only the basilica of Sacré-Coeur, in certain lighting conditions, appears anywhere nearly as white. But white is just right for the Canal+ river-edge circumstance, and it would probably do well in many others.

Canal+ also reveals a rarely perceived but distinct feature of this city's older buildings: an essential thinness and delicacy in latitudinal section. This aspect is not usually so visible; an opposite impression of deep, massive buildings is often created along Paris streets, because most buildings are arranged superblock-style around internal courtyards and wells.

If Canal+ shows up many of the new buildings around it for the dreadful works they are, it also takes directions deeply rooted in France's architectural and industrial past and provides cues for what could be done elsewhere. Given the lamentable demise of so many great urban industrial artifacts in and around Paris, the Canal+ headquarters shows that this city can still have new buildings that are in their own ways beautiful, industrially useful, likely to endure, and worthy of emulation. This may be why the building's American architect is able to report that he is often greeted by his French counterparts with two English words: "Thank you." **Thomas Vonier** ■

The author, P/A's correspondent in Washington, D.C., now divides his time between the American and the French capitals.

6,7

8

9

The bright Parisian light subtly infuses all parts of the building, fashioning the different concourse levels and even infiltrating the flattened cone of the rooftop cinema (8), the inner sanctum of the channel's highly profitable ventures into film production. The offices behind the curtain wall (9) enjoy a sweeping view of the river. Concern about potential condensation problems was responsible for limiting the extent of this glazed wall to the curved portion of the building. The atrium lobby (10) forms a delicate, light-diffused link between the wings of the building, and between the street and the inner-block park.

(continued from page 46)

systems. Similarly, the treatment of the atrium entrance hall dramatizes the distance between the worlds of production and management: along its longitudinal axis, the foyer acts as a visual link between the street and the park, while its two lateral façades lead off on one side to the closed world of the studios, marked by a diagonal slash of a fire escape, and on the other to the vertical distributions of the offices.

The *promenade architecturale* is punctuated by variations in internal volume and by unexpected vistas of other parts of the building. Indeed, the institutionalized narcissism of Canal+ reflects a constant factor in the architect's work; here it naturally arises from a massing configuration that was greatly refined – rather than limited – by site constraints.

The transposition to Paris of themes dear to Meier's heart has been slightly compromised in that the folded metal angles of the paneled façades have been replaced with sharp edges which, when viewed from certain angles, sometimes give the building an impression of tenuousness. The absolutely transparent façade initially planned for the Seine front was partially dropped for obscure technical reasons, and the gross presence of an automobile ramp positioned by traffic engineers at its feet, will also be regretted.

At twilight, the reticulated light of the Canal+ building transforms the urban scene while materializing the Constructivist ideal of fusion between the building and what it communicates. The relevance of Meier's work, which appears to have been stimulated by the challenge of this difficult site, is underscored by neighboring responses to identical briefs: Canal+ is caught between the Maison de Radio-France, a state communications bunker of the 1950s, and the ostentatious mirror-glass façades of the lowbrow, private-sector TV channel TF1. Canal+ holds up a more complex mirror, reflecting not only the contemporary cityscape, but also the imaginary museums of 1920s avant-garde movements. Eschewing the emblematic accretions of the media era and the metaphorical architecture of ships in port, Meier has succeeded in enriching his *propos* by virtue of his acute sensitivity to local contingencies.

Jean-Louis Cohen. ■

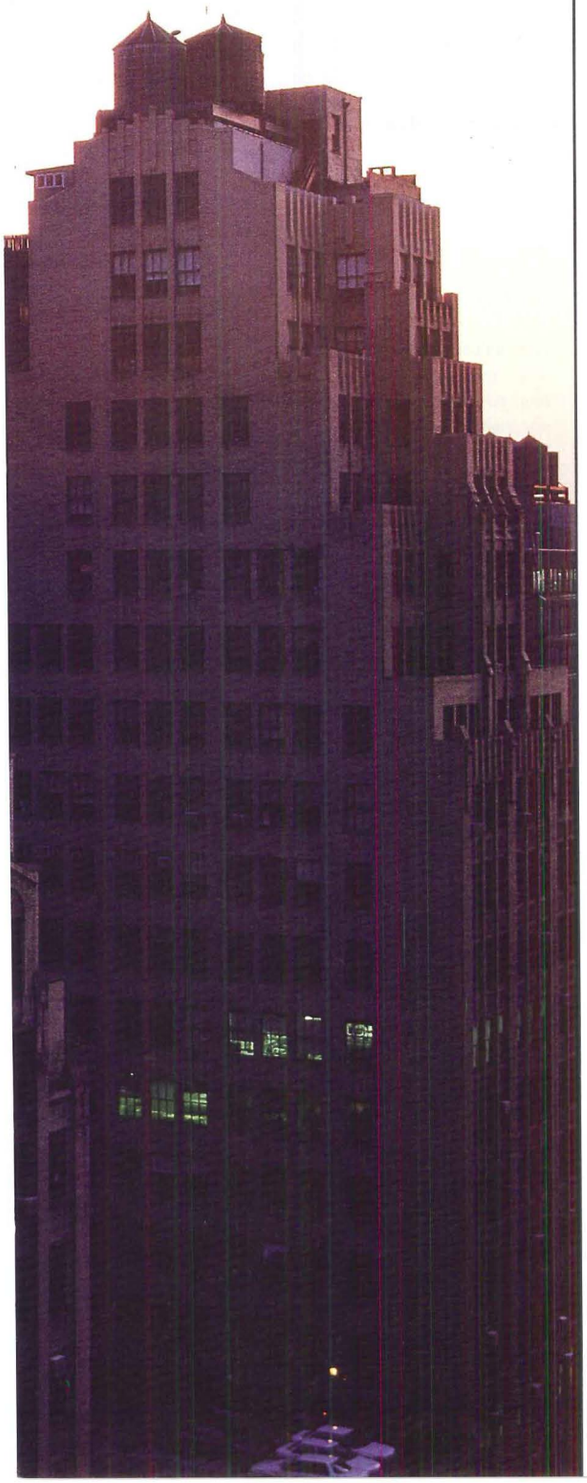
Translated from the French by Kenneth Hylton.

The author, an architect, teaches at the Ecole d'Architecture Paris-Villemin and is a visiting professor at Columbia University.

Project: *Canal+ Television Headquarters, Paris.*
Architects: *Richard Meier & Partners, New York (Richard Meier, Thomas Phifer, design team; Robert F. Gatje, administrative partner in charge; Alan Schwabenland, Rijk Rietveld, Bernhard Karpf, project architects; Stuart Basseches, Steve Dayton, Michael Duncan, Nina Freedman, Mark Goulthorpe, Katharine Huber, Raphael Justewicz, Richard Manna, Jean Mas, Brian Messana, Jean-Michel Meunier, Matthew Petrie, Susan Price, Hans Put, Mihai Radu, John Reed, François Roux, David Shultis, Orestes Valella, François Zajdela, collaborators).*
Client: *Canal+ (Cogedim Aménagement, Paris, owner's representative).*
Site: *on the left bank of the Seine in western Paris, on a lot bounded by the Quai André Citroën.*
Program: *production facilities, studios, auditorium, and offices for Canal+ pay-television company. Total floor area 380,000 sq ft.*
Structural system: *cast-in-place concrete.*
Major materials: *aluminum panels, glass, granite flooring.*
Mechanical system: *gas-fired boiler, central chiller, cooling towers (heat exchangers) above roof of Cévennes building.*
Consultants: *Société SICA, structural; Energo, mechanical; Cabinet Calvi, electrical.*
Construction manager: *Coteba, Clichy, France.*
Photos: *Scott Frances/Esto Photographics.*

Up on the Roof

A rooftop fashion showroom by FTL Architects has an unexpected location and offers an unconventional view of the city.



There is an ominous aspect to the alleyways and rooftops of cities, often home to criminals and addicts. But pop culture has also given us a more positive and more romanticized view of those places, associating back streets and rooftops with personal liberty and freedom from convention.

The latter view finds a particularly apt expression in this penthouse showroom for The Donna Karan Corporation. Part of a larger suite of offices designed by Nicholas Goldsmith of FTL Architects, the showroom stands on the roof of an early-20th-Century loft building in Midtown Manhattan. The existing building had less than the floor area ratio permitted by zoning for manufacturing buildings in the Garment Center district, which allowed the addition of this showroom in the space between the mechanical penthouse and the parapet. The real restrictions on the new structure involved its height and setback, established by the "sky exposure plane" requirements of New York's zoning laws, and its weight: although the showroom has a light steel frame supported on new beams above the roof, the existing steel structure had to be reinforced and the existing cinder roof fill removed to reduce the overall load.

Despite the difficulties of building on a roof, this little showroom seems effortless. You reach it from a top-floor elevator lobby, via a steel stair in a translucently glazed enclosure. Upon entering the tall, narrow space, you look out on a landscape of rooftop water towers, mechanical penthouses, access ladders, and huge billboards, visible through the north-facing glass wall. The showroom itself seems an integral part of that roofscape. Along the room's north face, for example, vertical trusses, made up of steel angles bolted together and painted black, not only support the roof and brace the 30-foot-high glass wall, but hold up huge letters – DKNY – that announce the company's presence on the New York skyline. The showroom is, literally, a billboard building.

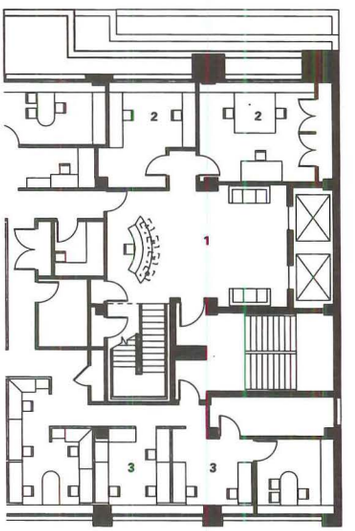
It is also a TV studio, although most of the time you wouldn't know it. On a typical day, the space is occupied by wholesale buyers who come to the showroom to examine the company's various product lines. They browse through clothing hung from custom-designed, cable-supported racks or sit at tables as apparel is displayed on wall-mounted rods. At one end of the room there is a mezzanine meeting area, accessible via a counter-weighted steel stair; above it all, fabric banners and spotlights hang from steel bowstring trusses supporting a vaulted roof.

The same space, however, is transformed for fashion shows. Crews store away the tables, racks, and banners; raise up the counter-weighted stair; set out chairs; install a raised gangplank; and pull out from the wall a series of custom-designed bleachers,

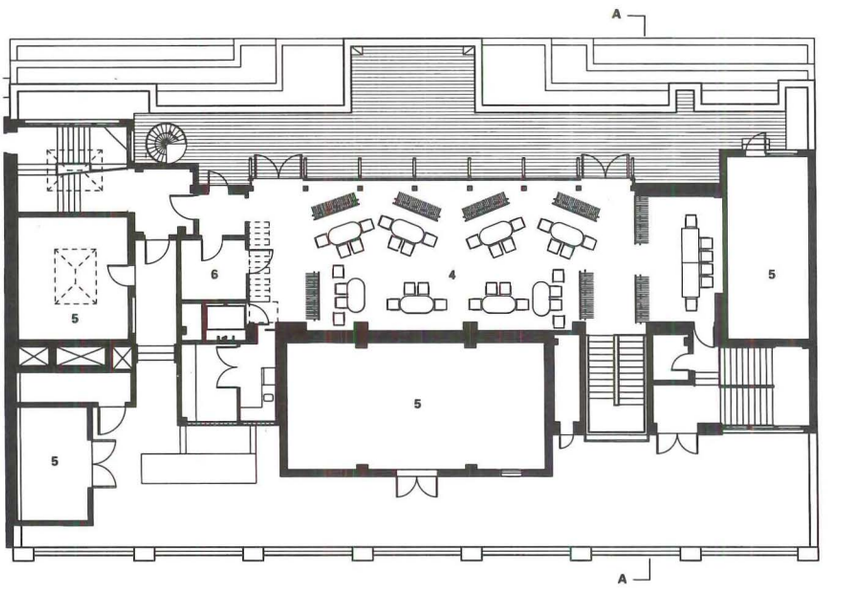
1

The Donna Karan showroom in New York (1) is a steel-and-glass, vaulted-roof pavilion standing on the roof of an older building that contains several floors of offices for the company. Exterior steel trusses, which hold up a large sign displaying the company's initials, recall the black-painted steelwork that supports the neighboring rooftop billboards and water tanks.

1 RECEPTION/ OVERFLOW VIEWING AREA
2 OFFICES
3 BULLPEN OFFICES
4 SHOWROOM
5 EQUIPMENT ROOM
6 STORAGE



PARTIAL 12TH FLOOR PLAN



PENTHOUSE FLOOR PLAN

N 20'/6m

using the wall-mounted rods as grips. Video cameras located in an equipment room at the far end of the space tape the shows and broadcast them through a series of television monitors mounted above the reception desk, allowing overflow crowds (and wheelchair-bound people) to watch the events.

Architecture and Fashion

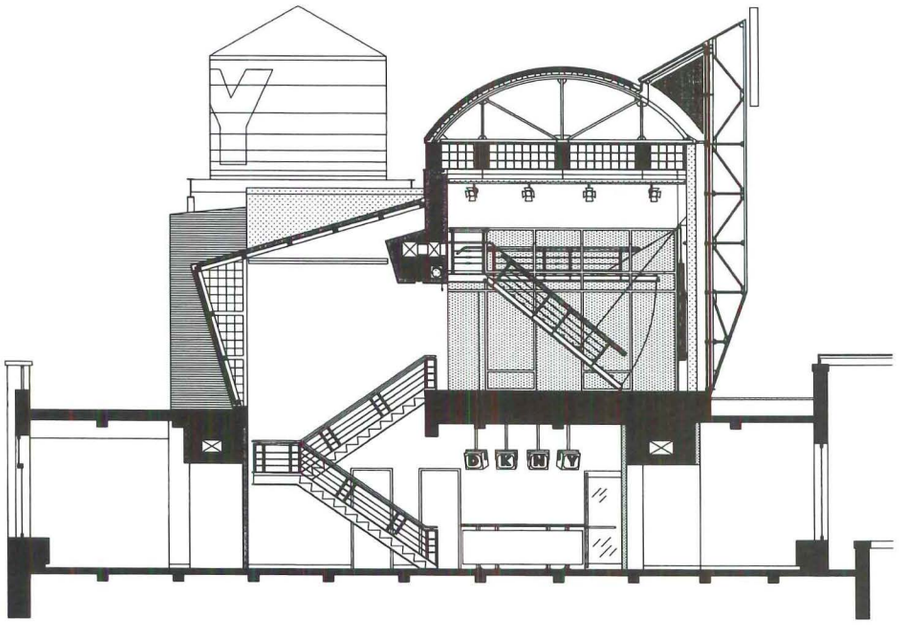
During these shows, architecture, fashion, and the city seem to converge. The showroom's steel-and-glass wall, for example, frames the models against the backdrop of the city, recalling the way fashion photographers pose models in unconventional urban settings – alleyways, waterfronts, rooftops. The architecture, in other words, becomes a kind of three-dimensional simulation of the fashion photograph, a real-time substitution for the fantasies that that genre offers.

This rooftop showroom also seems a perfectly tuned mechanism for consumption. Not only does it raise customers above the street, away from the city's pressures, but it places them in a setting that we have been conditioned to associate with freedom and unconventionality. When you visit the showroom, its subliminal message seems to be: wear this clothing and you will lead a less ordinary life or go places most people do not go.

There is perhaps a lesson here for architecture. Although many in the profession use the word "fashion" in a derogatory way to refer to work that is superficial or trendy, the best fashion design does address deeper issues, such as our yearning for personal freedom and self-transcendence. Some might argue that architecture is not the best medium to explore such psychological matters. But this elegant little structure flies in the face of that wisdom, showing how much overlap really exists between two very different design disciplines. **Thomas Fisher** ■

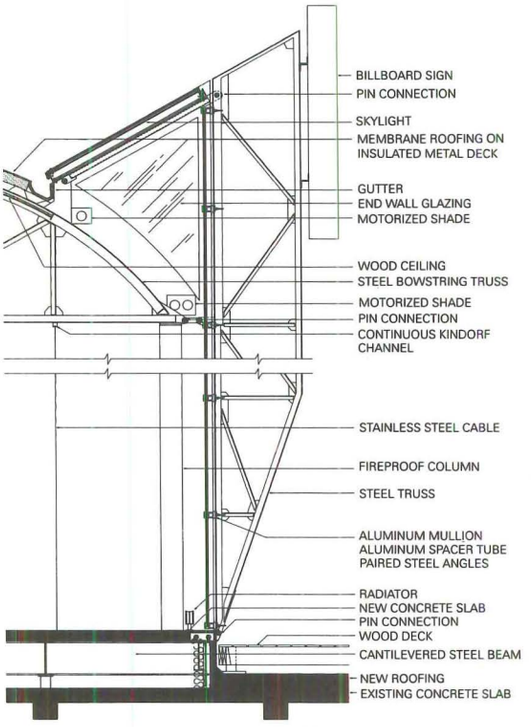
The interior of the showroom (2) has several custom-designed parts, including a counter-weighted steel stair and cable-supported clothing racks. During fashion shows, the furniture is stored away, the stair is raised, and custom-designed bleachers are pulled out of the wall.

Project: *Donna Karan New York (DKNY) penthouse showroom, New York.*
Architects: *FTL Architects, New York (Nicholas Goldsmith, partner-in-charge; Ronn Basquette, penthouse project architect; Eugene Sewell, annex project architect; Robert Riley, Mike Meyer, William Lenart, Ali Tayar, Rudi Scheuermann, project team; Amedeo Perlas, model maker).*
Client: *The Donna Karan Corporation (Stephen L. Ruzow, president and CEO).*
Site: *rooftop of 1920s manufacturing loft building in Manhattan.*
Program: *1600-sq.-ft. clothing and accessories showroom for wholesale sales, capable of being converted into studio for fashion shows and other events.*
Structural system: *steel frame with bowstring roof trusses and exterior steel wind bracing that also supports illuminated sign.*
Major materials: *stucco, glass block, wood ceiling, aluminum windows, translucent panel system (see Building Materials, p. 99).*
Mechanical system: *gas-fired hot water system with perimeter radiation, packaged rooftop air-conditioning units.*
Consultants: *Ross Dalland, structural; Syska & Hennessy, mechanical (penthouse); Laszlo Bodak, mechanical (offices); Charles Hoberman, bleachers; Testwell Craig Berger, glazing; Cutsogeorge Associates, roofing; Audio Design Associates, audio/visual; Light & Space, lighting; Construction Spex, specifications.*
General contractor: *Herbert Construction Company; Reid Dalland, installations; Tobron, furniture.*
Costs: *$4.2 million (1992) for two floors of offices and showrooms.*
Photos: *Elliot Kaufman.*



SECTION AA

10'/3m



WALL SECTION

3'/1m

2

Back-Alley Oasis

Architects Weese Langley Weese convert a dilapidated carriage house into an environment that transcends its ostensible retail function.

1

Simple industrial materials are juxtaposed with the worn brick of the century-old structure. On the garden side (3), re-used steel windows and custom French doors have been installed in new or enlarged openings; off-the-shelf perforated metal is formed into exterior lights. Inside (2), pipe-and-cable stair railings and corrugated metal partitions are juxtaposed with rough-sawn cedar floors on the second floor (brushed concrete on the first), materials that don't show spills and scrapes. Gypboard ceilings, which get no wear, are coated with aluminum paint, which diffuses light from sheet-metal-gutter sources. The rooftop sunshades (1) were fabricated of greenhouse fabric on structural steel tees; although drawings were made, the contractor used models as guides on the site.

Step through an iron gate along North Wells Street on Chicago's North Side, slip along the side of an unremarkable apartment building, and you emerge in a leaf-dappled space before a façade of weathered brick. The whole ensemble lives up to the name "Secret Garden" bestowed on it by client Marion Parry and architect Cynthia Weese.

Strictly speaking a mere annex to Parry's nearby retail garden center, A New Leaf, the garden and the converted carriage house behind it represent much more. Parry's strong second interest is renovating old North Side buildings, and this has led to her almost continuous collaboration, for about a decade, with Weese and with contractor Bob Magyar of Just Construction.

It is clear that rehabbing this building responded to motives beyond the uses Parry puts it to: a holding area for potted shrubs and flats of plants in the garden, space inside for drying plant materials and for storing objects she uses or lends out for photo shoots. (A four-car garage on the alley side had to be retained under zoning.) It is clear when Parry talks about the place that she loves it mainly as an architectural complex to be savored on its intrinsic merits.

The angular sunshades over the roof deck are ostensibly to shelter plants, but their butterfly-like figures can enhance either summer parties or solitary contemplation. Seen around and through these mesh planes, the rather grungy surrounding backyards and alleys form a sculptural diorama.

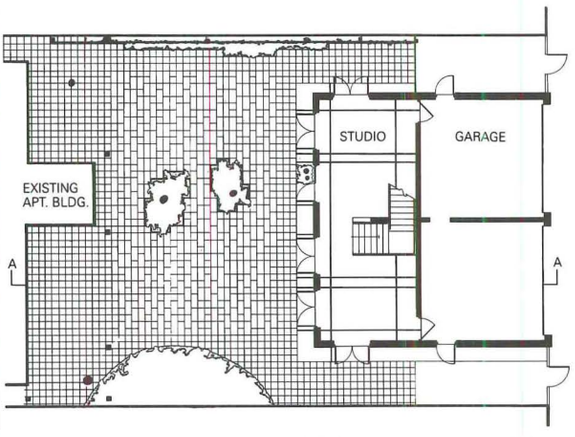
Architectural alterations to the old carriage house are minimal but by no means routine. Steel-framed casement windows were salvaged from an old apartment house undergoing retrofit; savings on the reused windows helped pay for the custom-fabricated steel doors that reiterate their thin-lined elegance. Inside, standard steel components have been assembled into an elegant stair and sheet-metal gutters used for up-lighting.

There are no pressing functional demands here, no public image, no vaunting architectural ambitions – just an attitude of quiet satisfaction with construction elements and plant life. One could attribute this environmental restraint to the collaboration of a woman architect and a woman client, but the men associated with the project must have shared the same sensibilities – and a male architectural editor can clearly see here a design ethic worth emulating. **John Morris Dixon** ■

2

3

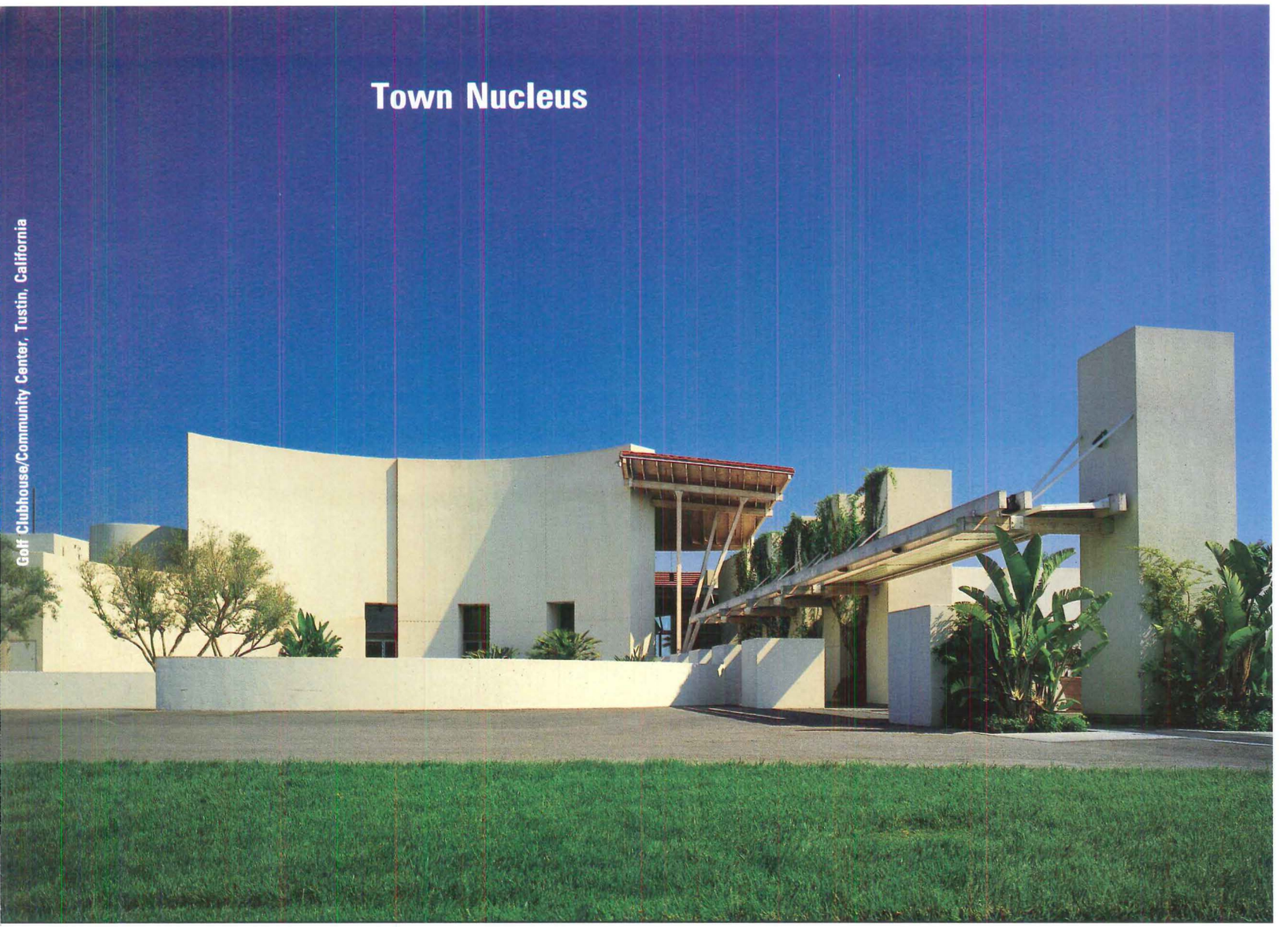
SECTION AA



GARDEN/FIRST FLOOR PLAN N 20'/6m

Project: *Secret Garden, Chicago.*
Architects: *Weese Langley Weese, Chicago (Cynthia Weese, principal in charge; Richard Klein).*
Client: *Marion Parry.*
Site: *garden and carriage house on 4000-sq-ft site behind an 1890s commercial/apartment building.*
Program: *convert two-story carriage house into space for retail garden center; four-car garage remains. 2740 gross sq ft in building, plus 2200-sq-ft garden and 1000-sq-ft roof deck.*
Structural system: *brick bearing walls, wood framing (existing); steel tees for roof shelter.*
Major materials: *exposed brick, steel doors and casements, steel stairs; galvanized ribbed siding (see Building Materials, p. 99).*
Mechanical system: *ground-floor radiant slab; forced-air heating.*
General contractor: *Just Construction.*
Photos: *Jamie Padget, Karant Studio (2, 3); Wayne Cable (1).*

Town Nucleus



Golf Clubhouse/Community Center, Tustin, California

1

A new golf clubhouse by Rob Wellington Quigley doubles as a center for community social activity.

As Orange County, California, development presses inexorably east toward the Santa Ana Mountains, one of the towns to come into being on its easternmost "frontier" is Tustin, just east of Santa Ana. A relatively new community, Tustin is under the aegis of the Irvine Company, developer of the extensive properties comprising a major portion of the county. Roger Seitz, a former partner at Skidmore, Owings & Merrill, has for some time now been a vice president at the Irvine Company, with major responsibility for design done for the organization. Reaching outside of Orange County, the company commissioned San Diego architect Rob Wellington Quigley to design a new dual-purpose facility, the Tustin Ranch Golf Course Clubhouse and Community Center.

Quigley made a conscious decision not to take the design direction of this center from the "Spanish" housing forms that surround the site, since the function and community role of this facility were entirely different; however, he did rely on the predominant materials and colors of the area to provide compatibility. While the most visible activity that takes place here is golf, the center is intended to be the social hub of Tustin as well, a role reflected in the lounge, dining, and banquet facilities.

Adjoining the entry porte-cochère is a relatively unadorned circular court, defining the center of the golf course as well as of the community itself. Olive trees line the two long sides of a narrow, rectangular grass bed that intersects the circle and penetrates some distance into its paved surface. In addition to the entry, functional necessities such as circulation, locker facilities, and kitchen encircle about one-half of the court. A serene concave stucco wall that forms the backdrop for the court is punctuated only by three door slots, and was intended, together with the shaded arcades of the building, to create a sense of early adobe missions rather than thin-walled residential construction. Quigley wanted the building "to have a solidity and romance that will make it seem to have existed long before the surrounding development."

Appropriately, the more populated functions, primarily the indoor and outdoor dining areas, but also the golf pro shop, share a wide panorama of the golf course beyond. On this side of the building, both the architectural and the human activity create a busier image than that of the entry

2

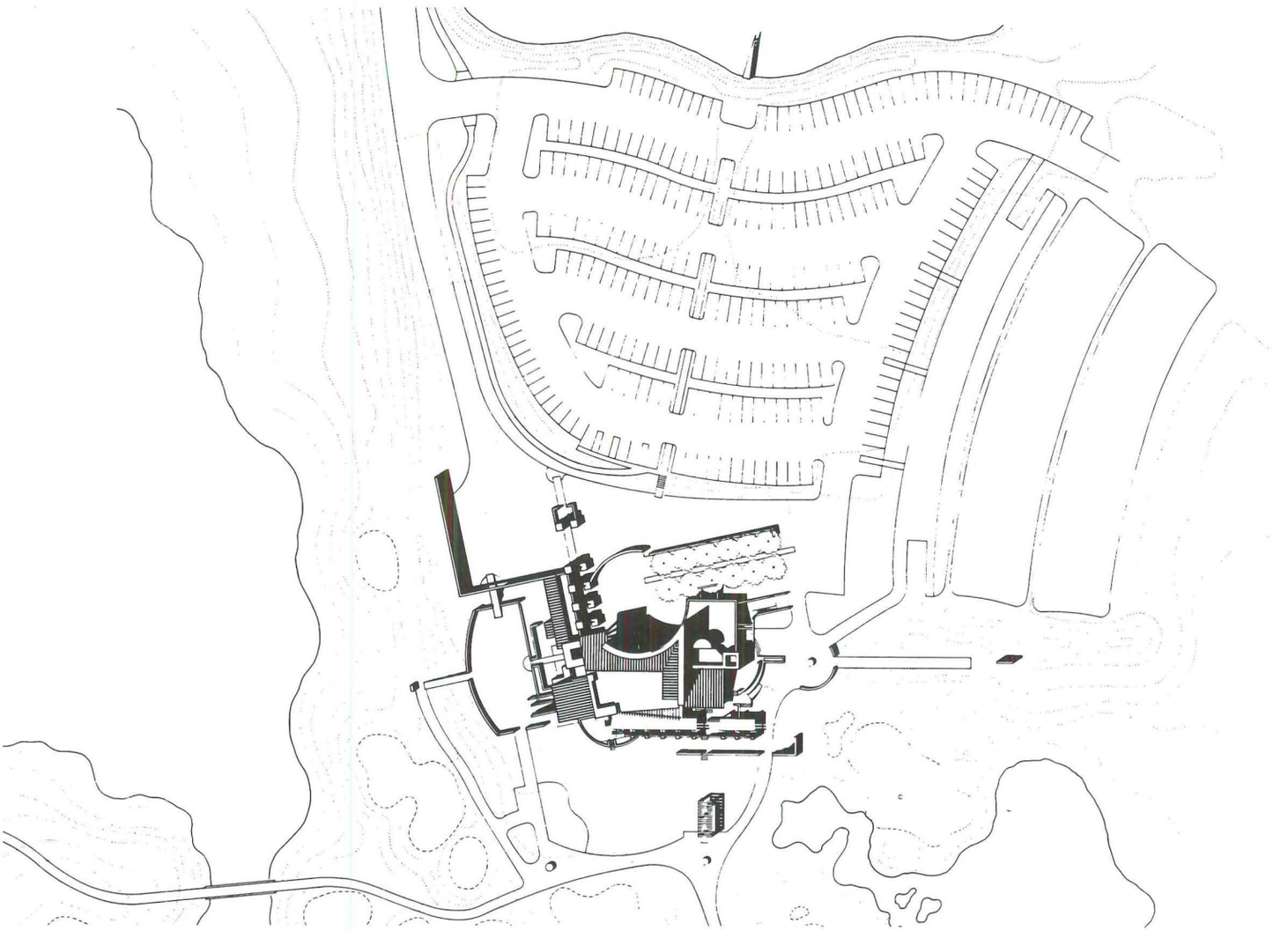
3

side, a result of some compromises Quigley admits he had to make. Certainly, no early missions are recalled here, a fact of life that he regrets. But one doesn't get sweeping vistas from inside a mission.

Further lessons from early Hispanic California architecture, the architect notes, came from the juxtaposition of the simple and powerful plaster surfaces to the rich detail of the wood ceilings, the delicate metal details, and the tracery of flowering vines. The interior detailing does create warmth and richness, and the inclusion of translucent plastic panels helps bring to mind an almost oriental character in places. This is reinforced by carefully controlled details around the clerestory windows in the higher portions of the spaces; the treatment is effective, even if at first glance this upper wall construction resembles that of unfinished stud walls. Further scrutiny proves, however, that the assembly is anything but incomplete.

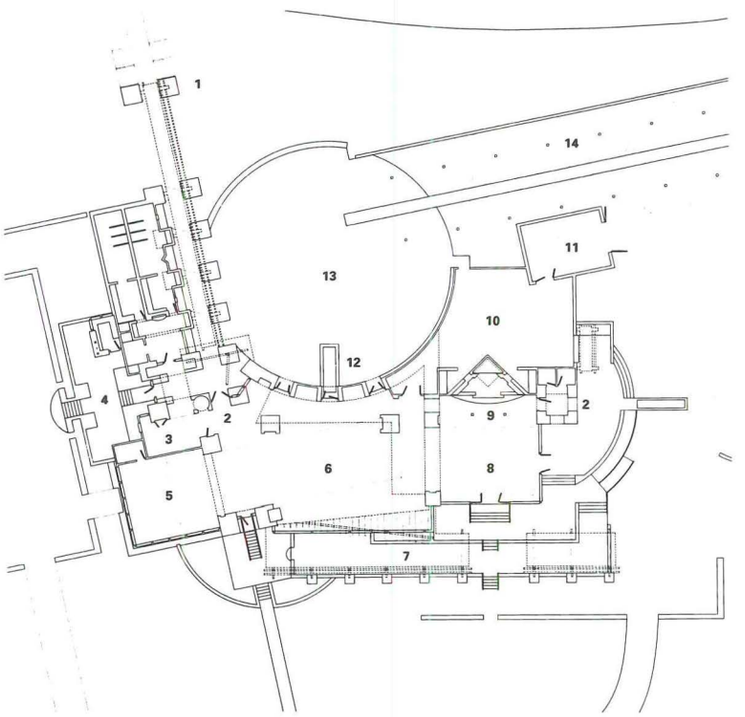
Taken as a whole, the building is a skillful composition, successfully employing cues from a past architecture in a nonliteral way. Its interior creates a smooth flow of spatial experiences, both in plan and in volume. To varying degrees, the exteriors achieve the sense of permanence the designer intended. There can be no mistaking this facility for something residential, even though it pays adequate respect to the architecture of the area. Especially from the entry side, the bold simplicity makes it abundantly and beautifully clear that this is a civic building of major importance. **Jim Murphy** ■

The entry porte-cochère (1) is tangent to the spare circular court defined by a serene concave wall at the front of the building (2). There is a small pool in the court just outside the middle of three openings in the wall. The court may also be entered from inside the building through the other two openings in a circulation area off the glazed entry vestibule (3). Seating is provided in recesses along the inside of the curved wall. It is in this quietly dominant entry wall that Quigley has vested much of his design intent to make the facility look like a longtime resident of the area, reminiscent in a non-literal way of mission architecture.



SITE PLAN

N ↗ 100'/30m



1 PORT-COCHERE
2 ENTRY
3 OFFICE
4 SNACK TERRACE
5 PRO SHOP
6 DINING ROOM
7 DINING TERRACE
8 BANQUET ROOM
9 BAR
10 KITCHEN
11 SERVICE COURT
12 REFLECTING POOL
13 COURTYARD
14 OLIVE GROVE

FLOOR PLAN

N ↗ 40'/12m

A narrow rectilinear grass strip carries past a grove of olive trees (4), cutting an artful and pronounced slice out of both the circular paving and the gravel bed outside the circle. From the minimalism of the court, the opposite side of the building (5), with dining areas and pro shop facing the golf course, is more active architecturally, owing to the desire to provide lush views of the links for diners. Veranda seating areas overlooking the course create a highly enjoyable place from which to enjoy a fine afternoon, something offered up in quantities much of the year in Southern California. It is these areas and the dining amenities that help the building carry off its dual role as clubhouse and community center.

4

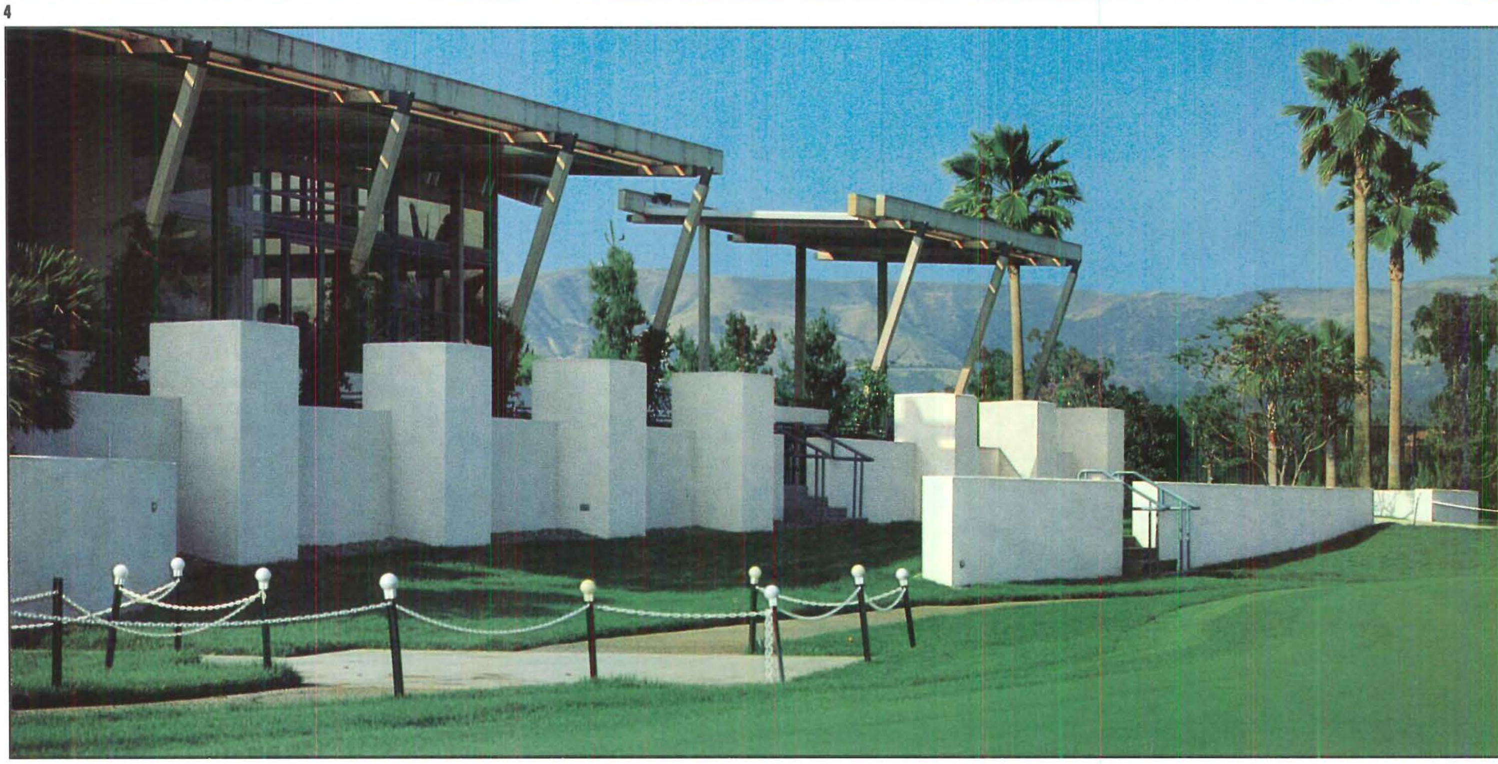


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Photo: Rob Wellington Quigley

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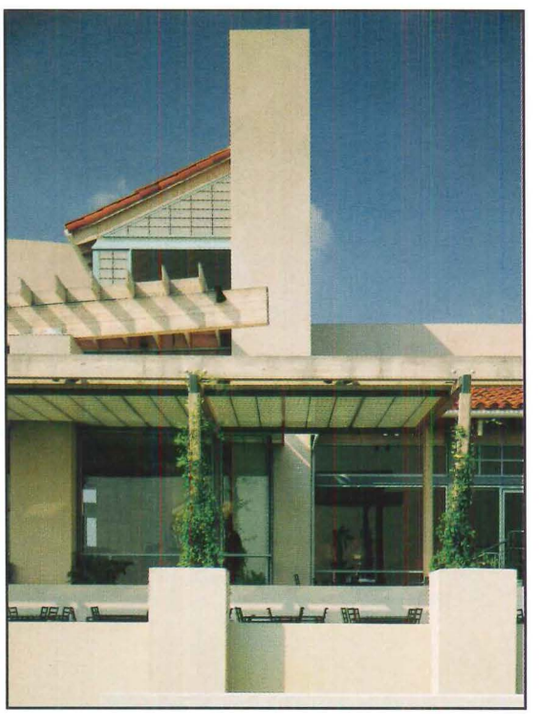

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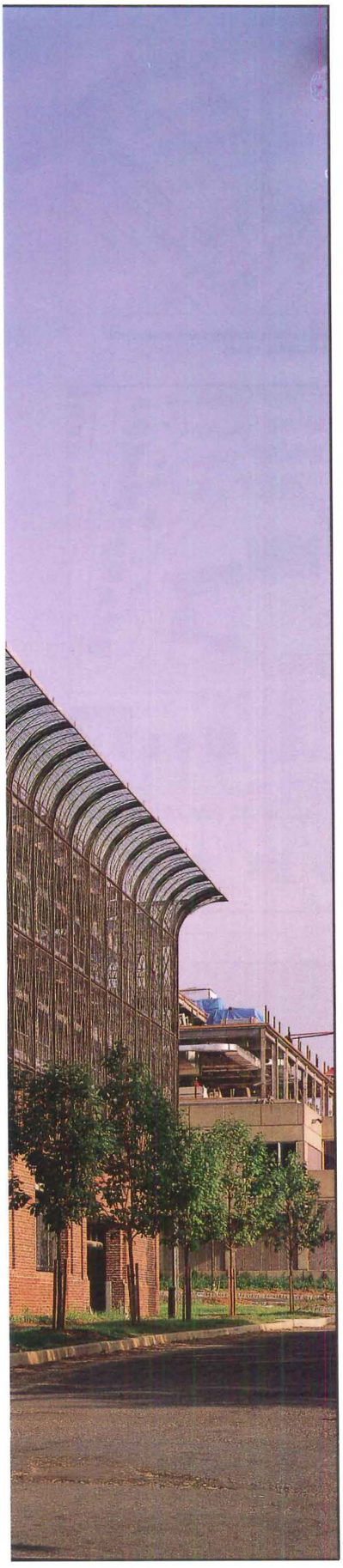
Translucent plastic panels shade the veranda areas, helping to cut out afternoon sun (7) and reduce glare in the main dining areas (6). Further use of the translucent material in the walls, the careful treatment of the exposed wood framing, and the filtered light from clerestory and skylights combine to create an oriental feel to the space. There is a certain sense of colliding elements on the exterior of the rear façade (8) which reverses the serenity found in the entry court. However, the quality and intricacy of the detailing produce their own brand of calmness, especially on the interiors. If the initial impression, when looking up at clerestory windows near the entry, is of unfinished stud walls (9), clarity and utility of detail disabuse viewers of this opinion.

Project: *Tustin Ranch Golf Course Clubhouse and Community Center, Tustin, California.*
Architects: *Rob Wellington Quigley, FAIA (Rob Wellington Quigley, principal, Bill Behun, project architect).*
Client: *The Irvine Company, Roger Seitz, vice president.*
Site: *five and one-half acres in the middle of a golf course and tract house development.*
Program: *golf course clubhouse and community center with lounge, banquet rooms, kitchen, golf pro shop, and golf cart storage.*
Structural system: *type V wood frame with truss joist and flooring over concrete block basement.*
Major materials: *stucco, glass, translucent plastic panels, tile roof, and carpet, slate, quarry tile and rubber flooring (see Building Materials, p. 99).*
Mechanical system: *electric heat pump.*
Consultants: *AMS Engineering, structural; Studio Kuhnen, interiors; Patrick Quigley & Associates, lighting; FORMA, landscaping; Christopher Lee, sculpture.*
General contractor: *R.D. Olson.*
Photos: *David Hewitt and Anne Garrison, except as noted.*

Scrim-side Parking



A lattice of bronze, at once refined and assertive, screens Princeton's new garage

by Machado & Silvetti.

It's hard to like parking garages. They're storage shelves for inanimate machines, buildings where people scurry in and out while cars roost, having wrested a stronghold on the pedestrian's terrain. Public points of entry by default, rather than intention, garages are architectural exiles (their ubiquity notwithstanding) built to accommodate cars, not people.

Princeton University expected, and received, a loftier accomplishment for its first garage. Designed by Machado & Silvetti Associates, a familiar presence in P/A's annual awards issues (most recently in January 1991, pp. 118 and 128), it is a 409-car structure enclosed by walls of brick and a bronze lattice hung from a steel frame. Princeton paid for a premium quality garage – with a plan and fittings far more generous than is the norm – a building that should last for decades before it needs rehabbing.

The suspended lattice is a scrim that floats above a brick plinth, the extension of a wall by McKim, Mead & White. Twenty feet tall, the old wall hides the garage from Prospect Avenue, a neighborhood of undergraduate eating clubs in the guise of mansions. To the north, on the opposite side of the garage, is the Engineering Quadrangle, one of Princeton's less inspired legacies of midcentury Modernism. As often happens on Princeton's collaged campus (see P/A, April 1992, p. 127), the Quadrangle grew without a strategy to link it to its environs. In 1989, when new construction was mandated, the university commissioned a development plan for the Quadrangle from Machado & Silvetti. Their garage, the first of several buildings in the area, creates a solid corner on Prospect Avenue, its bulk mitigated by its layered façades.

Princeton's lush landscape, a fabric that blankets the gaps between buildings, inspired Machado & Silvetti's lattice: the south façade of the garage, screened by a painted metal grid, will become a wall of ivy, the edge of an outdoor room behind McKim, Mead & White's wall. On the three remaining façades, the lattice, built of bronze, terminates in a curved profile, a graceful lid unburdened by any connotation of a compressive load. A curtain wall reduced to metal strips, the lattice brings to mind Gottfried Semper's proposition in *The Four Elements of Architecture* (1851) that façades, which began as carpets suspended from a frame, are textural, rather than tectonic in nature.

The screen is a veneer, but not a mask, a façade alternately transparent and reflective. When you see the lattice head-on (without direct sunlight) the shaded floors of the garage are more noticeable than the screen. Seen at an oblique angle, the mesh looks like a corrugated surface that gleams in the sun. From all aspects, it is a skin stretched taut above the plinth, a tensile wall suspended over a base in compression. Broad voids with segmental arches modulate the masonry and create deep reveals – a device used by Louis Kahn in his brick walls. Like him, Machado & Silvetti make modern reinforcements part of the aesthetic. At close range to the garage, you can see steel lintels and imposts, cues that the arches are not load bearing. The brick base is a cavity structure, a rhetorical counterpart to the 1911 wall.

While Machado & Silvetti's garage is intellectually elegant, it doesn't disguise its utility. This is a large-scale piece of campus infill, with an unavoidably broad floor plate (it's a "doughnut" plan – a two-way ramp surrounded by stalls). Nonetheless, the garage's lumbering character seems intentional: copper panels with small apertures clad the stairwells like sentries on guard. The lattice and colonnade on the north façade are horizontally divided just off center (an uncomfortable split), perhaps an intentional departure from proportions created for load-bearing walls. To me, the results are evocative, yet free of sentiment: Machado & Silvetti's work is sober, but not dry, informed by Classical precursors without any attempt to resurrect them. But others – including some of my colleagues – are less impressed, and see simply an ungainly building. (See the sidebar on p. 69.)

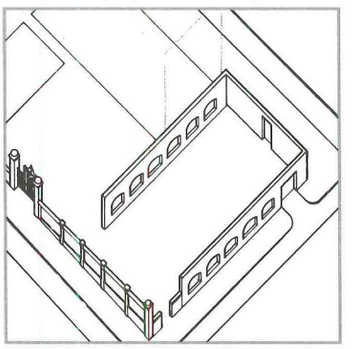
The concave lid, whose emphatic profile appeals to many, but not all, is akin to the lifted and elongated cornices that have appeared in several Machado & Silvetti projects – a thin band that accentuates the building's cubic volume while casting a shadow on it. At Princeton, the lid avoids cliché: it is not imposed on the garage, a structure without a roof, but is adapted to it. On the north façade, the light of the late afternoon sun falls behind the coved lattice, casting a shaded grid on the masonry wall. It's a silent structure that looks – and is – uninhabited. This is a shadowy warehouse for cars, a new structure that seems decades old.

Philip Arcidi ■

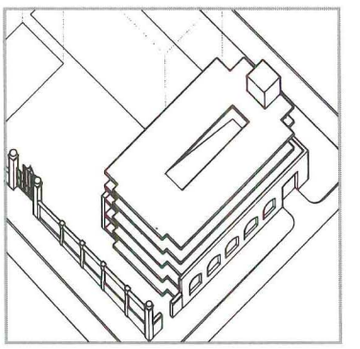
Princeton's parking structure is entered from the driveway that links Prospect Avenue to the Engineering Quadrangle in the distance (1).

The steel colonnade of the north façade, the dividend of a hefty budget, is symmetrical about the copper-clad elevator tower (2). Its canopied entrance, like the car ramp inside, marks an axis perpendicular to Prospect Avenue on the opposite side.
The bronze lattice, treated to stay dark brown, extends from the brick wall to the colonnade (3). This metal wall also hangs like a curtain in front of the cavity-wall plinth with segmental arches set in steel frames (4).

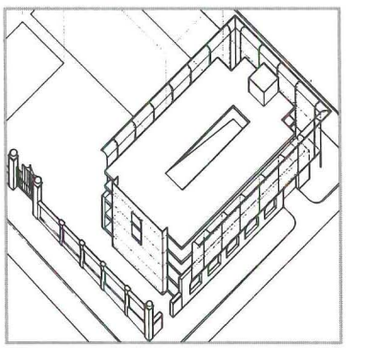
Project: *Princeton University Engineering Quadrangle Parking Structure, Princeton, New Jersey.*
Architects: *Machado & Silvetti Associates, Boston (Rodolfo Machado, Jorge Silvetti, principals; Peter Lofgren, project architect; Gerard Gutierrez, Barry Price, project team).*
Client: *Trustees of Princeton University, Office of Physical Planning (Jon Hlafter, Director), Princeton University.*
Site: *Most recently a parking lot, the site is separated from Prospect Avenue by a 20-ft brick wall on the south side; the Engineering Quadrangle, built in the 1960s, lies to the north.*
Program: *parking for 409 cars, an elevator, and three staircases in a 140,000-sq-ft structure.*
Structural system: *cast-in-place concrete decks on galvanized steel frame with spread footings.*
Major materials: *CMU/brick veneer cavity wall, non-patinating bronze grille, painted metal screen, copper cladding (see Building Materials, p. 99).*
Mechanical system: *electrial service, security system, and campus telephone; an emergency generator was installed for adjacent buildings.*
Consultants: *Lim Consultants, structural; Cosentini Associates, mechanical; Berg Howland Associates, lighting; Richard White, specification; Van Note & Harvey, landscape (and civil engineering for the University; BFHK & J, traffic engineering for the University; Henderson Company, estimating; Nassar Design, graphics.*
General contractor: *Irwin & Leighton.*
Costs: *not available.*
Photos: *Chuck Choi.*



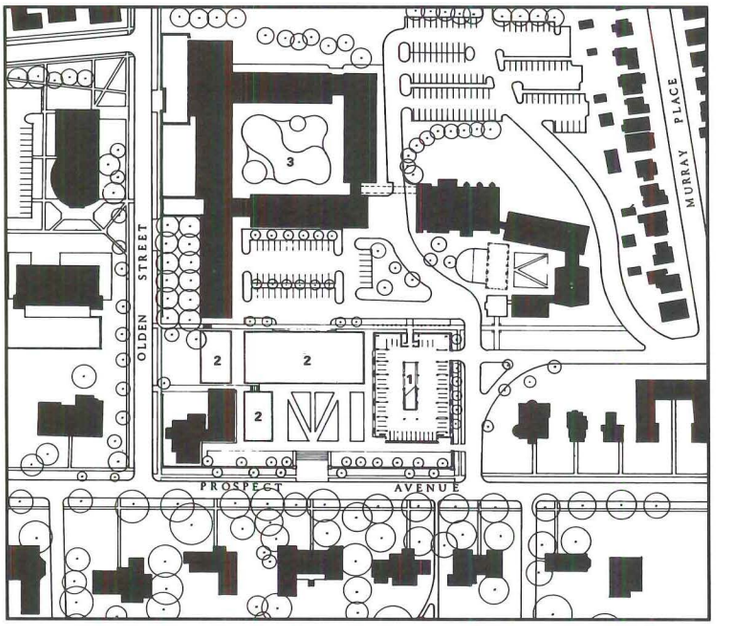
THREE NEW WALLS MARK PERIMETER OF GARAGE



PARKING SPACES PROVIDED BY FIVE CONCRETE SLABS



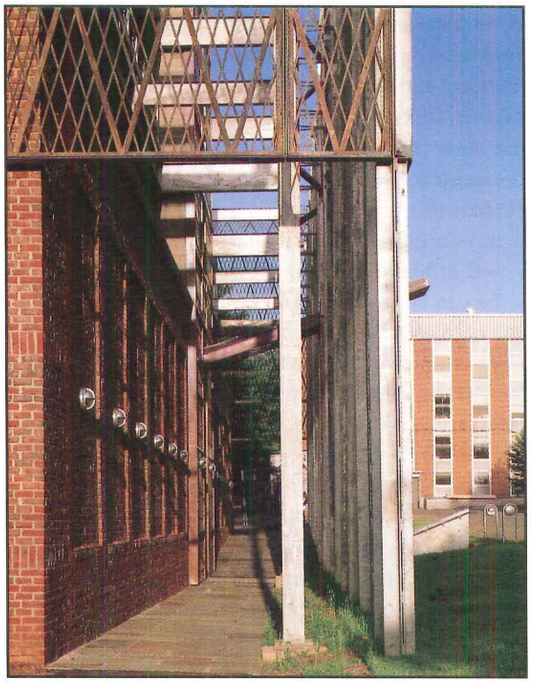
BRONZE LATTICE SCREENS ARE HUNG FROM EXPOSED STEEL FRAME



1 PARKING GARAGE
2 ENGINEERING BUILDINGS (PROPOSED)
3 EXISTING ENGINEERING QUADRANGLE

SITE PLAN, AS PROPOSED IN DEVELOPMENT SCHEME BY MACHADO & SILVETTI

2



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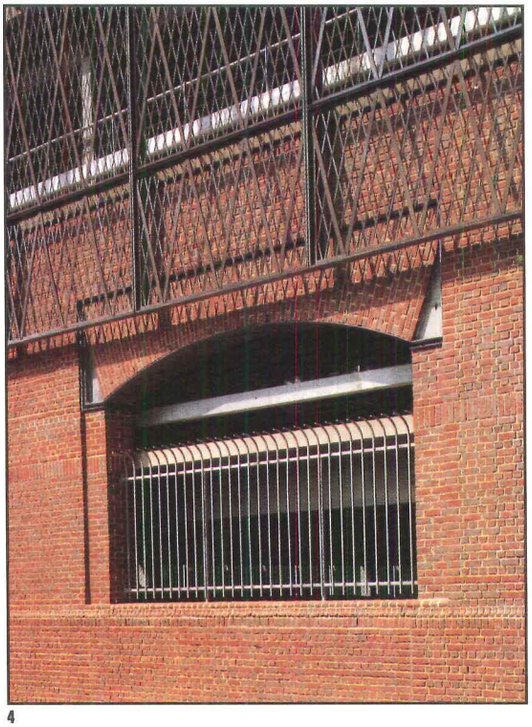

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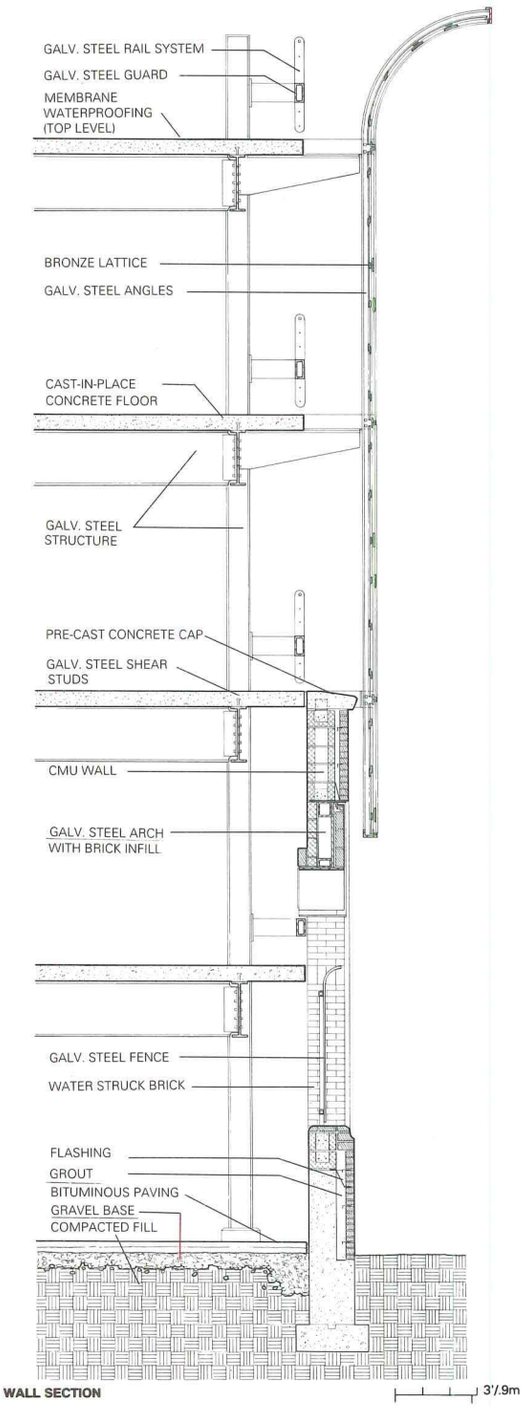


WALL SECTION

Other Editors' Views

P/A's editors had serious differences of opinion on the merits of this project (as is frequently the case), so we are taking this opportunity to inaugurate a new recurring feature that will give voice to the dissenting – and concurring – opinions of our staff. First, though, a caveat: except for Thomas Fisher's, these thoughts are based on the review of photographs and drawings, not on site visits.

The main objection cited among editors is to the building's screen walls, which were thought by some to have an overly aggressive, menacing quality. Ziva Freiman noted in the outward-curving cornice an uncomfortable resemblance to prison-camp fences; this association, she suggests, is reinforced by the fence at street level. Mark Alden Branch contends that if the building is intended to elevate the design of parking garages, it is unsuccessful: "The screen wall takes what would have been a benign – if banal – façade and makes it actively hostile."

Where others see menace, John Morris Dixon sees a suggestion of appliquéd Gothic decoration in the screens. Without visits to the site, he cautions, it is hard to judge the true scale of the screens, hence whether they look threatening, frivolous, or just right.

Thomas Fisher likes the screen wall; he suggests a resemblance to the work of Edward Durell Stone and Minoru Yamasaki (most notably, Yamasaki's Robertson Hall down the street, with its flared cornice).

"They are probably the last architects anyone today wants to be compared to," says Fisher, "but this garage shows that we still have something to learn from them and someplace to go with their ideas."

Report from Springfield, Missouri

The first in a new series of P/A reports takes up the troubled relationship between architects and developers in a small, heartland city. Thomas Fisher reports.

Why is there often such animosity between architects and developers? Is it simply that familiarity breeds contempt or is there something larger and more important going on? Such questions were on my mind as I waited in a Springfield, Missouri, hotel to meet with the developer John Q. Hammons. I had come to Springfield for other reasons, having been asked to give a talk at the architecture school at Drury College. But a friend who lives in the city told me about Hammons, one of the largest hotel developers in the country, and I decided to stay on for a few days to find out more about him and his relationships with architects. To illuminate the the murky waters in which architects and developers swim, I thought it might help if the fish were big and the pond relatively small.

And Hammons, an older man with a stocky build, a round face, and a downturned mouth, is, indeed, a very big fish in Springfield. When he arrived for lunch, with his in-house architect, Steven Minton, at his side, we sat at his reserved, corner table at John Q's restaurant, in a Holiday Inn developed by John Q. Hammons Industries, which faces the John Q. Hammons Parkway. Nearby stands the John Q. Hammons Building, the Hammons Tower, and the Hammons Fountains, the Hammons Student Center, the Juanita K. Hammons Hall for the Performing Arts, and Hammons House, all at Southwest Missouri State University. A short drive away you will find the Hammons School of Architecture and the Hammons Heart Institute at St. John's Regional Health Center, to which flies the Hammons Life Line helicopter. Hammons, I decided, might have several virtues, but humility was probably not one of them.

As he and I talked, I realized that Hammons was not just a big fish, but also a rather odd fish, being old-fashioned in ways that are both good and bad. For example, unlike many developers who have learned, perhaps grudgingly, to pay attention to preservation groups and to respond to public pressures of various sorts, Hammons scoffs at such things. He tells, with evident pride, that when developing the 50 acres of buildings among which we sat (where, apparently, there once stood a neighborhood of fine, late-19th- and early-20th-Century houses), he did an end run around a hesitant city and preservationist opponents by getting financing from out-of-town banks, buying the land, and clearing it. And, as a major developer of Holiday Inns around the country, he responds with equal disdain for older hotels: "The hotel industry is not overbuilt, but under-demolished."

If Hammons lacks some of the sensitivity of other developers, however, he also seems to lack some of their greed. Unlike developers in the Donald Trump mold, who have rather high rates of personal consumption, Hammons lives in a relatively modest house, occupies fairly ordinary offices, and engages in rather extensive philanthropy, which is why everything short of the city itself seems to have his name attached to it. No one I talked to in Springfield could deny that he had helped the city through his good works.

But it is hard to find local architects who think that what Hammons has developed is good work, architecturally. He has made his fortune developing hotels that are hard to distinguish from one another and office buildings similarly wrapped in tinted glass. As I spoke with Hammons, it also became clear that architectural excellence is not uppermost in his mind; he seems to see what he does as more akin to manufacturing a product than to the creation of architecture. He has, for example, set up an in-house architectural staff because, he says, it is more cost-effective and efficient than hiring outside firms for every project and because he can control the results more effectively. (Hammons's in-house staff occasionally produces contract documents, but most often it does everything through the design development phase and then passes the 1/4" drawings to outside firms who prepare the documents. But, as one architect told me, it is difficult to make money doing that, since a fair amount of uncompensated time is spent resolving details before the contract documents can be done.)

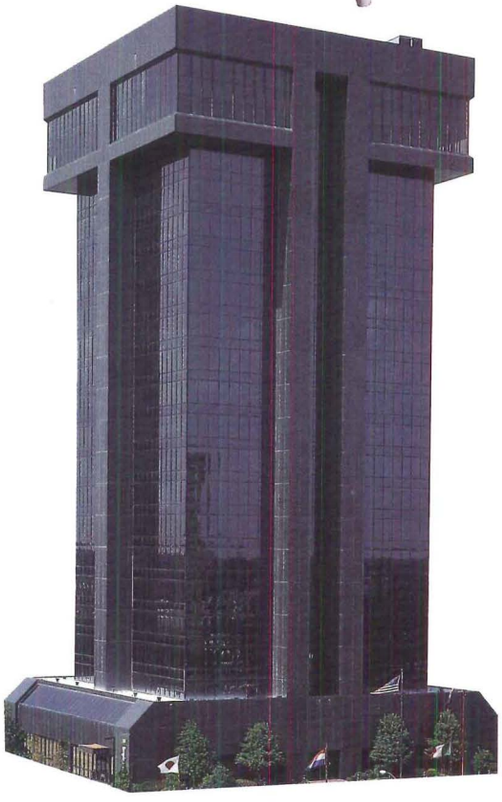
He is also quick to dismiss architects who "want to invent something new with each project," perhaps because they do not fit his manufacturing mode of development, where the predictability of the product is what matters, not its individuality. Hammons, of course, does not represent all developers. Obviously a number of his colleagues have found a niche in the marketplace by developing singular buildings by noted architects. But Hammons's view of architecture as a kind of commodity is probably more widespread among developers, especially when you include home builders, with their emphasis on creating familiar imagery (the house's "curb appeal"), providing expected features (master bathrooms as big as the garage), and avoiding anything not already tested in the marketplace (lest it affect the resale value).

It would be tempting, here, to trot out the old clichés about architects and developers – that architects are prima donnas who want to make a work of art out of every project and that developers are philistines who simply want to make the most money, however boring or ugly their projects may be. And it would be easy to point to these differences as the reason so many architects and developers seem not to get along. But I think the relationship between the two is more complicated and more interesting than that. To see what I mean, consider for a moment the context within which Hammons practices.

Three Phases of Industry

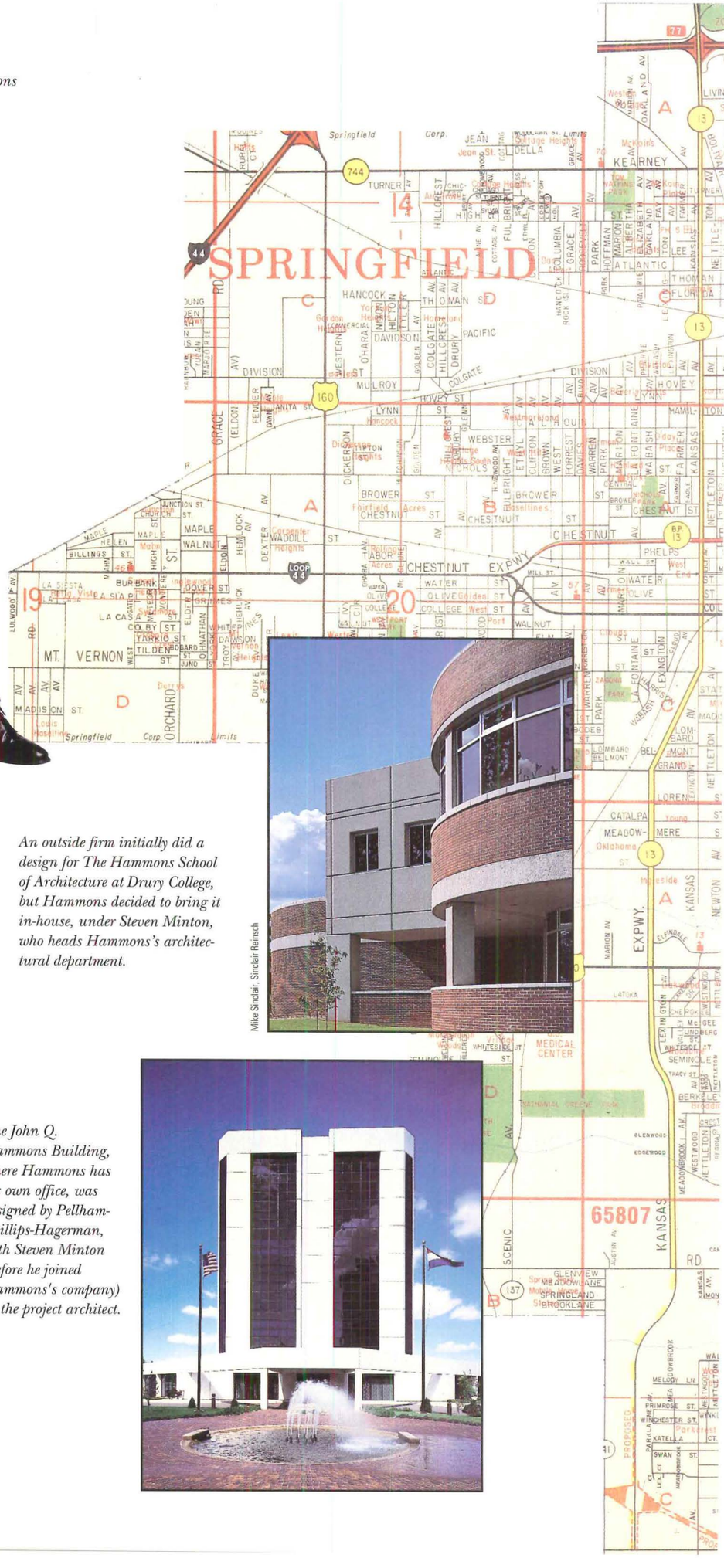
Springfield, like so many cities, has gone through three phases of industrialization in the last 100 years or so. The first phase after the Civil War left its physical remains: the brick loft buildings along Commercial Street and in the brick industrial structures in the valley near the city's institutional and governmental core. These relatively small-scale buildings were constructed to house industrial production methods that predated the assembly line. Most products were made by

John Q. Hammons



Dan Rockafellow

Hammons Tower, by Hood & Rich, is one of the few recent projects developed by Hammons that was done almost entirely by an outside firm.



Mike Sinclair, Sinclair Reinsch

An outside firm initially did a design for The Hammons School of Architecture at Drury College, but Hammons decided to bring it in-house, under Steven Minton, who heads Hammons's architectural department.

The John Q. Hammons Building, where Hammons has his own office, was designed by Pellham-Phillips-Hagerman, with Steven Minton (before he joined Hammons's company) as the project architect.

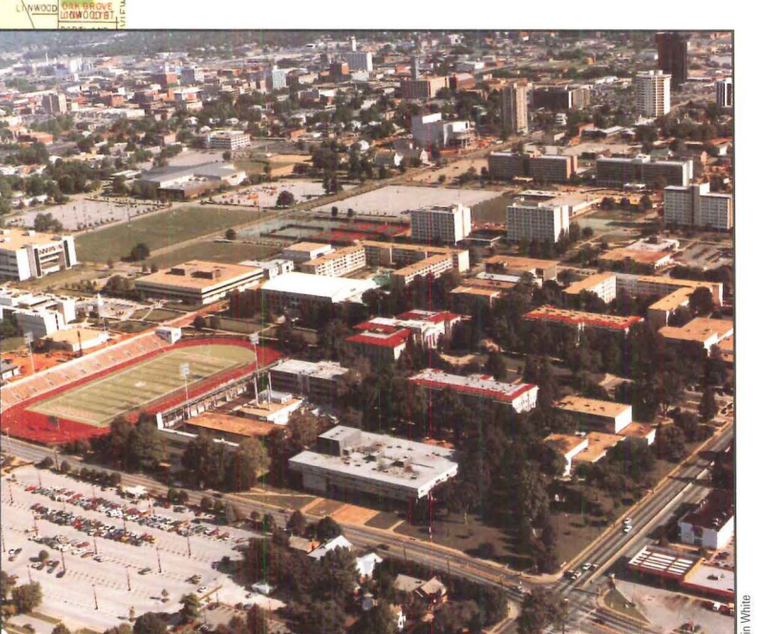
View of one of the many suburban strips in Springfield.

Postcard: James Blank Photo

Patricia Pierce

The Juanita K. Hammons Performing Arts Building was designed by a joint venture of two Springfield firms: Pellham-Phillips-Hagerman/ Butler, Rosenbury & Partners. Hammons had little involvement in the design.

Favorite elements in the atriums of the hotels Hammons develops include glass elevators and fountains.



Kevin White

Aerial view of central Springfield, with the state university in the foreground and with Hammons' s development visible in the upper right and the old downtown visible in the upper left of the photo.

skilled people at stationary positions, and carts were used to move components around the factory.

The second phase of industrialization came to Springfield after World War II. Several nationally based companies built large manufacturing plants in outlying areas of the city, where land was less expensive and truck access easier. Unlike the earlier factories, these plants are mostly windowless boxes on a single floor, to accommodate assembly line production and to allow almost any type of product to be manufactured there. The result was a kind of depersonalizing of factory architecture, curiously parallel to the de-skilling of the work performed within these buildings, as assembly line workers increasingly handled simple, repetitive tasks with highly complicated equipment.

But Springfield – again like many other cities – is now going through a third and rather more painful phase: the de-industrialization of the city as the same out-of-town companies move their manufacturing operations to other parts of the country or the globe, where labor is less expensive. This is happening, in part, because of advances in transportation technology that allow raw materials and finished products to be shipped economically over long distances, and advances in manufacturing equipment that simplify tasks to the point where almost no skill is needed to run increasingly automated machinery. More and more manufacturing, in other words, can now be done almost anywhere, and in almost any facility.

Three Phases of Development

As it turns out, the service economy seems be going through similar changes, with a potentially dramatic effect on both architects and developers. In Springfield, the first phase of the service economy, based on office and retail employment, culminated in the development of a dense commercial core containing low- and midrise buildings, dating mostly from before World War II. Like the early factories nearby, these buildings are architecturally quite distinguished. And, like the early manufacturing methods, the tasks originally performed in those early offices involved simple equipment and a lot of skilled hand work, a combination reflected in the buildings themselves, with their rudimentary mechanical and electrical systems and the labor-intensive ornament of their façades.

If the aesthetic skills of architects and the handiwork of craftspeople were valued when those prewar buildings were erected, that seemed to change as the service economy in Springfield, like its industrial sector, entered a second phase after the Second World War. At this point in the story, we return to John Q. Hammons. Like the companies that abandoned the downtown factories for the urban fringe, Hammons rejected the idea of rehabilitating the downtown commercial buildings and, instead, cleared land several blocks away from the core. The office towers he then erected there are also like the postwar factories, with large amounts of flexible floor space and updated mechanical systems, all within anonymous and almost interchangeable boxes. (Springfield's old commercial core, like its old factory area, now seems almost deserted.)

If the postwar phase of our economy has demanded such faceless architecture, so too has it altered the way people in offices, as well as in factories, work: performing more specialized and less rewarding jobs with ever more sophisticated equipment. Likewise, the services architects offer clients have become more specialized. Not only does Hammons, for example, have an in-house architectural staff, which by its very nature must focus only on those buildings he develops, but he, like more and more clients, seeks out firms who have experience in a particular building type. Accordingly, architects are becoming either the employees of those who build – be they developers, contractors, or corporations – or captives of certain groups of clients.

This is not to say that there is no more room for the art of architecture, for the invention that Hammons dismisses so readily. But it may increasingly exist at the edges of our economy, among the patrons and institutions charged with the perpetuation of culture or of a corporate image, rather than among those in the business of selling a product. Hammons is interesting, in part, because he straddles both worlds. As the philanthropist-patron, he gave money for a performing arts facility that was recently completed on a site near his development, at the edge of the Southwestern Missouri State University campus. This building has far greater architectural distinction than almost anything Hammons has built himself, perhaps because Hammons, the developer, apparently had almost no involvement in its design.

If you accept this analysis, then the line typically drawn between architects and developers is not so clear. The division instead seems to be between those architects and developers who treat buildings as commodities and those who treat buildings as forms of art or cultural expression.

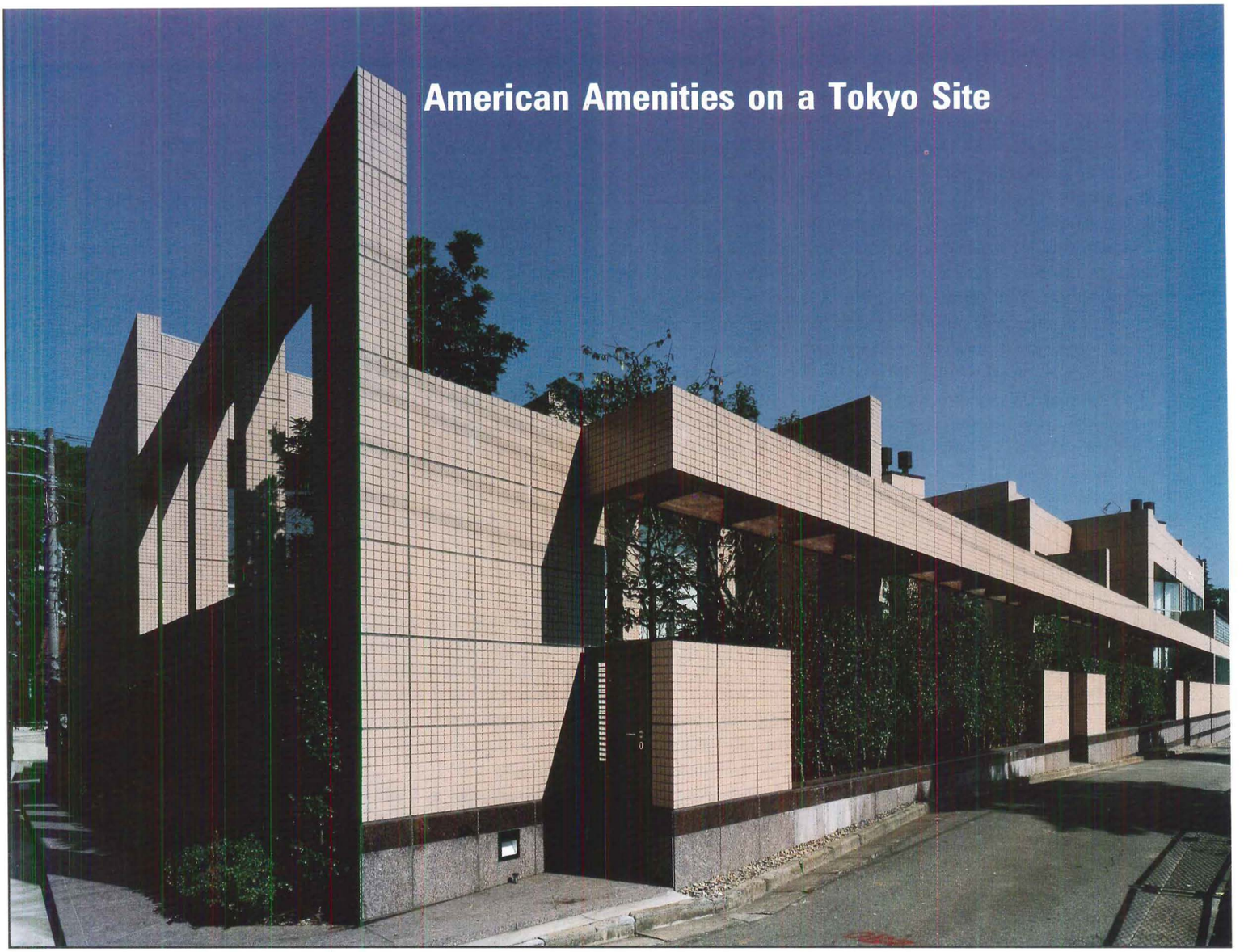
The implications for architectural education and practice are enormous. For example, the form of practice, the method of designing, the extent of detailing, the involvement in construction matters all differ dramatically, depending upon whether an architect is producing a singular work of architecture or a more-or-less standard product. And the frustrations that architects and developers often experience when dealing with each other may stem simply from a misunderstanding of how both groups are being forced by our economy into one of these two tracks.

I wondered, as I left my meeting with Hammons, if the changes occurring in Springfield's manufacturing sector would also happen in its service sector. Would companies ever abandon Hammons's interchangeable office towers the way they were evacuating the sprawling factories on Springfield's edges? No answer came immediately to mind, so I forgot about those questions until the next day, as I sat in my hotel room preparing notes for this article on my laptop computer. Then it dawned on me. The third phase of white-collar work was not coming; it was already here. Most business travelers are already living it, able to carry on the functions of the office – filing notes, writing articles, making phone calls, sending and receiving faxes – thousands of miles away from the bit of floor space we still call, rather quaintly, "the office."

Here, then, was the final irony. Perhaps Hammons was not so old-fashioned after all. If advances in office and communications technology make the large-scale office building – like the large-scale factory – obsolete, allowing white-collar work to be done almost anywhere around the globe, then the office of the future may be more like the small, uniformly appointed hotel rooms Hammons has developed around the country rather than the large, flexible office space he has put up in Springfield. Then again, the office of the future may be wherever there is an electrical outlet and a phone jack, even if in the most magnificent work of architecture. Developers such as Hammons may have prevailed during the second phase of our service economy, but it is not at all clear who or what will prevail in the third.

Thomas Fisher ■

American Amenities on a Tokyo Site



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One of Paul Kennon's last works, named in his honor, offers housing for expatriate executives.

In the last five to six years, the better residential districts in Tokyo have witnessed a proliferation of apartment buildings designed primarily for Western executives and their families. Compared to Japanese homes, these units are generally more spacious, bigger in dimensions (such as the height of kitchen counters and the length of baths), and better designed to accommodate the entertainment of guests, an activity that for the Japanese usually takes place outside the house. The Japanese are building these apartments in large numbers not only for the high rents such units command, but also because the Americans provide guaranteed tenant turnover; Japanese law makes eviction of tenants difficult.

The overbuilding in Tokyo has created a wide choice of units, and would-be tenants have consequently become more selective, weighing strategic factors such as proximity to American-style supermarkets and to the bus routes of international schools. The Paul Kennon House is designed for those expatriate executives: it is close to a park but also only a short walk away from a major commercial, entertainment, and business center.

The project occupies a triangular site surrounded on all sides by streets. One corner of the site has been turned into a community space with an outdoor pool and an activity room. A second corner has been shaved off the site to provide gardens of different sizes. Six townhouses, each oriented north/south, have been built on the roughly rectangular area that remains.

On the outside, the walls are finished in salmon-colored ceramic tile. A stepped waterfall on the outside of the pool area is a small but pleasant civic gesture, acknowledging the adjacent park.

The units offer a great deal of privacy. Direct access from the street, a private (single-car) garage, and an individual garden are features not always available in Tokyo, and add to the attractions of these units. The southern half of the building has been raised half a level, and this helps shield the garden side from the eyes of passersby.

The Paul Kennon House is a handsome building with units that offer distinctive features. Even in the current glut in Tokyo, they should readily attract tenants. **Hiroshi Watanabe** ■

The author, P/A's Tokyo correspondent, has recently published Amazing Architecture from Japan *(Weatherhill, 1991).*

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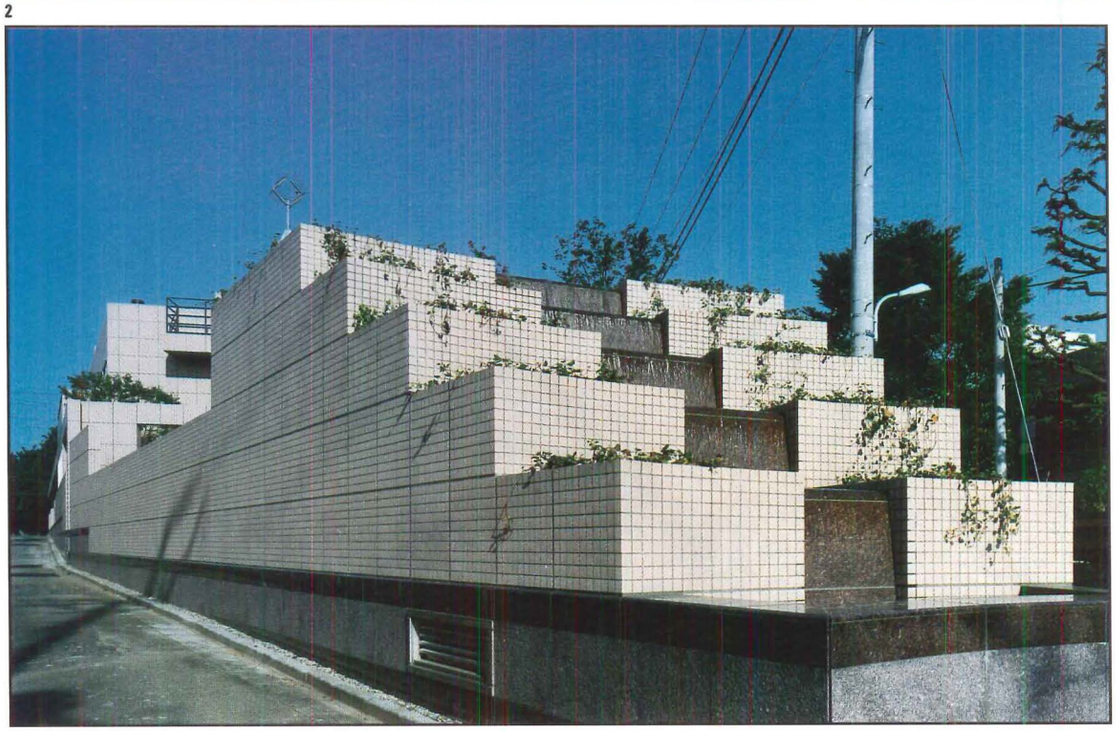

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The private gardens of Paul Kennon House are shielded from the street by walls, sun screens, and greenery (1). On the opposite side (2), the units open directly onto the street, a rarity in Tokyo. A fountain (3) fills the triangular corner of the site; behind it are a common swimming pool and activity room.

Remembering Paul Kennon

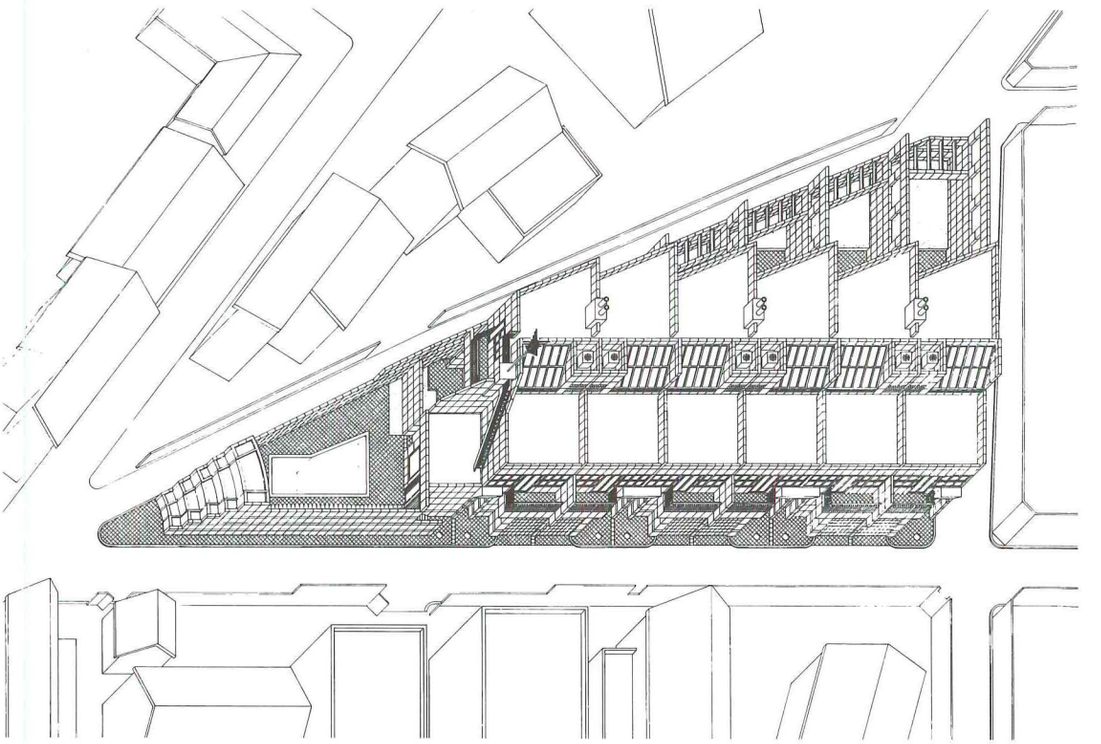
Certainly there were far grander projects among the life works of Paul Kennon than the 20,450-square-foot Paul Kennon House – so named by the client to honor their mutual friendship and respect. But the scale of this Tokyo housing complex only serves to underscore the wide range of work he considered worthy of design excellence. Because the Tokyo project may be the last of his work to be published, P/A intends this article as a tribute to an extraordinary architect and career. In the nearly three years since he died (P/A, March 1990, p. 25), his memory has not left those who knew him; his was a friendship to be treasured.

Paul Kennon could only be described as one of the most upbeat, sincere, and hardworking men in this profession or any other. Although he was driven by an incredible work ethic, he always had time to handwrite a note to those he visited, either by choice or by chance. And it seemed he always had time for those visits, as well. His generosity with his time was legendary, as was his willingness to share professional information with colleagues.

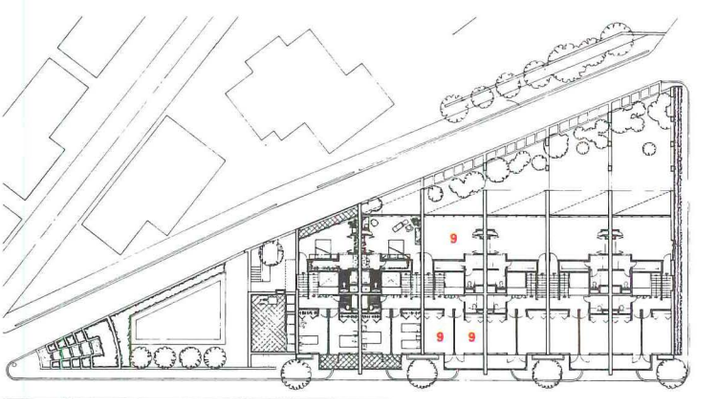
Also among the beneficiaries of his magnanimous nature were his students. Happily, that process was a give-and-take situation, for he seemed to take almost as much pleasure in associations with students as he gave to those fortunate enough to have his guidance.

Indeed, when he began his deanship at Rice, alternating that with work on select architectural projects at CRSS, he was happier, perhaps, than he had been as president of CRSS. Paul Kennon's mentor, William Caudill, was also his staunchest proponent; on numerous occasions he would marvel at the Kennon ability to focus on numerous projects concurrently.

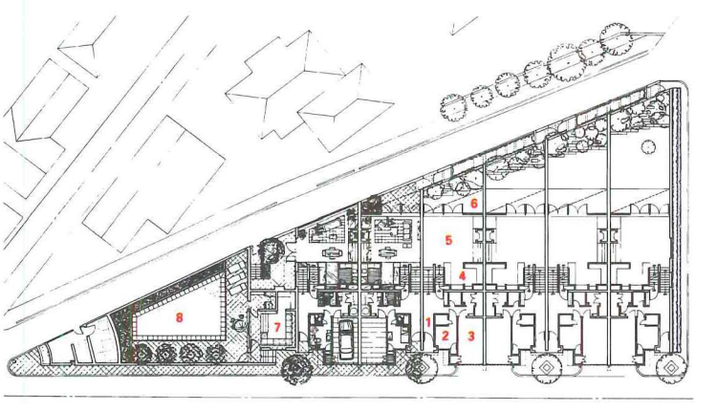
It is fitting, therefore, that Paul Kennon was doing just that, and enjoying his roles, when his considerable energies were stilled. For all of the superlatives he deserves, perhaps the most apt is a simple one, and one that would have pleased him: Paul Kennon was, in all ways, a gentleman. **Jim Murphy** ■



AXONOMETRIC



SECOND FLOOR PLAN

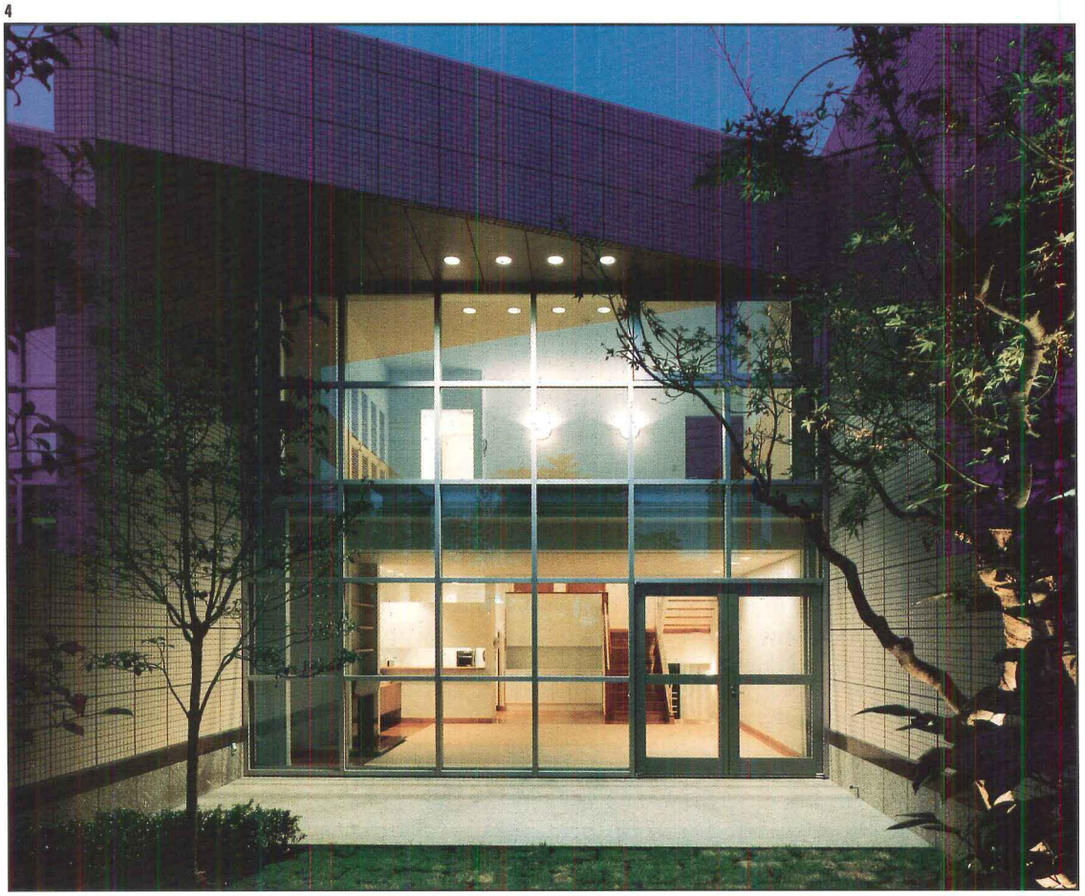


FIRST FLOOR PLAN

N ↘ 40'/12m

1 ENTRY
2 STUDY/MAID'S ROOM
3 GARAGE
4 KITCHEN
5 LIVING ROOM
6 GARDEN
7 ACTIVITY ROOM
8 POOL
9 BEDROOM

4



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Inside, the units are arranged on four staggered levels. The central stairwell is lighted by a skylight. The main level, which houses the living room (4), opens onto the garden (5).

Project: *Paul Kennon House, Tokyo.*
Design architects: *CRSS Architects, Inc., Houston (Paul Kennon, design principal; James M. Wright, design director/project manager; Kathleen Alberding, Mieko Ota, project architects).*
Architects of record: *Kajima Corporation, Architectural Design Division, Tokyo (Yasuhiro Oda, senior architect).*
Client: *Kaike Service, Inc., Tokyo.*
Site: *0.4-acre triangular block in established Tokyo residential neighborhood.*
Program: *six three-bedroom, 2152-sq-ft townhouses, each with private garage and garden, for the expatriate American executive market; community swimming pool and activity room.*
Structural system: *cast-in-place reinforced concrete with post-tensioned slabs; spread footings.*
Major materials: *ribbed ceramic tile cladding, built-up asphalt roofing, granite paving, aluminum windows, plaster interior walls, hardwood floors.*
Mechanical system: *individual electric heat pumps, electric hot water heaters.*
General contractor: *Kajima Corporation.*
Costs: *withheld by owner.*

Texas Regionalism: The Lighter Side

1

Camp John Marc Myers, Bosque County, Texas

A Hill Country camp planned by Good, Fulton & Farrell mines the vernacular for the sake of fun.

Camp John Marc Myers is a rarity – a project in which a worthy program is matched by lively architectural expression. Opened in 1991, the summer camp in Bosque County, about 90 miles south of Dallas, is designed for children with cancer, spina bifida, and other severe and chronic illnesses. The 137-acre camp had been a ranch, the favorite place of John Marc Myers; following his death from cancer at age nine, his parents donated the property. The Junior League of Dallas raised funds for the camp and organized programming of the camp's spatial requirements with various family support groups, while a number of Dallas foundations also contributed funds. Real estate professionals donated time to upgrade the property and organize construction, while several architecture firms, headed by Good, Fulton & Farrell of Dallas, gave their services to the effort.

The greatest strength of the project is its siting, which accommodates the campers while making the most of the area's tough, scrubby terrain. A small pond on the site was blasted out and enlarged to become the camp's focus. The main activity buildings – office, dining hall, medical building, arts-and-crafts buildings – were situated in a crescent above the lake on an oak-shaded knoll. A gentle slope allows easy access to the lake and funnels the prevailing southern breezes up toward the buildings during the scorching summer months. Just above the crescent of activity buildings are clusters of cabins and the camp's swimming pool. Beyond them lie areas for overnight outdoor camping. David Farrell of Good, Fulton & Farrell, chief designer on the project, says that the final placement and design of the buildings was decided on site. The resulting arrangement provides campers with a balance of sheltering architectural space and uncomplicated access to the outdoors.

Balance is also provided by the camp's circulation link, a broad veranda that links all the activity buildings. The architects say the importance of this element comes from early programming, in which porches, which would allow children to be outside but protected from heat and rain, had been emphasized.

Porches are among the elements that modern regionalist architects in Texas have lifted from 19th-Century vernacular buildings, along with a devotion to native materials and farm-building

2

forms. Camp John Marc Myers has all the right regionalist layering, materials, and forms, but it doesn't quite fit. Texas regionalism has been a movement of abstraction and urbanization, emphasizing decorum, prim appropriateness, and structural honesty. The architecture of the camp, by contrast, derives not just from the working ranch, but from dude ranches and summer camps. In these times of Euro Disney overload, this may seem like a slighting assessment, but it is not. Most of the campers are city kids, and most spend a lot of time in hospitals, facing mazes of equipment and medical processes. If ever there were an appropriate place for entertainment architecture, this is it. The architects gave the kids a welcome break from their routines, using rural images, color, and animated materials instead of Disneyesque façades and tricks of scale.

The lantern-topped office at the entry to the camp shows the techniques used. Its wood framing is painted white to stand out from and bring order to the rubble-stone walls, and its dormers and roof are ornamented with saw-toothed metal flashing that echoes and animates the corrugations of the shiny metal roofing. The lodge and dining hall, with seating and kitchen capacity for up to 280 campers and attendants, scales these materials up to a grand public space, in which the massive stone end walls are topped by a tentlike ceiling.

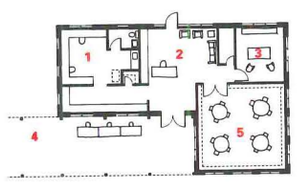
Skilled and inventive masons from San Antonio, who lived on the site for months during construction, were given free rein in constructing the buildings; they obviously had fun building the sleeping cabins, with their freely curving tree-trunk columns and their stone-work versions of each cabin's identifying symbol. The medical building, with its exaggerated rubble base and diaper-patterned upper walls, is an equally remarkable composition. Here, campers receiving medical treatments can sit or lie on cots on porches that face the lake, at least able to see the outdoors for the time they need to be inside.

With its feeling of being just right for its location and just goofy enough to amuse the kids who use it, Camp John Marc Myers fulfills its mission of bringing nature and play into the process of healing. **Joel Warren Barna** ■

The author, P/A's Texas correspondent, is the author of The See-Through Years, *published in November by Rice University Press.*

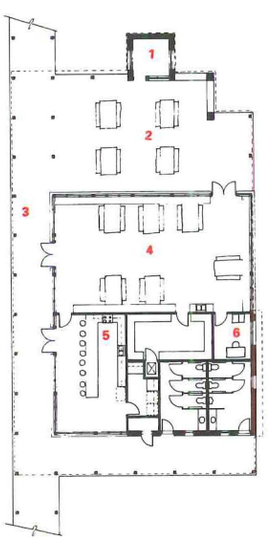
Camp John Marc Myers, in Central Texas's rolling, scrubby Bosque County, is a camp for children suffering from severe and chronic illnesses (1). The architects took off from the precedents provided from the ranch buildings that once occupied the site to create an animated recreational atmosphere. The main buildings stand on a knoll above a small lake. Accessibility was a major concern of architects and users; a ramp connects the office to the other main buildings (2).

The lodge and dining hall (3), with seating for 280 campers and attendants, features a massive patterned stone fireplace wall, rough pine columns, glue-laminated beams, cedar-twig chairs, metal cactus-motif chandeliers, and bright fabric banners (each sporting the symbol of the cabins in which the campers stay).



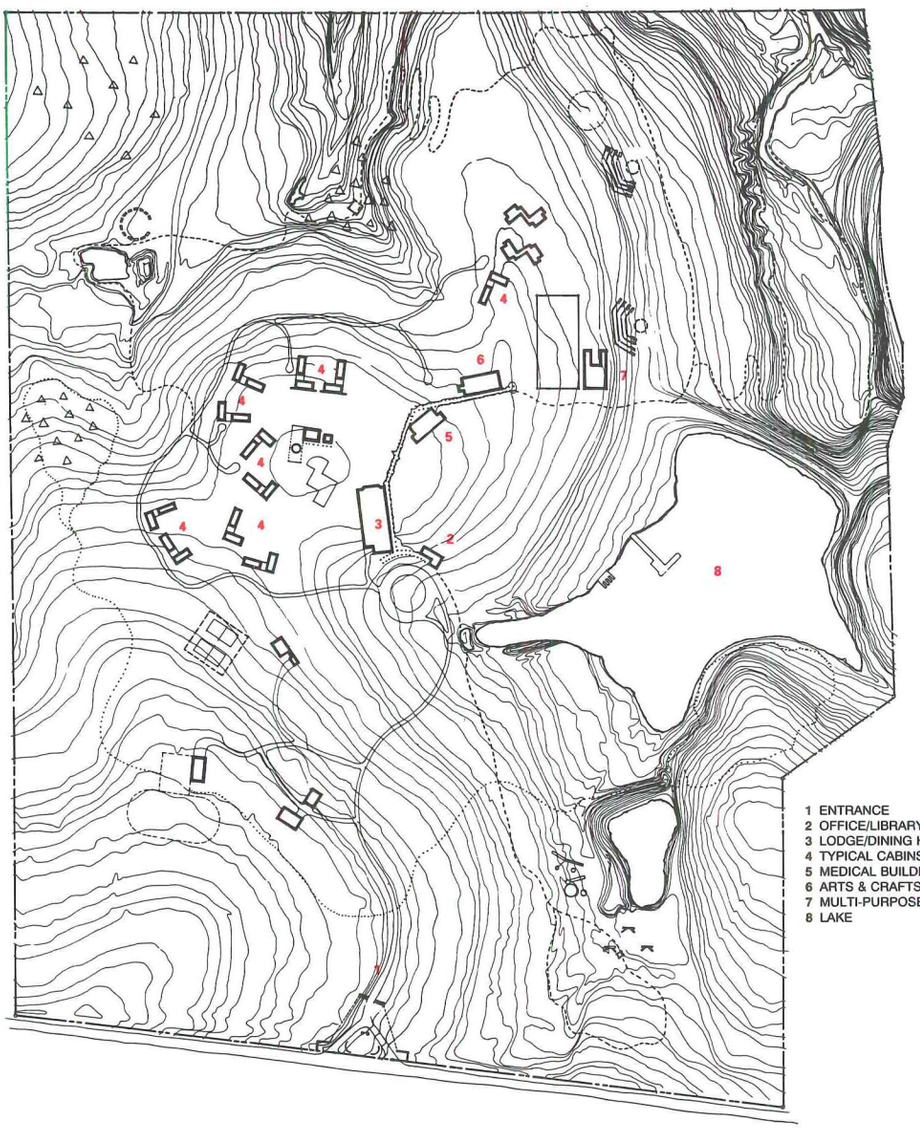
OFFICE/LIBRARY PLAN N

1 STAFF
2 RECEPTION
3 DIRECTOR'S OFFICE
4 VERANDA
5 LIBRARY



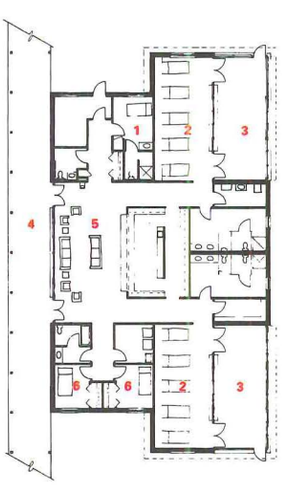
ARTS & CRAFTS BUILDING PLAN N

1 KILN ROOM
2 CRAFT YARD
3 VERANDA
4 CRAFT ROOM
5 KITCHEN
6 OFFICE



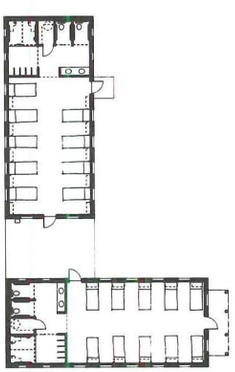
1 ENTRANCE
2 OFFICE/LIBRARY
3 LODGE/DINING HALL
4 TYPICAL CABINS
5 MEDICAL BUILDING
6 ARTS & CRAFTS BUILDING
7 MULTI-PURPOSE BUILDING
8 LAKE

SITE PLAN N 300'/100m

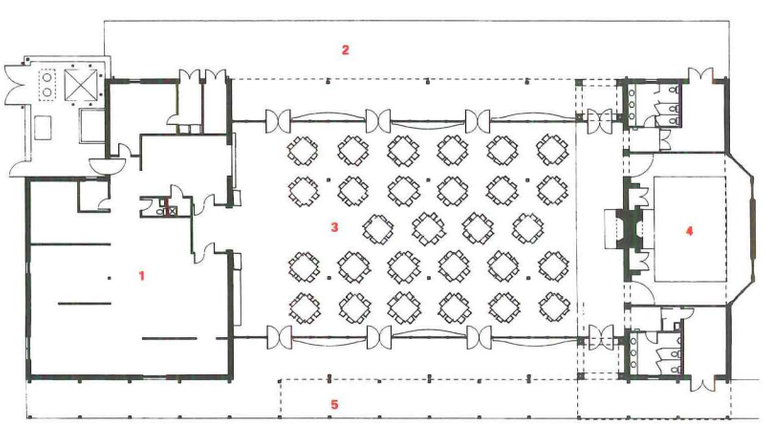


MEDICAL BUILDING PLAN N

1 EXAM ROOM
2 INDOOR TREATMENT
3 TREATMENT PORCH
4 VERANDA
5 RECEPTION
6 NURSE



TYPICAL CABIN PLAN

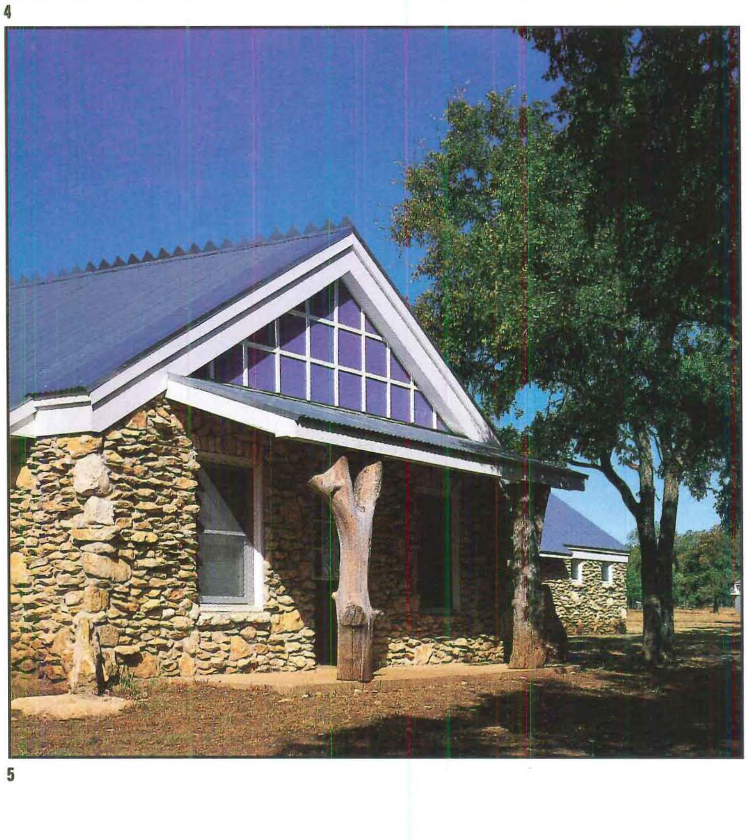


LODGE/DINING HALL PLAN

1 KITCHEN
2 PORCH
3 DINING ROOM
4 LOUNGE
5 VERANDA

N 40'/12m

4



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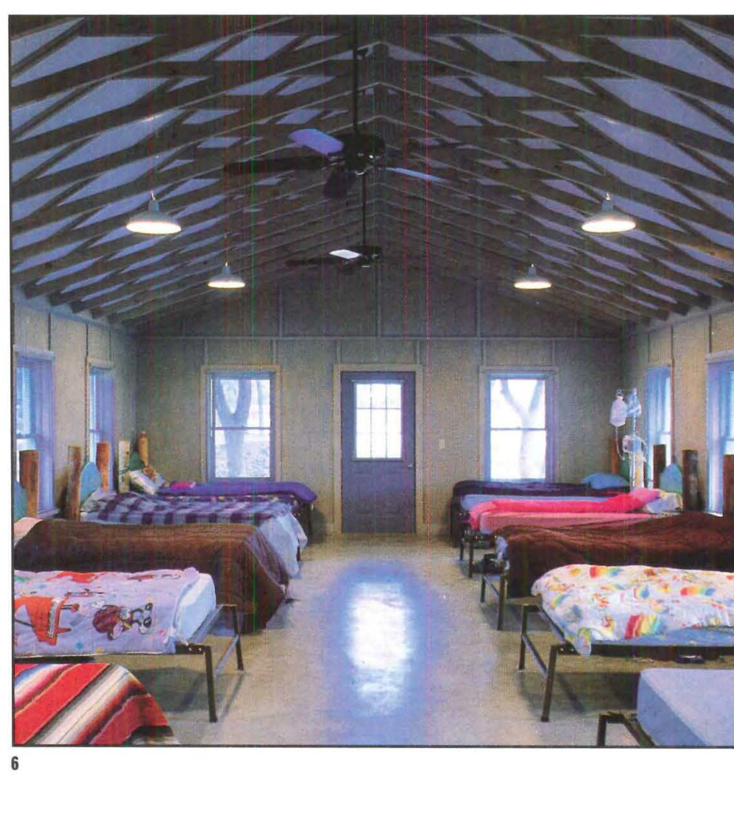

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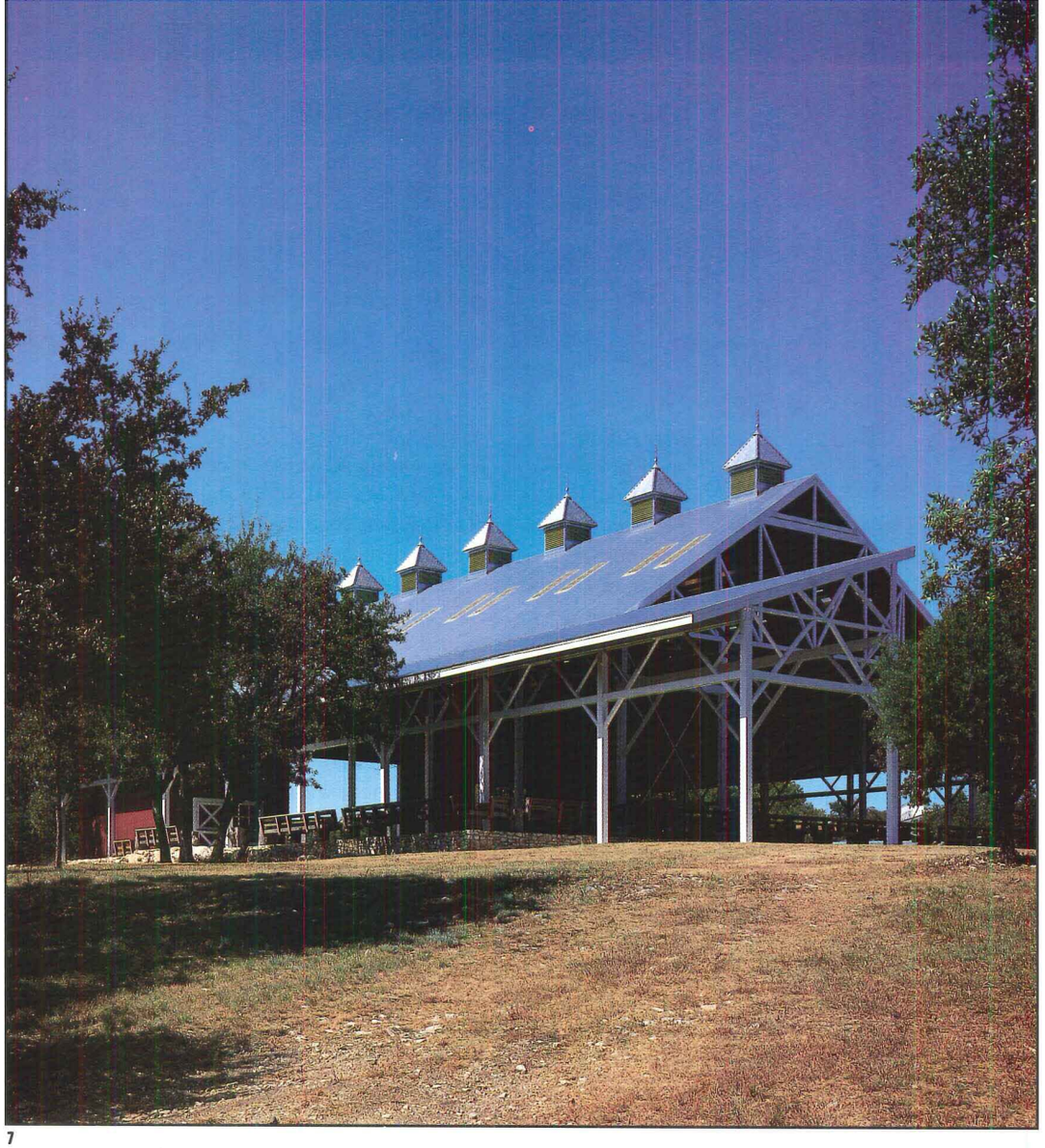

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The cabins for the campers showcase the work of skilled masons who were given free rein in constructing the camp buildings (4, 5). Cabin interiors are simple, with wide aisles for wheelchair accessibility (6). The multipurpose building overlooks the lake (7), as does the medical building (8), where screened porches allows campers receiving treatment contact with the outdoors.

Project: *Camp John Marc Myers, Bosque County, Texas.*
Master planners and design architects: *Good, Fulton & Farrell Architects, Dallas (Duncan Fulton, David Farrell, Tammy Chambless, Monty Stark, Don Kubala, David Rogers, Brendan Dunnigan, Erich Brann, Brian Cargill), in association with Don Madsen, Dallas.*
Production architects: *Gromatzky Dupree & Associates, Dallas, arts and crafts building; Meinhardt & Associates, Dallas, multipurpose building; Merriman Associates, Dallas, office; Dickson Wells, Dallas, medical building; all others Good, Fulton & Farrell.*
Client: *Special Camps for Special Kids, Dallas.*
Site: *137 acres on the northern edge of the Texas Hill Country.*
Program: *camp for children with severe or chronic illnesses; program includes ten cabins and various common structures.*
Structural system: *slab-on-grade foundation, wood frame (except multi-purpose building, which has steel frame), timber trusses in lodge/dining hall.*
Major materials: *native stone veneer, decorative cedar posts from site clearing, concrete floors, split wood exposed lath, stained plywood wall panels, corrugated metal roofs (see Building Materials, p. 99).*
Mechanical system: *gas-fired package rooftop heat and air units in lodge/dining hall, all others residential gas-fired furnaces with split condensing unit (heat and air).*
Consultants: *Steve Rahn, landscape; Lynn Sears, interiors; The Core Group, structural; Johnson Basharkhah, Inc., mechanical; Mulhauser/McCleary, kitchen.*
General contractors: *James D. Izzarelli, Inc., cabins 1 and 2; Dal-Mac Construction, lodge/dining hall; Kajima Corp., arts and crafts building; McFadden & Miller, multi-purpose building; Joey Cannon Construction, cabins 3–10 and director's residence; all others SCSK Building Committee.*
Costs: *not available.*
Photos: *Blackmon Winters.*

Perspectives

In memoriam: **Peter Rice** 1935–1992

Reflections on a Consummate Artisan

While in school, I designed an office tower in what I understood to be "high-tech" style: terrifically impractical, with two independent cores, a bizarre structure of arches, girders, and trusses, and all the requisite metal, glass, and bright color. One of my critics took issue with my approach to technology. In his view, architects interested in technology should look to recent advances in materials and electronics to make buildings that improve economic, material, and energy efficiency, while also enhancing user comfort. Under this philosophy, he suggested, true "high-tech" architecture could look more like the box in which a computer's entrails are held, than the "erector-set" buildings that claim the term.

I was unconvinced. My design was awful, but I felt the alternative I was being offered would be profoundly alienating. The mind-set that leads to what we generally call "high-tech" architecture in fact runs contrary to the gee-whiz mentality that explains sci-fi films or The Sharper Image. A building that achieves great technical innovations within a plain, elegant wrapper could never inspire the public in the way that the Centre Pompidou or HongkongBank have. The late Irish engineer Peter Rice put his finger on the difference when he accepted the 1992 RIBA Royal Gold Medal for Architecture this past June. He said that construction is now so dominated by off-site manufacturing that one cannot perceive the collaborative effort in creating buildings. Indeed Rice, through his role as collaborator on many of the best "high-tech" projects, did much to create an architecture that speaks both of craft and of the human mind at work.

Rice had ample opportunity to develop this approach. He was born in rural Ireland in 1935. He attended Queen's University, Belfast, and Imperial College, London, from which he graduated in 1958. The same year, he joined Ove Arup & Partners and worked for the next seven years on the Sydney Opera House, following the project from analytical studies through construction supervision. The experience with such an ambitious and controversial project was influential in Rice's career, as was the following year he spent as a visiting scholar at Cornell, where he pioneered a study of applying pure mathematics to engineering problems. This study led to the development of non-linear mathematical models which made possible many of his later works. He returned to Ove Arup in 1968, where he served as structural engineer on such acclaimed projects as the Lloyds of London building, among others. At the time of his death in October, the end of a year's battle with a brain tumor, Rice was probably the most influential engineer in his field.

Though he in no way considered himself an architect, Rice admitted that the architecture on which he worked involved a much closer collaboration than is normal within the industry. I suspect that, in large measure, it was his particular sense and sensibility that kept such projects from being merely picturesque essays in the industrial aesthetic. Unlike those engineers who would single-mindedly pursue economic or material efficiency, Rice was consistently interested in expanding the scope of experience to engage the human spirit. His frequent collaborator, Renzo Piano, said of Rice that he reaffirmed the humanism of science and its contribution to art and technology.

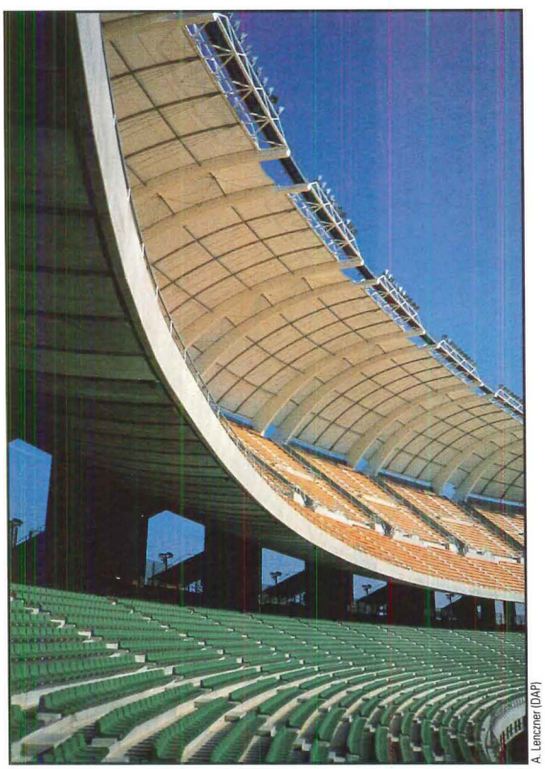
Many of his structural designs have the potential to become archetypes in and of themselves. His work on Parc de la Villette in Paris offers many examples (P/A, Nov. 1989, p. 65). Notable, in particular, are the glass walls that form the greenhouse "bays," designed by Ian Ritchie and attached to Adrien Fainsilber's Museum of Science and Technology. The design intent was to create the maximum transparency with the minimum of visible structure. But the combination of the stainless steel tubes that form the structural bays, the countersunk brackets that hold the individual panels together, and the horizontal cable system that stabilizes the sheets creates an image of transparency that goes beyond the stated intention. If we were some day able to engineer a glass strong enough to be cast in a single sheet to the size of a wall, I suggest that the effect would be experienced as less "transparent" than Rice's – precisely because the evidence of striving for transparency would be absent.

Italian critic Niccolo Baldassini has tagged this aspect of Rice's work "Metastructure," in that it is the very exemplification of itself. This is a good description, as it explains how work that seeks to push the limits of available technology can, at the same time, avoid the trap of the mindless pursuit of novelty which has led to so many dead ends. Rice's "metastructural" touches have become some of the dominant images of the works on which he collaborated. In earlier works, we see it in the shapely balance of weight in the hinged cantilevers on Piano and Rogers's Centre Pompidou, or in the way that different diameters are used to articulate the functions of the members that make up the suspended roof of Rogers's PA Technology Research Center (P/A, Aug. 1985, p. 67). We see similar distillate qualities in the ferro-concrete and ductile iron structural lighting baffles of Piano's Menil Collection Museum, (P/A, May 1987, p. 87) where the perception of lightness and light combine in a manner not seen in many more "complex" skylight solutions. Most recently, and perhaps most eloquently, we saw it in the Pavilion of the Future at Expo 92, where one side of the sinuous roof is suspended from an almost dematerialized set of granite arches. The slender cables in tension transfer the load to the stone in compression in a poetic twist on the Gothic sensibility. In none of the above cases is a prototype being proposed. Rather, they are such singular statements that imitation could not lessen their power. **David Gruber** ■

The glass wall for Ian Ritchie's greenhouses at Parc de la Villette.

1

Photo: Martin Charles



A. Leinzner (DAP)

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Richard Bryant

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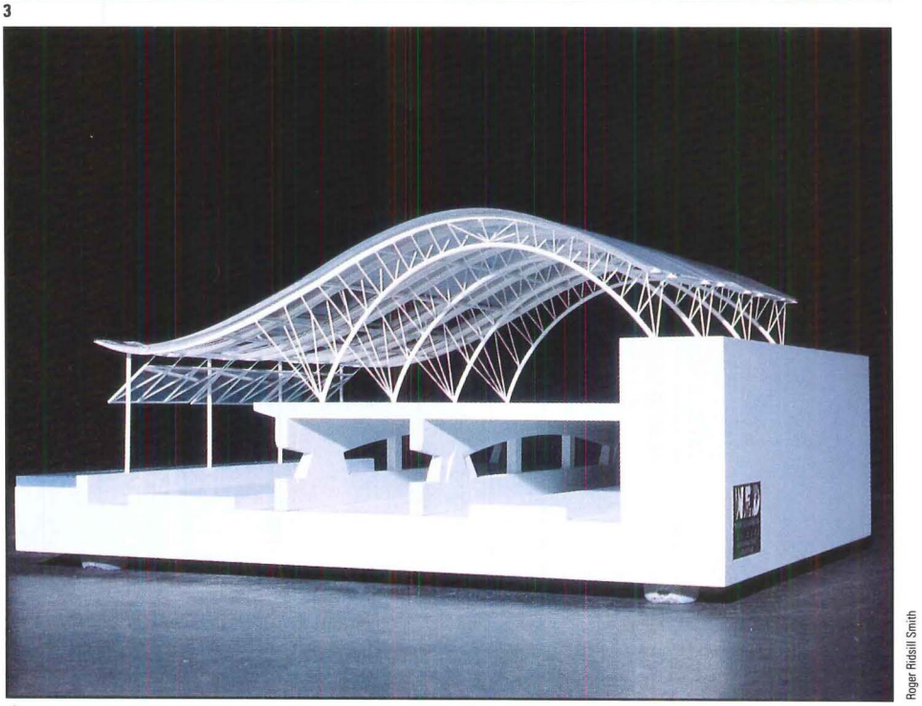
The ferro-concrete and ductile iron lighting baffles in Renzo Piano's Menil Collection Museum in Houston form the structural ceiling (3), and literally "make" the space. Rice also collaborated with Piano on the lightweight canopy for the San Nicola Stadium in Bari, Italy (2). Model of Richard Rogers's TGV Station design for Lille, France (4). Rogers's PA Technology Research Center in Princeton, New Jersey, has become an icon for its powerful suspended roof structure (5). Rice's stone arches for the Pavilion of the Future at Expo 92 in Seville (6) support the roof cables that connect the trusses to the arches; the connection is not yet shown in this construction photo.



Roger Ridsill Smith

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Otto Baitz

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Alistair Lenczner

In keeping with the sociable spirit of Pioneer Courthouse Square, **Portland's weather machine** draws lunchtime crowds.

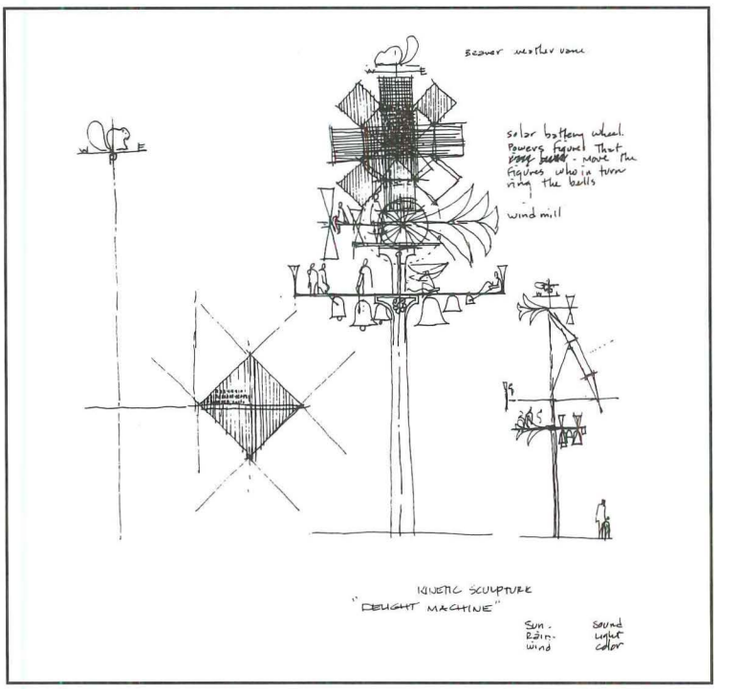
A Gentle Spectacle

A weather machine? It sounds like something out of Jules Verne or *Back to the Future*. But Portland has one, and owes it to numerous hands. The late Portland architect, Will Martin of Martin/Soderstrom/Matteson, accompanied by a multidisciplinary team, won a competition for the design of Pioneer Courthouse Square, which was dedicated in April of 1984 (P/A, August 1985, p. 93).

At one point team member and author/historian Terence O'Donnell suggested the device, a "gentle spectacle," as he called it. Martin, in turn, had envisioned what he called a "delight machine," with bells rung by mechanical people, and the ability to spill water on unsuspecting bystanders; and he produced a light-hearted sketch of what it might look like. But the project was delayed until some community leaders contributed or raised the funds to realize it, and another competition was held for its design.

Although the contraption shown in Martin's original sketch was not built, the weather machine, dedicated in August of 1988, lives up to his and O'Donnell's intentions. It was devised and built by the Omen Design Group, comprising Jere Grimm, Ray Grimm, Dick Ponzi, and Roger Sheppard. Like the square's original design team, this group brought a broad range of talent and expertise to the task: Jere Grimm is a sculptor active in environmental efforts; Ray Grimm is a ceramicist and professor emeritus of art at Portland State University; Dick Ponzi has an engineering degree and experience in engineering major rides for Disney; Roger Sheppard, a retired advertising manager, has created and fabricated decorative metalwork for area churches.

A taxing process of working through ideas and mechanics, making the weather machine required the talents and skills of each team member; Ponzi was informally recognized as the team leader, partly because of his engineering background. However, the contribution of the others is clear in the active pieces that make up the display.



1 *Will Martin's original sketches for a "delight machine" (1). Its modest scale and siting in Pioneer Courthouse Square (4) make the weather machine a popular local landmark. The blue heron (2) represents typical Portland weather, cloudy and changeable; the dragon appears (3) when more severe conditions are forecast; Helia, the sun symbol (5), signals all clear.*

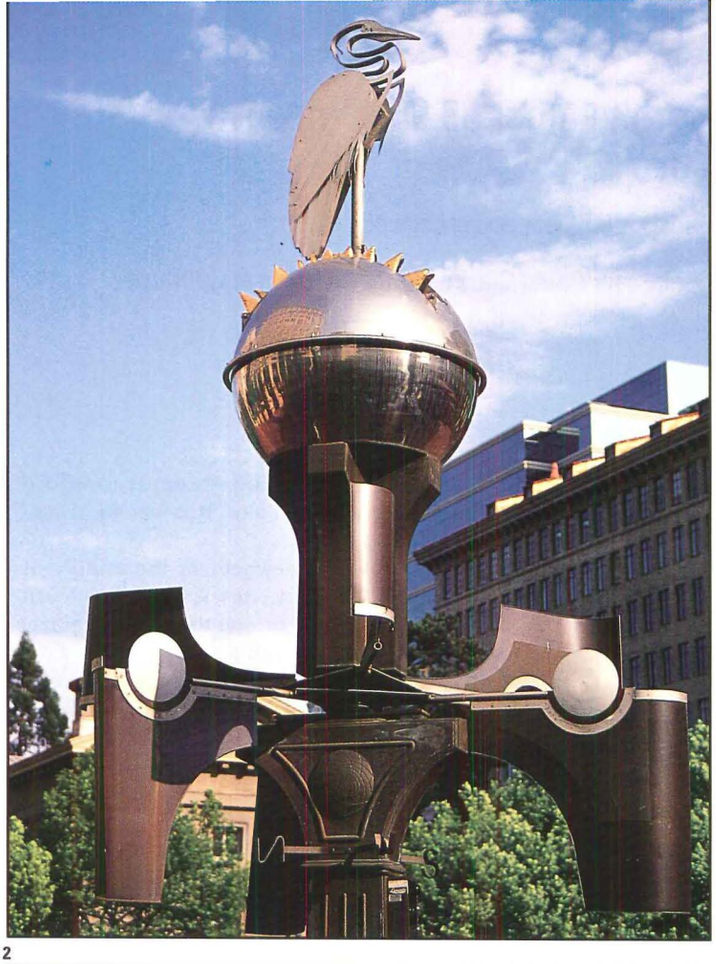
The machine consists of a silver orb set atop a 25-foot column placed near the northwest corner of the square. Within the globe are three symbols, executed with great wit and character. To herald what is considered "typical" Portland weather (drizzle, mist, and change), the designers created a graceful silver outline of a blue heron; if the weather is more stridently ugly, a (silently) roaring dragon appears; and for those days residents love most – sunny and clear – a gold-leafed sun named "Helia" presides. All rotate in the wind.

The two "off-duty" symbols rest inside the enclosure by fitting, through an ingenious series of hinged folds, into slots in the orb. The computerized movements of the figures are achieved with pneumatic power. Weather bureau information is fed to the controls by the square's staff.

At exactly noon the show, which runs for approximately two minutes, begins with "Fanfare for Weather Machine with Four Trumpets" by Michael Ponzi. At the same time, the machine "rains" a spray of mist from the equator of the ball. If there is to be a change of weather, the shifting of the symbols then takes place, folding and unfolding in a ballet of sorts.

Additional ongoing functions of the assembly include "thermometer" lights running up the column, two bronze wind-activated blades, and an air-quality globe. Every two-degree rise of temperature activates a light, with each ten degrees marked by a red one. The air-quality lens shifts among three different colors according to conditions.

If there is any downside, it is that the fanfare happens only once a day. It is said that area businessmen, fearful of disruption during work hours, halted earlier plans to activate the machine more frequently. Given that the weather changes more than once a day, it seems a shame that the public can't enjoy this marvelous spectacle of weather whimsy more often. **Jim Murphy** ■



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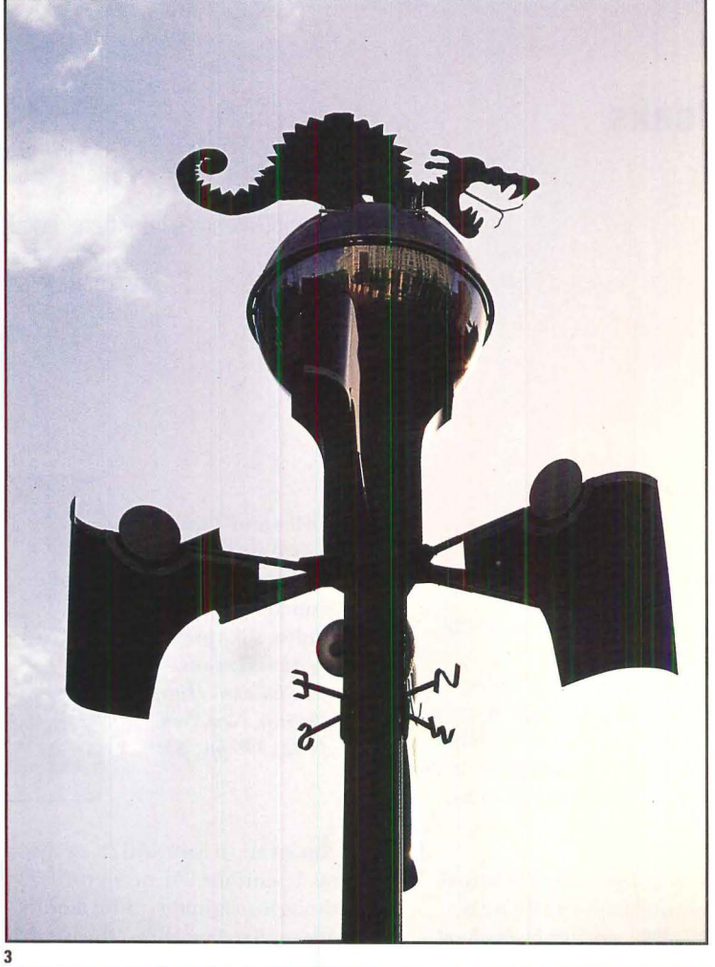

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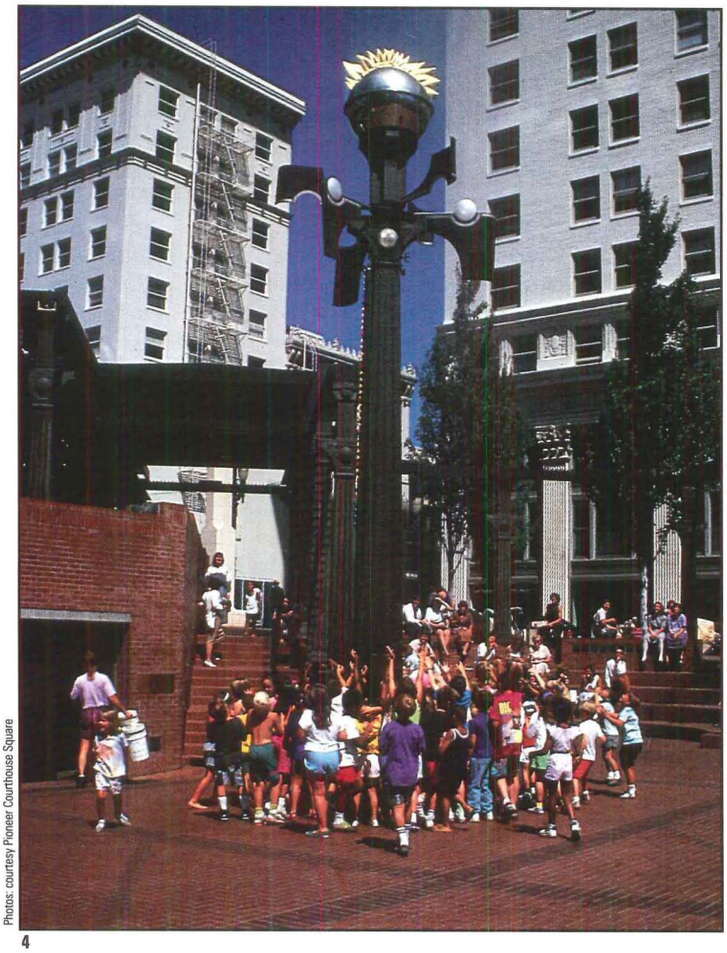

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Photos: courtesy Pioneer Courthouse Square

Books

Written for the other 99.963 Percent

Alan Gowans's latest architectural survey is synthetic and undogmatic – appropriate scholarship, says **David Clarke**, for the architecture we live in.

Books of Note

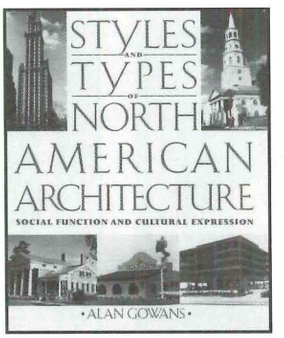
Estonian Architecture: The Building of a Nation *by Liivi Kunnapu, Finnish Building Centre, Helsinki, 1992, 97 pp., $58.*
Twentieth-Century Estonian architecture, unknown to us, is evidence of the nation's ability to synthesize international influences with indigenous styles. It's worth a look.

Hardy Holzman Pfeiffer Associates: Buildings and Projects 1967–1992, *preface by Michael Sorkin, introduction and interview by Mildred F. Schmertz, Rizzoli, New York, 1992, 288 pp., $50 cloth, $35 paper.*
HHPA's 25th anniversary is celebrated with an extensive monograph; the theater projects – rich and frenetic – are the best part of the book.

The Global City: New York, London, Tokyo *by Saskia Sassen, Princeton University Press, Princeton, New Jersey, 1991, 397 pp., $39.50.*
Sassen, a professor of urban planning, investigates the "massive and parallel changes in ... economic base, spatial organization, and social structure" of three cities.

Women in Architecture: A Contemporary Perspective *by Clare Lorenz, Rizzoli, New York, 1990, 144 pp., $29.95.*
This survey of 40 architects from 20 nations features interviews that encapsulate the experience of making architecture. Questions of gendered architecture are, thankfully, not imposed upon the work.

Styles and Types of North American Architecture: Social Function and Cultural Expression *by Alan Gowans, Icon Editions (Harper Collins), New York, 1992, 396 pp., $50.*



Imagine, if you will, a continuum of architectural historians. At one end is Bernard Rudofski. Although originally published by the Museum of Modern Art (in 1965, the year before they published *Complexity and Contradiction in Architecture* – their heyday), he had the effrontery to bypass architects and architectural historians (A&AH) as an audience and address himself directly to the rest of the human race. Initially, A&AH people bought Rudofski's *Architecture Without Architects* and he was invited around, but when his subsequent books went mass market he was snubbed by them. After all, he wasn't really an architectural historian – just, well, an acute observer.

The other end of the continuum has two branches, one curving up and one curving down. At the end of the upward curving branch one might find, say, Anthony Vidler. He writes exclusively for A&AH and is thus published by a University Press. Because the magnitude of A&AH is under 100,000 people in the U.S. (.00037 of the people), the Press knows it will sell only a few copies. Thus the book is sumptuously produced, with a marbleized cover, and the price is elevated to create sufficient margin to break even at, say, 1500 copies. The high end of the A&AH market is a risky place to be. For one thing, it demands theory. The work must smack of rigor and, even better, science. Thus the Vidlers of the world, as graduate students, have to decide on some strain of literary criticism/philosophy and hope this choice still interests A&AH a decade later when it is time for the marbleized cover.

The downward-curving branch leads to, say, Charles Jencks. He writes for A&AH too but he does it either without theory (or with *every* theory) and flourishes on wit and charm. In other words, he is entertaining. He writes many books (often revisions of earlier ones), they are paperbacks, and they are priced low enough for many students to afford them. The pictures are in color. It is a good, if constantly demanding, niche.

Alan Gowans fits somewhere in the middle of this continuum in a tiny, tiny school that I will attempt to characterize. For one thing, its members are not incarcerated in architecture schools. England's John Gloag and his 1975 book, *The Architectural Interpretation of History*, come to mind as an example. This title is loaded – an implication that this diminutive school's members see themselves as historians, not just as architectural historians. For them, the artifacts of architecture are keys to unlock normative relational history. They see architecture as a medium of expression where culture collects, much as mercury in Lake Michigan tends to concentrate in its fish's livers.

Another early exemplar is J.B. Jackson; more recently, we have Roger Kennedy, author of *Architecture: Men, Women, and Money*. He is unusual, a banker for most of his life. Like real, live, practicing architects, he appreciates that any true understanding of how architecture happens (and, above all, what it *means*) must involve money, as well as wars, imports and exports, migrations of people, and mutations of politics. I am a fan of Robert A.M. Stern's more recent writing as it has toned down and become more "ordinary." I read his monograph on George Howe and liked it a lot, but I am not aware of Stern as a writer steeped in economics and politics. Perhaps this pitch was stronger in his TV series, but I never saw it.

The assumption of the continuum I posited has been the audience: *to* whom the authors are writing. Consider instead the idea of *from* whom. A quote from *Styles and Types* illustrates my point; Gowans writes about ordinary people:

> Siegfried Giedion cited balloon timber-framing and prefabricated metal skeleton construction as examples of lost opportunities for 19th-Century America to take the lead in developing a "functional" architecture whose style would derive directly from technology. But this is to misunderstand what those inventions were about. They were ingenious devices for meeting immediate needs for quickly produced houses and shops ... Balloon- and metal-framed buildings took whatever shape their constructors chose to give them, not what scantlings and girders decreed.

One of my favorite parts (a story Kennedy does

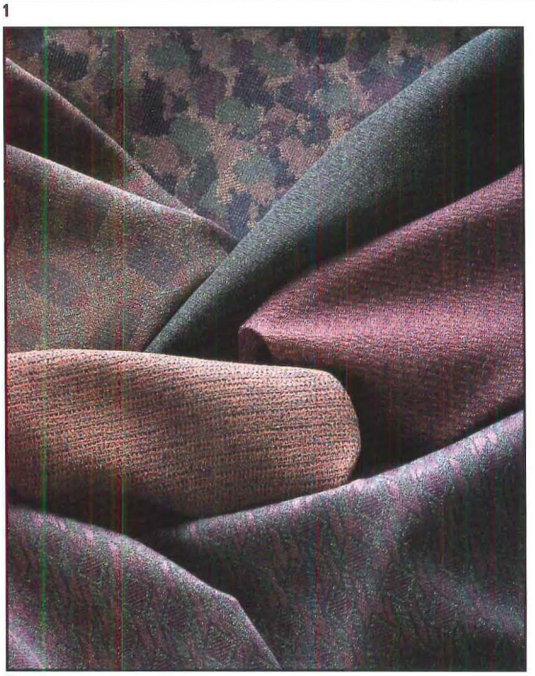
(continued on page 105)

New Products and Literature

1 WPA Furniture
Chairs commissioned by the Works Progress Administration in the 1930s for cafés at the National Zoo in Washington, D.C., were recently discovered and are now being reproduced. A table has been designed to complement the seating. "The Café Deco Set" is constructed of stainless steel with a powder-coated finish in green or terra cotta or in a polished steel and clear-coat finish. The chairs are 35½ inches high, 17½ inches to the seat, and 14 inches deep; the table is 28 inches high and has a 24-square-inch top. Sloan Designs.
Circle 100 on reader service card


1

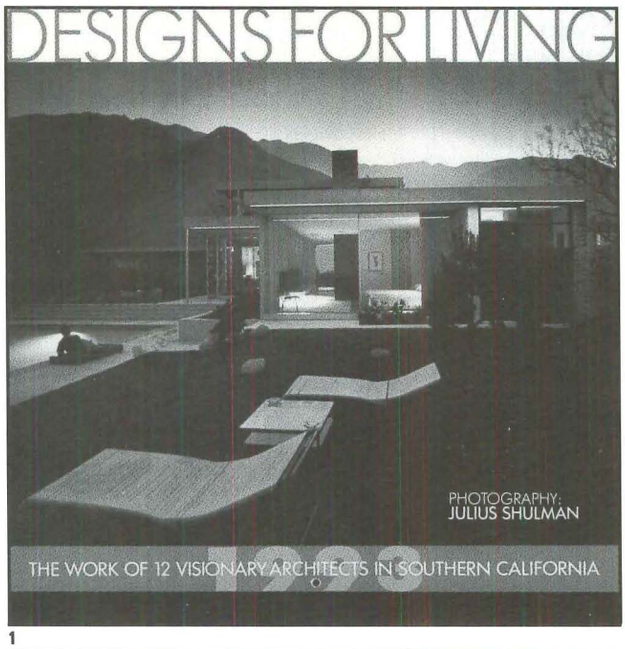
2 Hearty Textiles
The "Nuts and Bolts" collection of contract textiles, designed by Susan Lyons, is constructed from BASF's Zeftron 200 solution-dyed nylon. The nylon has been used to produce carpeting for twenty years, and it was chosen for use in the "Nuts and Bolts" collection for its durability and low-maintenance characteristics. Lyons's designs, for healthcare, hospitality, corporate, and public seating applications, have clean, crisp patterns, and a soft nap. DesignTex.
Circle 101 on reader service card


2

3 Memphis Milano Wallcoverings
Ettore Sottsass, Boris Sipek, Alessandro Mendini, and Matteo Thun are among the architects and artists invited by Rasch of Germany to produce designs for the "Zeitwande" collection of wallcoverings. Mendini's "Luna" is shown. Urban Architecture.
Circle 102 on reader service card
(continued on page 94)


3

Holiday Designs



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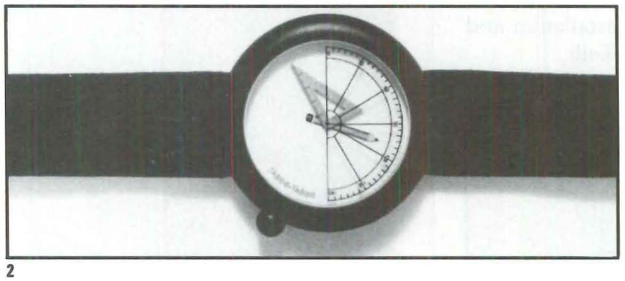

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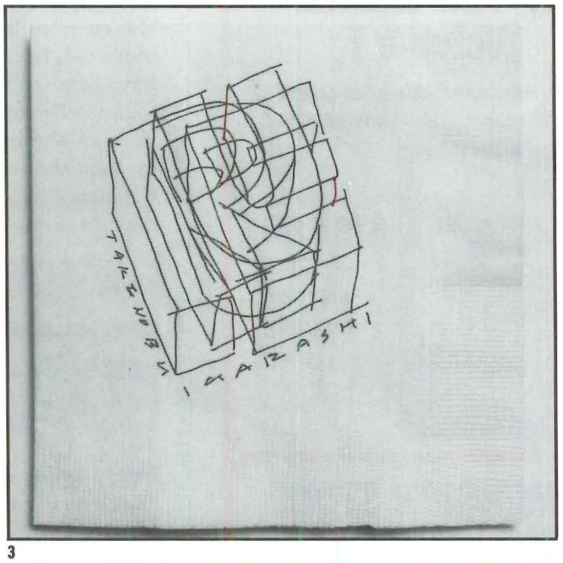

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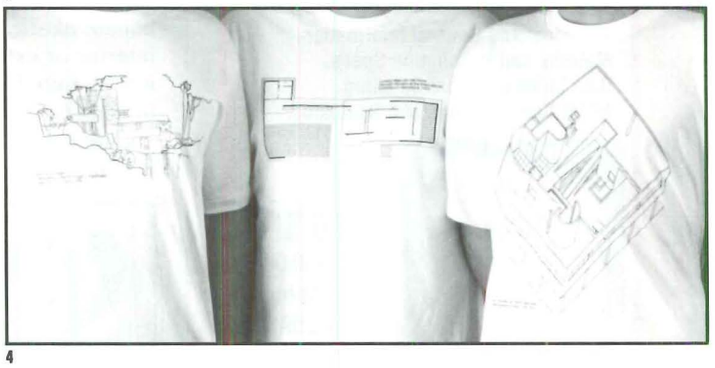


4

1 Modernist Calendar
"Designs for Living" is a large-format, 1993 calendar of photographs taken by Julius Shulman. Photos of residences designed by Richard Neutra, Rudolf Schindler, Ray Kappe, Frank Lloyd Wright, John Lautner, Charles Eames, Carl Maston, Pierre Koenig, Irving Gill, Bernard Judge, Gordon Drake, and Milton J. Black are included. Contact Photoventures Publishing, 3700 Eagle Rock Blvd., Los Angeles, CA 90065 (213) 344-1600 or FAX (213) 256-9999. Cost: $11.95.

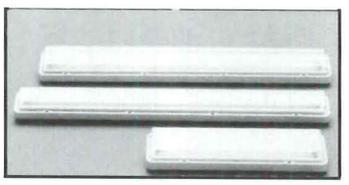
2 The Architect Watch
The "Architect," designed by J.C. Mareschal and produced in Besançon, France, has a light green slide rule and silver pen, a white face, and a black leather strap. It is water-resistant and has quartz movement. Contact MuseumBooks, San Francisco Museum of Art, 401 Van Ness Ave., San Francisco 94102–4582 (415) 252-4035 or FAX (415) 252-4043. Cost: $110.

3 Literary Napkins
A set of three dozen cocktail napkins designed by 36 members of the design community from Niels Diffrient to Michael McCoy and Paula Scher has been produced. Participants were asked to produce a sketch in reaction to assigned words such as human, rage, and form. All proceeds benefit the American Center for Design's educational programs. Contact American Center for Design, 233 E. Ontario St., Ste. 500, Chicago, IL 60611.Cost: $25.

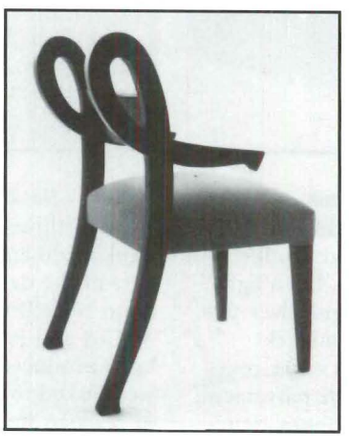
4 Body Cladding
T-shirts promoting the dicta of 20th-Century masters can now be had. One for Frank Lloyd Wright shows Fallingwater on the front and says "Organic Architecture" on the back; another shows Mies van der Rohe's Barcelona Pavilion and reads "Less is More" on the back; and the third shows Corbusier's Villa Savoye with "A House is a Machine for Living in" on the back. Contact New Architects Club, P.O. Box 12, Verona, NJ 07044 (201) 239-8703. Cost: $20–25.

(continued from page 92)

Caster-Mounted Chests
"Movers," a line of caster-mounted, beechwood chests, have been added to the Zerodisegno collection. The chests have an aluminum satin finish on both the top and the sides. Quattrocchio.
Circle 103 on reader service card



Energy-Saving Fixture
"Regina" is an energy-saving NEMA-4X-rated lighting fixture constructed from polycarbonate plastic. Designed for interior or exterior application, it is mounted onto a snap-in bracket for easy installation and maintenance. Beghelli.
Circle 104 on reader service card



New Side Chair
The "Ram" chair, constructed of maple with a mahogany finish and upholstered seat, is 36½ inches high, 27 inches deep, and 20 inches wide. Dialogica.
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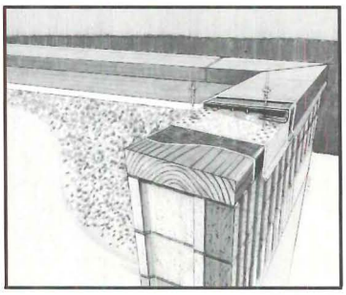
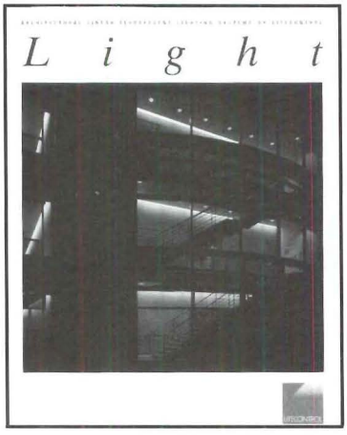


Parapet Wall Coping

The "Permasnap™ Coping System" has become the first parapet wall coping to receive an I-90 Approval from the Factory Mutual Research Corporation, according to recently released company literature. FM I-90 is the construction industry's most stringent rating system for protection against the effects of high winds. "Safeguard™ Fascia and Water Dam System" for built-up roofing and "Econosnap™ Roof Edge System" for single-ply systems have also received extended approvals from FM. W.P. Hickman.

Circle 106 on reader service card



Lighting Systems Brochure

Light is a new brochure on a line of linear fluorescent lighting systems. It describes the manufacturer's attention to "performance," "innovation," and "commitment" through application examples and brief product descriptions. Litecontrol.

Circle 200 on reader service card

Computerized Paint Specs

The "Sherwin-Williams Paint DataBank® Computerized Painting Schedule 09900," available on both 5¼-inch and 3½-inch floppy disks, is a painting schedule that arranges selections by substrate for exterior and interior exposures. The specifications are drafted in the Construction Specification Institute's master format and are compatible with many systems. Sherwin-Williams.

Circle 107 on reader service card

Office Tools Literature

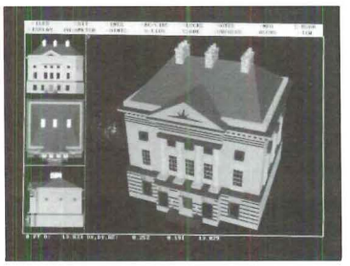
This four-color, spiral-bound catalog of computer support tools, personal lighting, and organizational work tools is divided into sections describing products relating to physical trauma, eye strain, and clutter. The information goes beyond general product descriptions with the inclusion of informative topics such as repetitive stress syndrome and organizational stress-reduction. Details.

Circle 201 on reader service card

CRSI Software

Two new software programs are part of a yet-to-be-completed software version of the 1992 CRSI Handbook. HB-COLUMN (Reinforced Concrete Column Design) and HBRETAIN (Reinforced Concrete Cantilevered Retaining Wall Program) are $95 each. Contact Concrete Reinforcing Steel Institute, 933 N. Plum Grove Rd., Schaumburg, IL 60173–4758 (708) 517-1200 or FAX (708) 517-1206.

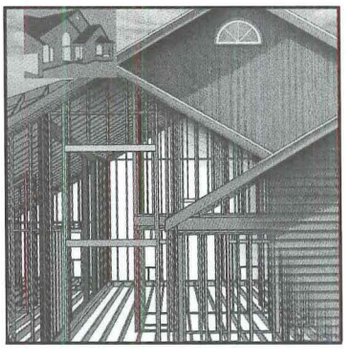
Computer Products



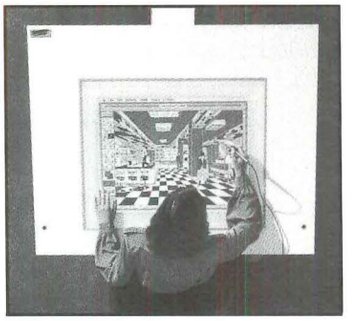
DesignCAD Professional
American Small Business Computers's first high-end CAD package combines the features of its other products. DesignCAD Professional contains a popular 2-D drafting package, with a new 3-D modeling and rendering application, a scanning application that converts paper drawings to CAD drawings, an extensive symbols library, and an estimating program. American Small Business Computers.
Circle 108 on reader service card

RxEDM 2.0
Rasterex has updated this viewing and redlining tool for PC compatibles. The program can create overlay files as well as completely converted drawings in AutoCAD. The philosophy behind the system is to allow those not familiar with AutoCAD the ability to correct drawings on the computer. Expert Graphics.
Circle 109 on reader service card

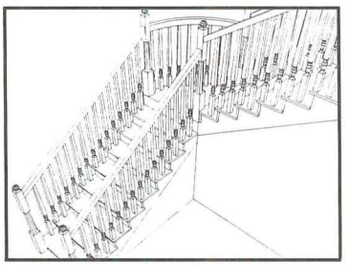
BeneLog
This Windows-based project management tool is specifically designed for tracking shop drawings and other construction-related documents. The system automatically assigns code numbers to documents, and tracks the time each is held by a consultant or by in-house staff. Okoh, Gurevich & Co.
Circle 110 on reader service card



SolidBuilder
Billed as a "next generation CAD program," SolidBuilder is an integrated intelligent CAD system for wood frame construction. Once the architect has crated a 3-D model, the program will frame the structure and label and catalogue every component. Users can customize the database of materials and components to reflect their standards. SolidBuilder can generate cutting and layout lists, bills of materials, and quantity take-offs. The program can also be used to create framing diagrams, perspective renderings, and production drawings. Computer Integrated Building.
Circle 111 on reader service card

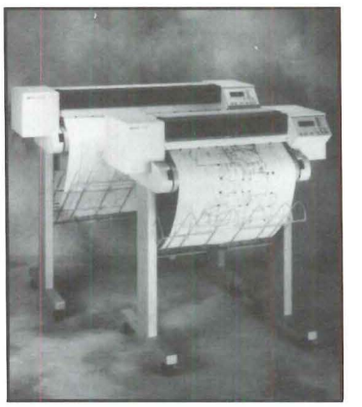


CAD Drafting Table
Pen-based CAD drafting is swiftly becoming a reality. A.R. Technologies has introduced the Designex Computerized Art Table, a table with a built-in computer monitor that serves as a drawing surface. The system can run both Macintosh and Windows operating systems. It includes a motorized tilting mechanism, and can be had with either a 33-inch or 21-inch diagonal monitor. A.R. Technologies.
Circle 112 on reader service card



3-D Stairs
Cadkey has released an add-on to its popular DataCAD program. 3-D Stairs allows the user to set parameters for a stair and allow the computer to resolve remaining dimensions or quantities. Users can also customize tread, riser, landing, stringer, baluster, and handrail details. Cadkey.
Circle 113 on reader service card

MICRO/CFMS
Harper and Shuman's project management software has been redesigned in its recently announced tenth version. The user interface integrates the system's functions in pull-down menus, data entry, and look-up capabilities have been expanded, and the company is claiming easier sorting and scanning of reports. A Profit Center Reporting module also is available to track firm profitability. Harper and Shuman.
Circle 114 on reader service card



HP DesignJet 600
Hewlett-Packard has doubled the resolution of ordinary ink jet plotters with its new D- and E-size range. These plotters can print 600 × 600 dots-per-inch, with a 300 × 300 dots-per-inch draft mode. The company claims the E-size plotter can do a draft in less than four minutes, and a final drawing in no more than 12 minutes. Hewlett-Packard.
Circle 115 on reader service card

Building Materials

Major materials suppliers as they were furnished to P/A by the architects for buildings featured this month.

DKNY showroom, New York (p. 54). *Architects: FTL Architects, New York.* Prefabricated fireproof steel columns: Lally Tubular. Custom steel trusses: Koenig Iron Works. Stucco: U.S. Gypsum. Aluminum curtainwall and translucent panel system: Fisher Skylights. Flat-seam metal siding: Berridge. Aluminum windows: Traco. Glass block: Pittsburgh Corning. Exterior glass doors: EFCO. Hollow metal doors and frames: Bilt-Rite. Coiling grille: Metro Door. Fire shutters and sliding doors: Cookson. Diamond plate sheet vinyl: Lonseal. Carpet: Designware. Aluminum pan ceiling system: Simplex. Roll roofing: Celotex. Modified bitumen roofing: U.S.Intec. Sealants: Sonneborne. Rigid insulation: Dow. Fiberglass insulation: Owens Corning. Fireproofing: CAFCO. Gypsum board: U.S. Gypsum. Exposed steel coatings: Tnemec. Interior paint: Benjamin Moore. Epoxy floor paint: Burke. Hinges: Stanley. Locksets: Sargent. Electric exit devices: Von Duprin. Refrigerators: Sub-Zero. Gas range: Viking. Bleachers: Zengineering. Billboard signage: Artkraft Strauss. Metal halide billboard lighting: Crouse-Hinds. Stainless steel rods/turnbuckles at stairs: Tripyramid. Pendant fluorescents: Linear Lighting. Incandescent track lighting: Lighting Services. Recessed fluorescents: Zumtobel. Compact fluorescents: Edison Price. Corian lavatories and counters: DuPont. Water closets and faucets: American Standard. Flush valves: Sloan. Toilet stalls: Flush-Metal. Toilet accessories: Bobrick. Sprinklers: Central Sprinkler. Radiators: Runtal. Package air-conditioning units: Carrier. Thermostats: Titus. Folding showroom tables: Vecta. Motorized shades: DFB. Video cassette recorders and monitors: Sony. Still image generators: Panasonic. Loudspeakers: JBL. Amplifiers and control system: Audio Design Associates.

Secret Garden, Chicago (p. 58). *Architects: Weese Langley Weese, Chicago.* Existing brick masonry and wood structure. Steel casement doors, A&S. Steel casement windows, recycled. Steel stair, pipe and cable railings: La Monaca Iron Works.

Project: Tustin Ranch Golf Course Clubhouse and Community Center, Tustin, California (p. 60). *Architects: Rob Wellington Quigley, FAIA, San Diego, California.* Floor trusses: Trus Joist. Aluminum storefront and doors: St. Gobain. Translucent plastic, glazing, and sliding partitions: Kalwall. Custom design carpet: Axminster. Slate: Eurocal. Quarry tile: American Olean. Rubber flooring: Norament. Rubber tiles: Flexco. Rubber matting: Scotia Golf Flooring. Built-up roofing: Manville. Paint and stain: Frazee. Plumbing fixtures: American Standard.

Project: Princeton University Engineering Quadrangle Parking Structure, Princeton, New Jersey (p. 66). *Architects: Machado & Silvetti Associates, Boston.* Steel frame: S.S. Fisher Steel. Face brick manufacturer: Kane Gonic Brick. Precast stone: Bucella Precast. Painted metal screen fabricator: Ametco. Bronze lattice: Tate Fabricating. Bronze patina: Sur-Fin Chemical. Copper cladding: Wheeler Architectural Metals. Steel windows & doors: Galaxy Steel Door Frames. Bluestone pavers: Johnson & Rhodes. Membrane roofing: Manville. Exterior Paint: Tnemec. Hydraulic elevator: Montgomery. Exterior lighting: Louis Poulsen.

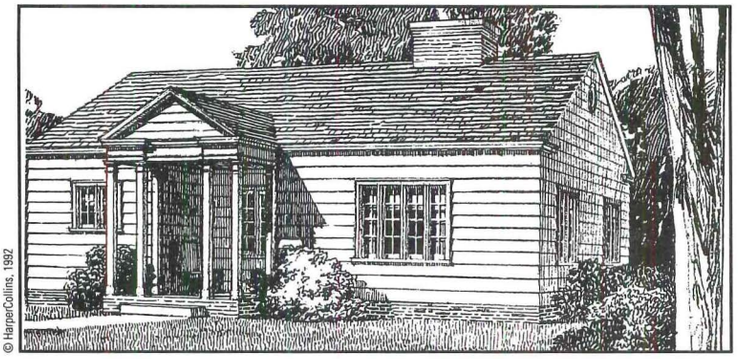
Project: Camp John Marc Myers, Bosque County, Texas (page 78). *Architects: Good, Fulton & Farrell, Dallas.* Concrete foundations: Ingram Industries. Vinyl-clad wood windows: Caradco. Custom wood doors: Richard Wincorn Studios. Concrete pavers: Pavex. Corrugated metal roofing: Wheeling Steel. Batt insulation: Owens Corning. Interior and exterior stain: Jones Blair. Custom chandeliers: David Karp Studios.

Progressive Architecture 1992 Annual Index

This index lists the issue and page number of articles that have appeared in P/A in 1992. It is organized alphabetically by subject, and by architects and designers. P/A's special Mid-October Information Sources issue, which includes alphabetical listings of references by subject, is not included in this index.

• Subject Index

Books *(continued from page 90)*



Gowans wrote that this 1915 house (plans distributed by the AIA) "combined a vaguely Colonial homestead form with a bit of Georgian detail to create a popular mix that melded into Williamsburg Colonial ... and so became a standard small house form."

to a turn) is of Nicholas Biddle. He was the first American liberal arts graduate to sketch in Greece after the 500-year Turkish occupation. Then he became President of the Second Bank of the United States, in Philadelphia, and specified Greek Revival to his architect, Strickland. For a 19th-Century Yankee Yalie, sketching and banking were like breathing. President Andrew Jackson hated his guts but in the end agreed on one thing: that Greek Revival was right for U.S. banks. Gowans elaborates:

> ... the associated ideas were what mattered .... For banks, Greek Revival proclaimed liberty .... Thanks to the Republic's banking laws, it was now possible as never before for an individual to save money and thereby experience freedom in the only sense that really mattered: freedom to tell the boss to go to hell and to move, to use a nest egg to start a new life or a new profession.

This is not to say that architects are underrepresented in this school of architectural history; they are very much there – but they are represented in true perspective to their role in unskewed history, not as solitary heroic actors. The Kaufmans, Sr. and Jr., get their due as well as Wright; Hearst as well as Morgan; Phyllis Bronfman Lambert as well as Mies van der Rohe. (Some of Gowans's best writing, by the way, is in the captions.) Gowans and others of this school are honest enough to admit that more often than not architects are instruments of other people's visions, individually or collectively – of the other 99.963 percent of the population.

The question that arises – and it never fails to confound me when it does – is why isn't the architecture history world the other way around? If we really expect architecture students to become gainfully employed professionals, able to raise children and have a nice house and car, doesn't it make some sense to teach them architectural history as it really exists – that is, from the point of view of the 99.963 percent that provides their clients and users? Why do we instead set them up with lies they must undo to practice successfully? We pretend that the world of architecture is wholly circumscribed and self-referential, consisting of this architect influencing that one in a vacuum – or couching our explications in some obscure French theory of criticism that any alert child can perceive as twaddle. Why don't we take such irrelevant historians and put them in monasteries where they can pass their time writing for, about, and to each other? The answer is: because they're already there.

Alan Gowans is now working on a book of world architecture history. Hope springs eternal. When architecture school tenure is decided by panels of ex-clients, his will be the textbooks to be adopted. **David Clarke** ■

The author, a professor at Southern Illinois University in Carbondale, wrote Arguments in Favor of Sharp-shooting *and the forthcoming* Frank Lloyd Wright and the Laffer Curve.

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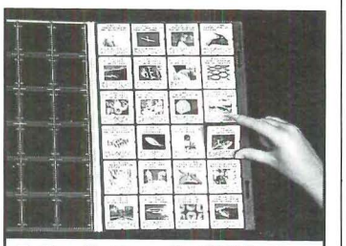

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