

IPA

Progressive Architecture

A Penton Publication

July 1994

Also in this issue:

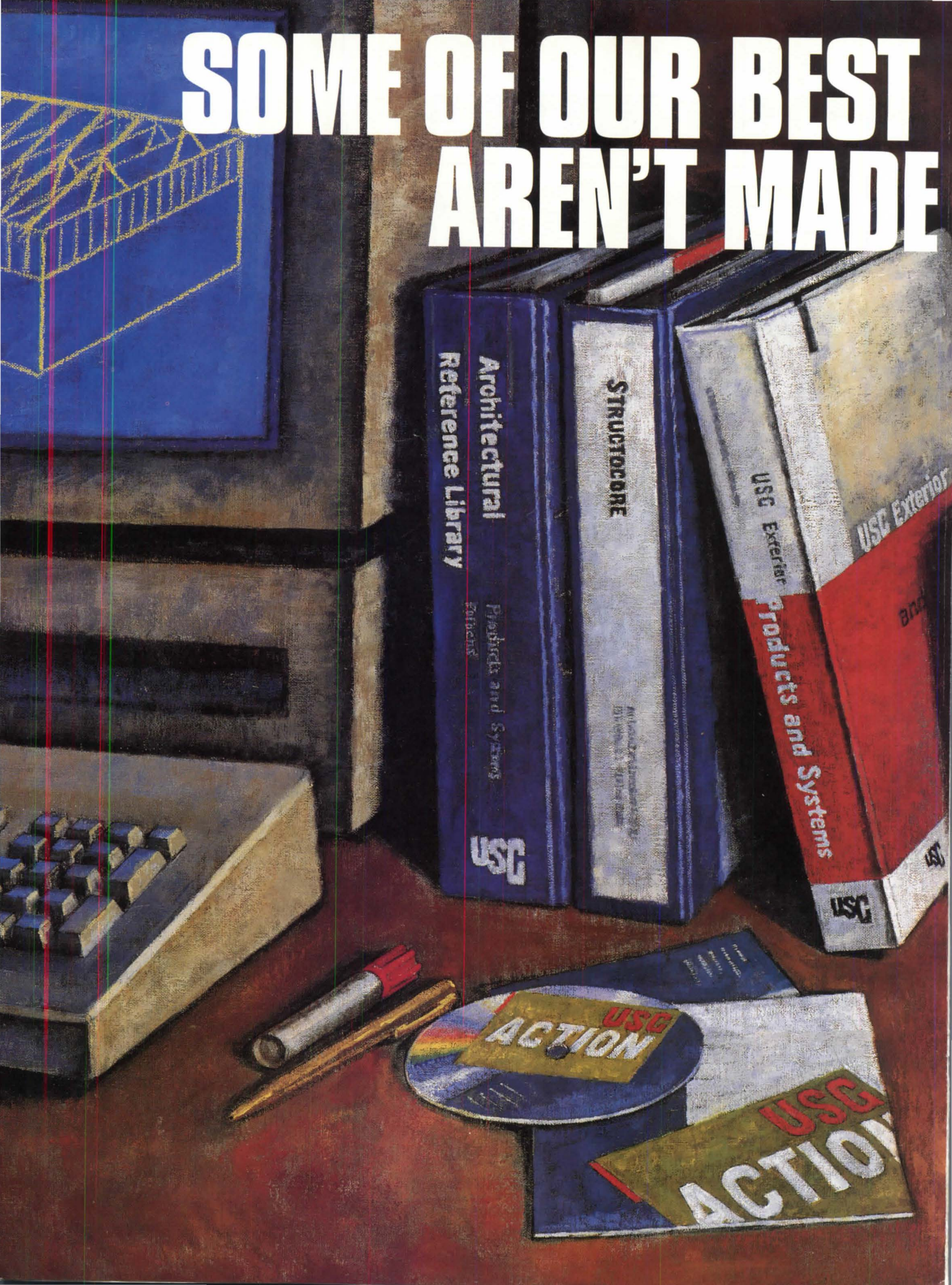
- Works by Heikkinen and Komonen
- Interview: Jaime Lerner
- 1st Annual Research Awards
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Reading our Readers

The latest round of changes in P/A's editorial pages has stimulated an unprecedented outpouring of opinion and advice from our audience. There has been a spontaneous flood of mail on some of our articles, notably the February cover feature, "Can This Profession Be Saved," and the April one, "AIA: Worth the Price of Admission?"

P/A's editors have also invited some of the response; we are convinced that reader feedback is necessary if we are to transform our magazine into a unique medium for examining this profession and its works. We have bound FAX surveys into the magazine, mailed other surveys to subscribers and non-subscribers, and assembled focus groups of representative professionals to give us their opinions. Those surveys show that between 81 and 91 percent of our readers like the new direction of the magazine as much as or better than the old P/A in terms of its value to their work, its interest to them personally, its adequacy of information, and its coverage of professional concerns.

When our February issue appeared, many subscribers observed that, for the first time, they had an architecture magazine they could actually read. John Siebel of Los Angeles FAXed us our first response to these changes: "I'm putting down the latest issue of P/A just long enough to write you this letter. In my humble estimation this is the best issue of P/A magazine I have ever read (not just looked at the pictures)...."

Architect Hugh Hardy of New York took somewhat longer to deliver these sage words: "Having finally read the February issue of P/A, it is possible for me to comment upon its brave new world.... You have made a startling contribution to the profession by suggesting architects should read and think, as well as manipulate forms and colors...."

Catherine Naismith of Toronto penned a brief postcard: "I'm enjoying the new P/A - for the first time I read it cover to cover - full of things I need to or would like to know."

Matthew B. Smith of Peoria, Illinois, was one of those who praised the intention behind the changes, but not the product: "Your goal of becoming a more 'tough-minded journalistic magazine' and less a 'beauty pageant' is admirable enough.... Unfortunately, however, in reaching your goal, P/A clearly lost more than it gained...."

Some readers didn't even give us points for good inten-

Response to recent issues indicates widespread, though by no means uncritical, enthusiasm for the new kind of magazine P/A is becoming.

tions. Patrick Winters of Venice, California, got directly to the point: "Your new magazine design is appalling. I was shocked to discover that what appeared to be one of the many low-budget construction trade journals lying around our office was actually P/A!.... I have long considered your magazine to be the premier American architec-

tural journal. The latest changes to your publication now put that judgment in doubt."

A lot of reader criticism has focused on P/A's appearance more than on its content. But magazine design is not isolated from editorial intentions (at least, it shouldn't be). In our zeal to break the complacent picture-book mold, we were urging P/A's art director to strive for visual shock and abrasive juxtapositions. We've definitely learned that readers in this profession don't favor assertive graphic devices, especially if they intrude on photos and drawings. Future issues will be visually calmer and more orderly than those earlier in the year.

Some readers, such as Professor Richard Levine of the University of Kentucky, recognized that we are charting a new course, even as we pursue it: "Congratulations on the new P/A. You are now doing just what you should be doing. Perhaps it will be a bit difficult in the beginning, but as you get going, it will be worth it. I predict that we will all be surprised at some of the benefits and unexpected directions your publication will discover for us."

We will probably lose some readers who don't like to read or who want to focus exclusively on design (and some outside the field who peruse the magazines just to see what is "hot"). On the other hand, we seem to be making subscribers of some previously alienated professionals: Joseph Lambke of Chicago wrote: "I have never subscribed to architectural fashion magazines, so it was only by chance (or by association with critical thinking people) that I was given your February issue because a friend thought it had great things in it."

As P/A evolves, its subscription list will shift toward those committed to our new mission. (Even in this transition period, however, P/A's readers are renewing subscriptions to P/A at substantially higher rates than to the more predictable magazines in the field). We are digesting what readers tell us and shaping a magazine that addresses your concerns. The better we can read you, the more you will get from reading P/A. □



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P/A's New Direction

I would like to congratulate you and thank you for shifting the purpose and content of your magazine. I finally feel after more than 25 years out of school that I have a professional journal worth reading cover to cover. The irony is now that there is some real content, I do not feel so guilty about indulging in some of the more fashionable sideshows of the profession that may still appear in the same pages from time to time.

I can think of many architects who are thrilled by what you have done and, if they have not yet taken the time to write, I would like to give thanks on my behalf as well as on theirs! I hope you do not have a change of heart because of those who may be complaining. Good Luck!

*Michael Pyatok, AIA
Oakland, California*

The print is fine; the size is fine; the layout is fine; the graphics are fine; etc., etc., all very businesslike and an easy read. And, regarding your notion to stop treating architecture in the same genre as women's fashion, I can only say congratulations and well done.

I pretty well drifted away from P/A years ago when your coverage of 20-year-old architectural grand masters became obsessive, as if the latest truth in architecture was not discovered over a 200-year period, nor a 100-, nor a 50-, nor even in a decade; but if a new breakthrough and stylistic revelation was not documented at least on an annual basis, we were all made to feel woefully behind the times.

Architecture is far too important and permanent to be treated in a trendy fashion. I congratulate you on focusing on substance rather than on style.

*George Haecker, AIA
Pasadena, California*

Thank God for P/A! The new format and editorial approach give your readers some much needed and long-overdue aggressive journalism. The past four issues have been great – filled with articles that are very relevant to our practice and the challenges architects now face – both to survive and to contribute to a rapidly changing society. Keep up the good work!

*James A. Wentling, AIA
Philadelphia*

It is so wonderful to see your magazine this month. This fundamental change of architectural journalism may very well wake up the profession. Your process of self-evaluation truly gives us the opportunity to reflect on our fading role in society. Given enough time and energy, I believe that we can work together to save our practice. Indeed our office is implementing steps to address some of the critical issues mentioned in your magazine. Hopefully, we will have something to report in the near future.

I think your new magazine breathes new life and hope. Thank you so much.

*Lawrence K. Man, AIA
Cambridge, Massachusetts*

AIA

Hurray for the article by Michael J. Crosbie in the April edition entitled, "AIA: Worth the Price of Admission?" It was easily worth the price of renewal of P/A.

Our firm has been established since 1953, and we have six registered architects, all of whom once belonged to the AIA, some since 1958. None of us can name a handful of benefits of membership. One architect in our firm is the past president of the local chapter.

There were no concessions offered or made to members in the mid-80s when 40 percent of the firms in our area were leaving the state or going bankrupt.

There is no question that the AIA powers that be in Washington are out of touch and encouraging those of us in the rank and file to go away and stay away.

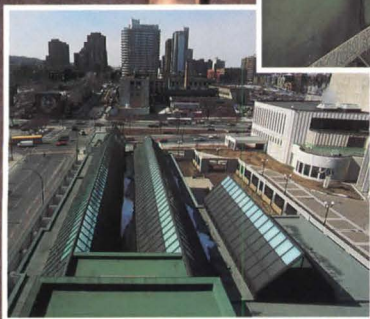
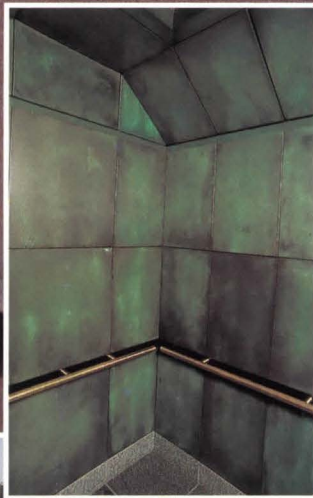
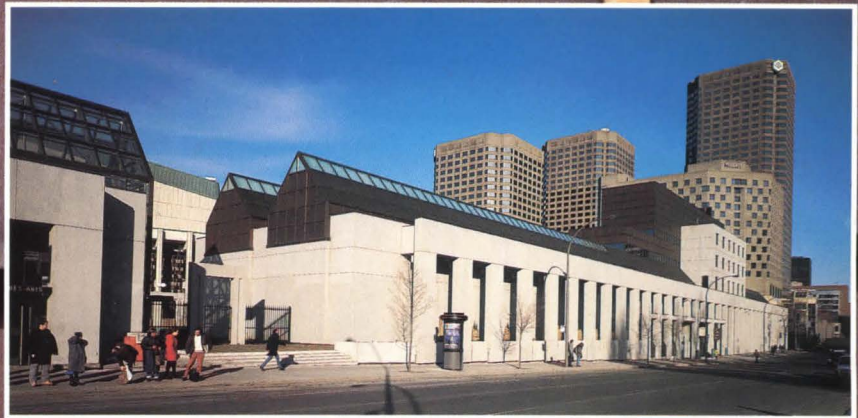
*Richard DeMunbrun (formerly AIA)
San Antonio, Texas*

Computer-Generated Drawings

Regarding the article "Like Pencils, Only Better" in the May issue (p. 80), is no one else disturbed by the falsity of the idea of making computer-generated drawings look like something they are not? While the rapid expansion of the capabilities of computers is both astounding and liberating, is there not just a bit of nagging queasiness in anyone's mind about the superficiality and deceptiveness of making machine-made drawings look like they were made by hand?

The kind of sketchy, fuzzy pencil drawing referred to in the article has its value to the practice of architecture as much or more in its role as "process" as of "product." It "talks back" to the designer, (continued on page 67)

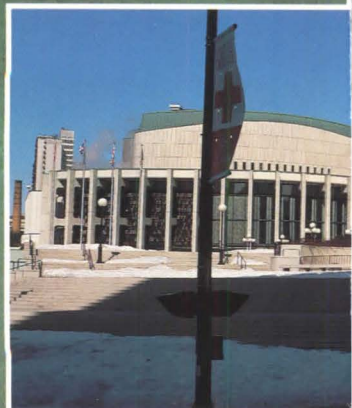
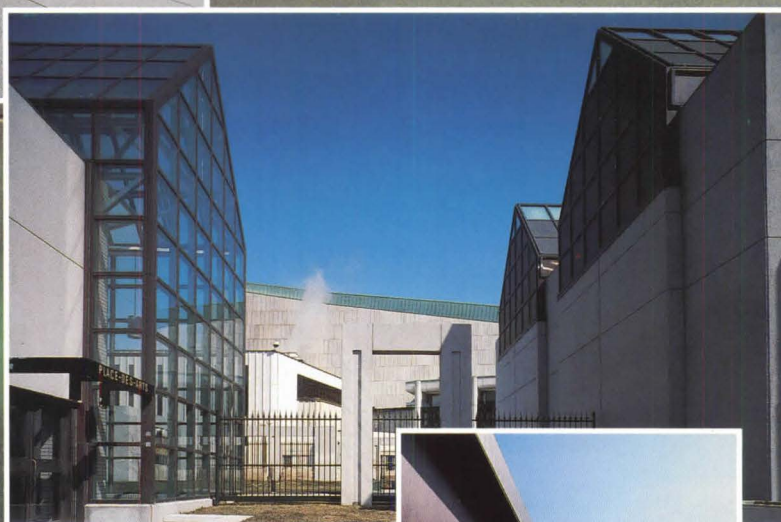
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MUSÉE D'ART CONTEMPORAIN DE MONTRÉAL

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Montréal

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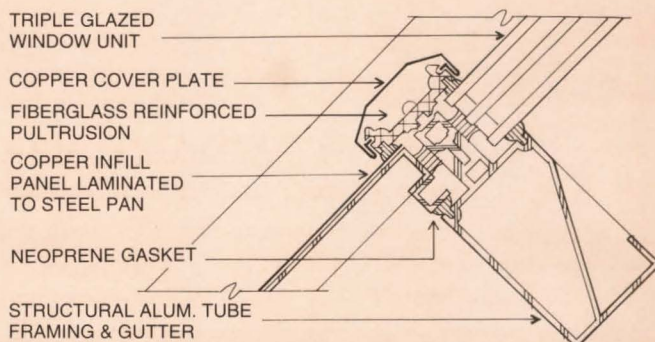
A triad of distinctive buildings comprises Montreal's Place des Arts in the northwest sector of the city. Easily accessible by subway, bus, automobile and pedestrian walkways, the complex has evolved as a popular meeting place and cultural focus for the past 25 years. The newest of the buildings, the Museum of Contemporary Art, is a five-story juxtaposition of precast concrete, glass and copper. It harmonizes well with its elder sisters through its common vocabulary of materials and handling of massing. However, each building has a personality of its own.

Striking in its modern use of copper (a metal replete in this historic city), the new museum building boldly presents an exterior copper curtainwall to complement its roof treatment. The copper motif continues inside. Interior focal points have been clad with prepainted copper to echo the advanced age and beauty of its neighbors. Meanwhile, the exposed copper has been left to weather naturally and blend with its sisters as the family complex ages gracefully.

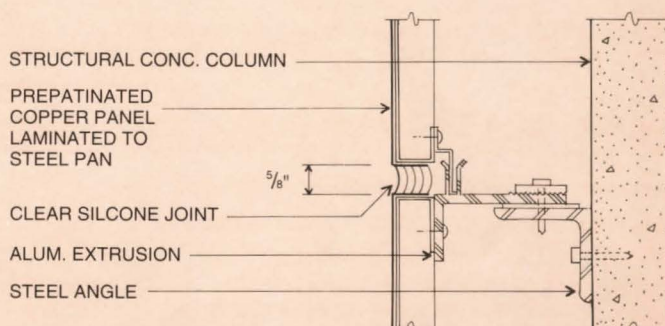


Photography: Pierre Guay

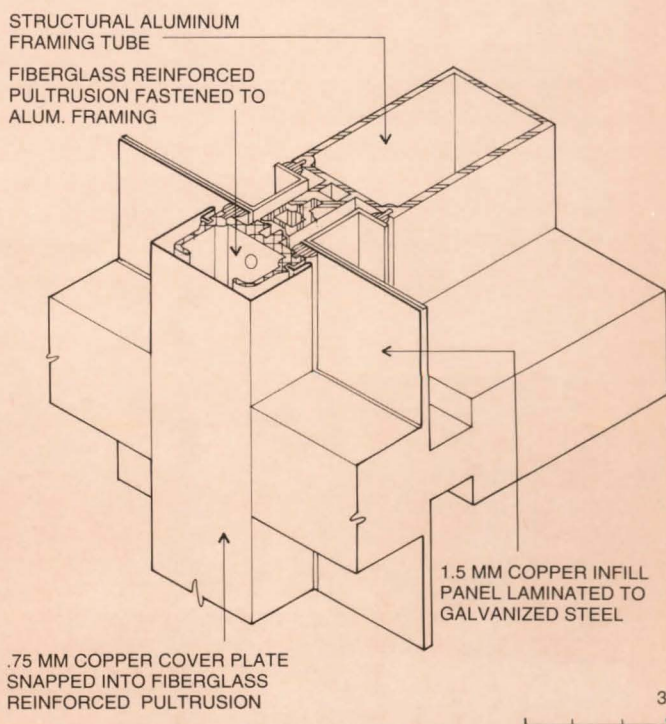
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DETAIL-SLOPED SKYLIGHT



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ISOMETRIC-EXTERIOR CLADDING SYSTEM

MUSEE D'ART CONTEMPORAIN DE MONTREAL: THE TEAM'S THINKING

The following is taken from conversations with Michel Desrosiers, Associate Principal, JPL & Associés Architects, and Dominic Lefebvre, Gerant de Project, LBL Inc., curtainwall contractor.

The Architect:

This is a contemporary building using materials in context with the buildings of its environment. From the beginning of the design concept, copper was a primary focus. Surrounding the museums of the Place des Arts are commercial buildings. In the language of architecture, curtainwalls are often associated with the commercial, while copper is more closely associated with the institutional. Thus, we sought a blend using the nobility of copper with the practicality of a curtainwall design.

Copper is comfortable with designs of any age or period. Early proposals for substituting aluminum panels, based on budget considerations, were rejected. Copper complemented the complex specifically and the cityscape in general.

We decided to let the exterior weather naturally, while permanently capturing the elegance of patinated copper for prominent interior applications using a patina acceleration process. All panels were processed prior to installation. The results are very stable.

"Copper is comfortable with designs of any age or period."

Four central columns rise five floors to a dome capping the lobby rotunda. This focal point is completely clad with the prepatinated panels as are the elevator interiors and several other accent locations throughout the building. This use of copper fulfills the philosophy of the design, links the museum's inside and outside, and ties it to its 25-year-old neighbors.

Most architects are not familiar with designing copper curtainwalls. Here's where it's important to work with an experienced and competent contractor, one who can

team with the architect, both in design considerations as well as construction shop drawings. A good contractor can take a good design and make it happen.

The Contractor:

Our firm has been working successfully with copper curtainwalls since 1984. The Museum of Contemporary Art is probably the most demanding for both roof and wall applications. The broad areas between mullions (up to 4' x 4') necessitated a rigid, flat, warp-free panel, difficult to achieve with copper alone.

"A good contractor can take a good design and make it happen."

We used 0.06-in (1.5-mm) copper sheet bonded to 0.04-in (1-mm) galvanized steel sheet. A sheet of each metal is fully coated with a 0.04-in (1-mm) layer of a two-component polysulfide adhesive made by PRC Canada and then pressed together. The adhesive, which is the same used to hold in place the heat protection tiles on the U.S. Space Shuttle, sets up in about 20 minutes. All fabrication is done in the shop. The hybrid panels can withstand up to 60 lb/sq ft from wind or snow with less than 0.08 in (2 mm) deflection at their midpoint.

Complete adhesive coverage of the metal panels ensures no galvanic interaction, and the flexibility of the adhesive offsets any shearing related to their different thermal expansion characteristics. The PRC adhesive was especially developed for the panels' fabrication and to withstand all anticipated conditions of sun, temperature and humidity. Its formulation comprises copper chloride, arsenic, copper phosphate, copper sulfate and water.

The mullions are roll-formed copper caps, 0.03 in (0.75 mm), that snap on to FRP (Fiberglass Reinforced Plastic) pultrusions which are fastened to a 4-inch (100-mm) deep aluminum subframe. Moisture protection is accomplished by neoprene gasketing where the pultrusion meets the copper panel and the use of PRC 5000S sealant between the panel edges and the structural aluminum mullion frame. In this design, the copper has little to do with the building's moisture barrier. Virtually the

same design is used for the triple-glazed panels as for the copper-steel panels, both for the roof and for the curtainwall. The design is similar to the Zimmcor system we used on Le 1000 de La Gauchetière in the center of Montréal.

"...experience and appreciation for design and performance have led us to...copper..."

The prepatinated copper interior panels are bolted to aluminum extrusion stand-offs which, in turn, are bolted to steel angles. No mullions are used. The 0.625-in (16-mm) joints are filled with clear silicone. The interior panels are clear-coated for both luster and protection by a product from SICO, Canada.

The Team:

The benefits of the curtainwall contractor teaming with the architect are extraordinary and augment the value of each to the building owner. Our combined experience and appreciation for design and performance have led us both to our commitment to copper and to a highly successful building for the arts.

The Copper Development Association Inc. and the Canadian Copper & Brass Development Association provide information and technical assistance to architects, contractors and builders considering the use of copper and copper products in projects of any scale. This publication has been prepared for the use of such professionals and compiled from information sources CDA and CCBDA believe to be competent. However, recognizing that each installation must be designed and installed to meet the specific requirements of the application, CDA and CCBDA assume no responsibility or liability of any kind in connection with this publication or its use by any person or organization and make no representations or warranties of any kind hereby.

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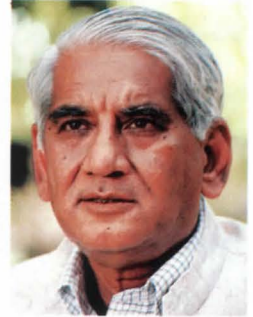
Roberto Burle Marx 1909–1994

Brazilian landscape architect Roberto Burle Marx, who developed a distinctly native language of gardens and public spaces for his homeland, died on June 4 at age 84 at his home near Rio de Janeiro.

A committed Modernist, Burle Marx (shown above in 1990 in a private garden he designed) introduced ideas and geometries from abstract art into his plans while employing plants from

Brazil's voluminous list of lush native species. He worked with planner Lucio Costa and Oscar Niemeyer on the design of the capital city of Brasília (1956–1961), but his most celebrated work was the 300-acre Flamengo Park in Rio (1954), a landfill project that incorporated parkways, gardens and lawns. He designed almost 3,000 projects in 20 countries during his 60-year career. □

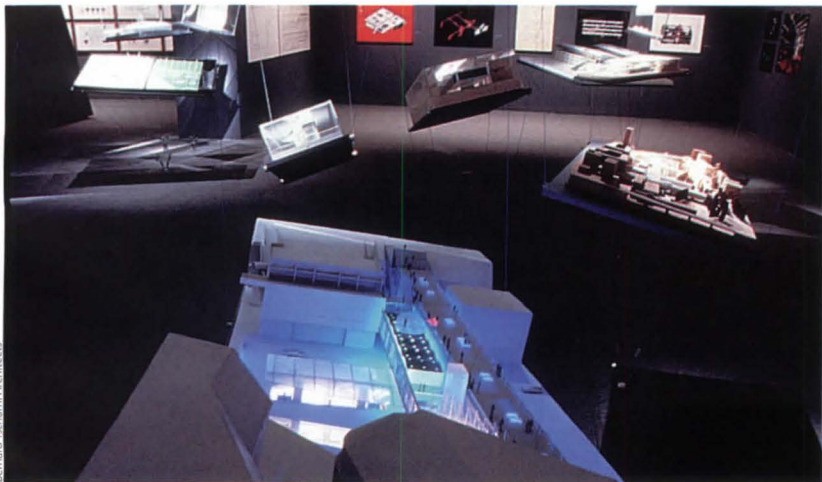
Correa Wins Praemium Imperiale



Indian architect Charles Correa, 63, will receive the Japan Art Association's Praemium

Imperiale Award in architecture. Correa, who practices in Bombay, is widely recognized for his work in housing and in climatically responsive design; his credits include New Bombay, a new city of two million people for which he served as chief architect.

The six-year-old Praemium Imperiale was designed to recognize achievement in fields not covered by the Nobel Prizes. The other winners this year are British actor John Gielgud, American sculptor Richard Serra, Chinese-born French painter Zao Wou-Ki, and French composer Henri Dutilleux. Each winner receives a commemorative medal and 15 million yen (about \$150,000). □



Bernard Tschumi Architects

AIA Shuffles Staff, Rolls Heads

In what was touted as a "major effort to provide better services to its members," the American Institute of Architects has reorganized its headquarters staff. In the process, it laid off more than a dozen employees (including one of its nine vice presidents), bringing the national AIA staff to 186. According to the Institute, this represents a staff reduction of 17 percent from its 1993 budgeted level of 223 employees.

The reorganization shuffled operating departments, eliminating some old ones and creating some new ones, ending up with a grand total of ten (the old structure had nine): the American Architectural Foundation, government affairs, professional practice, public affairs, member communications and information, education, business operations, internal operations, human resources, and general counsel.

AIA funds have also been reallocated to enhance some areas (communications, government affairs, and education) at the expense of others: the staff of the AIA's community design & development department, for example, was gutted. □

Tschumi Exhibits at MoMA

Proving that there is life after La Villette, Bernard Tschumi Architects mounted a show this spring in the Museum of Modern Art's design gallery. Titled "Architecture and Event," the show included five projects by the firm, displayed in arresting models suspended at jaunty angles. The work is aesthetically dazzling and programmatically imaginative. Most notable are the spatially capti-

vating second-place entry from the Kansai International Airport competition and an ambitious project – covering a set of existing buildings with a lofty steel structure – now under way for the National Studio of Contemporary Arts in Tourcoing, France. But *New York Times* critic Herbert Muschamp was skeptical of Tschumi's depth, labeling him "a Morris Lapidus who thinks he's a Walter Gropius." □



Work by Swiss Architects Herzog & de Meuron On Show

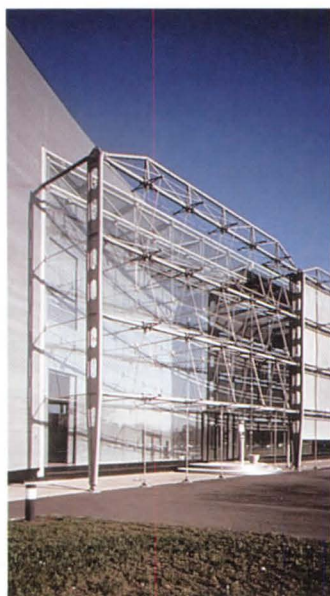
"Any artistic architectural idea is worthless, even ridiculous, if it cannot be expressed within the regular building process," say Jacques Herzog and Pierre de Meuron. An exhibition of seven European projects by the Swiss firm, at the Peter Blum gallery in New York through mid-September, is evidence of ideas realized, not stranded on paper. Their work, shown in subtly manipulated, large-scale photographs (6' x 7') by Thomas Ruff, attempts to close the gap between the complexities of contemporary culture and ideas and the process of making architecture.

A concrete railway signal box for a site in Basel is wrapped in narrow strips of copper, twisted in intervals to emit daylight into the interior; the building acts as a Faraday cage protecting the electronic equipment inside. So too, a private contemporary art gallery in Munich investigates materiality. Here, two glazed glass strips frame the wood midsection of a rectangular volume; the building's character changes, depending on the time of day and light conditions.

A monograph is available from Peter Blum Editions, New York (\$65.) □

Benedictus Award to French Architects

The second annual Benedictus Award, given for "innovation in the use of laminated glass," has been awarded to the Paris firm Architectes Urbanistes for their Banque Populaire de l'Ouest in Rennes, France (P/A, March 1992, p. 80). The building (right), which features a 393-foot-long suspended structural glass façade, was singled out for its "marvelous interplay of walls and structure." Elina Vaittinen of Tampere University of Technology in Tampere, Finland, won first prize in a concurrent student design competition for the expansion of the Bauhaus in Weimar, Germany. The program is sponsored by DuPont and the AIA/ACSA Council on Architectural Research. □



Books



Ludwig Wittgenstein, Architect by Paul Wijdeveld, MIT Press, Cambridge, Massachusetts, 1994, \$75.

Believe it or not, the philosopher Wittgenstein (photo above) produced one work of architecture – a house in Vienna for his socialite sister – with former Adolf Loos apprentice Paul Engelmann. Well illustrated with photos and sketches, this book demonstrates that the 1928 house is more than a curiosity; it is an early Modern work worth study.

The Theory of Architecture, Concepts, Themes & Practices by Paul-Alan Johnson, Van Nostrand Reinhold, New York, 1994, \$39.95; **A History of Architectural Theory, from Vitruvius to the Present**, by Hanno-Walter Kruft, Princeton Architectural Press, New York, 1994, \$65 cloth, \$39.95 paper.

These two books on architectural theory complement each other. The Kruft book, first published in Germany in 1985, is encyclopedic, with detailed descriptions of theories – both well-known and obscure – in chronological order. A bit dry, it is best used as a reference work, with an excellent index of names and an exhaustive bibliography. The Johnson book is more textbook in character, with theories arranged thematically and with each chapter including quotes, history, commentary, and further sources. It is a pleasure to read, with an engaging narrative and strongly stated opinions.

Urban Revisions: Current Projects for the Public Realm

edited by Russell Ferguson, Museum of Contemporary Art, Los Angeles, and MIT Press, Cambridge, Massachusetts, 1994, \$29.95. Five thought-provoking essays by urban theorists and thinkers dovetail with the presentation of 18 public realm projects in this exhibition catalog published in conjunction with the traveling exhibition "Urban Revisions," on view at MoCA through July 24.

Behind the Post-Modern Façade: Architectural Change in Late Twentieth-Century America

by Magali Sarfatti Larson, University of California Press, Berkeley and Los Angeles, 1993, \$35. Basing her findings on interviews conducted between 1988 and 1990, the author, a sociology professor, portrays the style wars of recent decades in relation to this "heteronomous" profession's struggle for a meaningful role in the larger society. The book can be tedious reading, especially in the early chapters, where the scene is set for nonarchitects. But the final chapters thoughtfully examine the P/A Awards program as a "symbolic reward system" and a platform for discourse.

Briefly Noted

Starting a New Design Firm, or Risking It All by Frank A. Stasiowski, Wiley, New York, 1994, \$39.95.

A how-to guide to organizing, managing, marketing, etc.

A Guide to Archigram 1961-74 edited by Dennis Compton, Academy Editions, London, and St. Martin's Press, New York, 1994, \$35 paper.

Small-format monograph on and by the Brits who did for architecture what the Beatles did for Rock and Roll.

Double Play

The season's two new major league ballparks: a historicized suburban park for the Texas Rangers and an urbane Modern structure for the Cleveland Indians.

by Barbara Koerble

The proverbial field of dreams is emerging as a new vehicle for urban revitalization and civic identity, judging by two new ballparks that opened this spring in Cleveland, Ohio, and Arlington, Texas. Following in the formidable wake of Oriole Park's overwhelming success in Baltimore (P/A, June 1992, p. 26), Cleveland's Jacobs Field and The Ballpark at Arlington demonstrate how far ballpark design has come from the generic multipurpose stadium of the 1960s, and how it continues to be shaped by economic factors.

Jacobs Field surpasses its Baltimore predecessor, both in its humanistic reinvigoration of modern ballpark design and in the concurrent urban redevelopment efforts of the Gateway Economic Development Corporation. The Ballpark at Arlington gamely feigns a similar urbanity, in spite of its suburban setting, but underscores the pitfalls of transplanted nostalgia.

The design of the building type has for several decades been dominated by several sports facilities specialists, including Hellmuth, Obata & Kassabaum Sports Facilities Group of Kansas City, who designed Jacobs Field. HOK Sports's uneven work has ranged from the much maligned New Comiskey Park in Chicago (P/A, July 1991, p. 26) to the widely praised Oriole Park at Camden Yards. The Texas Rangers, however, decided that a newcomer to sports design might yield even more creative results. Following an exploitative pseudo-competition (conducted with no professional jury or fees), David M. Schwarz/Architectural Services of Washington, D.C., was selected as design consultant to architect of record HKS of Dallas, with HNTB Sports Architecture Group of Kansas City consulting on ballpark requirements.

The contrasting settings for the two new ballparks reflect the long-standing conflict between the traditional urban setting of the classic ballpark and the strong pull of the



Craig Blackmon, AIA



Craig Blackmon, AIA



Mort Tucker



Barbara Koerble

The Ballpark at Arlington (top left) and its historicist entry arcades (top); Jacobs Field (left) and its bridge-inspired steel structure (above).

suburbs. But it is the opportunity for downtown redevelopment that seems now to be gaining momentum in Baltimore, Cleveland, Denver, and other cities.

Inspiration from Cuyahoga Bridges

Jacobs Field is the biggest surprise stylistically; opting for an admittedly high-risk approach, HOK developed an unabashedly Modern character for the Indians' 42,000-seat ballpark, as against the nostalgia so successfully manipulated at Oriole Park. A distinctively industrial Cleveland aesthetic was suggested by the steel bridges spanning the Cuyahoga River and by the city's famous Arcade, with its lacy steel structure. The elegant Modernity of the round-columned white structure is the ballpark's most memorable image, detailed to a level of decorative invention far beyond the simple, functional steel structure of Oriole Park, and contrasting with the complex, yet still traditional steel structure em-

ployed in Arlington. A colorful palette of stone banding encircles the base of the Cleveland ballpark, providing scale and texture on the lower portion of the 60-foot-high wall for the benefit of pedestrians (in marked contrast to the monolithic mass of the nearby basketball arena designed by Ellerbe Becket of Kansas City). Passersby who aren't attending a ballgame can walk right up to the entrance gates of Jacobs Field to view the seating bowl from the plaza, a unique feature made possible by its depressed playing field. (Arlington's field is also depressed, as is Oriole Park's, but neither of them permits this kind of view.)

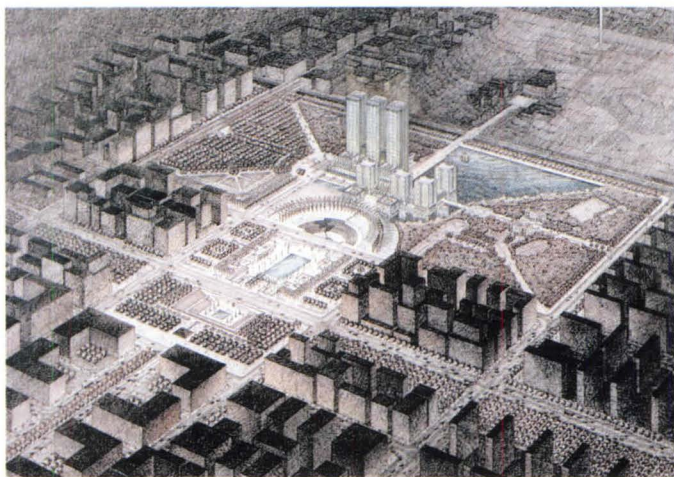
Cleveland city officials astutely retained control over the complex Gateway project by hiring Sasaki Associates of Watertown, Massachusetts, as master planner to oversee design coordination on the tight 28-acre site. (Sasaki's plan won a Citation for urban design in the 1992 P/A Awards.) Sasaki worked closely with (continued on page 25)



This Time, It's a Mezzo-Soprano

What is it about architecture that's inspiring the opera world? Just one year after *Shining Brow*, an opera about Frank Lloyd Wright, premiered in Madison, Wisconsin, the Vancouver Opera introduced its first commissioned work, *The Architect*, on June 11. Billed as a "psychological thriller," the opera revolves around a successful architect named Sandra, "at the pinnacle of her career,"

who "unleashes a mistrust and malaise hidden beneath the surface of her relationships, and is haunted by the constraining power of the status quo." (Isn't there a comic opera about architects out there somewhere?) *The Architect* was written by composer David MacIntyre and librettist Tom Cone; the sets (above) were designed by real-life Vancouver architect Joost Bakker. □



Perspectivists Announce Ferriss Prize

Top honors in the American Society of Architectural Perspectivists' annual competition went to Chicago architect and illustrator Rael Slutsky. His rendering of an entry by architects Kunwon International of Seoul for the Third Government Center Competition in Daejeon, Korea, (above) was awarded the Hugh

Ferriss Memorial Prize. Other prize winners were Thomas Schaller, Eric Schleef, Donald Cook, Gilbert Gorski, and Douglas E. Jamieson. Jurors also selected 56 drawings (out of 370 submitted) for a traveling exhibition that will premiere at ASAP's annual convention in San Francisco in November. □

Calendar

COMPETITIONS

AIA Awards

The AIA has announced its 1995 awards programs. Upcoming deadlines are: Honor Awards for Architecture (entry-Aug. 1, submission-Aug. 29); Twenty-Five Year Award (submission-Aug. 29); Honor Awards for Urban Design (entry-Sept. 6, submission-Oct. 11). Contact Frimmel Smith, AIA, 1735 New York Ave., NW, Washington, DC (202) 626-7300.

Membrane Superstructures

Deadline: submission-August 31

Proposals for membrane-enclosed work environments may be entered in this annual ideas competition. Contact Membrane Design Competition '94 Office, Taiyo Kogyo Corp., 4-8-4 Kigawa-higashi, Yodogawa-ku, Osaka 532 Japan, FAX 81-6-306-3154.

Photo Contest

Deadline: first stage submission-August 31

Photos of people in the process of building any type of structure may be entered in "A Moment in Building." Contact Photo Contest, National Building Museum, 401 F St., NW, Washington, DC 20001.

P/A Awards

Deadline: submission-September 9

The 42nd annual P/A Awards recognize projects scheduled for completion after January 1, 1995. See p. 45 for details.

EXHIBITIONS

Peter Rice

Architectural League, New York.

Through July 30

"Exploring Materials: The Work of Peter Rice" documents the late engineer's structural innovations (P/A, Dec. 1992, p. 84).

Renaissance Architecture

Palazzo Grassi, Venice, Italy.

Through November 6

A 16-foot-high, 26-foot-long wooden model of St. Peter's, constructed in 1539, is among the drawings, models, sculptures, and paintings in this blockbuster show.

Learning Architecture

Canadian Centre for Architecture, Montreal.

July 5–October 2

This show explores the "activities that have continuously characterized the education of architects since the Renaissance."

Renzo Piano Building Workshop

Art Institute, Chicago.

July 7–September 5

This is a traveling exhibition (P/A, Feb. 1993, p. 19).

CONFERENCES

Marketing Professional Services

Chicago. August 24–27

"Change or Die" is the theme of this year's Society for Marketing Professional Services conference. Contact SMPs 1994 Nat'l Marketing Conference, 99 Canal Ctr. Plaza, Ste. 250, Alexandria, VA 22314 (800) 292-7677, FAX (703) 549-2498.

Habitat 94

Edmonton, Alberta, Canada. September 18–23

"Habitat 94: New Frontiers in Housing and Planning" is an international congress hosted by the Canadian Institute of Planners and the International Federation for Housing and Planning. Contact Bruce Duncan, Habitat 94, 10310-102 Ave., Edmonton, Alberta, Canada T5J 2X6 (403) 421-1994, FAX 428-4742.

The New Designer's Saturday

New York.

September 27–29

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

Missed Chances in the Oakland Hills

The area is being rebuilt after the 1991 firestorm, but hopes of a coherent community have been dashed. *by Sally B. Woodbridge*



Photos: Sally B. Woodbridge



On October 20, 1991, a wind-whipped brush fire spread over the East Bay hills of Berkeley and Oakland. In ten hours, 2,846 dwelling units – about 2,500 of them were single family houses – were destroyed. Some 1,800 acres were blackened and deforested. In the weeks after the fire, architects and planners were optimistic about the community's future. Although the cities' top priority of enabling residents to rebuild as quickly as possible precluded advance planning, architects and community leaders hoped that this unmatched opportunity would inspire the replacement of the loose aggregation of buildings, most of which were not designed by architects, with an architecturally coherent community.

Although many former residents chose to rebuild, 40 percent of them left for good. Fear of the area's natural vulnerability to firestorms was one reason. Another was that the prospect of prolonged negotiations over insurance settlements caused families to establish their children in other school districts. Many of the elderly found flatter areas more suited to their needs.

Clients' Minds Were On Resale

As for the rebuilding effort, psychological, social, and economic factors have played a complex role. First, no one had imagined a new town for this area. Most people who lost their homes neither wanted a new house nor relished the

process of building one. The no-longer-youthful residents did not view their houses as long-term investments, and thus did not want innovative houses that might have lower resale values. They wanted houses with salable style. Because older clients also wanted the main living spaces on one floor to avoid trips up and down stairs, new houses on sloping sites typically have bulky midsections with adjunct spaces below. Houses built within allowable setbacks to maximum permissible height and bulk on standard 5,000-square-foot lots, often configured in a patchwork along looping streets, have created the effect of building saturation.

The Impact of Guidelines

Why didn't the design guidelines and review process that were in operation within a month of the fire mitigate this effect? First, the city officials' desire to ease the process of rebuilding prevented the imposition of an FAR for the fire area. Second, the huge volume of applications for building permits hindered a stringent review of plans. After the houses built during the first wave of construction provoked a negative public reaction, the review process became more rigorous. In the current phase of building, strategies for diminishing bulk by breaking up building mass are yielding positive results. Compliance is measured by a point system which, despite architects'

New construction in the East Bay Hills displays a rampant eclecticism (left). These houses are much larger than their

predecessors, making it unlikely that the fire area will ever be as verdant as before.

inherent distrust of guidelines, has proved workable because it can be approached pragmatically.

Community concerns have focused on protecting privacy and views while improving access, so that the streets will not get clogged with vehicles as they did during the fire. But opposition to early street-widening plans resulted in more limited street improvements than originally planned, and off-street parking bays became the main solution.

Eclecticism Is the Rule

If, for most people, increased size is the most objectionable feature of the new buildings, their lack of stylistic coherence runs a close second. Although few of the designs are brash standouts, the overall visual effect suggests that a mix-and-match manual of stylistic features guided the rebuilding process. Since, by and large, architects designed the new houses, why didn't they produce a more visually coherent community? Some architects, trained as Modernists, explain the rampant eclecticism of the new houses by pointing out that many young architects at work in the area were schooled to enrich *(continued on page 26)*

Practice Notes

AIA Breaking Down Practice Barriers

In early May, the AIA and NCARB met with their counterparts in Canada and Mexico to develop mutual standards for licensing and certification of architects in the three countries. The goal is to have free trade and reciprocity across their borders by the end of 1995, with full implementation in 1996.

Meanwhile, the AIA, the American Consulting Engineers Council (ACEC), and the National Society of Professional Engineers (NSPE) met in late April, agreeing to work together, state by state, to reduce potential conflicts between architects and engineers.

Design-Build Documents Clear Up Confusion

As design-build has become more common, it has also raised a number of contractual questions that are addressed in a series of documents by the Design-Build Institute of America (DBIA). They include an introduction to design-build, an overview of the process, a discussion of negotiated source selection, and a listing of design-build terms. Contact DBIA at (202) 434-8240.

Project Managers Studied

The Association for Project Managers reports that PM salaries have increased three years in a row. In 1993, the average of the lowest paid PMs was \$40,000 and of the highest paid was \$53,000. Also increasing have been PM experience levels (a median of 12 years) and staff ratios (now at 4.1 staff for each PM). The 1993 *Project Management Survey* is available for \$29 from APM (312) 472-1777.

Technics Notes

Environmental Design Research

Proposals for papers, symposia, workshops, design projects, and working groups are sought for the 1995 annual conference of the Environmental Design Research Association. The broad theme "Environmental Design Research" is intended to accommodate a host of approaches, including psycho-social issues in design; teaching; housing, neighborhood, community, and public facilities; design for a pluralistic society; ecological and sustainable development; methods development; and public policy. Contact: EDRA Business Office, P.O. Box 24083, Oklahoma City, OK 73124.

Shake Well

The earthquake that struck Los Angeles in January provided the first full-scale test of the latest seismic codes and revealed both successes and deficiencies in current construction practices and codes. That's the conclusion of a new report released by the National Institute of Standards and Technology's Building and Fire Research Laboratory. The study, *1994 Northridge Earthquake - Performance of Structures, Lifelines, and Fire Protection Systems*, found that most buildings constructed after the code revisions of the mid-1970s fared well, but nonstructural damage to buildings was widespread. The report recommends ways to improve the codes. Copies of the report (NISTIR 5396) are available for \$27 from the National Technical Information Service, Springfield, VA 22161, 703-487-4650.



Andy Beck



Michael A. Hanke

Presidential Design Awards

President Clinton presented the eight winners of the quadrennial Presidential Design Awards in an April 28 White House ceremony, citing the program as a "positive way of connecting the American people to their government again." The awards, administered by the National Endowment for the Arts, recognize quality design in Federally funded projects ranging from housing to graphic design. Winners are:

- Old Faithful Inn rehabilitation, Yellowstone National Park, Wyoming (top), by Andy Beck, Thomas Busch, and Paul Newman of the National Park Service, Denver;
- Blue Heron, Kentucky, Coal Mining Camp interpretive historical exhibit (above), by the U.S. Army Corps of Engineers, DeMartin Marona Cranstoun Downes, New York; Scruggs & Hammond, Lexington, Kentucky, and Chrisman Miller Woodford, Lexington;
- Mer Rouge Villas housing development, Mer Rouge, Louisiana, by the Farmers Home Administration and architects Wenzel & Associates, Tunica, Mississippi;
- Bendway Weirs river control project, Mississippi River, by the U.S. Army Corps of Engineers;
- *Keys and Locks in the Collection of the Cooper-Hewitt Museum*, a book by the Cooper-Hewitt Museum, New York, and Jeana Aquadro, Savannah, Georgia;
- National Gallery of Art exhibit designs, by the National Gallery of Art, Washington, D.C.;
- Arctic Data Interactive, prototype of a new electronic journal by the U.S. Geological Survey and InterNetwork, Inc., of Del Mar, California;
- the EGIS Explosives Detector, a hand-held device developed by the Office of Countermeasures & Counterintelligence, the Federal Aviation Administration, Thermedics, Inc., Woburn, Massachusetts, and Design Continuum, Inc., Boston.

□

Double Play *(continued from page 21)*

city officials and the architects of the two sports facilities to establish design guidelines that were enforced by the city's Design Review Committee. With Sasaki's input, the ballpark was carefully positioned to incorporate views of landmark buildings on Cleveland's downtown skyline. In strong contrast to the huge surface lots adjacent to the ballparks in Chicago, Baltimore, and Arlington, Sasaki recommended construction of two parking garages, use of existing parking lots in downtown Cleveland, and lighting and streetscaping enhancements for the security of fans walking from more remote lots.

Ballpark on the Prairie

Arlington's contextually challenged ballpark sits isolated, elevated on a rise above the surrounding flood plain and its adjacent jumble of parking lots, amusement parks, and condominiums. From a distance, the wraparound façade has all the verism of a pop-up book; it is a monumentalized billboard that conceals rather than celebrates the park's seating bowl. In the strong Texas sun, the stark contrast between the light precast banding and the red brick has a flat, cartoonish appearance. On closer inspection, the multitude of surface relief details becomes evident. The Texas Rangers asked for a ballpark that would embody Texas architecture, but the façade's stylistic mélange of pseudo-Venetian towers and Texas motifs is more confusing than regionally inspired.

Schwarz handles scale and detailing as adroitly as HOK, although his decorative sensibility is often cloying, and some portions of the 1.4-million-square-foot interior volume are simply cavernous rather than dramatic. His obvious quotations from other well-known parks invite unflattering comparisons – even the use of arches and red brick appears to be parroting Oriole Park, whether intentionally or not. The Ballpark in Arlington is so self-consciously reverent and referential, studded with icons and emblems, that even as it attempts to recycle the memories of old ballparks, it undercuts its own unique sense of place. Schwarz was unsuccessful in defending his vision of that place, as his master plan for the 270-acre site was seriously compromised by encroaching parking lots on three sides of the ballpark.

Private Suites Defeat Intimacy

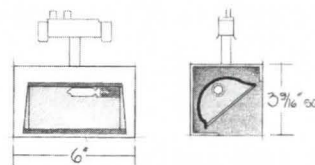
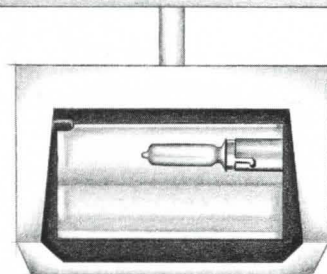
Even though both ballparks provide excellent sight lines from seats in their lower seating bowls, and have a moderate 32- to 33-degree rake in the upper decks, the private suites demanded by patrons and corporate sponsors lessen the intimacy for upper-deck fans, relegating them to some of the most distant seats to be found in recent ballparks.

While Schwarz's design more than adequately fulfills the program requirements, it will disappoint those who hoped that a designer from outside the sports design world would advance or transform the building type. Here, Schwarz proved more adept as an imitator than as an innovator. HOK, whether inspired by more demanding clients or by concern for future commissions, has left Comiskey Park far behind and has met the challenge of its own Oriole Park. At long last, it appears that competition has improved the level of play on the field of dreams.

The author, a freelance architectural writer and curator, curated the exhibition "Fields of Dreams: Architecture and Baseball," which is currently on a national tour under the auspices of ExhibitsUSA. □

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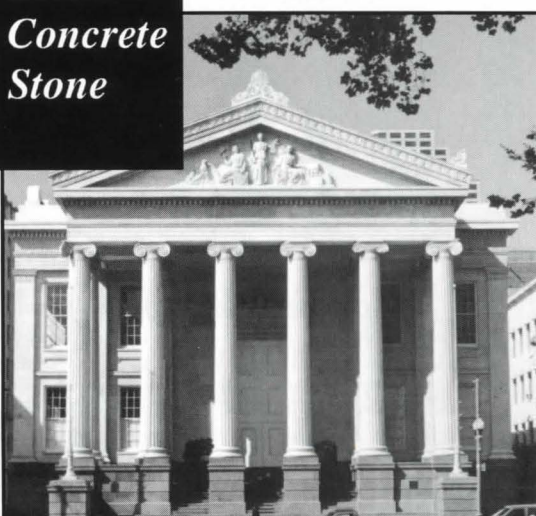


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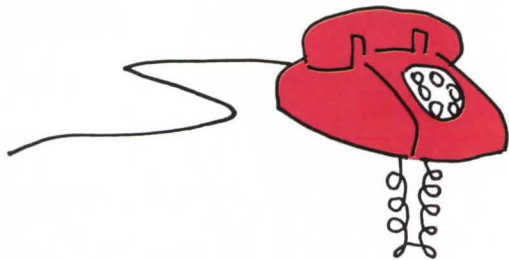


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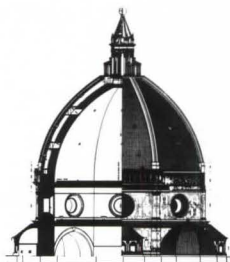
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News

Oakland Hills (continued from page 23)



Sally B. Woodbridge

Older residents prefer living space concentrated on one level, resulting in houses like the one at upper right.

their designs with historical references. Clients often bring magazine articles that advocate blending styles. But lack of experience and/or rigorous study of detail may be more to blame for the visual indigestion than eclecticism *per se*.

As architects well know, the value of features and fixtures is easier to quantify than the intangible worth of time-consuming design. And quantifying was very important in the process of negotiating financial settlements. Because of the difficulty of assessing the replacement costs of obsolete technology in mechanical and heating systems as well as architectural features that must now be custom-made at great expense, payments were slow in coming for older houses. Meeting new codes for building foundations and retaining walls also raised costs. But those claimants who lasted the year or so of negotiations with their insurers received generous financial settlements. Since they were legally obligated to spend the settlement money on their new houses, the result is an assortment of larger houses loaded with amenities.

At this writing, with over 60 per cent of the rebuilders given certificates of occupancy and fewer than 1,000 buildings still in design and construction, expectations for a model new community are low. Design professionals and other observers touring the area have found depressing the sight of nearly continuous houses, seemingly stacked on top of each other. The conspicuously larger houses also occupy more of their lots, limiting the amount of landscaping around them.

Former Landscape Won't Be Back

Although certain species of trees that helped spread the fire were banned – including some eucalyptus and all pines – no plan was adopted to regulate vegetation and establish view corridors. (A carefully considered plan was not feasible, given time constraints.) Applicants for building permits are required to submit a landscape plan along with their architectural plan and to post a bond for \$2,500 to insure carrying it out, but where people once accepted tall trees that blocked a potential view of the bay, they now feel entitled to all they survey. Trees will grow, and shrubbery will mask foundations, but not so densely as before. Bay Area residents accustomed to boasting about their sensitivity to the natural environment are disappointed that the fire area's development is proving to be a different model than the one they had hoped for. And, alas, architects must still ponder ways to explain the value of design. □



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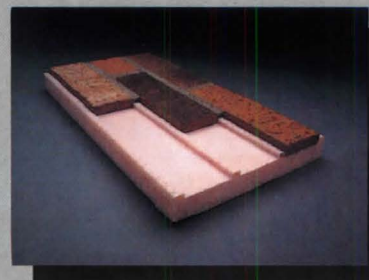
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Photos: R. Bryant

Gehry Redux at Vitra

Once again, Frank O. Gehry & Associates of Santa Monica, California, has added a few new slopes and moguls to the Swiss landscape with the new Vitra headquarters in a suburb of Basel. An established patron of architecture, including Gehry's factory building and design museum (P/A, May 1990,

p. 94) on its Weil am Rhein campus, Vitra required a new flagship complex with changeable office space in which to demonstrate and experiment with its own furniture lines. The complex includes a villa, its Gehryesque swoops and dips holding communal support functions such as reception,

cafeteria, and conference and audio-visual rooms, and a rectangular office wing with code-required operable windows; the two pieces are joined by an atrium and a series of bridges.



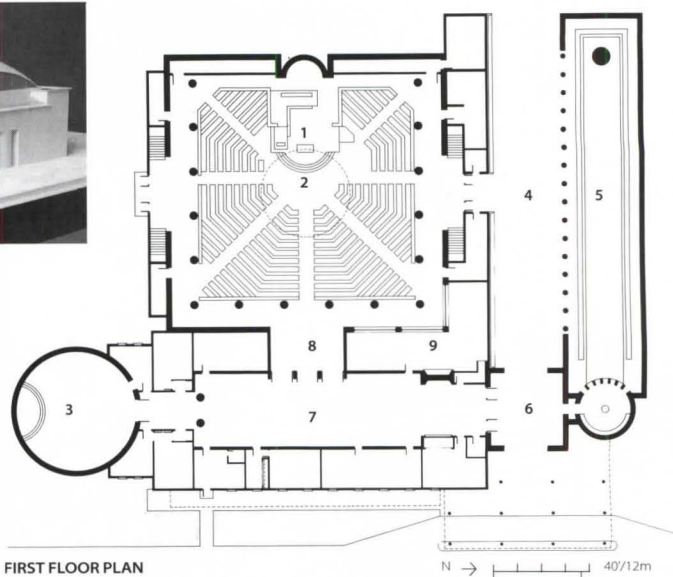
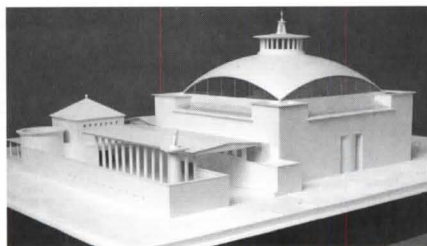
Tom Benner

UCLA Chiller Plant a Little Too Cool

The eagerly anticipated central chiller-cogeneration plant at the University of California at Los Angeles is now up and running, but it's easy to wonder what all the fuss was about. Designed by Wes Jones, now of Jones Partners Architecture, San Francisco, the plant won a Citation for Holt Hinshaw Pfau Jones in the 1990 P/A Awards; like the firm's Astronauts Memorial (P/A, July 1991, p. 73), the chiller plant was celebrated for its exploration of technology and industrial language. But as built, with its red brick and beige paint to match other campus buildings, the plant is surprisingly tepid, even banal. The exposed mechanical equipment is the best part, but the hide-and-seek game the architects are playing with it fails to engage.

Soanelike Vault for Miami Church

Members of St. John Neumann Catholic Church in Miami didn't want to lose the intimacy of their old church when they decided to build a new building that would seat up to 1,000 people. Design architects Javier Cenicacelaya and Inigo Salona of Bilbao, Spain, and Frank Martinez of Miami, who won an invited competition for the project, along with associate architect Gail Byron Baldwin of Miami, addressed this charge by wrapping a gallery for overflow seating around the square sanctuary. Taking advantage of the liturgical changes that have made centrally focused plans more desirable than linear ones, they capped the volume with a pendentive vault that brings "mysterious light" into the space. The plan also includes a loggia – bordered by a reflecting pool – for after-mass gatherings. Construction is to begin this fall.



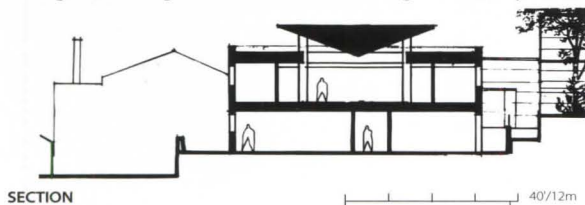
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|------------------|-------------------|------------------|
| 1 ALTAR | 4 LOGGIA | 7 VESTIBULE |
| 2 MAIN SANCTUARY | 5 REFLECTING POOL | 8 BAPTISMAL FONT |
| 3 CHAPEL | 6 ENTRANCE | 9 QUIET ROOM |

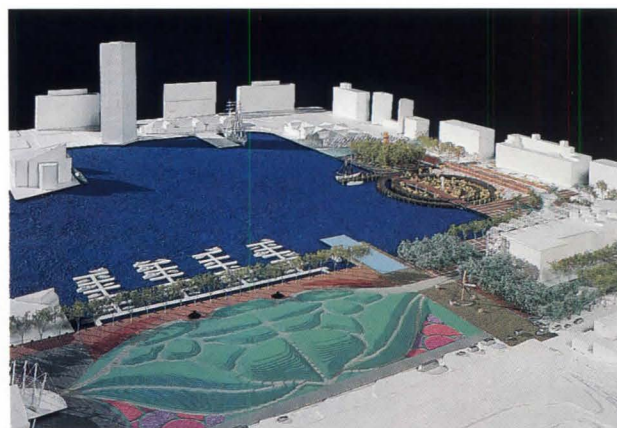


Inverted Pyramid at St. Louis Garden

In renovating and expanding a building at the Missouri Botanical Garden in St. Louis to house the Center for Plant Conservation, architects Mackey Mitchell Associates of St. Louis chose a palette of materials – gray brick and metal panels, perforated aluminum sunscreens, and a yellow stucco entry – that would tie it to adjacent buildings. The renovated building's most prominent feature is the roof, an inverted pyramid that controls the light entering the offices below through clerestory windows.



SECTION



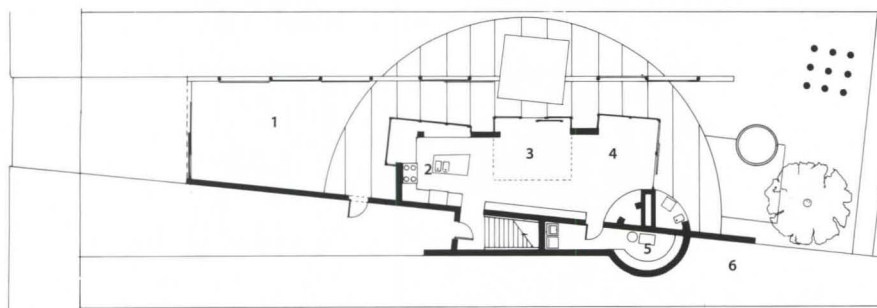
New Plan for Baltimore Inner Harbor

An underused portion of Baltimore's Inner Harbor is to be revitalized by Martha Schwartz Inc., Boston, and Design Collaborative Inc., Baltimore, winners of the West Shore/Rash Field competition sponsored by the City of Baltimore. The scheme, designed to link the harbor to surrounding neighborhoods currently cut off by existing streets, includes several elements, among them: the "Crab Walk," a field of 2-foot-long translucent blue crabs set atop 25-foot-tall stainless steel poles that will act as a beacon, lighting the path from Camden Yards into the harbor; the "Info/Picnic Park," an interactive information plaza; the "Natural History Spiral," an educational site commemorating the city's natural and cultural beginnings; the "Science Playground," enlivening the area around the existing Maryland Science Center, which sits between Rash Field and West Shore; and "Blue Crab Park" a green landscape sculpted in the form of a crab.



An Energy-Efficient House from the Gas Company

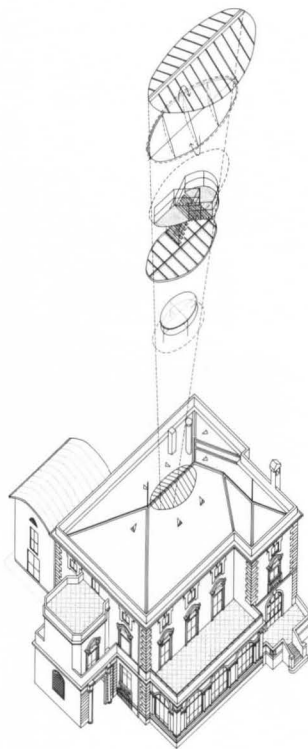
Designers Sussman/Prejza & Company of Culver City, California, unveiled the design for "L.A. Casa," an energy-efficient house they created for Southern California Gas Company, at the AIA Convention in Los Angeles. The house combines passive lighting and ventilation techniques with gas appliances and sustainable materials. The fluid interior spaces are arranged around a "utility wall" that houses its mechanical systems and a cylindrical "utility tower" where many appliances and plumbing fixtures are concentrated.



FIRST FLOOR PLAN

- 1 CARPORT
- 2 KITCHEN
- 3 DINING ROOM
- 4 LIVING ROOM
- 5 UTILITY ROOM
- 6 UTILITY WALL

20'/6m



AXONOMETRIC

Restored Digs for British Council in Spain

The restoration of a turn-of-the-century "palacette" in Madrid for the British Council, by Jestico+Whiles, London, and Reid Fenwick Asociados, Madrid, is most remarkable for the insertion of a new conical stairwell, in the shape of an ellipse, that runs from the second floor to the roof. It is oriented to increase the penetration of morning sun into the building and to reduce solar gain later in the day. An oval-shaped diaphragm shade positioned below the skylight can be rotated to manipulate solar gain and glare. A perforated-metal stair fills the cone and an oval, etched-glass panel in the second-floor slab allows daylight to filter into the ground-floor reception area. The project, part of a master plan for the Council, includes offices, a library, and information, education, and arts facilities.

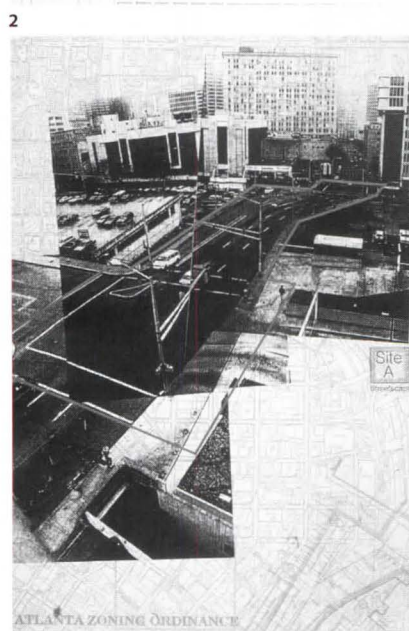
Conceptual Winners in Atlanta Public Space Competition

Winners were announced in May for "Public Space in the New American City/Atlanta 1996," an open competition addressing four urban sites in Atlanta. Jurors reviewed 682 submissions and selected winners for each site. The competition was sponsored by the Corporation for Olympic Development in Atlanta and the Architecture Society of Atlanta.

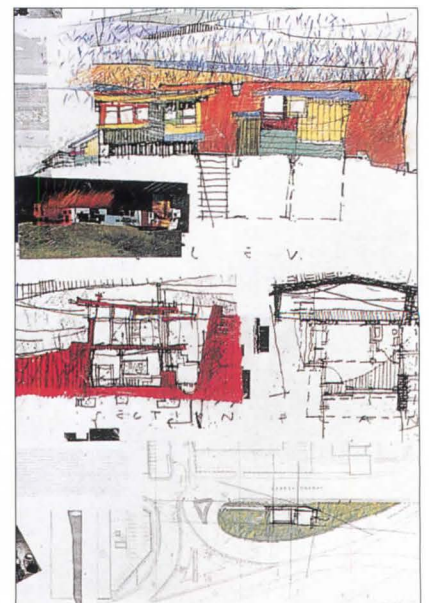
On Site A, a downtown streetscape, first place winners William F. Conway and Marcy Schulte of Ames, Iowa, offered a critique of zoning codes with their plan for a "public space district (3)." First place winners for Site B, a double overpass, were Robert D. Clements, Roberta Unger, Tony Loadholt, Chito LaPena, and Kenneth Beall of Atlanta and Athens, Georgia. Their "Place for the People" installs a "carnavalesque" environment in the placeless leftover space of the freeway (1). Brian Wurst of Audubon, New Jersey, was awarded first place for Site C, a suburban offramp opposite the Olympic Village. Wurst proposed a homeless shelter (4) that one juror said "reinserts [the homeless] into the public." And for Site D, a parking lot, student Rachel Kisker of Providence, Rhode Island, (with faculty advisor Stephanie Bothwell) won first place for "The American Dream Parking Lot," (2) a plan to fill the site with detached one-car garages that would have "an infinite number of uses."

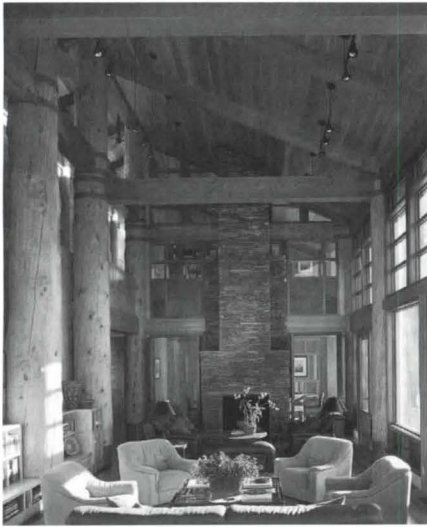


**SITE B, DOUBLE OVERPASS,
"A PLACE FOR THE PEOPLE"**

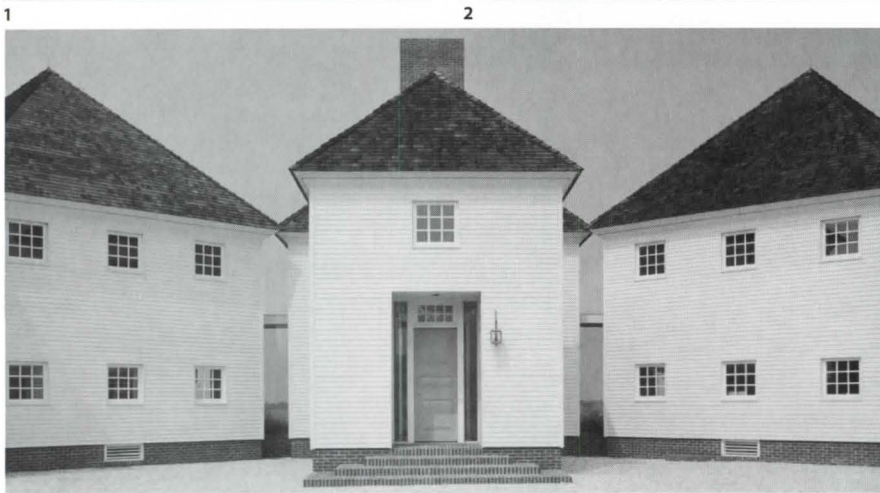


ATLANTA ZONING ORDINANCE

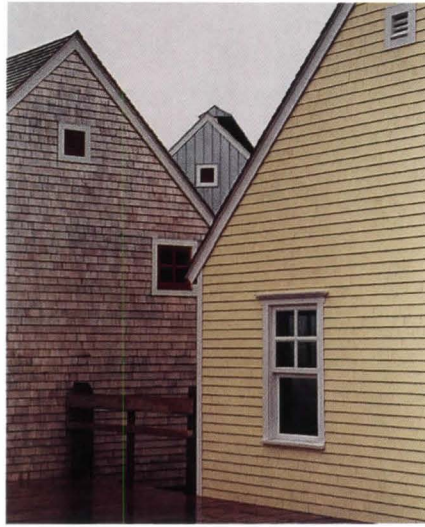




© Scott Frances



Robert Laumann



Wood Design Award Winners Announced

The American Wood Council has announced the winners of its 1993 Wood Design Awards, an annual program to encourage the use of wood in architecture.

The Honor Award winners were:

- Winchester-Thurston School, Pittsburgh, by Bohlin Cywinski Jackson, Pittsburgh;
- residence, Berkeley, and a new stable and remodeled schoolhouse, Mill Valley, California, by Fernau & Hartman, Berkeley;
- residential addition, Chevy Chase, Maryland, by David Jones Architects;
- residence, Washington State, by David Hall of the Henry Klein Partnership, Mount Vernon, Washington;
- residence and guest house, Wyoming, by Cesar Pelli & Associates, New Haven, Connecticut (1);
- residence, New England and residence, New York, by James Volney Righter Architects, Boston (P/A, Nov. 1993, p. 68);
- residence, Martha's Vineyard, by Centerbrook Architects, Essex, Connecticut (P/A, Nov. 1993, 46);
- residence, Lords Valley, Pa., by Steinberg & Stevens Architects, Philadelphia;
- Foothill student housing, University of California, Berkeley, by William Turnbull Associates, San Francisco, and Ratcliff Architects, Emeryville, California (P/A, Sep. 1993, p. 70);
- residence, Franz Valley, California, by William Turnbull Associates.

Merit Award winners were:

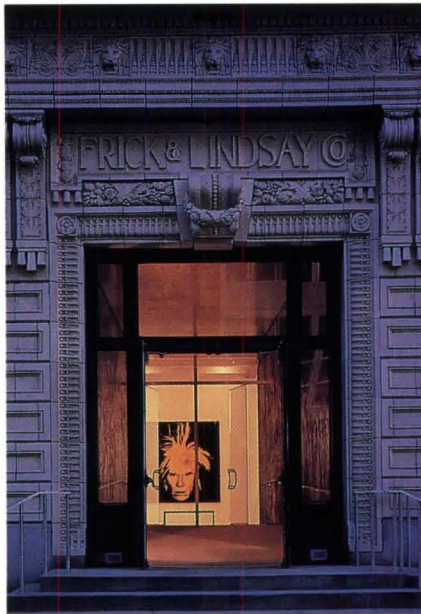
- tourist village, New Brunswick, Canada, by Elide Albert Architect (2);
- cottage, Martha's Vineyard, by Jeremiah Eck Architects, Boston;
- renovated farmhouse, Connecticut, by Centerbrook Architects;
- residence, Easton, Maryland, by Hugh Newell Jacobsen, Washington, D.C. (3);
- residence, Washington Island, Illinois, by Frederick Phillips & Associates, Chicago (4).

Citations were awarded to:

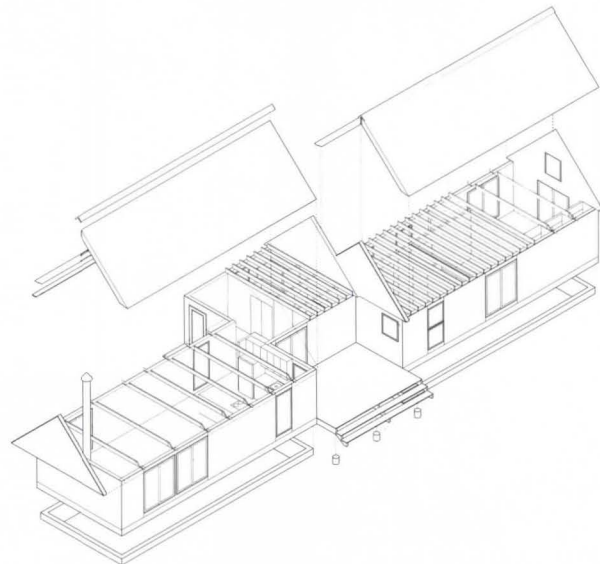
- Lake Harriet Refectory, Minneapolis, by Frederick Bentz/Milo Thompson/Robert Rietow, Minneapolis;
- residential retreat, Two Harbors, Minnesota, by Salmela Fosdick, Duluth;
- The Farm, Soquel, California, by Alexander Seidel & Associates, San Francisco (P/A, May 1994, p. 36).

A New "Factory" for Warhol

The Andy Warhol Museum, America's largest single-artist museum, became the latest star in the Carnegie Institute's constellation of Pittsburgh cultural facilities when it opened in May. Designed by Richard Gluckman Architects of New York with UDA Architects of Pittsburgh, the project is a renovated eight-story, 73,000-square-foot warehouse with an unobtrusive 15,000-square-foot addition. The 1911 building's dandyish Baroque terra cotta façade was restored, and its cornice reconstructed. Inside, Gluckman's elegant Modern gallery spaces prevail, punctuated by occasional rhetorical flourishes and neoindustrial details. The \$12.3-million facility lucidly incorporates a surprisingly elaborate program of galleries, archives, offices, storage, a study center, a theater, and a coffee shop.



- 1 ENTRY
- 2 STORE
- 3 INFORMATION
- 4 EXHIBITION
- 5 THEATER
- 6 RECEIVING



EXPLODED AXONOMETRIC

An Alternative to the Mobile Home

Maine architect Carol A. Wilson and entrepreneur Susan C. Ruch established House One to "search for an alternative to the ubiquitous metal and vinyl-clad shoe box design of the mobile home." According to the partners, one in 16 Americans lives in a mobile home; in Maine alone, there are 68,000 units. Wilson and Ruch believe that manufactured housing offers a superior design standard at a comparable price. Their 1,386-square-foot, 3-bedroom house can be

configured to meet space, site, and financial requirements and, unlike a mobile home, can be financed with a traditional mortgage. The house is composed of three modules: an open plan living/dining/kitchen with a cathedral ceiling and a fireplace in one; three bedrooms in a second; and an entry hall, one and one-half bathrooms, and a laundry area in a central module. The current cost is \$35 a square foot.



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Handrails with Braille

The Raynes Rail is a handrail system designed to guide visually impaired people through buildings and public spaces. Designed by Coco Raynes Associates, an industrial design firm in Boston, the handrail's inner face holds Braille messages that describe open areas, corridor patterns, and the location of ramps, stairs, and offices. Audio units, with multilingual capabilities, are also integrated into the rail. The product exceeds ADA requirements, which mandate that all doors within public buildings be identified in Braille, by providing a link between entrance and interior signage. Several materials and finishes for interior or exterior applications are available. The Braille-inscribed surface can also be retrofitted to existing railings. Circle 100 on reader service card



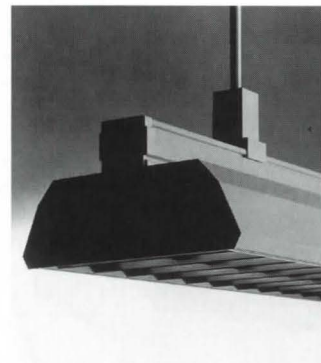
Custom Laminates

Wilsonart™ now offers screen-printing and seamless inlay custom laminate services for signage, retail displays, tables, and elevator cabs. Both processes result in products with the same performance characteristics as conventional laminates. Circle 101 on reader service card



Vladimir Kagan Furniture

The Vladimir Kagan Classic Collection is a reedition of the biomorphically shaped furniture designed by the German emigré in the late 1940s and 1950s. Revived by Dennis Miller Associates, the pieces are custom built from the original patterns, molds, and working drawings in the same woods and finishes. Among the pieces offered is the one-arm chaise (above), available with a right or a left arm, and a pedestal of aluminum or clear Plexiglas. Circle 102 on reader service card



Continuous Fluorescent Lighting

The ZX Continuous Fluorescent Lighting System has been added to Zumtobel's line of fixtures. The system consists of three main components: a slim line trunking (wire way system); a fixture assembly; and accessories (interchangeable optical reflectors and louvers). Each fixture assembly can be plugged into one of three circuits in the trunking, enabling the entire system to be individually switched without special wiring in the field. Circle 103 on reader service card



Steel-Frame Dresser

The polished industrial aesthetic of Park Furniture's dresser (above) is characteristic of the company's designs. The dresser, available in two sizes, has a steel frame, aluminum drawer pans, mahogany drawer sides, and rubber drawer faces. Park's collection also includes a dining table, a worktable, a bookcase, a king-sized bed frame, side tables, and a retail display case. Circle 104 on reader service card

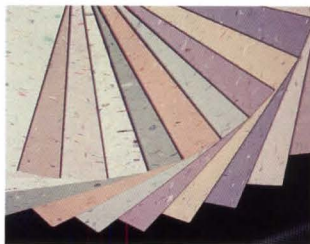


Stronger Vinyl Windows

The vinyl windows and patio doors in the Astoria™ Collection from Louisiana-Pacific are made with a new unplasticized vinyl (uPVC). The products (single- and double-

hung, and casement/awning windows, and hinged or sliding patio doors) resist rust, scratches, rot, and dents.

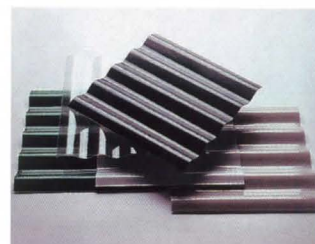
Circle 106 on reader service card



Commercial Floor Tile

MultiColor Premium Excelon is a new commercial floor tile line from Armstrong. Available in 12 colorations, the new vinyl composition tile is designed for use in healthcare, retail, educational, and commercial projects. Excelon colors match those in the manufacturer's Imperial Texture and solid-color Feature Tile lines.

Circle 107 on reader service card



Clear Fiber-Glass-Reinforced Panels

Super 600 from Sequentia is a new line of clear FRP panels for roofing, fencing, and other building and remodeling applications. Manufactured with a new fiber-glass reinforcement from Vetrotex CertainTeed, the panels provide exceptional clarity without the fiber strand showthrough typical of FRP panels. Flat or corrugated panels, in green, beige, white, dark gray, or clear, can be ordered in standard and custom sizes.

Circle 108 on reader service card

Glazing Systems Brochure

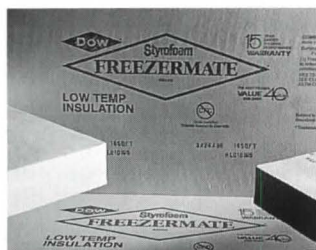
Vistawall's new full-color brochure documents buildings nationwide that use the manufacturer's engineered curtain wall, window wall, standard storefront, and entrance systems for new construction and renovation projects.

Circle 105 on reader service card



Residential Doors Brochure

Simpson's MasterMark® Doors brochure documents the full line of interior and exterior door products with photos, descriptions, specifications, and finishes. The company uses fine-grain Douglas Fir and Western Hemlock for its products. Circle 109 on reader service card



Insulation for Low Temperatures

The Dow Chemical Company has introduced Styrofoam™ Freezer-Mate™ brand insulation, a lightweight extruded polystyrene foam product for use in low-temperature applications. Designed to resist the most severe forms of moisture penetration, FreezerMate has a long-term R-value of 5 per inch. It is available in several standard sizes and thicknesses. Circle 110 on reader service card



Metallic Laminates

The October Company has expanded its line of metallic laminates to include finishes and embossings that replicate wrought iron, pewter, slate, and naturally oxidized metals. The laminates are suitable for casegoods, exhibits, and wall and ceiling panels. Circle 111 on reader service card

Tinted Float Glass

Introduced as the first uncoated glass that provides exceptional control over solar heat gain and enhanced control over harsh daylight and interior glare, SuperGrey High-Performance Tinted Float Glass from Libbey-Owens-Ford (LOF) is said to have the lowest shading coefficient of any uncoated glass.

Circle 112 on reader service card

Scan-To-File Option for Laser Copier

Océ-Bruning, the engineering systems division of Océ-USA, has introduced the Océ 7707B Scanner-To-File Option on the Océ 7700D digital laser copier/plotter/scanner. With third-party software, it is said to be the industry's first and only high-volume multifunction system able to copy, scan, store, retrieve, view, change, print, and finish documents. The 7707B option scans the document before compressing the image into an electronic file in fewer than 60 seconds for a typical D-size document. It can plot CAD drawings from a variety of output formats including HPGL; CALCOMP 906/907; Versatec Raster and scanned images from TIFF, CALS, and G4 formats.

Circle 113 on reader service card

Steel Joist Manual

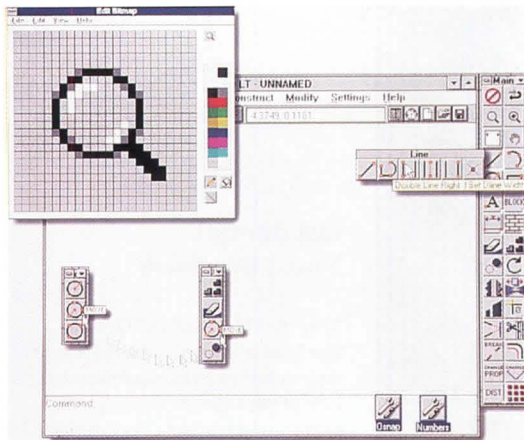
The Steel Joist Institute's 60-Year Steel Joist Manual for renovation and reconstruction is now available. Replacing the 50-Year Digest, the new manual includes a chronological compilation of all specifications and load tables of SJI steel joists manufactured between 1928 and 1988, the original "K" Series specifications and load tables, and the complete expanded "H" Series load tables, joist girder specifications, and weight tables.

Circle 200 on reader service card

Raster View and Redline Software

Sirlin's new SirlinVIEW 3.0 for windows, the fastest version of its raster file view and redline software, offers advanced Windows features such as Dynamic Data Exchange, Object Linking and Embedding, and Multiple Document Interface. The redlining features allow graphical markup of drawings into multiple layers; redlines are stored in AutoCAD .DWG file format.

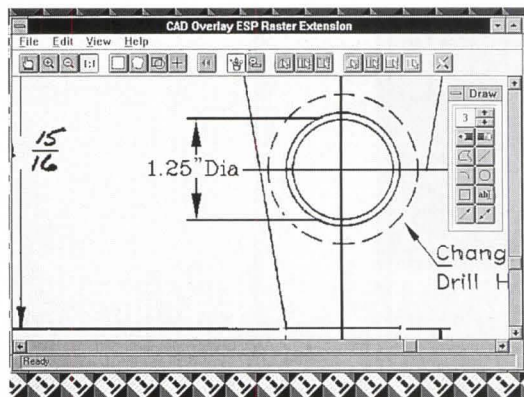
Circle 114 on reader service card



Software for Sizing Structural Members

WoodWorks™ Software for Wood Design from the American Wood Council is a Windows-based design tool developed to allow quick and accurate sizing of structural members such as joists, studs, beams, and columns for different load conditions. Based on the American Forest & Paper Association's National Design Specification®, the software's generic databases hold materials such as sawn lumber, sawn timber, glulam, structural composite lumber, and prefabricated I-joists. Using the database editor, users can customize any database to specify the most commonly available species, grades, and sizes in their region.

Circle 115 on reader service card



Customizable Command Toolboxes

Robert McNeel & Associates is shipping IconTOOL 3.0 customizable command toolboxes for Windows and AutoCAD LT. A product family of icon-based drafting tools, IconTool buttons have both left and right mouse commands, run macros, LISP routines, and ADS programs.

Circle 117 on reader service card

CAD Overlay Expanded

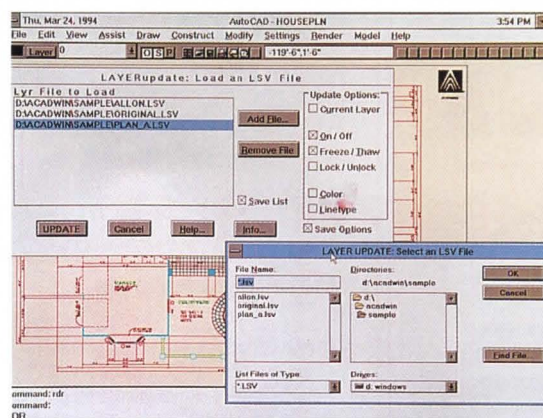
Image Systems Technology has expanded the capabilities of its CAD Overlay® ESP™ software. CAD Overlay ESP 4X includes Raster Extension to provide raster object erasures, pixel editing, object smoothing, and cut-and-drag capabilities; Rubber-Sheeting to correct image distortion to match raster images with CAD drawings; and Hybrid Color Plotting to plot color vector and monochrome raster formats, giving the user more drawing information.

Circle 118 on reader service card

Software for Federal Projects

Enlightened Software has recently released a customizable Executive version of their Standard Form (SF) 254/255 software that automates the completion of the standard bidding forms required for Federal projects. The system requirements include an IBM-compatible computer with 640RAM, DOS 3.3 or higher, and a Hewlett-Packard-compatible laser printer.

Circle 116 on reader service card



AutoCAD Layer Management

Hub Engineering's AutoLAYER Version 1.0 is an AutoCAD management software that saves plan layer groups and their properties (color, line type, freeze/thaw, lock, on/off) from a current drawing. The groups can be recalled at any time for viewing or plotting. The LAYERsaver function saves layers and their properties to an LSV file, eliminating the need to individually change the status of each layer every time one is needed; the LAYERupdate restores saved layers and their properties from an LSV file to the current drawing using a dialog box similar to the AutoCAD dialog box for the "Apload" command; and the LAYERpick manipulates layers by picking entities directly from the screen.

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And there's more. To further complete this package as your AEC solution, there's a coupon good toward a 20% discount off the suggested retail price on your choice of one of our most popular third-party AEC applications. There's even security for the future with discounted upgrades to AutoCAD Release 13 and the compatible versions of the products we've mentioned. All of which makes this Special Edition hard to beat. It is, however, easy to miss. Especially since it's available only from June 21 to September 30, 1994. So for the name of your nearest Authorized Autodesk Dealer and to request more information, call 1-800-964-6432 and ask for Demopack S985. Or fax us at 206-325-1893.

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Deadline for Submissions: September 9, 1994

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

42nd Annual P/A Awards

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

Eligibility

1 Who Can Enter.

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

2 Real Projects.

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

3 Architectural Design Entries.

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

4 Urban Design Entries.

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

5 Verification by Client.

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

(Submission requirements and entry form on the following page)

Jury

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

Merrill Elam, AIA
Principal, Scogin Elam & Bray
Architects, Atlanta

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

Nicholas Grimshaw, RIBA
Chairman, Nicholas Grimshaw
& Partners, Ltd., London

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

Entry Form: 42nd P/A Awards Program

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

Entrant:

Address:

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

Entrant phone number:

Project:

Location:

Client:

Client phone number:

Category:

Entrant:

Address:

Project:

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

Signature

Name (typed or printed)

Fees:

Subscriber \$90 ☐ Non Subscriber \$125 ☐ Entry plus one-year subscription, \$125 ☐

Awards Editor/Progressive Architecture

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

Project:

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

Entrant:

Address:

(Receipt)

Awards Editor/Progressive Architecture

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

Entrant:

Address:

(Return label)

Submission Requirements

6 Binders.

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

7 Project Facts Page.

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

8 Documenting the Process.

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

9 Research Behind Projects.

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

10 No Original Drawings.

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

11 Anonymity.

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

12 Entry Forms.

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

13 Entry Categories.

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

14 Copies of Key Pages.

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

15 Entry Fees.

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

16 Entry Receipts.

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

17 Return of Entries.

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

18 Entry Deadline.

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

Address Entries to:

Awards Editor
Progressive Architecture
600 Summer Street
P.O. Box 1361
Stamford, CT 06904
(For carriers other than mail,
delete P.O. Box)

**Deadline: September 9
Strictly Enforced**

(continued from page 8)

as a mentor of mine once pointed out, by telling him or her what will or will not work or fit or simply feel right. A good designer does not love the "fuzziness" because of its look so much as because of how it has helped him or her in the process of design. This has been inverted in the article; that is, the whole formulaic procedure described is focused on the role of the drawing as product, rather than process. The result is that the inexperienced designer may be led to believe that serious design inquiry may have been conducted when it was not, or worse yet, that serious design inquiry may not be necessary.

Aside from that there seems to me to be a more basic question of the ethics of encouraging the profession to practice such deception on its clients. It matters not that few may be fooled, rather that I find repugnant the moral assent by an architect to engage in a "whatever it takes" philosophy.

Just like so much of our society, the profession of architecture seems to have lost its moral center. We are all the lesser for it and it makes me immensely sad.

Frank Orr
Nashville, Tennessee

CORRECTIONS

Rome Prize

Karen Bausman of Bausman-Gill Associates was awarded this year's Rome Prize in Design Arts (P/A, June 1994, p. 26), not Leslie Gill, as we reported.

Water and Architecture

All of the photographs in the May photo essay (p. 76) excerpted from the book *Water and Architecture* were by Jane Lidz, Copyright Jane Lidz, 1994.

Projects House and Studio

The red-and-white board-and-batten siding of the Turner Brooks-designed house and studio (P/A, June 1994, p. 69) was inspired by Norwegian barns, not by local Amish barns, as we erroneously stated.

Cover Photograph

The credit line for the schoolhouse photograph used on our June cover should have read: Dewitt Historical Society of Tompkins County, Verne Morton Collection.

Glazing Coauthor

Stephen LeSourd's name was misspelled as a coauthor in the June Technics article "Amazing Glazing" (p. 108).

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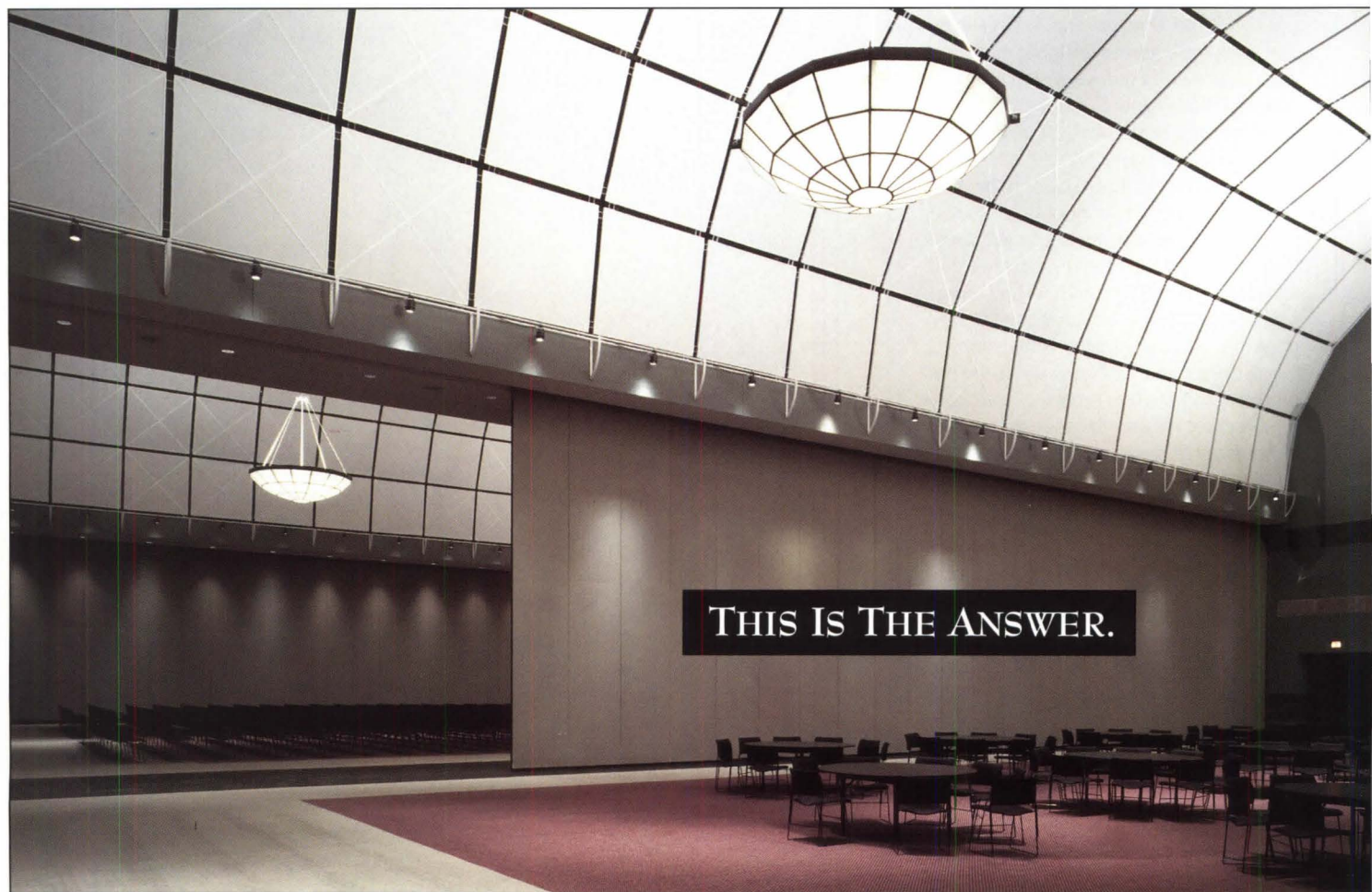
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The Intern Trap

How the Profession Exploits its Young

While some of the best-known firms do not pay interns at all, other firms engage in less obvious forms of exploitation, much of which is illegal and all of which damages the profession. *by Thomas Fisher*

The summer after my first year in architecture school, I went to work without pay for a firm in my hometown. Later that summer, and in subsequent summers with the same firm, I was paid a very low wage and was never paid for overtime. And I felt lucky. Others in my class fortunate enough to find jobs in the field put in much more unpaid overtime than I did. One classmate worked in the office of a well-known architect for an entire summer without pay.

There is nothing unusual about such experiences. Probably everyone in this profession has – or knows someone who has – worked without compensation or

worked long hours as an intern without overtime pay. It's tradition, we're told, all part of paying our dues to the profession. But it is also illegal, and it's scandalous that the architectural community has looked the other way for so long.

That may soon end, however. Students and interns, under the leadership of AIA Students (AIAS), are beginning to take a stand against exploitation. And, according to Jack Kalavritinos, with the American Consulting Engineers Council (ACEC), the Department of Labor "is targeting design firms" for violations of the labor laws.

So everyone in the profession – employees and employers alike – should know our rights and responsibilities under these laws. At the same time, we should try to understand why this profession has been willing "to eat its young," as Boston attorney Carl Sapers refers to it, if for no other reason than to put an end to the cycle of exploitation that gets passed from one generation of architects to the next.

Types of Exploitation

There is a range of exploitation that occurs in the profession, evident in the numerous letters we received in response to a solicitation we ran in the March issue of P/A. Many people described situations that might best be called sleazy: not giving young employees credit for work, renegeing on promises of advancement, or luring interns away from other firms only to lay them off a few months later. While none of this is illegal, it shows, says New York attorney C. Jaye Berger, the value of spelling out in a written agreement the



Joel Peter Johnson

terms of employment. "Promises not written down are not worth anything in court," says Berger.

A few letter writers also described situations that appear to violate the Equal Employment Opportunity laws. One person tells of how the women in an office are routinely passed over for promotion, a possible violation of Title VII of the 1964 Civil Rights Act, which prohibits discrimination in hiring, promotion, and pay based on race, color, religion, sex, or national origin. Another person describes a firm that laid off staff members as soon as they were diagnosed as HIV-positive, a form of discrimination based on disability that is prohibited under the 1990 Americans with Disabilities Act. Employees who think they have been discriminated against under either Act should contact a local office of the Equal Employment Opportunity Commission.

Who's Exempt and Who's Not

From the letters we received and from our own discussions with both employers and interns, however, some of the most blatant exploitation involves wages and hours. The actual wage and hour requirements, in the 1938 Federal Fair Labor Standards Act, are not very complicated. The Act establishes a minimum wage, now \$4.25 (higher in some states), and it requires that nonexempt employees be paid time-and-a-half for everything over 40 hours a week. The Act also allows only three exemptions – executives, administrators, and professionals – and grants some flexibility in the case of apprentices, learners, and student learners.

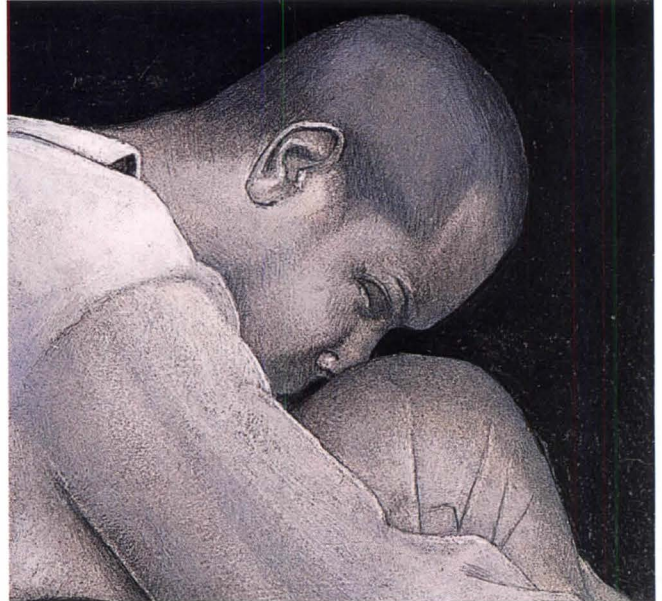
The trouble begins with the exempt and flexible categories. Many architects mistakenly believe, says Sapers, who is the NCARB's legal counsel and a partner in the law firm Hill & Barlow, that if interns have professional degrees, if they get a salary, and if they work on projects, then they qualify for professional exemption. The Act, however, defines a professional as a person who works without supervision and who consistently uses independent judgment, "which is not true of any intern," says Sapers. And even if a firm tries to claim it is so, the Labor Department won't accept it, he adds, pointing to an example of nonexempt work given in the regulations. "(T)he field of engineering has many persons with 'engineer' titles who are not professional engineers, as well as many who are trained in engineering, but are actually working as trainees, junior engineers, or draftsmen." If the Labor Department is not going to exempt engineering interns, it is certainly not going to exempt those in architecture.

Some firms also apparently believe that interns are exempt from wage and hour requirements under the apprentice, learner, or student learner categories, but this too is mistaken, according to Sapers. "Apprentices," he writes in the IDP News, "are defined as workers 'employed to learn a skilled trade.' Professional and semiprofessional occupations, which include architecture, are expressly defined as not being 'skilled trades.'...An employer cannot obtain a certificate [from the Labor Department] to employ an intern as a 'learner' because federal regulations dictate that all applications for the employment of learners in office occupations must be denied. Finally, an employer cannot obtain a certificate to employ an intern as a 'student learner' because student learners are persons employed on a part-time basis pursuant to a vocational train-

ing program authorized by a recognized educational body. IDP [the AIA's Intern Development Program] generally is not a part-time program and it is not authorized by a recognized educational body."

The officials I talked to in the Labor Department did not know of any architectural firm's having ever applied for a certificate in any of those categories. And Sapers reports that his "discussions with the Department of Labor demonstrate that an employer of architectural interns will not be able to obtain such a certificate."

The conclusion here seems obvious. Interns, at least those two or three years out of school, are considered by the Labor Department to be nonexempt employees who must be paid at least the minimum wage and paid time-and-a-half for work



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beyond 40 hours a week. But it is surprising how many firms shirk the requirements of the law.

Understanding Overtime

Sapers recounts that, upon publishing the article in the IDP News, "I ... received a number of critical phone calls from employers who assured me that I had misapprehended the role played by their interns, who were consistently given broad discretion and the right to make independent judgments on the employer's behalf. I marveled at the arrangements they described, pointing out that they were, of course, contrary to the training requirements of IDP (e.g., training under the direct supervision and control of a registered architect) and to the requirements of state law (e.g., employees may prepare technical submissions only if they work under the direct supervision of a registered architect)." And he writes in a second article in IDP News of receiving calls from architects "indignant that NCARB and AIA would publish an article that might arouse employees to complain about their compensation at a time when the architectural community was suffering from a severe recession."

Such protests reveal a head-in-the-sand attitude. But they also reflect an underlying conflict between the government, which tries to protect employees through the labor laws, and

the profession, which tries to prepare interns for a career, often by working them long hours. The latter makes the time-and-a-half overtime pay requirement in particular seem intrusive, somehow foreign to a profession noted for burning the midnight oil. And at least some interns see it the same way. One I spoke to expressed some anxiety that an article on this subject might discourage firms from hiring interns at a time when such positions are hard to come by.

The Price of Not Knowing

Still, not knowing the law is far worse than not liking it. If an employee files a complaint with a local office of the Labor Department against an employer, and an audit reveals a significant violation of the law, the penalties can be severe.

"Several employers over the years have illegally paid me as a 'consultant' in order to avoid the expenses resulting from having employees This falsification, so glowingly recommended by my employers and their accountant, has remained a source of anger and guilt for me."

According to Bruce Sullivan of the Labor Department's Wage and Hour Division in New York, the courts typically award double damages – double the unpaid amount owed that employee and sometimes all other employees in the same situation – plus court costs and legal fees. If the employer retaliates against the employee who filed the complaint, double damages will again be sought.

Given the potential liability that the wage and hour law imposes on a firm, no wonder some within the profession have argued that the law should be changed. Fred Stitt, editor and publisher of The Guidelines Letter, estimates that "at least half of the very small firms are skirting the law. "In my view," he says "the laws should be changed. When students graduate, they are dysfunctional in the office and very small firms cannot afford them. The law needs to see the architectural workplace as a place of learning."

But such change isn't in the offing. There is little incentive for the government to expand wage and hour exemptions to include architectural interns. Nor does the profession have a strong argument to make, given the perception of architects, says attorney Berger, as being "bad business people. Why should interns pay the price for architects' inefficiency?"

Flexibility or a Fleecing?

A growing number of interns are beginning to ask themselves the same thing, particularly when they sense that firms are shirking the law because of greed. An example of this is firms hiring of interns as independent contractors, to avoid contributing to social security and unemployment funds.

It is perfectly legitimate, says the Labor Department, to hire exempt, professional-level people as independent contractors, provided they are treated as such and not as full-time employees. For the Labor Department to accept a person's contractor status, says Berger, most of the following stipulations must be met. Independent contractors should have established, separate businesses; they should offer special skills that others in the office do not have; they should work independently, with control over their time; they should have their own place of work and their own equipment; and they should work for a fixed period of time, for a given job.

All too often, though, firms claim contractor status for people who are in fact employees, who work in a firm's office 9 to 5 every day, who use the firm's equipment, who work on various projects, and who have little ability to come and go as they see fit. As one Labor Department official put it, "If it looks like an employee and smells like an employee, it is one."

While such practices violate labor law, they become egregious when the independent contractor is an intern. By definition, says Sapers, interns must be under the supervision of an architect. And rarely will an intern have an established consulting business or special skills that no one else in an office has. If the Labor Department catches a firm doing this, it can be "calamitous," says Sapers. "The firm will face not just the Labor Department, but the IRS, and the IRS has many more weapons than Labor's Wage and Hour Division."

The Future of Consulting

The likelihood that firms will get caught increases as interns speak out against the practice. As one intern writes, "Several employers over the years have illegally paid me as a 'consultant' in order to avoid the expenses resulting from having employees In my case, the employers knowingly and deliberately violated the law One employer's accountant came in and instructed all the 'consultants' how to lower their tax liability by claiming virtually every personal expense as a business expense This falsification, so glowingly recommended by my employers and their accountant, has remained a source of anger and guilt for me, and also complicated an IRS audit."

I called the accountant in question and he would not address the legality question, but he insisted that interns were better off as independent contractors than as employees. That, however, doesn't jibe with what I hear from interns. One tells me that he owes \$6,500 in Unincorporated Business Taxes, because the government believes that he was a consultant. Another writes, "I should have gotten a total refund on all taxes I paid. However, with the 1099 form my employer filed, self-employment tax is added independent of my deduction and I owed money." She goes on to say, "Please warn new grads to stand up for themselves and not be exploited as 'independent contractors' while their employers shirk their responsibilities."

Despite the dangers of such a practice, the hiring of interns

On Not Naming Names

A few people who read this article in advance of its publication asked me why I didn't mention the names of architects who were discovered to be exploiting their interns. That raises a question of journalistic ethics: should a writer become a whistleblower if wrongdoing is uncovered in the course of writing an article? I don't think so. A whistleblower has to have irrefutable proof, and even though several architects told me things – on the record – that I later discovered to be against labor or tax law, I have nothing other than their word, without even a witness that they said it.

Besides, the responsibility of a journalist is to raise issues, to point out problems, to inform readers, not to turn people in. That is the responsibility of those who have been wronged, which is easier said than done, as one intern reminded me. Not only does an employee who approaches a local labor department official have to worry about the direct retribution of the employer (which is illegal), but also the indirect blacklisting of the employee among other firms.

What that suggests is that if we are to end the exploitation of interns, it will take a change not only in the employment practices of specific firms, but a change in the culture of the entire profession. We should support those who stand up against their exploitation, be they interns abused by employers or a colleague abused by a client. Since those who were once abused tend to become abusers themselves and allow clients to abuse them, breaking the tradition of exploitation within the profession is in everyone's best interest. To pay interns a fair wage and to compensate them for overtime is not an expense, but an investment in the profession's future.

as independent contractors continues. If anything, some observers of the profession see it becoming even more common. Stitt estimates that 30 to 40 percent of firms use independent contractors for drafting and other services, and he predicts that if healthcare reform requires employers to pick up employee benefits, it could jump to 80 to 90 percent.

Driving this trend are not just the cost of IRS withholdings and healthcare benefits, but the combination of increasing competition and computerization. The latter two factors are prompting more and more firms to maintain relatively small core staffs and to hire independent contractors as work comes in. Whatever else this means, it creates a potential crisis for interns who have neither the experience and knowledge to be core staff nor the ability under the law to be independent con-



Joel Peter Johnson

tractors. We cannot count on the law to change. So, if future generations of interns are to find work without becoming bogus "consultants," there may have to be substantial changes in how architectural students are educated and prepared for a career.

Slave Wages

Nowhere is the exploitation more blatant and the liability greater than in those firms that do not pay interns at all. At least since Frank Lloyd Wright started the Taliesin Fellowship some six years before the signing of the Fair Labor Standards Act, well-known architects have made a practice of not paying interns. "People worked for Corb, Goff, and Wright for free," notes Stitt. "Visionary architects simply can't afford to pay." And it is no secret in the profession that some architects continue that ignoble tradition to this day. When three young employees of one well-known architect were recently asked if they were paid, they said, "A bit."

When I asked another noted architect about such practices, he said: "My office runs on unpaid interns. We lose money every year; it's not as if we're making money. Besides, recent graduates are next to useless in the office. And they don't have to come to work here; I have to turn them away." Such justifications are remarkably similar to those leveled against the minimum wage by laissez-faire conservatives in the 1930s. Let the market determine wages, they said at the time, and if people

are willing to work for low wages or no wages, so be it.

Why do some of our more radical practitioners still espouse such reactionary views? And why, at least in some circles, are such views seen as a sign of an architect's importance? It stems, I think, from two sources: the distant echo of architecture's aristocratic roots – the gentleman's profession, for those who don't need the money – and our field's ongoing nostalgia for romantic individualism, for the dedicated artist who can't be bothered by something as petty as getting paid.

But such thinking is, in fact, discriminatory, since it crowds out all but the wealthiest interns, and disingenuous, since behind the façade of not caring about business is "the crassest sort of business," observes Kent Hubbell, the chair at Cornell and President of the Association of Collegiate Schools of

"My office runs on unpaid interns. We lose money every year; it's not as if we're making money. Besides, recent graduates are next to useless in the office. And they don't have to come to work here; I have to turn them away."

Architecture (ACSA). "It's the age-old practice of minimizing employee costs to maximize profits."

Some of those who do not pay interns make token gestures toward the law. One reports that he gives regular seminars in the office to the unpaid interns, another that the firm's unpaid people are all foreign students whose schools require them to have work experience to graduate, a third that his unpaid people only "observe." But the Labor Department people I talked to were not convinced by such tactics.

Seminars do not qualify interns for the "learner" or "student learner" exemptions. For that, firms must apply for a certificate from the Labor Department, which as noted earlier, would probably not be granted to an architectural firm anyway. Nor does the use of foreign students change the situation: the wage and hour laws cover employees from other countries and do not automatically exempt those who may be getting credit for work experience. Again, firms must apply for such exemptions. About the only legitimate exemption here is the "observer" category. Bruce Sullivan of the Labor Department acknowledges that observers do not have to be paid, but people can be claimed as such only if they are "in an office for only a short period of time, not performing any function, and not providing any work product." A person who builds a model or does presentation drawings is not an "observer."

Labor historians have long noted that employers who vio-

late the labor laws often do so because they think they can get away with it, that the Labor Department will never notice. Unfortunately, that is sometimes true with illiterate workers or illegal immigrants, who are unlikely to file a complaint. But treating college-educated interns this way is both dangerous and stupid, since it takes just one call from one disgruntled employee to trigger a labor audit. And the mood among interns these days, despite the difficult job market, is to fight exploitation.

The AIAS, for example, now asks that all those who are invited to speak at their conventions sign a form stating that they pay their employees. The AIA and the ACSA has backed the AIAS on this and have begun to inform members about their position. One architect refused to sign the form and instead wanted to debate the issue at the AIAS convention, but they refused. "Ask them why they don't pay their speakers," said the architect to me. Garen Miller, AIAS President, said in response, "Ask him where the law stands on paying speakers versus paying employees."

What might do more than anything to end the exploitation of interns is the possibility that NCARB would pull the licenses of architects found guilty and fined for labor violations. "There is a recommended professional conduct code, which a number of boards have adopted," says Samuel Balen, Executive Vice-President of NCARB, "that allows boards to take action against an architect who has violated the law. The penalties range from sanctions, suspensions, and fines, to the revocation of licenses." The license of an Illinois architect, says Balen, was revoked when he was found guilty of violating the tax laws. Should labor law violations be treated any differently?

Ignorance is no Excuse

I began working on this article after hearing many interns complain about being mistreated, especially in some of the leading firms. I assumed that the exploitation was done knowingly by very few architects, but both assumptions proved to be wrong. I discovered that misunderstandings about the wage and hour law abound in the profession, and that non-compliance with the law, especially regarding interns' overtime pay and consultant status, is widespread.

The profession has largely escaped the notice of the Labor Department, I think, because officials there are used to chasing the operators of sweat shops, not the partners of architectural firms. But labor officials are beginning to realize that, in some cases, the two are not so far apart, and we are certain to be the focus of investigations in the future. Since the last thing this profession needs is a labor scandal played out in the popular press, we would be wise to police our own turf.

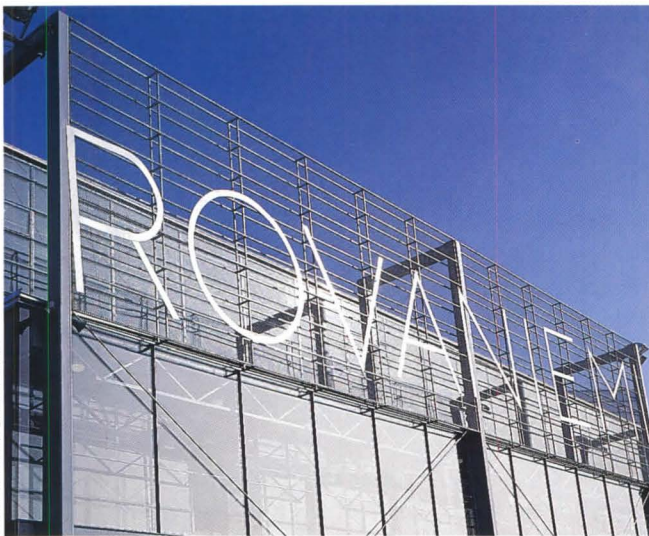
But that will take two things: a concerted effort to learn about and obey the wage and hour law (an excellent program was held on the subject at the recent AIA convention but very few people attended) and a determination by everyone in the profession to speak out against exploitation, especially of those in our midst who are the most vulnerable. The AIA's Code of Ethics holds that "Members shall not, in the conduct of their professional practice, knowingly violate the law," and that they should "compensate [employees] fairly, and facilitate their professional development." If we are serious about enforcing this Code and saving the profession from scandal, the fair and legal treatment of interns is an excellent place to start. □

The Cosmic Connection

The Architecture of Heikkinen and Komonen

The Finnish tradition of design leadership is upheld by a firm that has been taking the "Functionalist" approach to major commissions at home and in other countries.

by William Morgan

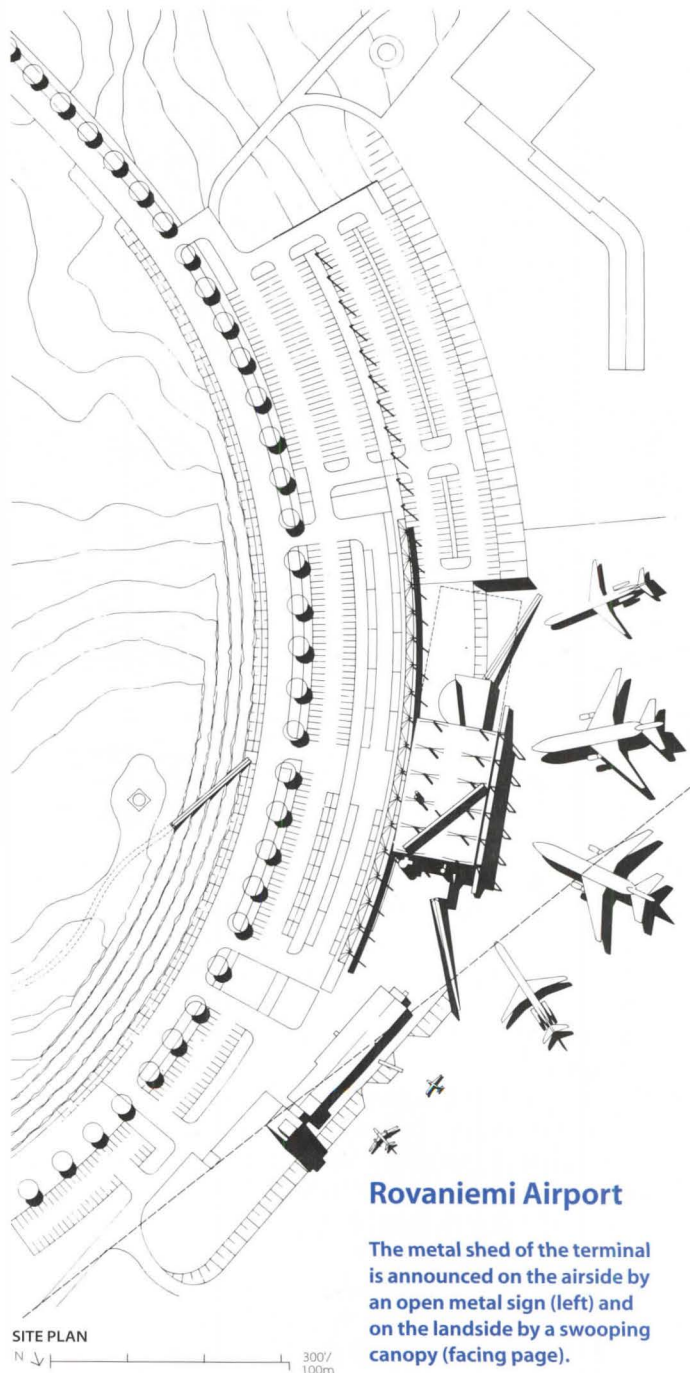


Photos these two pages: Jussi Tainen

We can all tell stories about unexpectedly encountering a great work of architecture – an unknown building in a most improbable place. A couple of years ago I flew to Lapland in a blizzard and almost skidded into what appeared to be a battleship gray factory. ROVANIEMI, in giant white letters splashed billboard fashion across the building, announced the new terminal for the capital of Arctic Finland.

No mere dumb box, the terminal is actually a handsome steel container, and the logo is attached to a surprisingly elegant wire screen. The interior space, with gray steel walls and exposed mechanicals, has the wonderful monumentality of a 19th-Century railroad station. What's more, this metal envelope acts as backdrop for cosmic iconography based on the presence of the Arctic Circle, which passes through the airport.

Passengers may be excused for believing that the circular slide screen that hangs in the terminal reflects the polar "cir-



Rovaniemi Airport

The metal shed of the terminal is announced on the airside by an open metal sign (left) and on the landside by a swooping canopy (facing page).

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



cle.” That shape is encountered again out front as the sweeping entrance canopy, but its true role is to tie the airport visually to the hills beyond.

Despite its contemporary use and materials, Rovaniemi has an ineffably primitive aura about it. Finns are a country people who have only recently moved to cities and become bankers, doctors, and designers. This point is reinforced by a group of granite steles poetically arranged as a sort of “Laphenge” at one end of the entrance marquee.

Although Rovaniemi does have three buildings by Alvar Aalto, Lapland is hardly an architectural pilgrimage destination. But the airport’s enigmatic feeling that “the style is modern, the place is timeless” made me eager to see other creations by its architects, Heikkinen and Komonen.

Finland’s Functionalist Tradition

Mikko Heikkinen and Markku Komonen may soon be better known in this country for their Embassy of Finland in Washington, just completed. But they have been in practice

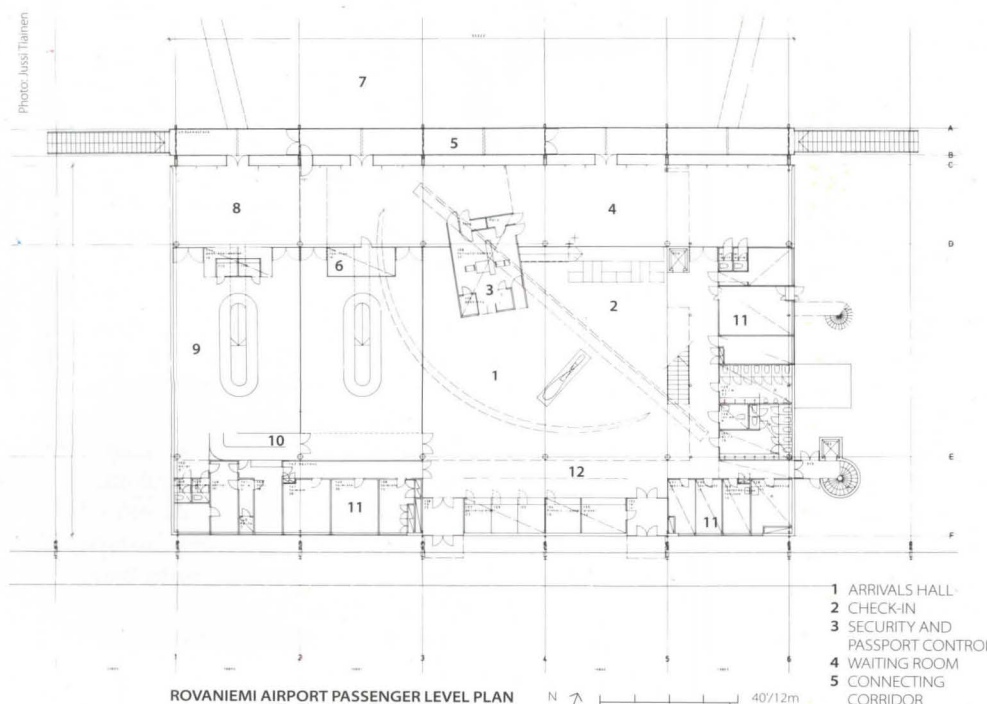
together for twenty years, winning competitions, prizes, and critical notice abroad. They may well be the most intriguing firm in a country known for design leadership.

Baby boomers Komonen and Heikkinen (born in 1945 and 1949) got their training at Helsinki University of Technology. That campus was designed by Alvar Aalto, but most of Markku’s and Mikko’s teachers were “Functionalists,” men like Juhani Pallasmaa and Jaakko Laapotti who kept alive the principles of early Modernism. A national legend, Aalto so dominated Finland’s architectural landscape (his face on Finnish banknotes serves as a constant reminder of his long shadow) that outsiders are often unaware that the International Style continued to evolve even though Aalto had abandoned it for his personal organic style. Heikkinen and Komonen’s reliance on a modular grid and their love of industrial materials no doubt reflect the influence of architects like Aulis Blomstedt, Aarno Ruusuvuori, and Pallasmaa.

After working for a variety of offices (Heikkinen for Kristian Gullichsen and developer James Rouse, Komonen with



Photo: Jussi Taiminen



Rovaniemi Airport (continued)

The fact that this airport lies on the Arctic Circle is celebrated with a skylight that parallels the polar line. Markings on the floor below note the locations of the circle at various dates in history and in 1990, the year construction began. A small circular aperture, admitting light only briefly around noon daily, marks the seasons of the year on a figure-eight-like analemma traced on the floor. A gridlike roof structure, suspended from twelve columns contributes to the airy quality of the interior.

Laapotti, and also as editor of *Arkkitehti*), they opened their own office in 1974. Their big break came when they won the 1986 competition for the national science museum in the Helsinki suburb of Vantaa. The Finnish Science Centre is one of the most popular new buildings in Finland, where it is known simply by its competition moniker, Heureka.

A box, like the airport, Heureka has Euclidean additions of a domical planetarium and a wedge-shaped auditorium. The external supports of the glass wall are painted the colors of the spectrum. In front of this Space Age museum is a rock garden – a seemingly random collection of boulders that forms a geological map of Finland when viewed from above.

The delicate balancing of the new and the ancient, of clarity and darkness, holds true as well for the School of Rescue Operations in Kuopio, completed in 1992. As at Rovaniemi, simple geometries and near-canon proportions turn a functional program into a solution of exceptional power, and invite favorable comparison to the work of Louis Kahn.

A competition won under the code name of Fahrenheit 451, the Kuopio rescue college is where every Finnish fireman and ambulance driver is trained. The 350 trainees live in a four-story concrete dormitory whose crescent shape recalls Rovaniemi's curved entrance; its façade, too, is wrapped in industrial-strength chain link fencing.

The training of firemen and paramedics would seem to be both prescribed and thoroughly High Tech (a large portion of the building's \$40 million cost was equipment, including dozens of fire trucks, smoke chambers, and a pool that simulates an ice-covered lake with a car at the bottom). Yet the architects found inspiration in Miyamoto Musashi's *A Book of Five Rings*. The 17th-Century Samurai training manual, with its stress on calmness, decisiveness, and economy of movement, became the appropriate blueprint for arming the contemporary warrior.

Work Outside Finland

This unorthodox yet utterly logical approach is apparent in the 1991 winning design for the European Film College in the seaside town of Ebeltoft, Denmark. Beating out four Danish firms in an invited competition, the Finnish architects fashioned an appealing and coherent campus from still another sloping site, employing their by-now-familiar geometry of long, narrow school building, arc-shaped student housing, and wedgelike theatre.

The rectangular classroom block divides the coastal valley in two, riding the grassy waves like an ark – or the boat in Jean Vigo's *L'Atalante* that struggles vainly to reach the sea. Color-

ful boxes, a copper-clad kitchen and a brick sound studio, collide with and penetrate the building, reducing its Modernist corporate scale to that of a Danish village.

The unsuccessful competition entries are instructive, too. Heikkinen and Komonen's pavilion of tarred logs that would have brought the smell of Finland to Expo '92 in Seville placed fourth. Their scheme for the Museum of Contemporary Art in Helsinki (a competition won by Steven Holl) owes a lot to the spirit of Donald Judd (whom Heikkinen visited in Marfa and whose spirit is also invoked in the rather Zen exhibition space designed for the contemporary Nordic Art and Architecture show in Leeuwarden, Holland, four years ago). The 1989 design for Pakila church offered rocks from the River Jordan in a stream that separated sanctuary from cemetery (and was branded an "object of Satan" by the minister).

More than just competition entrants from an isolated land, Heikkinen and Komonen got a boost from their invitation to join Stanley Tigerman, Alvaro Siza, Hans Hollein, and Zaha Hadid in the exhibition "Visiones para Madrid" in 1992. The year before, Vaclav Havel invited Mikko and Markku to Prague to brainstorm about urban development.

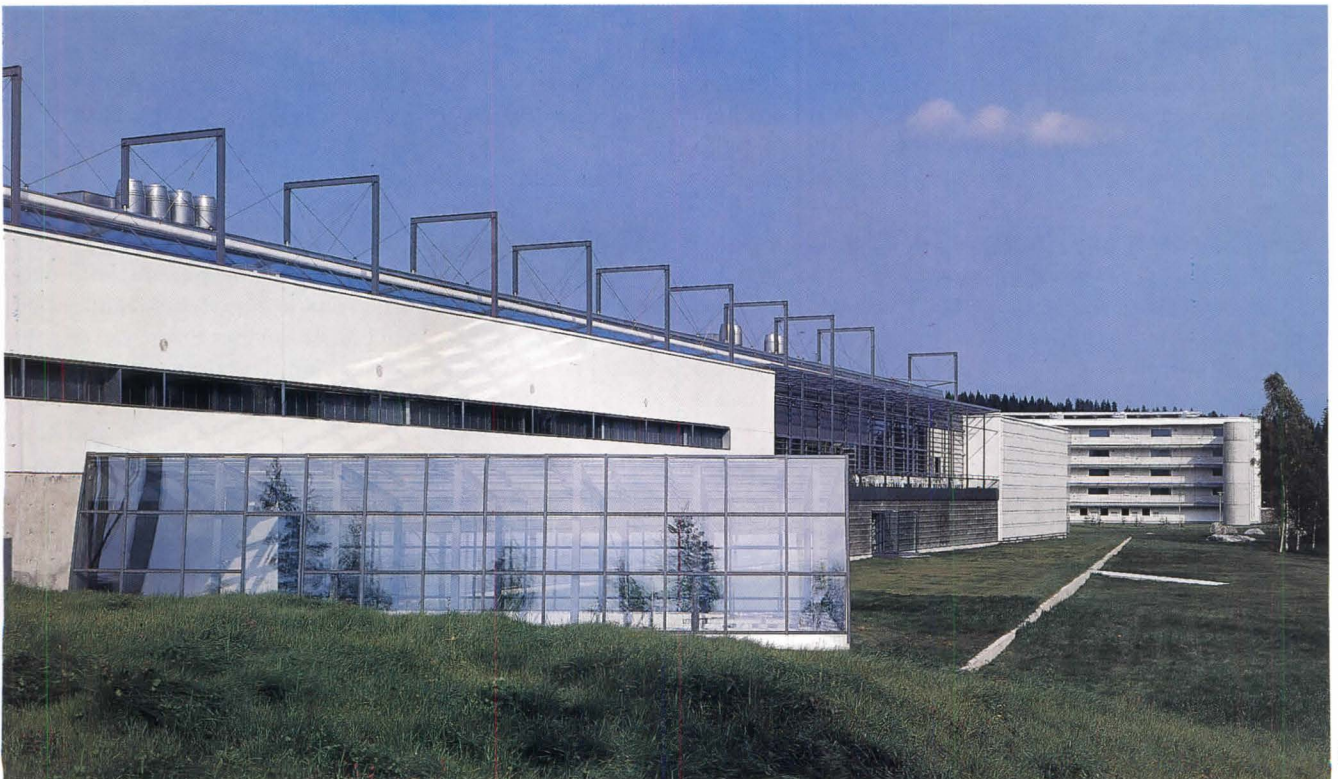
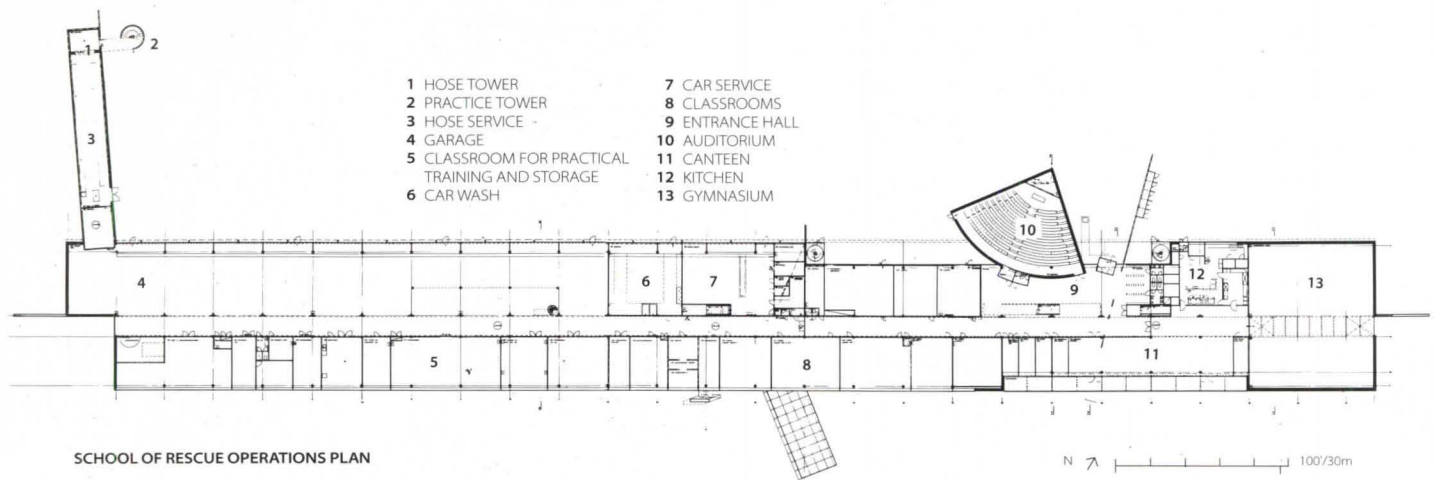
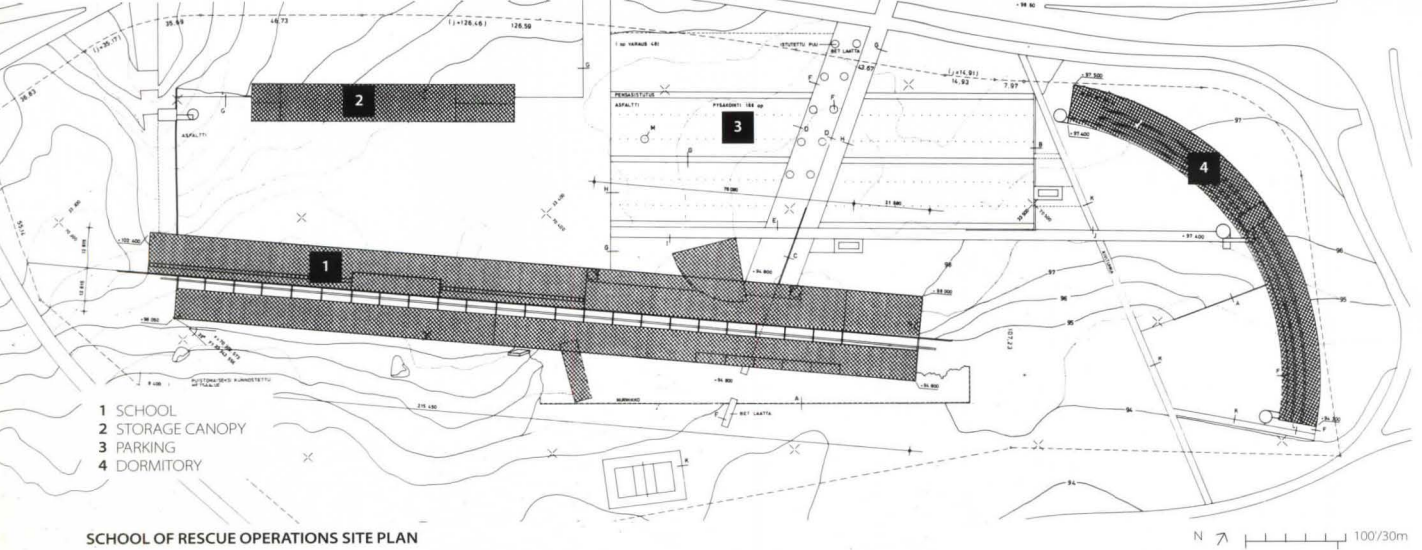
Increasing recognition (Rovaniemi was the European Steel Building of the Year in 1993, for example) has translated into new, important commissions. The architects' scheme for a combined Swedish-Finnish embassy in Berlin is in the site survey stage (the Danes and Norwegians may join the venture), while Heikkinen is a juror for the Chancery of the President competition in the German capital.

A Presence in Washington

It is the embassy in Washington, however, that introduces Heikkinen and Komonen's work to Americans, and, in a city not given to subtlety in public statements, the newest addition to chancery row is a model of Finnish understatement.

Masters at exploiting the genius of a place, the architects transformed a small and unpromising site into an enchanted setting for a challenging, mysterious work of art. Using granite, copper, and bronze, while incorporating quintessential Finnish elements of light, nature, and solitude, the architects have created another box – in this case a reliquary for cultural memory.

The embassy confirms the consistent nonpolemical vision demonstrated by earlier triumphs like Rovaniemi airport and the Kuopio rescue school. And taken all together, Heikkinen and Komonen's work speaks of a mature, logically developed, and spiritual Modernism – a highly sophisticated architecture with the whisper of the primeval forest. □



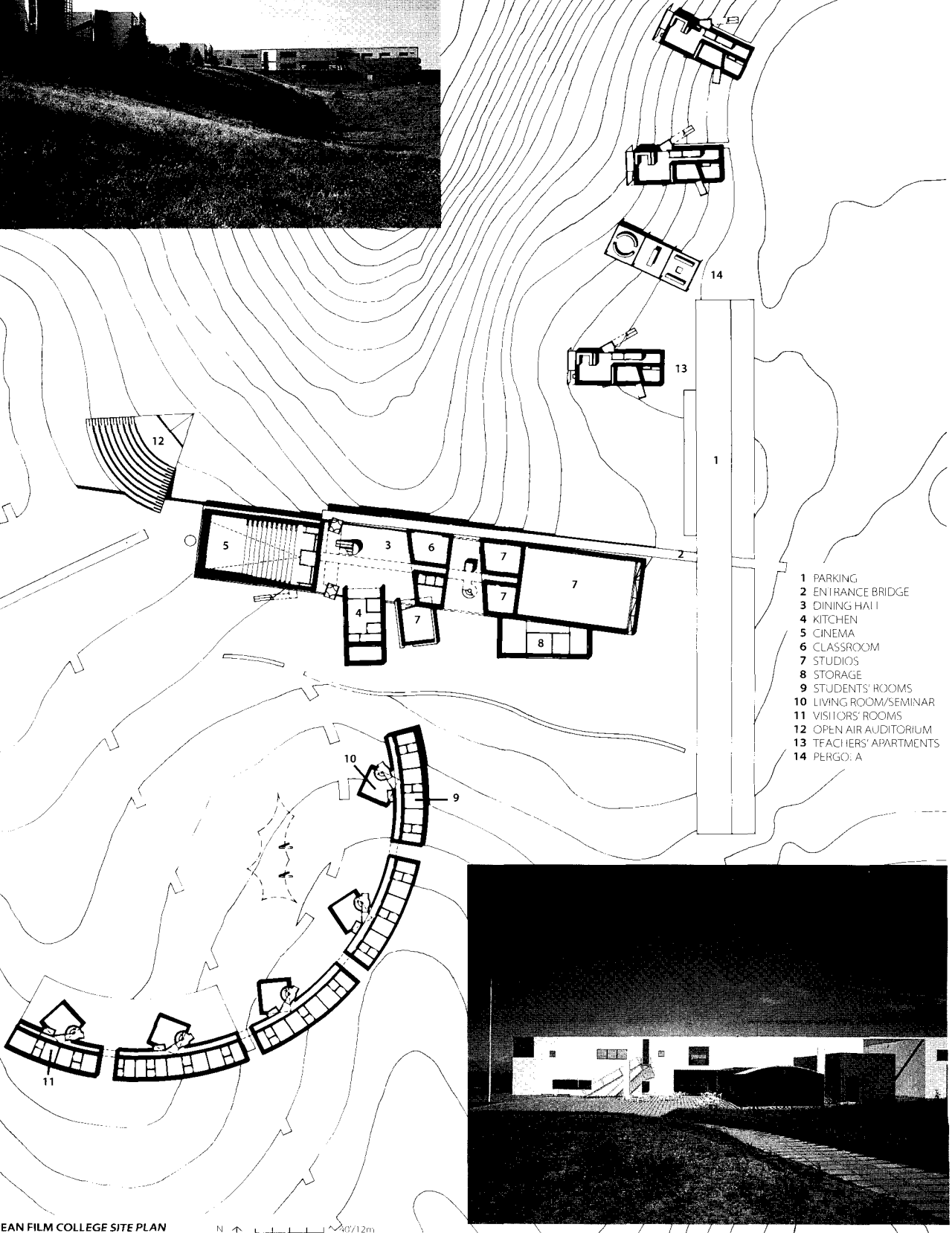


School of Rescue Operations

At the fire and rescue college at Kuopio, Finland, a single 650-foot-long main building (facing page) houses all training, office, dining, and garage facilities along one delicately glazed central corridor, which is exposed at the structure's ends (above). Crashing gently into the linear building is the triangular form of the main auditorium. At one end of the site, curving back toward the main building, is the four-story dormitory (right) that houses the 350 trainees.



Photos this page: Jussi Taiminen



EUROPEAN FILM COLLEGE SITE PLAN

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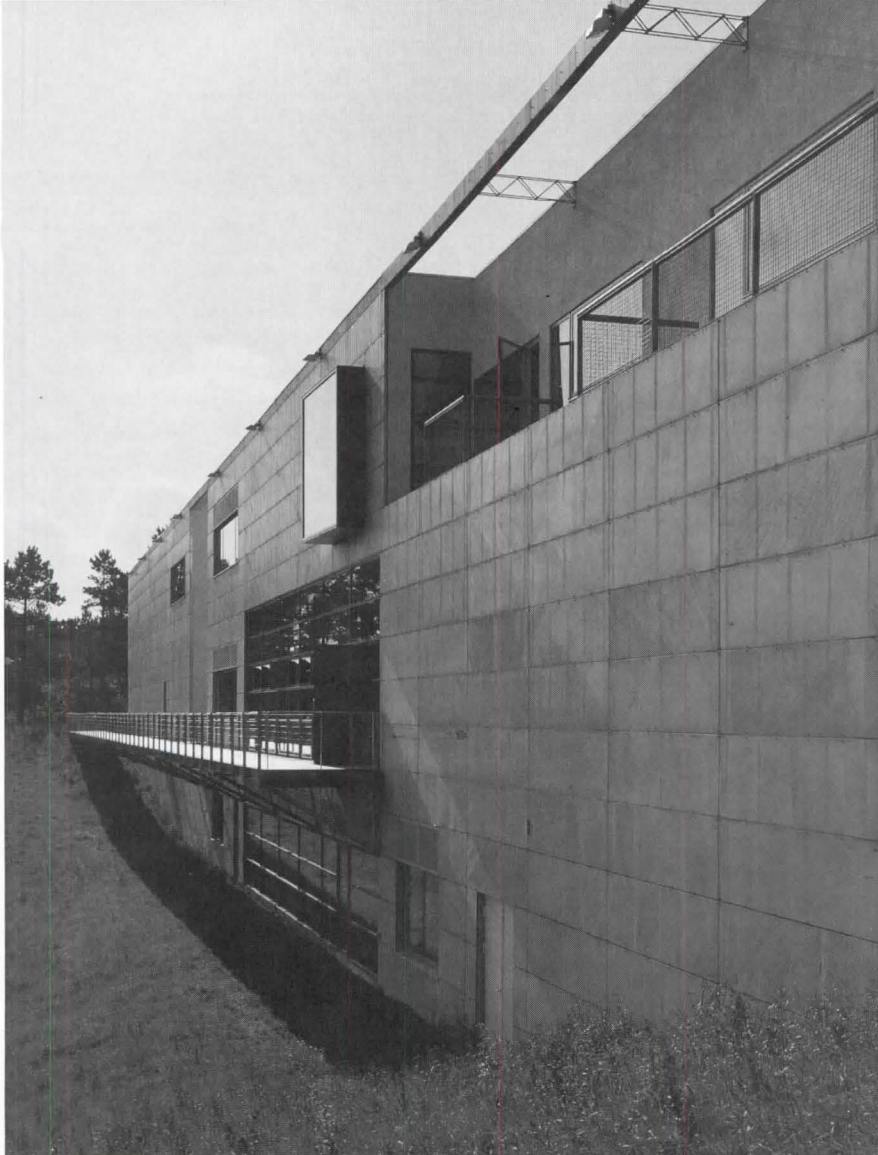


European Film School

A rolling glacial landscape in Ebeltoft, Denmark, is the setting for Heikkinen & Komonen's competition-winning film school. "Towers," each housing two faculty apartments (facing page, top), stand on the crests, juxtaposed to the linear main building (facing page, bottom). The south side of this building is clad in white stucco, with wings in various materials appended to it. At one point, a terrace with a spiral stair (right) interrupts the linear structure. The long curve of the student housing (above) is studded with cylindrical stair towers and houselike living room wings.

Jussi Tainen; (above): Poul Ib Henriksen (right)





Jussi Taininen

European Film School

(continued)

The south side of the film school's main building (left) is a precipice of zinc-plated steel rising over one of the site's valleys. Entry to the building is by an open, vertigo-inducing gangplank, evoking images of the climax of Alfred Hitchcock's *North by Northwest*. The core of the main building is a two-story dining hall (below left) that serves as a lobby to its film theater.



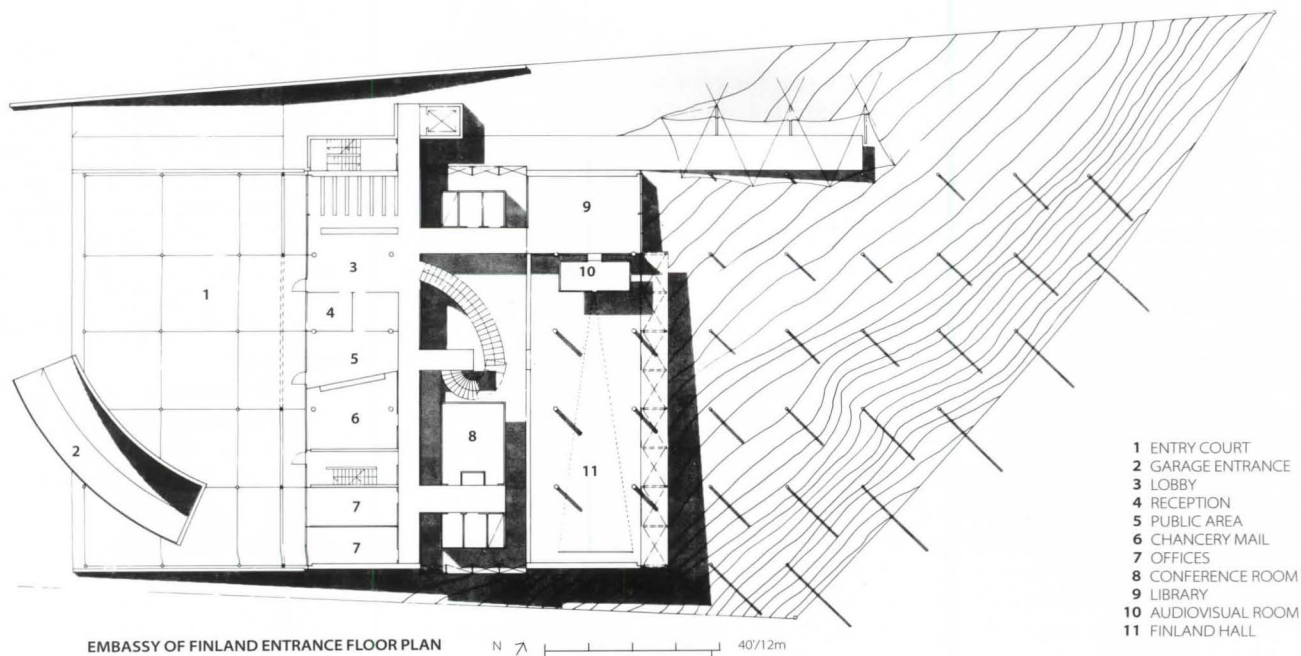
Poul Ib Henriksen

Embassy of Finland

Being completed as this issue goes to press, the Finnish Embassy in Washington (facing page) makes exceptional use of a wooded site next to the Vatican chancery. On terrain that slopes sharply down from Massachusetts Avenue, the architects have placed a linear box of a building, layered from a three-story array of offices in front to a four-story stack of more ceremonial spaces overlooking the dense woods to the rear. The filling in this sandwich is a grand lightwell/stairwell (facing page, top right) into which metal clad meeting rooms are suspended. The front wall of glass and glass block in a bronze-clad grid will be screened from the intense south sun by vines on metal lattices. A grid of poles, with lights on their tops, will extend the geometry of the main reception level out over the forested slope.



Photo: Jussi Taininen



Under the leadership of architect and three-time mayor Jaime Lerner, the city of Curitiba in Brazil's southern state of Paraná, has become a model of environmental sustainability. The list of Curitiba's major achievements since Lerner's first mayoral term, 1971 to 1974, is remarkable: a bus-based transit system captures 28 percent of the city's car owners daily; a park system offers 50 square meters of green space per inhabitant; 70 percent of Curitiba's households recycle their waste. Lerner is quick to point out that this green and fastidiously clean city is not the creation of one man, but reflects the collective values and desires of its citizens and a committed team of planners, technicians, and architects.

The foundation of Curitiba's environmental movement was laid in the early 1960s, when Lerner was part of the Curitiba Institute for Research and Urban Planning. At that time, architects, planners, and citizens raised their voices in a heated debate over the proposed implementation of a 1942 master plan, which would have sacrificed the city's historic fabric to the circulation needs of the automobile. Instead, the State Bank of Paraná funded a competition and a study for a new mass-transit-based master plan (1965–1966), which became the basis for the work of Lerner and his group. Since that time, Curitiba's population has tripled (from 500,000 to 1.6 million) owing to an influx from rural areas of the state.

So far, the city has successfully absorbed the expansion. The population of Curitiba and Paraná is ethnically diverse, but is unified by agrarian roots and values. With the lowest per capita consumption of fuel in Brazil, the city's current challenge is to retain its "sustainability," while receiving a new wave of people from the more industrialized regions of the country.

The country's former military dictatorship appointed Lerner to his first term at age 34, perhaps believing that the earnest young architect would not pose a political threat, and might absorb any pent-up political criticism that the citizens were forbidden to direct at higher government levels. Instead, Lerner, his party, and their environmental program won enduring support. During the constitutionally required interregnum between terms, he has served as a consultant to cities worldwide.

Lerner, now 57, is currently campaigning to be governor of Paraná.

Susan Di Giulio □

Architect Susan Di Giulio, based in Santa Monica, interviewed Jaime Lerner in his Curitiba office in March.

Di Giulio: Curitiba has provided creative solutions to some major urban problems. Can you please address the future of megacities, such as Los Angeles, Rio, Mexico City, whose growth is generally considered to be out of control?

Lerner: Throughout the world there exists a tragic view of the city, and often those responsible for planning speak as if there were no solution to urban problems. There's a misconception

that the larger cities, whether third world or first, have become unworkable. This is not true. Scale cannot be used as an excuse. On the contrary, I believe that the big cities can be the solution for a country. As the world population grows, the time lag in delivery of services increases, and the central governments are continually falling further behind the needs of the population. At the same time, our world culture is becoming ever more accus-

tomed to instant responses in communication, purchasing, information; the only things that remain in the stone age are the central governments. The only level of power that still has the potential to respond rapidly is local government. What this single fact clearly affirms is that the next century will be the century of the city. The countries that don't take this into account are going to be left in the margins of history. Curitiba, for example, is not a paradise. We have the same problems as other major Brazilian cities. The difference is the quality of our response [to citizens' needs]. I've been working 30 years in cities, most of the capital cities in Brazil, also San Juan, Puerto Rico, Caracas, Shanghai, and Havana. I was a professor in San Francisco [at U.C. Berkeley]. Therefore, I defend the thesis that any city, regardless of scale, size, productivity, or country, can make remarkable changes in a year or less.

Di Giulio: When you were projecting a transportation system for Curitiba, did

you use any existing systems as models?

Lerner: No. We just thought about our own reality. When I was mayor of Curitiba for the first time ... this city was projected to contain soon more than a million inhabitants, and many said it should have a metro system. But since we didn't have the money for this, we asked ourselves "Can we accomplish the same thing with a surface system?" We decided that it was possible, with a system that had few stops, one every five hundred meters, running in a dedicated lane. And so was born the idea of an express bus. The system began carrying 25,000 people per day. It now delivers 1.5-million passenger trips per day. That's four times the number of daily trips on the Metro in Rio (pop. 5.5 million), at a cost 200 percent cheaper per kilometer. If we can convince people to use public transportation in Curitiba, imagine what it would be like in cities like Rio or Los Angeles with 30 percent fewer cars on the street!

Di Giulio: You demonstrated the "ligerinho" bus system (1) in New York a few years ago, didn't you?

Lerner: Yes. We shipped four buses and four boarding tubes and assembled the system in five days. But the power structure is so decadent in New York, no one wanted to do anything.

Di Giulio: Bureaucracy is a stumbling block to progress in cities around the world. What can be done to alleviate this situation?

Lerner: I really like a phrase by Paul Goldberger, the [former architecture] critic for *The New York Times*. He wrote this for the 100th anniversary of the Brooklyn Bridge: "A work, in order to be a monument, must be a shared cause." If this is valid for a great work like a bridge, it's also valid (*continued on page 110*)



1

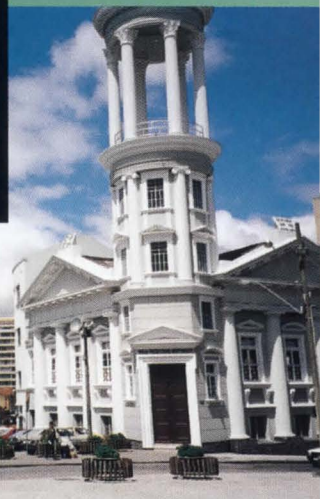


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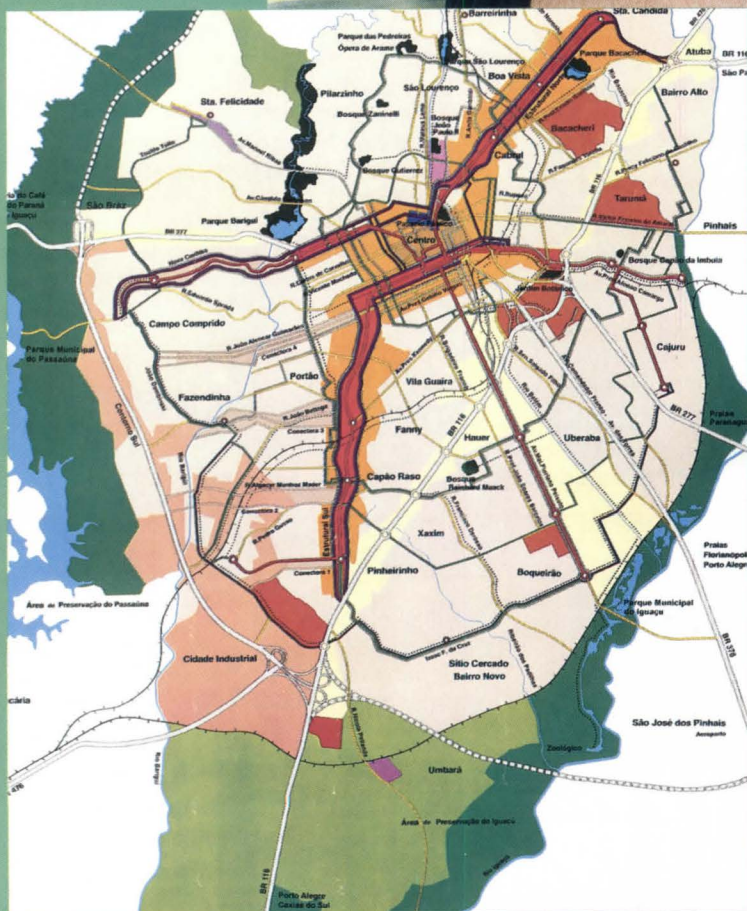


Photos: Susan Di Giulio

2



4



- high density, mixed use development
- transit corridor with residential/commercial development
- medium density residential
- industrial zone
- low density residential
- traditional city center
- civic center
- commercial district
- historic district
- rivers/lakes
- agriculture
- ecological zone
- woods/parks
- express bus
- direct bus line
- inter-neighborhood bus line

Rapid mass-transit and pedestrian amenities are major components of Curitiba's successful environmental initiatives, led by Jamie Lerner (shown in his office, 2). The "ligerinho" (1), is a hybrid bus/subway running in dedicated lanes; passengers pay at a turnstile in a glazed boarding tube that is elevated to the height of the bus floor, and enter the vehicle through sliding doors. The Rua das Flores (3) is the first pedestrian-only street in Brazil and one of many in Curitiba designed to reduce car use. A small plaza (4) in the historic center is carefully maintained.

1st Annual P/A Awards for Architectural Research



Jay
Farbstein

Randolph
Croxton

Roberta
Feldman

Donald
Watson

Sharon E.
Sutton

Mahadev
Raman

Julia
Robinson

Architectural research continues to gain influence in the profession, as the need to build architecture's knowledge base increases. In response, this year we chose to separate the awards competition for research from the annual P/A Awards program to give it more prominence. We also joined forces with the AIA/ACSA Council on Architectural Research to encourage submissions, to jury the entries, and to disseminate the results. The jury was composed of board members of the Research Council and invited experts.

We received 67 submissions, a 56 percent increase over the 43 research entries in the 1993 P/A Awards program. Of the submissions, 34 were in the behavioral and social science category, 18 were in energy and sustainable design, and 19 were in technology and materials (some projects were submitted under two categories). Submissions came from academicians and practitioners. Abstracts of all submissions are available from P/A (see page 108).

After discussion of the judging criteria, the jury concluded that two questions would govern its selection. First, does the project qualify as research – is it new knowledge in the sense that it builds on or extends what's known about the world, are there clear conclusions, are the research methods sound and defensible? Second, if it is research, then what are its special qualities – the project's overall excellence, innovation, relevance, rigor, design usability, its multidisciplinary quality? Winning projects, of course, would not have to possess all of these attributes, but would be outstanding in one or more areas. The deliberations produced six winners. Michael J. Crosbie □

Architectural Research Jury

Sharon E. Sutton, Ph.D., AIA
(Jury Chair)
Associate Professor, College of
Architecture & Urban Planning
University of Michigan
Ann Arbor

Randolph Croxton, AIA
Chair, AIA/ACSA
Council on Architectural Research
Principal, Croxton Collaborative,
New York

Jay Farbstein, Ph.D., AIA
Principal, Jay Farbstein Associates
San Luis Obispo, California

Roberta Feldman, Ph.D.
Associate Professor,
Department of Architecture
University of Illinois
Chicago

Mahadev Raman
Principal, Ove Arup & Partners
New York

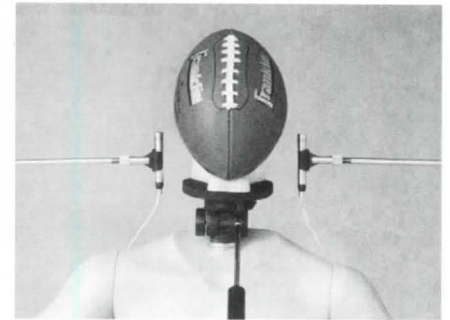
Julia Robinson, AIA
Associate Professor,
Department of Architecture
University of Minnesota
Minneapolis

Donald Watson, FAIA
Dean, School of Architecture
Rensselaer Polytechnic Institute
Troy, New York



Listening to Buildings

Gary W. Siebein
Architectural Acoustics Research Group
University of Florida



Project: Listening to Buildings

The purpose of the research is to develop methods to evaluate, model, predict, and aurally simulate the acoustical qualities of buildings. These methods allow qualities of sound to be consciously designed as important elements contributing to the multisensory experience of architecture. In a few years an integrated system will also be developed to simulate the subtleties of room acoustics; it will be designed to reflect the perceptions of people who use the rooms, and will be capable of being used as an integral part of the design process of all buildings.

This research is rooted in both education and practice. Much of the work included in the report is the result of thesis and dissertation research by graduate architecture students who investigated many aspects of architectural acoustics. At the same time, the methods developed in the research here have been used in the design of actual buildings. This allows for dissemination of the research results to the profession, but more important, it provides critical evaluation of research processes and products to continually improve the work.

The research activities are interdisciplinary. Faculty from architecture, neuroscience, psychology, music, theater, engineering, and speech have all been actively engaged in the work. The research agenda was developed in response to needs identified in teaching and practice, and it includes: comprehensive, multifaceted measuring of physical acoustical properties of rooms and scale models of rooms; developing sophisticated

instrumentation; subjectively evaluating listening experiences in rooms; and simulating the aural environment of rooms. Statistical modeling of a large database of acoustical information also occurred. The use of statistical, physical, and computer models to study and simulate the aural environment of buildings is transforming the way architects, clients, and consultants work in the field. It extends traditional architectural expertise into the multisensory realm, where the design of the total experiential environment of buildings can take place.

Principal Researchers/Authors: Gary W. Siebein, project director; Harold W. Dodgington, coinvestigator; Wei-hwa Chiang, project manager; Antonio P. Carvalho, Richard P. Cervone, Martin A. Gold, John Kidwell, Gary S. Madaras, Ganapathy Mahalingham, team leaders; Avi Bortnick, Christopher R. Herr, Shirley Mae Jin, Robert Lilkendey; Loren Raia, Mitchel E. Spolan, researchers.

Client: National Science Foundation, Washington, D.C.

Consultants: Wilhelm Schwab, software; Don Loftus, video.

Jury Comments

Jay Farbstein noted that even though much of the research was tied to sophisticated technology, the acoustical qualities of the spaces studied were also evaluated from a behavioral aspect. The researchers assessed the subjective quality of the spaces by giving surveys to the users of those spaces. This

Researchers used a combination of computer models and scale models (1) to record acoustical responses in spaces. The modeling techniques duplicated complex sound fields found in actual buildings. The football head (2) with microphones stands in for a

human listener in the space. The study determined that a solid object between microphones can simulate the quality of human hearing. Microphones were placed to replicate the listener's ears, and the football was used as a solid object between the mikes.

formed one of the key bases for one of their evaluation criteria.

Mahadev Raman praised the submission because of its applicability, in that it can actually be used as a design tool, as a process by which to evaluate the acoustical properties of a space before it is built.

Roberta Feldman added that the submission expressed the rigor of the study, which she thought would be important to people who invest large sums of money in the design and construction of auditoriums. But the research can be applied to any large space. Feldman also mentioned that the complexity of the analysis engages students in a technical subject in a very exciting, hands-on style.

Contact: Gary W. Siebein, Architectural Acoustics Research Group, Department of Architecture, 231 Architecture, University of Florida, Gainesville, FL, 32611-5531. Phone: 904-392-0205.

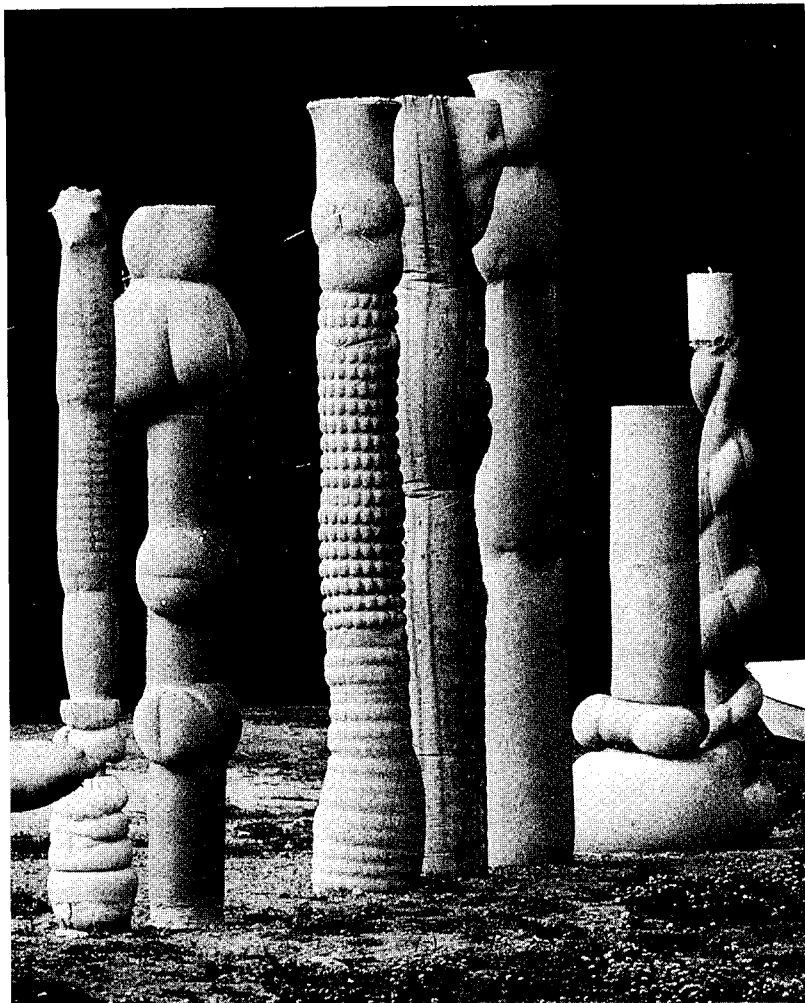
Fabric Formwork

Mark West

Carleton University School of Architecture
Ottawa, Ontario, Canada



1



2

Project: Architectural Fabric Formwork for Reinforced Concrete Structures

The intent of this project was to test the use of fabric membrane formwork in the production of reinforced concrete structures. A variety of fabrics and restraint strategies were tested at various scales with the purpose of exploring the possibilities this method held for architectural and building practice. The goal was to produce practical formwork designs and methods that would offer architects, builders, and engineers new economies in construction and new degrees of freedom and innovation in the use of reinforced concrete.

Fabric has been used since the 1960s to form concrete on the ground and under water. This project is the first to use fabric tension membranes for architectural purposes, forming columns, beams, and slabs. Much of this technology is patent pending. Because of the lack of precedent in this area, the work has been as much invention as research. These two activities necessarily went

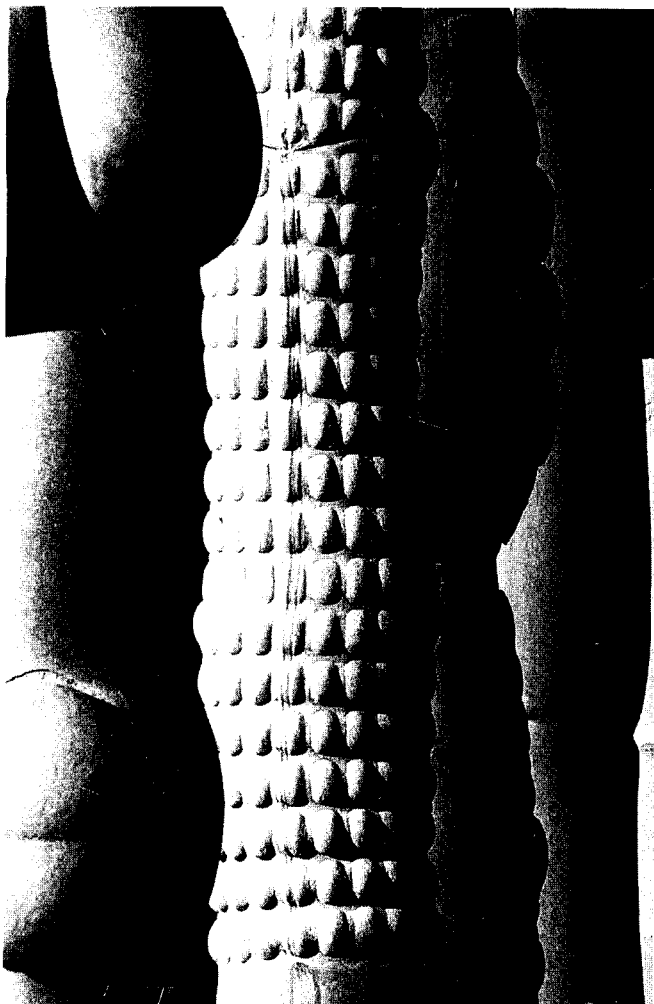
hand in hand as problems were confronted and solved. Combinations of materials and restraint methods were built and tested, first in small-scale physical models and later in full-scale pours.

Because the search was for simple, practical, and economical methods of construction, only materials and tools familiar to existing trades were used. Obviously, sewing machines played a part in the construction of the formwork, but full-scale columns were also produced from fabric forms that were neither sewn nor tailored. For these, standard rebar tie wire was used to connect the fabric to itself. The tests ranged from such "primitive" methods to carefully tailored formwork, in order to explore a full range of techniques.

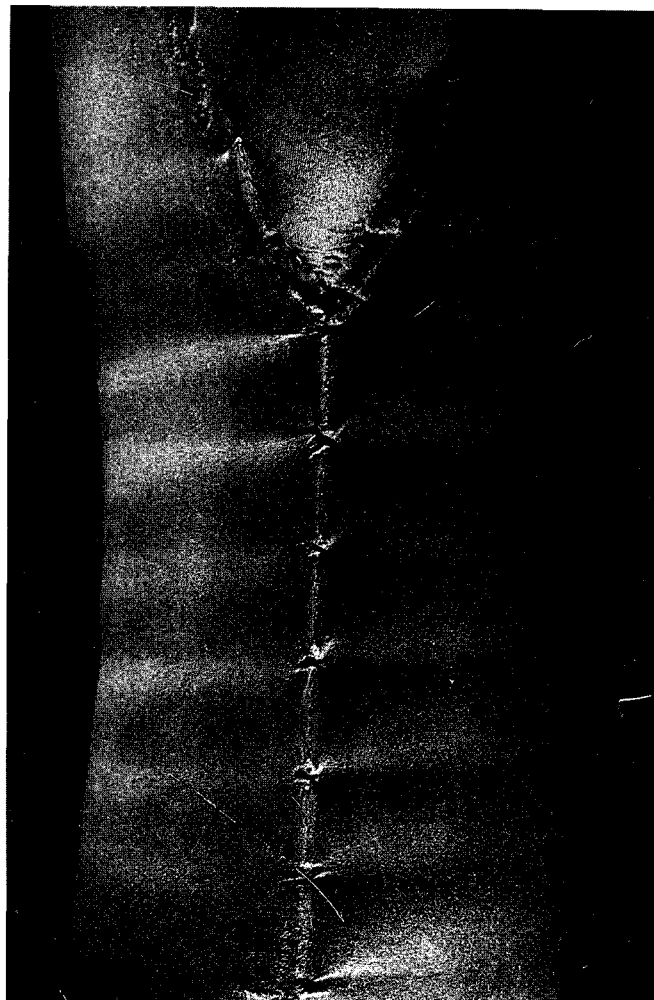
Formwork strategies and designs have been tested at full scale and are available for commercial application. The major finding of this work is that fabric formwork can be a viable alternative for panelized forms in several applications, and provides architectural

benefits not available through any other building method. Fabric formwork can produce structure, sculptural form, and an impeccable finish, in a single operation. The high quality finish is accomplished by using a permeable membrane which acts as a filter, allowing air and mix-water to bleed out, leaving a cement-rich paste at the surface of the form. Another effect of this filtration is that the water-to-cement ratio of the concrete near the surface of the form is reduced, resulting in a stronger compression strength. Many of the fabrics tested can be used for multiple pours. The cost per unit area of these fabrics is between one-tenth and one-fifteenth the price of formwork plywood in the North American market.

Principal Researchers/Authors: Mark West, sessional lecturer, Carleton University School of Architecture; Araya Asgedom, Benoit Chaput, Donald Chow, Jeffrey Coates, Donald Collins, Andrea D'Elia, Jennifer Fraser, Katrina Herrndorf, Graham



3



4

Hill, John Kim, Rita Kiriakis, Guy Pigeon, Geoff Roche, assistants.

Consultant: Juan Salinas-Pacheco, structural engineering.

Client: Independent research

Funding Sources: E. I. du Pont de Nemours & Co., Wilmington, Delaware; Canadian Portland Cement Association & Ottawa Carleton Area Ready-Mix Association, Ottawa, Ontario, Canada; Harris Rebar, a division of Harris Steel Group, Inc, Ottawa; UMACS Inc., Ottawa; Fabreen Inc., Mississauga, Ontario; Intertape Polymer Inc., Truro, Nova Scotia, Canada; Superior Propane Inc., Toronto.

Jury Comments

A major point of discussion was about whether this project was research. Roberta Feldman said that the quality of the submission itself convinced her and other jurors that it was. "If you consider research the development of new forms using a new technology, then this is research," said Feldman.

Julia Robinson noted that it was exciting to see someone exploring the use of a common material. Randolph Croxton echoed Robinson's point: "I thought the ability to introduce a level of whimsy and plasticity into something that is so rigid and so formal, and in recent times has been so little explored, was great. Here you saw with a great economy of means, a sudden richness and reinvigoration of what's possible."

Sharon Sutton also cited the project for its social implications: "It's a lightweight, inexpensive material that can be used to reduce deforestation, to build in areas that do not have trees. There were conclusions about the utility of this material. And there was a comical remark that contractors will have to learn how to sew. It's a new kind of technology that opens building up to those who have a different set of skills."

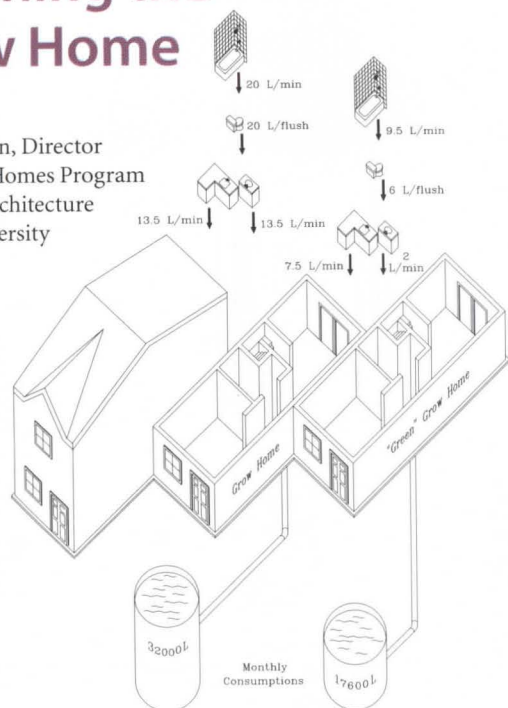
Contact: Mark West, 312 Kirchoffer Avenue, Ottawa, Ontario, K2A 1Y3, Canada. Phone: 613-728-2628.

Some of the first tests of the fabric formwork entailed pouring columns (2) that ranged from 9 to 12 feet high. No reinforcing steel was used since the columns were intended to test only the capacity of the formwork itself. Details of the columns (1, 3, 4) show the range of textures that can be achieved by variations in stitch-

ing. The curved surfaces perfectly register the forces imposed on the formwork membrane by the weight and pressure of the wet concrete. Each member produced from the same fabric form will be slightly different in detail – an economic advantage because such variety is achievable through mass production.

Greening the Grow Home

Avi Friedman, Director
Affordable Homes Program
School of Architecture
McGill University



1

2

ENERGY AND COST SAVINGS FOR A SEMI-DETACHED GROW HOME			
BUILDING	ENVIRONMENTAL BENEFITS	ENERGY SAVINGS (MJ)	ADDED CONSTR. COST
SHEATHING			
PLYWOOD TO OSB	59% LESS EMBODIED ENERGY EFFICIENT USE OF RESOURCES (BETTER USE OF WOOD FIBER)	17,493	-\$368
INSULATION			
FIBER GLASS TO CELLULOSE	56% LESS EMBODIED ENERGY LESS RESOURCE DEPLETION (RECYCLED PRODUCT); BIODEGRADABLE	3,104	\$441
ROOF SHINGLES			
ASPHALT TO CEDAR	43% LESS EMBODIED ENERGY LESS RESOURCE DEPLETION (RENEWABLE RESOURCE)	2,952	\$1,001
SIDING			
VINYL TO CEDAR	92% LESS EMBODIED ENERGY; LESS RESOURCE DEPLETION (RENEWABLE RESOURCE)	38,124	\$788
BRICK			
CLAY TO CONCRETE	55% LESS EMBODIED ENERGY	9,986	NEGL.
FLOORING			
CARPETING TO PARQUETRY	75% LESS EMBODIED ENERGY; LESS RESOURCE DEPLETION LESS TOXIC WASTE	8,347	\$724
VINYL TO CERAMIC	85% LESS EMBODIED ENERGY LESS TOXIC WASTE	3,995	\$908
TOTAL		84,002	\$3,495

Project: Sustainable Residential Developments: Planning, Design and Construction Principles (*Greening the Grow Home*)

The Green Grow Home research project is part of an evolutionary process, one that builds on house design, community planning, and previous research findings.

In Part I of the study, alternative building materials and techniques that could provide a more environmentally friendly house were surveyed and evaluated for use in the Grow Home (P/A, June 1991, p. 96). Various factors were considered, including general planning principles, energy-efficient envelope construction and detailing (including window alternatives), resource-efficient building materials, water-efficient plumbing fixtures and landscapes, recycling and composting alternatives, and indoor air quality. Incremental improvements in each area were analyzed through judicious selection of existing products and technologies; the effect on selling price and operating cost was evaluated for each.

In Part II, principles related to the design of sustainable communities were studied. Site planning, vehicular circulation and parking, outdoor spaces, community and house identity, and environmental comfort are the five areas of research.

Part III demonstrates the ideas that were developed in the previous sections for an existing infill site. In three design alternatives,

the authors demonstrated the effects of increased density on design and cost. The research demonstrated that it is not only possible, but practical, to improve substantially the environmental qualities of a home without significantly increased construction costs. The Grow Home was designed (with the participation of Witold Rybczynski and Susan Ross) as affordable housing and should remain consistent with this intent. This practicality, fundamental to the concept of sustainability, requires development that is responsive to the environmental, social, and economic needs of society.

Principal Researchers/Authors: Avi Friedman, Vince Cammalleri, Jim Nicell, François Dufaux, Joanne Green, Susan Fisher, Aud Koht, Kevin Lee, Aryan Lirange, Denis Palin, Mark Somers, Michele Takoff, Nicola Bullock.

Client and funding source: Canada Mortgage and Housing Corporation, Research Division, Ottawa, Ontario; David D'Amour, Project Manager.

Jury Comments

Donald Watson praised this project for its intelligence and wisdom. "The model home was built at the bottom of the market. It has traditional features so that it's appealing to folks. This study shows its implications, rigorously demonstrated on all kinds of sites."

Water-efficient fixtures can reduce water consumption (1) by as much as 50 percent, and reduce annual water heating bills by \$110. By replacing some basic construction materials (2) with "green" ones, the environmental impact of the

Grow Home can be substantially reduced at a cost of only \$3,500. Such substitute materials also reduce toxic waste, make more efficient use of resources, and save enough embodied energy in the replaced materials to heat the home for four years.

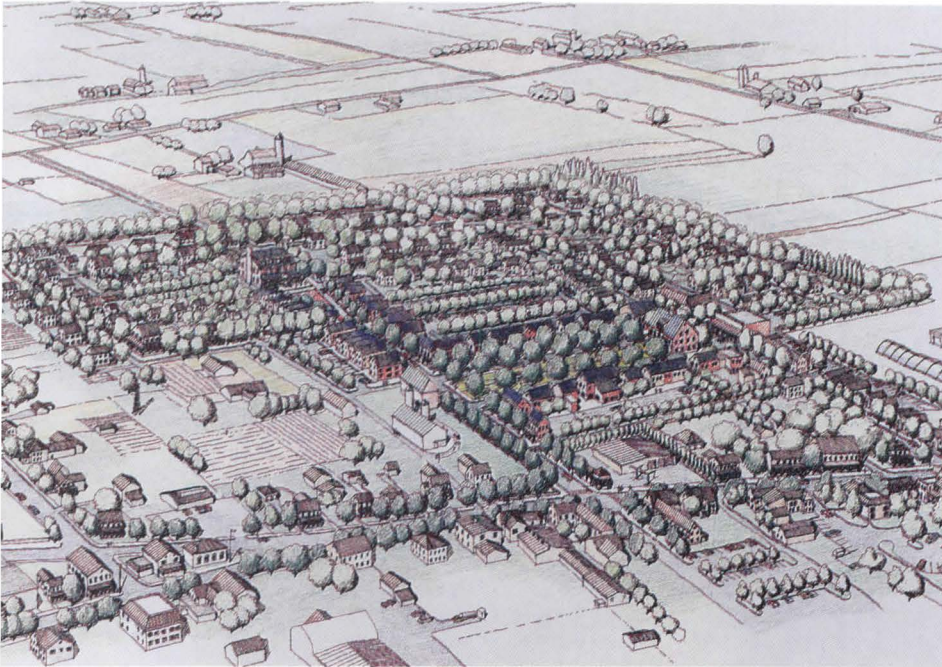
Jay Farbstein noted that even though the project was affordable housing, "the researchers were interested in working on 'marketable' housing as well, and they made it cheaper. People are opting to buy these cheaper houses, even when they can afford more expensive houses."

The depth of the study impressed Julia Robinson, who pointed out that the investigators kept "thinking of other ways to consider the house, and how the research could be expanded." Randolph Croxton summed up by saying that this project "is a perfect example of integrative and innovative thinking."

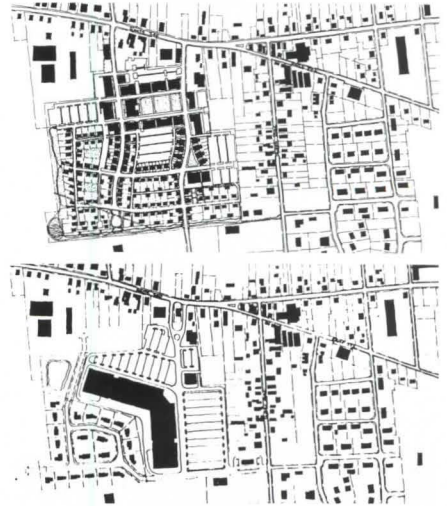
Contact: Avi Friedman, Director, Affordable Homes Program, McGill University School of Architecture, 815 Sherbrooke St. West, Montreal, Quebec H3A 2K6, Canada. Phone: 514-398-4923.

Urban-Rural Interface

Timothy W. Smith
University of Pennsylvania



1



2,3

Project: Sustainable Communities in the Urban-Rural Interface

This research project identified concepts, principles, and strategies for creating sustainable communities in suburbanizing farming regions. The project focused on existing towns and villages and their surrounding farmland in Lancaster County, Pennsylvania. The ideas were applied to a real development project to illustrate the benefits of a sustainable community approach to county and township planners, farmers, the local business community, and the public.

The approach taken by the team was to treat the town and surrounding farmland as a "human ecosystem, animated by the flow of energy, nutrients, resources, money, and information" between them. Farmers would benefit by having a local market for their products, a local source for organic soil input, and a community focus for their commercial, social, educational, and recreational needs. Town residents benefit by having an in-community food market, a local source for domestic energy, and a potential user for their recycled wastes. The community as a whole benefits from the reduced traffic and parking congestion that this pedestrian-oriented development would encourage, and by having a more stable, locally based, self-reliant economy. Reactions from the local Amish and Mennonite communities indicated that these strategies are consistent with

their traditional ways of life.

The project has led to the creation of a number of innovative planning and design tools. These include a Village Overlay Zone for Strasburg, Pennsylvania, the Lancaster County Livable Communities Handbook, and the Village Extension Ordinance for Intercourse village, Pennsylvania's first zoning ordinance based on principles of ecological planning and traditional town design.

Principal Researchers/Authors: Timothy W. Smith, project director; William W. Braham, director, Center for Environmental Design and Planning; Robert M. Wirtshafter, associate director, Center for Energy and the Environment; Ann L. Strong, John C. Keene, Robert E. Coughlin, participating faculty; Iain Low, Wen Wei Peng, Sibel Sandi-Zayak, Alan B. Buchan, David Jones, David Harper, Sally Townsend, Greg Andall, John Maneval, Ellen Bryson, Lauren Archibald, student researchers; Meriam Rahali, Erika Rush, Sheri Sanzone, David Wang, Susan Huffman, researchers; Anthony Smith, Kim Kroll, Janet Hammer, The Rodale Institute Research Center; Edward P. Drogaris, Doris Meyers, Concord Construction and Development Corp.

Client and funding source: Pennsylvania Energy Office, Harrisburg, Pennsylvania, with funds from the Energy Conservation and Assistance Fund.

A comparison of the proposed plan (1, 2) with the existing town (3) reveals design strategies such as mixed use development to reduce distances between activities. This also decreased dependence on cars, and increased urban density with

narrower streets and mid-block alleys. The scheme also results in lower infrastructure costs. The plan establishes a well-defined edge around the urban center (beyond which building is discouraged) to eliminate sprawl and leapfrog development.

Jury Comments

Sharon Sutton noted that this project set a hypothesis, "and what is admirable about it is the range of things considered, from agriculture and community reeducation, to zoning reformation and the local markets that sustain the community." Julia Robinson and Jay Farbstein, however, would have preferred the presentation of more detailed information.

Randolph Croxton noted that "the collision of two unusual forces make it a unique story. It's an innovative model for sustainable thinking. The multidisciplinary nature of the team was a high priority in terms of addressing the problem."

Contact: Timothy W. Smith, 7737 Devon St., Philadelphia, PA 19118. Phone: 215-561-1050.

Whole House Recycling

Jeff Joslin
Portland, Oregon



1

Project: The Whole House Recycling Project

While a significant number of the structures built in this country are ultimately demolished to make way for new construction, there has been little research examining the potential for reuse of materials from demolition. This project began with thorough documentation of a residential demolition. Subsequent analysis included research into the technical challenges of the reuse of salvaged materials; economic analysis of the potential for reuse on individual, regional, and national scales; and embodied energy analysis delineating the environmental economy of reusing salvaged materials.

With the increasing costs of fuel, landfill operations, and product processing, coupled with the relatively low cost of labor, the Whole House Recycling Project was formed in 1992 to investigate at what point in time these trends would result in cost-competi-

itive gleaning of construction materials from demolition.

To find out, the researchers, in association with a local demolition contractor, bid on the demolition of a house in Southeast Portland. It was demolished with hand labor, with the removal of as much construction material as possible in a form that could then be reused in future construction projects or otherwise recycled. The amounts of labor, money, and energy invested in the demolition were documented and analyzed, as were the potential energy and dollar values for the material removed.

The basic cost of hand demolition (or "defabrication") was more than competitive with the cost of the typical mechanical demolition. The value of the resultant material was \$4 per square foot of demolition, or approximately 8 to 10 percent of the construction cost in today's dollars. Another dollar

per square foot savings resulted from avoiding dumping costs. Almost four board feet of lumber per square foot of demolition were retrieved. Total embodied energy savings amount to 43,513 BTUs per square foot of demolition, or over 9 percent of the total energy originally required to construct the dwelling.

Based on 1992 whole-house demolition permits for the Metro region, salvage for reuse could retrieve 944,000 board feet of lumber from the solid waste stream each year in the form of remarketable lumber. Total value of salvageable lumber and other materials from the same number of demolitions could add up to \$1 million annually. On a national scale, the results suggest a salvage potential of more than 800 million board feet annually. Single-family house demolitions could result in \$1.5 billion in market value of salvaged material.

SALVAGE INVENTORY - 3124 S.E. DIVISION STREET

MATERIAL	QUANTITY	NEW VALUE ²⁵	RE-MARKET VALUE
FRAMING LUMBER²⁶			
2X4 @ 7'	73/511 L.F.	\$230.00 @ \$.45/L.F.	\$ 92.00
2X4 @ 9'	235/2115 L.F.	\$952.00 @ \$.45/L.F.	\$ 381.00
2X4 @ 22'	24/525 L.F.	\$236.00 @ \$.45/L.F.	\$ 95.00
2X6 @ 22'	20/440 L.F.	\$286.00 @ \$.65/L.F.	\$ 114.00
2X8 @ 22'	17/374 L.F.	\$314.00 @ \$.84/L.F.	\$ 126.00
2X12	20 L.F.		\$ 10.00
3X6	12 L.F.		\$ 7.00
4X6	12 L.F.		\$ 7.00
6X8	30 L.F @ \$3.80/L.F.		\$ 46.00
T&G SIDING²⁷			
1X6 @ 8'	85/680 L.F. @ \$1.23/L.F.		\$ 850.00
1X6 @ 18'	92/1656 L.F. @ \$1.23/L.F.		\$2546.00
FLOORING			
1X4 FIR @ 12-16'	38/532 L.F. @ \$.92/L.F.		\$ 451.00
MISCELLANEOUS			
TURNPOST		\$150.00	\$ 50.00
PLYWOOD - 4 SHEETS		\$172.00	\$ 20.00
EXTERIOR DOORS (2)		\$400.00	\$ 160.00
INTERIOR DOORS (4)		\$172.00	\$ 32.00
WINDOWS (6)		NA	\$ 24.00
TUB		NA	\$ 60.00
WOOD SCRAP	18920# @ (\$10.00)/TON	NA	(\$ 95.00)
METAL	18615# @ \$.07/#	NA	\$ 130.00
CONCRETE	30000# @ (5.00)/TON	NA	(\$ 75.00)
BRICK	600	\$159.00 @ .265/BRICK	\$ 90.00
TOTAL RE-MARKET VALUE			\$5121.00
RE-MARKET VALUE PER SQUARE FOOT (\$/1280)			\$ 4.00

²⁵ - BASED ON MARCH 1993 PHONE SURVEY OF LOCAL LUMBER YARDS

²⁶ - BASED ON 40% OF MARKET VALUE FOR NEW LUMBER

²⁷ - REMAINING REMARKET VALUES BASED ON MARKET VALUE OF USED MATERIALS AT REJUVENATION HOUSE PARTS, PORTLAND, OREGON, MARCH 1993

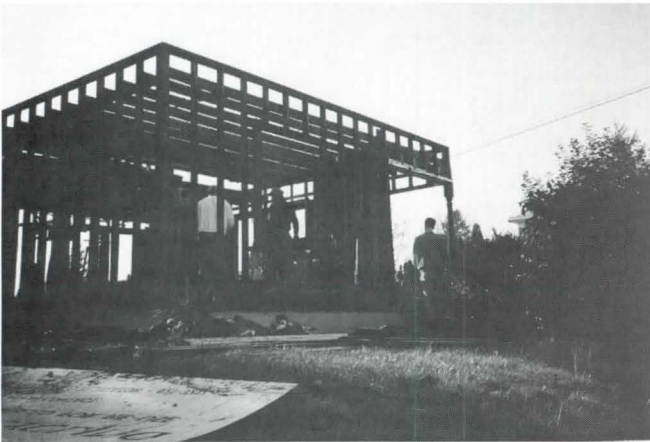
2



3



4



Photos this page: Jeff Joslin

5



6

The significance of the results has largely been borne out by the level of interest and inquiry that the project has received since the original report was released. Over 100 copies of the report, available by request, have been distributed internationally (with requests from as far away as the former Yugoslavia).

Principal Researchers/Authors: Jeff Joslin, architect.

Client and Funding Source: Metropolitan Service District (Metro), Solid Waste Department, Waste Reduction Division, Portland.

Jury Comments

Randolph Croxton gave high praise, describing this entry as "well documented and thoughtfully presented. It's an elegant, low-technology response to a real problem, and it's sustainable. The study also refers to the

general low regard of people involved in demolition. But you can take pride in it, because it's another way to invest value."

Donald Watson added that the study's additional worth was "as a model that can be replicated." Mahadev Raman noted that the project sets a good direction for future research, "with expansion of this work into larger buildings and more congested site conditions."

Sharon Sutton observed that the study can "feed back into the design process and the selection of materials, thinking about not only using but reusing—designing for demolition." Or, as Watson added, "Deconstruction."

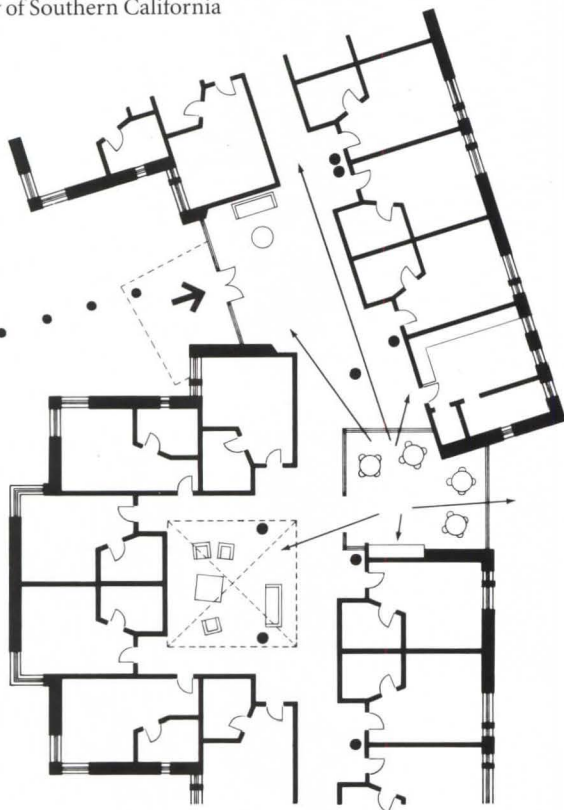
Contact: Jeff Joslin, 14700 NW Gillihan Road, Portland, OR 97231. Phone: 503-621-3217.

The research project determined the recovered cost of recycled materials by demolishing a house piece by piece (1). Demolition for recycling starts by removing the roof (3) and selecting rafters and sheathing for reuse.

Salvaged materials are sorted by size in front of the house (4), and the process continues down to the frame (5). The materials are then inspected, graded (6), and stamped for resale.

Housing for the Elderly

Victor A. Regnier
University of Southern California



1



2

Project: Assisted Living Housing for the Elderly: Design Innovations from the United States and Europe

Although the over-80 population is the fastest growing segment in the U.S., housing arrangements for this age group are less than ideal. Many mentally and physically frail older people are dependent on nursing homes to meet their health and personal care needs. But nursing homes are designed as healthcare institutions. They are not residential in character and appearance, nor are they designed to encourage independence, to facilitate autonomy, or to secure privacy.

New communication technologies, portable healthcare equipment, the burgeoning cost of nursing care, the preferences of recent retirees for more flexible arrangements, and a lack of enthusiasm in professional health policy circles for nursing home expansion have all led to experimentation with more humane housing and service environments. These settings seek to replace

much of nursing home care with "residential" long-term care alternatives. The most highly visible group living alternative that meets this new set of performance criteria is assisted living.

This research investigates how the design of the environment can optimize control, stimulation, accessibility, and privacy while encouraging physical exercise, intellectual achievement, social interaction, and autonomy. In this work "design" is examined comprehensively by noting its impact on management philosophies, innovative land-use mixes, independence-inducing strategies, and broader healthcare policy objectives.

One hundred assisted living settings in Europe and 25 U.S. facilities were visited as case studies. Innovative ideas in management, financing, and design were recorded. Because northern Europe is considerably ahead of the U.S. in experimenting with noninstitutional, group living arrangements for the frail, a research design was developed

that allowed comparison of the best U.S. elderly environments with design ideas currently pursued in Europe.

The result of this research was a book, *Assisted Living Housing for the Elderly*, published by Van Nostrand Reinhold (New York, 1993). The book is illustrated with 98 photographs and 46 drawings to appeal to professionals and students. It focuses on identifying innovative noninstitutional design solutions for housing the mentally and physically frail. It contains six chapters organized to introduce the reader to ideas regarding philosophy, concept definition, fundamental principles, and design.

Principal Researchers/Authors: Victor A. Regnier, Dean, School of Architecture, University of Southern California.

Client: University of Southern California, Los Angeles, CA; Van Nostrand Reinhold, New York.



3

Funding Sources: Retirement Research Foundation; Council for International Exchange of Scholars (Fulbright); The American-Scandinavian Foundation; The Norway-America Association; National Eldercare Institute on Housing and Supportive Services; Health Facilities Research Program; Fannie Mae Foundation.

Jury Comments

Roberta Feldman gave high marks to this project because the results are very useful in practice. "There's a good review of the literature," said Feldman. Projects in Europe are evaluated according to a set of standards developed out of the literature. "It's comprehensible by architects," Feldman added. "We always complain that architects don't use environmental behavior research, and that's because it hasn't been digested in a way that's comprehensible. This study does that. It's making accessible what is very often inaccessible to designers."

Randolph Croxton found that the study's comparative analysis of elderly housing was valuable "because it takes European and U.S. projects and compares them, holds that comparison against a higher performance model, and then makes suggestions about the future direction of design. The profile of conclusions pointing toward the future is more significant than any one of the projects studied. It makes a step forward."

Jay Farbstein noted that although visiting and studying the best examples of these environments was a good approach, post-occupancy evaluations of these examples would have been welcome.

Contact: Victor Regnier, School of Architecture, University of Southern California, Los Angeles, CA 90089-0291, Phone: 213-740-2083. Book orders: Van Nostrand Reinhold, 115 Fifth Avenue, New York, NY 10003, Phone: 800-544-0550, ISBN No. 0-442-00702-7, \$35 (plus tax and shipping).

Elder residents feel most comfortable when they can easily view a wide number of activities. A glass-enclosed dining room (1) is one of the most popular places in a Finnish facility because it offers views in six directions. Enclosed but not conditioned atrium space (2) in a Dutch project

permits frail residents to experience a protected, landscaped environment throughout the year. At the Elder Homestead in Minnesota (3) a steep pitched roof, attached entry porch, and detailing contribute to a residential rather than an institutional appearance.

Dwelling with Spirit

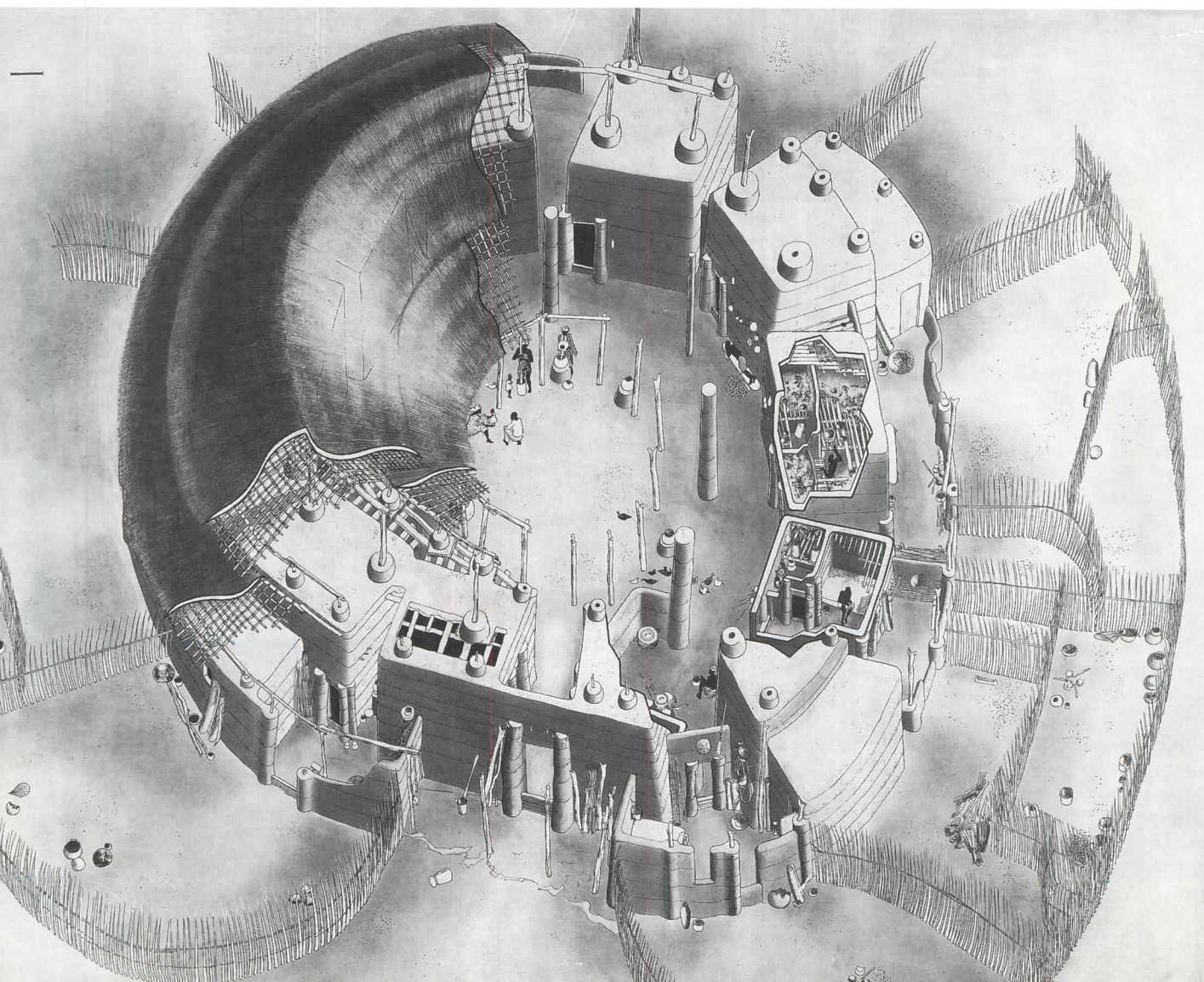
Two examples of traditional West African houses show that dwelling can represent a fully creative participation in the world rather than merely its utilization. *by Jean-Paul Bourdier*

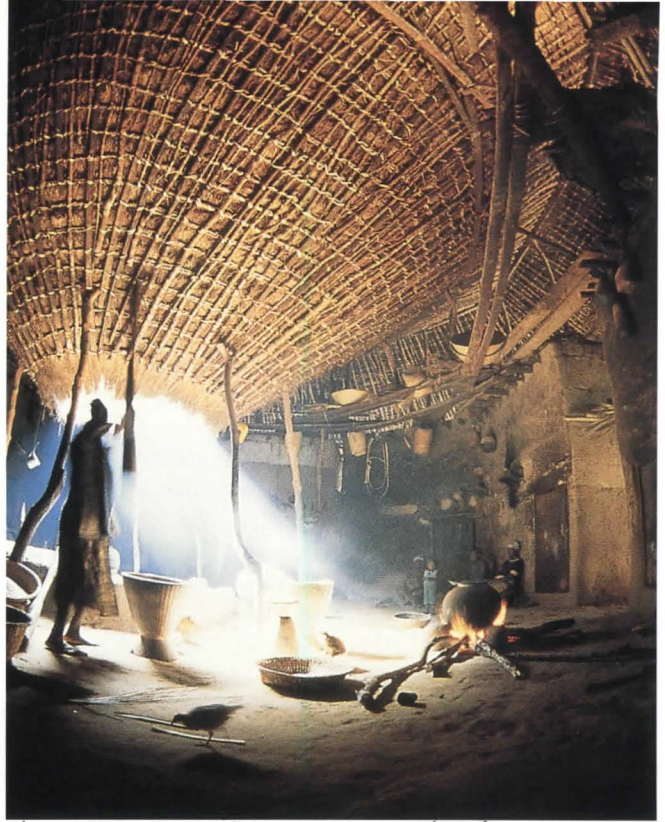
The two types of dwellings presented here are but a few among many in West Africa, whose complex housing traditions are architecturally inspiring. The human dimension, the human scale, and the human touch of this architecture, are the qualities commonly admired by foreigners and urban architects attempting to put tradition to use in contemporary practice, remind us above all that the relation of men, women, and building does not necessarily have to be one of oppression and submission (as is often seen in mod-

ern societies): it can be one of mutual vulnerability.

The impluvium house shown here is located in southern Senegal among the Joola people; it requires for its construction and maintenance considerable collective manpower, which has become more and more difficult to obtain because of the massive depopulation of the countryside. In the 1980s, only about 15 to 20 impluvia were still standing in Joolaland, while in Ivory Coast and Nigeria impluvium dwellings are no longer inhabited. (*continued on page 98*)

For an impluvium dwelling in southern Senegal (these two pages) the plan is also a mapping of family living; a single arrow indicates children, a double arrow with equal sign indicates marriage.





Definitions:

bañ: communal veranda

biin: woman's room

butoñ: man's (or couple's) room, rice granary, and storage

èjonkoñ: bathing enclosure

ejukut: resting bench

ekadar: adolescent's room

fuxalab: fenced area where vegetables are grown

gabiru: reception area

ga'inum: water jar

gakob: space between rooms that may be used as a pigsty

ganer: cattle room

gasurumal: "where the water flows"

jutoñ biin: woman's rice granary and personal storage.



Each dwelling unit opens into an interior court, which constitutes the site where regenerative interaction of air, earth, water, and light is made manifest in the concept of building and dwelling. These are, indeed, the four fundamental elements of creation that account for the making not only of the "earthborn and earthbound" habitats of people, but also of the first human beings in West African cosmogonies.

Within these houses, women's and men's units usually include a sleeping place and an attic space or granary for the storage of rice and other goods. As an element that carries with it the divine soul force and the life of the community, the rice granary image is at the center of many spiritual rites, whose performance is a constant reminder of how a house materializes the collective perception of men's and women's place in the universe.

Just south of the Sahara, in the border area between Mauritania and Senegal, is the land of the mostly Muslim Tokolor and Soninke people. Tokolor

dwelling are often composed of a series of three adjacent spaces whose function remains multiple and may vary according to the season and the climate. These are: the veranda, the corridorlike space containing an adobe platform bed, and one or two rooms used as bedrooms or storage.

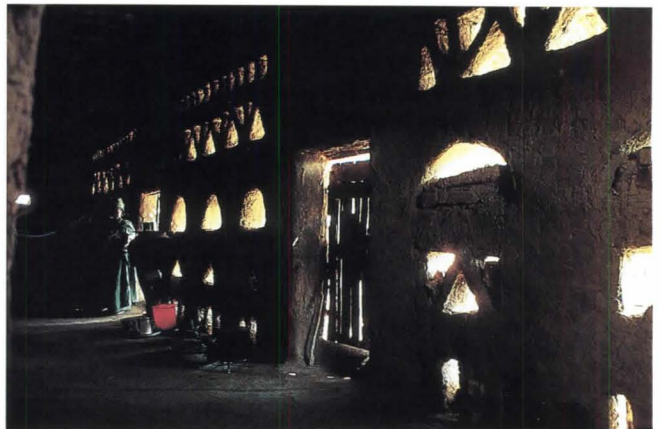
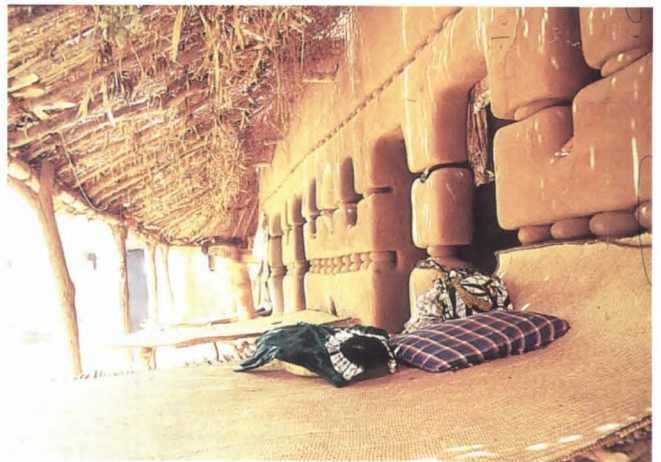
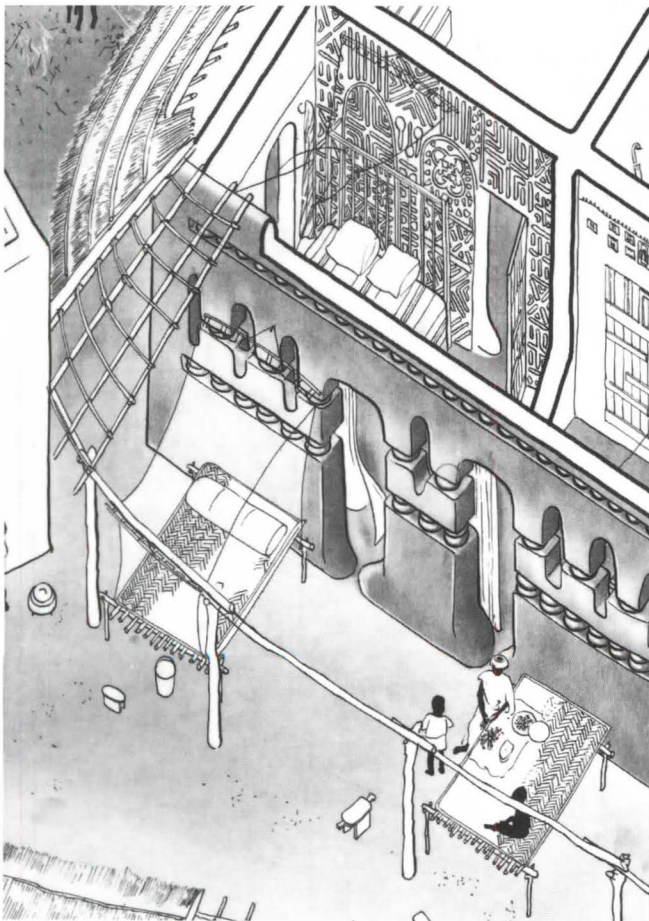
The mosaic of perforations in the façade, beyond its use for ventilation and visual privacy (from the inside one can see out without being seen), represents the Islamic writing tablets on which the words of God (known to be Light itself) are written and transmitted. Physical light and spiritual light go hand in hand in this screen wall, for just as spiritual Truth has to be filtered through human language to make it accessible to human beings, Light "needs a veil" whose mediation renders it more perceptible to the human senses.

The painted checkerboards of the interior are also representative of the "magic squares" that imply an inner stability in an externally changing Universe. They embody the Muslim view

that everything springs from, as well as returns to, the One. Multiplied on the inner walls of the rooms, they acquire the same incantatory power as the spoken verses of the Koran.

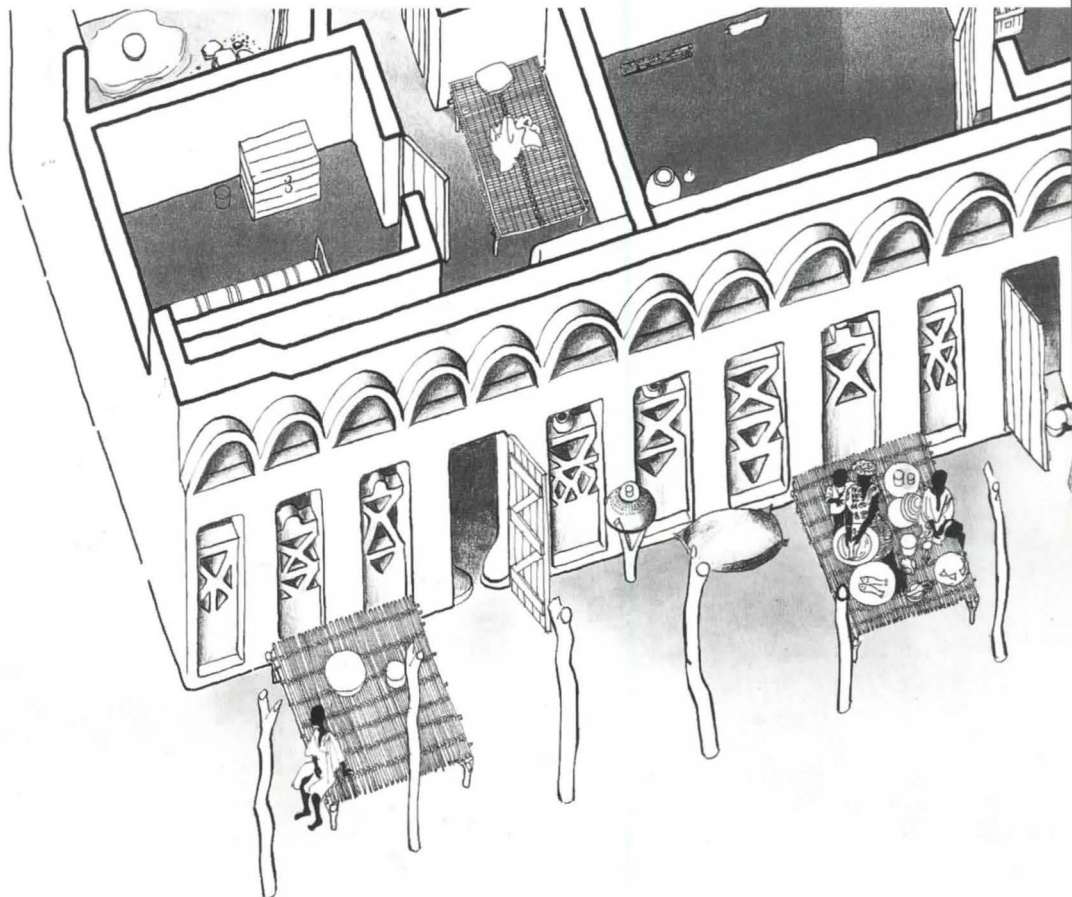
West African architecture, like other traditional architecture around the world, is to be used and to be seen. Every house here is at once a tool, a work of art, and a place of worship. It is built to shelter, to protect, to prolong existence, to give aesthetic pleasure, to erect a stage for social play, to promote communion with ancestors and deities, as well as to respond to the forces of nature. Neither merely a means to an end nor an end in itself, it is an environment both to live in and to live with. □

Photos and drawings by the author, who is Associate Professor of Architecture at the University of California, Berkeley, editor of Traditional Dwellings and Settlements Review, and partner in Bourdier, Walton, Gregg Associates. His forthcoming book, Drawn from African Dwellings, examines a wide range of West African dwellings.





Soninke dwellings in Senegal and Mauritania separate veranda and interior with sculptural screen-walls (drawing and upper photo, facing page), subtly varying from house to house. Walls of a Soninke room (above) are covered with an abstract mural. A Tokolor dwelling (drawing, right, and lower photo, facing page) has a screen of a different structure and pattern from the Soninke.





Critique

From Highboy to Boom Box

Sony has turned the staid base of AT&T's corporate temple into a loud commercial for entertainment and technology. Is it an improvement? Sort of. by Mark Alden Branch



For left: Peter Mauss/Esto; left: Mark Alden Branch

When AT&T commissioned John Burgee Architects and Philip Johnson to design their headquarters in New York, the corporation's public relations department sent a memo to the architects defining the company's self-image. Among other things, it said that "If we had our portrait painted, it should be by Norman Rockwell." Designing to suit such a corporate image is all well and good, but what happens when somebody else moves in? In this case, the somebody else is Sony Corporation of America, and with the help of architects Gwathmey Siegel & Associates of New York, they have made over what is now called the Sony Building like teenagers who just inherited Grandma Bell's musty old mansion. But more important, they cut a controversial deal with the city that allowed them to reconfigure street-level public space that had originally been provided in exchange for a floor-area bonus.

The AT&T building, of course, is no stranger to controversy. The original fuss over this Madison Avenue skyscraper, which erupted in 1978 when the design was unveiled, centered on the audacious idea of putting a broken pediment atop the building. Partisans on both sides of the Modern/Post-Modern debate were stunned to see International Style importer Philip Johnson come down, seemingly, on the Po-Mo side. But it soon became apparent that Johnson and Burgee had skipped Post-Modernism altogether in favor of a guileless historicism: the completed building was a rather straight-faced, pompous essay in prewar corporate majesty (except the jokey top, which, at 647 feet above the street, is easy to forget about).

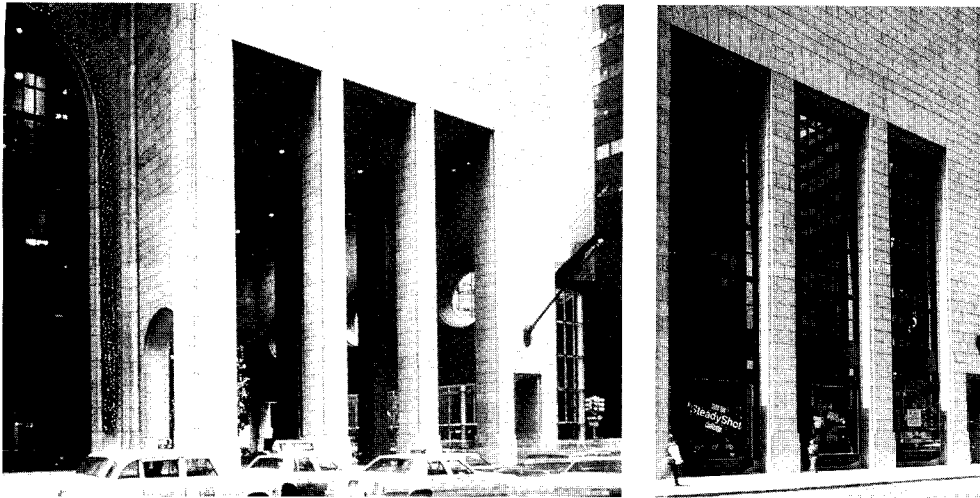
A Public Space That Was Hard to Love

When the building was completed, people also began to notice the public spaces at its base, which were provided in

exchange for the right to build higher without setbacks. The products of negotiations with the city planning commission, these arcades soon became famous for their inhospitability: 60 feet high, they managed to capture almost no sunlight but lots of wind. The wrought iron chairs and tables were, as Johnson himself acknowledged recently, "the ugliest things in New York." It was as if AT&T, which had raised its offices 70 feet above the street to avoid the madding crowd, could hardly bear to have the public actually use their public space. The open-ended retail galleria tucked behind the building was little better, its wind-tunnel effect blowing people through to the more pleasant enclosed atrium at the IBM Building across the street.

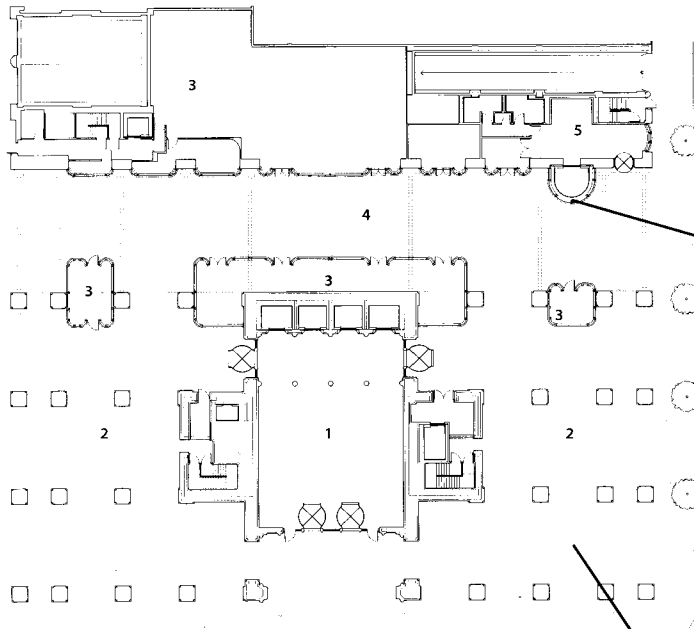
The Madison Avenue façade is dominated by an enormous entry arch and a tall lobby behind it, finished in the warm pink granite used on the building's exterior. The composition is puzzling, since even from across the street one can't really take in its monumentality. Such a scale – which is not really appropriate for an entrance to private offices anyway – needs a plaza or a forecourt to be viewed properly. (With typical cheek, Johnson says he tried to get AT&T to buy the block across the street and tear it down.)

Upstairs, major circulation spaces like the skylobby and a grand staircase linking the top executive floors were finished in an underdetailed but heavily veined marble that Donald Canty aptly described in *Architecture* as "morgue white." While the 27 general office floors were rather routinely fitted out by interior designers ISD, Inc. (Johnson and Burgee contributed a clean, elegant ceiling of perforated metal panels on a five-foot grid), the executive offices on the 33rd and 34th floors received generous Georgian paneling and moldings.



For all the fuss that was stirred up by the AT&T Building's **cartoon Chippendale top** (facing page, left) 16 years ago, the enduring debate has turned out to revolve around its meeting with the street. If you're counting, the redesigned public space has city-required plaques at its entrances (facing page, right) documenting how many trees, chairs, and tables the new tenant, Sony, is obliged to provide. Architects Gwathmey Siegel & Associates sensitively enclosed the former public space (far left) with bay windows (left) that preserve a sense of depth and shadow.

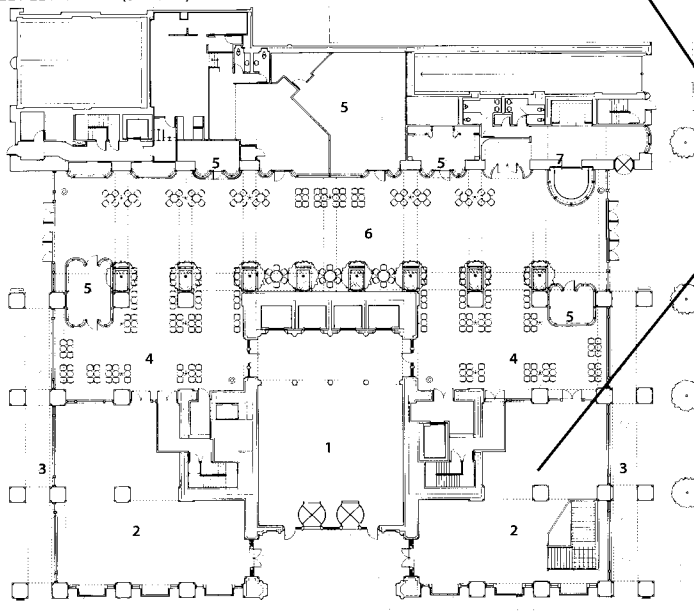
- 1 LOBBY
- 2 COVERED PUBLIC SPACE
- 3 RETAIL
- 4 GALLERIA
- 5 INFOQUEST ENTRANCE



The old galleria, covered with a skylight but open at both ends, proved an unsuccessful site for retail, and the arcades were windy and in shadow most of the time.

STREET LEVEL PLAN (BEFORE)

- 1 LOBBY
- 2 SONY RETAIL STORE
- 3 ARCADE
- 4 ENCLOSED PUBLIC SPACE
- 5 RETAIL
- 6 ENCLOSED GALLERIA
- 7 SONY WONDER ENTRANCE



It may look like **less public space** to you, but the City of New York disagrees. They award a higher bonus for enclosed, climate-controlled space. So even though Sony stores have taken over a good portion of the street-level square footage, there is even more public space now – in the city's eyes.

STREET LEVEL PLAN (AFTER)

N → 40'/12m

Gwathmey Siegel successfully argued for keeping **the slender arcades** along 55th and 56th Streets, despite the obvious marketing advantages of bringing the retail out to the street. The arcades provide a measure of outdoor protection from the elements.



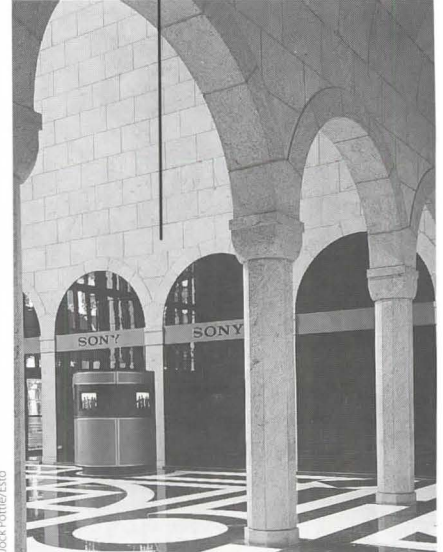
Mark Alden Branch

Between the busy passageway of the galleria and the retail stores are two quieter areas filled with chairs and tables.



Mark Alden Branch

The ground-floor lobby, once an austere, templelike room, has been jazzed up with a video kiosk. While the architects' introduction of new materials improved some interiors, the black glass set into the blind arches makes the granite look thinner, the wall less substantial.



Jock Pontle/Esto

In short, this is a building that was not in move-in condition for a company like Sony, which took over the building in the fall of 1992. As an entertainment company, Sony needed a hipper, more populist image than AT&T: more rock-and-roll than rock-solid. (The building houses only Sony's "software" divisions: its record labels and Columbia Pictures.)

Remodeling the Private Quarters

Most of Gwathmey Siegel's work on the building took place on the office floors. The architects toned down the blinding white of the skylobby by introducing other materials. The office floors, which before had consisted of enclosed perimeter offices and "secretarial corridors" around the core, were changed somewhat to accommodate the acoustical privacy requirements you might expect of a music company. Gwathmey Siegel zealously took up the geometry of Johnson's and Burgee's five-foot grid, producing a clean, rational aesthetic. On the executive floors, this works, but the geometric rigor is buried on the extraordinarily messy floors where the creative types work (though Robert Siegel argues that this rigor keeps these floors from devolving into complete chaos).

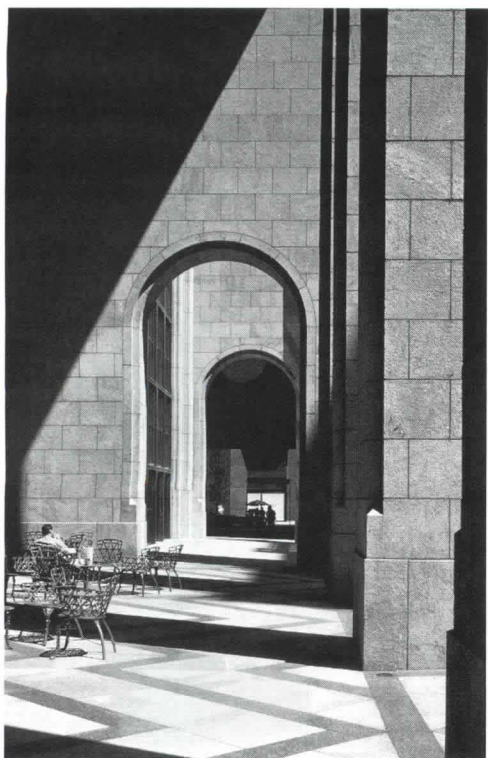
Perhaps the clearest sense of a changing of the corporate guard can be found on the former AT&T executive floors at the top of the building. Sony's top executives moved in just below these floors, leaving the space for the "Sony Club," a dining facility for executives and guests. As Siegel explains it, "Sony wanted to have comfort areas in the club for both executives and rock stars." So while some of the spaces in the club retain AT&T's Georgian formality, others have been jazzed up with a mixed bag of eccentric Modern furnishings, a pizzeria, and a sushi bar.

How Public is Public Space?

But the most controversial changes to the building took place at the street level. As Charles Gwathmey describes it, "AT&T wanted to be above the pedestrian domain. Sony is about the pedestrian domain, and wanted to attach itself to it." Just how Sony "attached itself" is at the core of the debate about "Sony Plaza," as the new tenants call their street-level spaces. With the approval of the planning commission, Gwathmey/Siegel and New York designers Edwin Schlossberg Incorporated developed a plan to enclose and air-condition the galleria, replace AT&T's uncelebrated InfoQuest exhibit (a free public amenity off the galleria that was part of the original zoning bonus) with an interactive technology exhibit called Sony Wonder, and turn the open arcades on Madison Avenue into retail stores for Sony products. It was the last provision that has generated the most controversy, since Sony appears to be retaking public space. (Technically, the building is still in compliance with the rules on floor-area bonuses. Even though there is now less public space, the city awards a higher bonus in exchange for enclosed, climate-controlled space; by enclosing the galleria, Sony comes out even.)

Whatever else might be said about the merits of this plan, it is unquestionably an improvement over what was there before. The galleria, in particular, is now a sunny, well-used mid-block passage. Midtowners fill its tables and chairs (which are lighter and more attractive than the old ones) during the lunch hour, and throughout the day there is pedestrian activity in the space. Sony has been criticized, justifiably, for filling the space with banners bearing its name; the word "Sony" is hard to escape here.

While I would not necessarily begrudge a company's plugging itself in a public space it has provided, there is something



The public space on Madison Avenue (seen at left at its sunniest) was replaced with retail stores that are more for show than for commerce. Retaining the 60-foot ceiling height, Edwin Schlossberg produced busy but entertaining spaces using a backstage aesthetic.

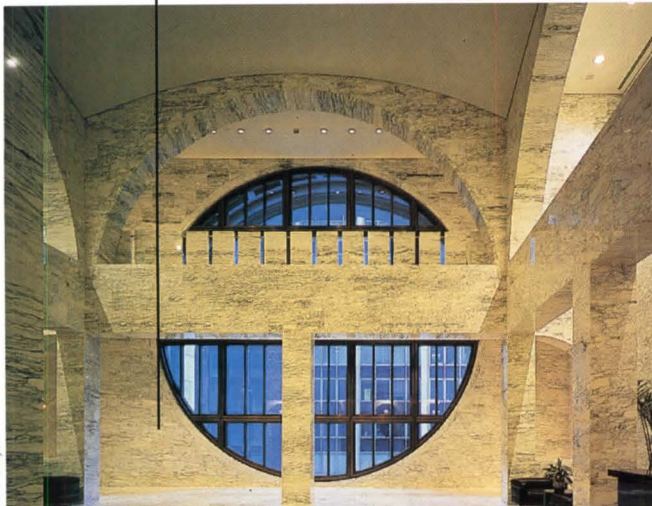


Picking up on the backstage theme, Gwathmey Siegel introduced catwalks at the top of the gallery, where new air-conditioning equipment was installed.

Banners and other territorial markers remind visitors whose gallery they're passing through, as do four or five uniformed guards. The space is now "public" in the same privatized sense as a shopping mall.

The gallery is an effective mid-block passage now, especially during the lunch hour, when people use it as an air-conditioned shortcut or as a place to eat. While it is not overly programmed as yet, Sony plans to install a large video monitor on one wall to promote its Sony Wonder exhibit.

Before, every surface of the stark white skylobby was covered with a heavily veined marble.



Richard Payne

Gwathmey Siegel remodeled the stark white skylobby by introducing new materials – including wood, black glass, and a mural by Dorothea Rockburne – making the space more comfortable and legible. Interestingly, this increased legibility allows one to notice the echoes of Kahn and Pei in the geometry of the space.



Jack Pottler/Esto

more than advertising afoot here. Like the four or five security guards with “Sony” emblazoned on their jacket pockets, these signs remind the public that while this is public space, it is private property; the Bill of Rights doesn’t necessarily come inside with you. So while the ends of the space have been glassed in (a necessity for climate control), discouraging the public, signs at the entrances – mandated by the city – shout “PUBLIC SPACE.” Inside, while the storefronts of a bakery, a ticket outlet, and a newsstand say “We’re just like the street, almost,” the banners and guards say, again and again, “Sony.”

It’s all part of the complex and often contradictory art of making places for people in urban America today: the subtle efforts to make a majority of people feel comfortable while discouraging the homeless from taking up residence. Cities like New York have an increasing number of these pseudo-public spaces – even Grand Central Terminal now has seating only for waiting passengers with tickets – that are setting up a two-tiered urban network: guarded spaces for the haves and unguarded streets for the have-nots. In making AT&T’s failed space usable, was it necessary for this space to cross over to “the other side?” Not really, since the complaints about AT&T had more to do with aesthetics than with safety problems.

Another problem with the galleria – not a major one now, but it may get worse – is Sony’s professed desire to “activate” the space. Not satisfied with the activity generated by the retail stores and Sony Wonder, the company plans to install a giant video monitor in the galleria. (This is all right with the city, said Amanda Burden of the planning commission, adding – with a straight face – “we are counting on Sony not to use it as an instrument of promotion.”) Again, this seems like an over-reaction to the failure of AT&T’s public space. People didn’t avoid the old arcades because there was nothing to do there;

they stayed away because they were not good places in which to do nothing. New York – especially Midtown – needs quiet places infinitely more than it needs to be activated.

To Sony’s credit, though, and to the chagrin of critics who are generally hostile to capitalism’s role in public life, the retail stores are in fact something of a public amenity. Schlossberg is an exhibit designer, and these spaces are really interactive showrooms more than stores. People can browse freely, trying out video cameras and other equipment. It’s a great commercial for Sony, but it’s also a place where most people would enjoy spending at least a few minutes. Gwathmey Siegel pushed Sony to retain the full 60-foot height of the spaces, inspiring Schlossberg to adopt a backstage flytower aesthetic. Gwathmey Siegel also deserves credit for a sensitive job of filling in the arcade; by inserting bay windows in the voids, they get the display windows onto Madison Avenue while preserving the shadow necessary to make the façade coherent. What is peculiar, especially in light of the city’s desire to get retail back onto Madison (as the block was originally zoned), is that the stores don’t open onto the street; they are entered either from under the great arch or from the galleria.

Sony also wants to make the templelike lobby a more accessible public space; they are planning an asymmetrical, 23-foot-high sculpture to enliven the (*continued on page 109*)

Project: Sony Plaza and Sony corporate offices, New York.

Architects: Gwathmey Siegel & Associates, New York.

Retail and Exhibit Designers: Edwin Schlossberg, Inc., New York.

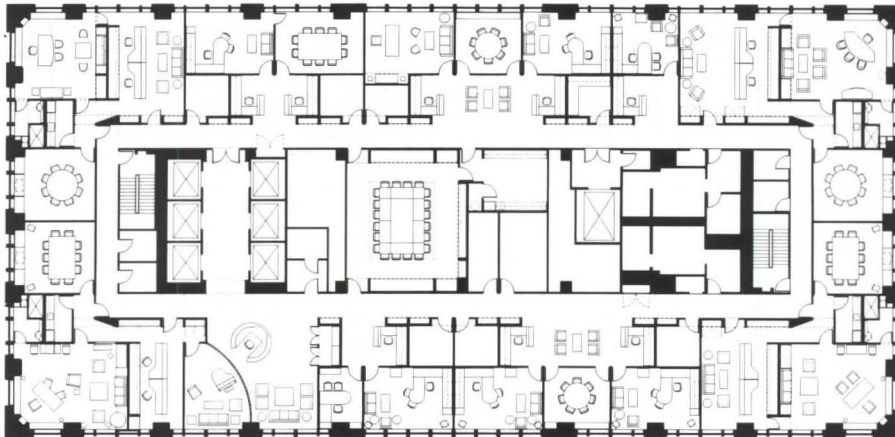
Consultants: Flack & Kurtz, mechanical engineers; Thornton Tomasetti, structural engineers.

Construction Manager: Structure Tone, Inc.

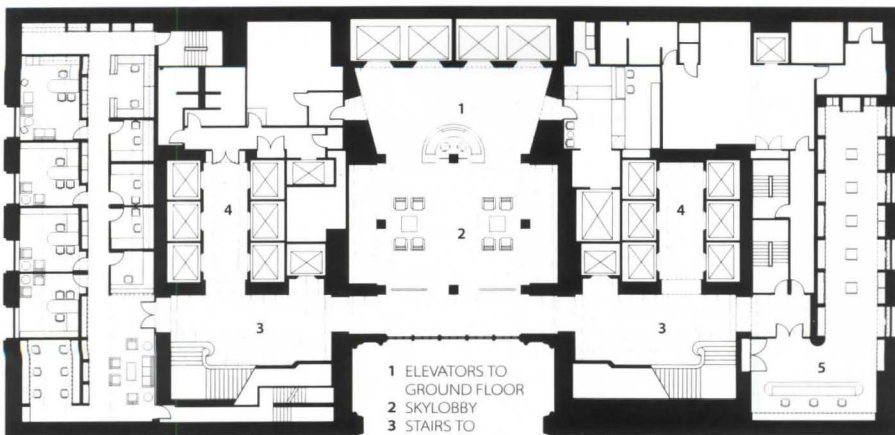
Exhibit Contractor: Rathe Productions, Inc.

Sony's top brass eschewed the Georgian executive suites of their AT&T predecessors, turning those offices into a **private club** and playground for musicians, complete with self-consciously clashing Modern furniture.

Gwathmey Siegel's cleanly Modern **office interiors** work best on executive floors like this one, which tend to be kept neater. The architects introduced clerestories to bring more light into interior offices.



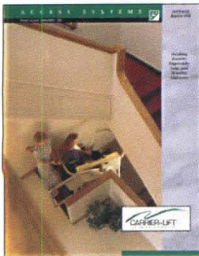
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N → 20'/6m



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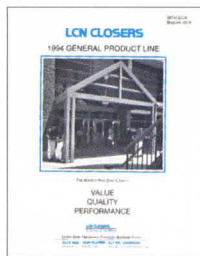
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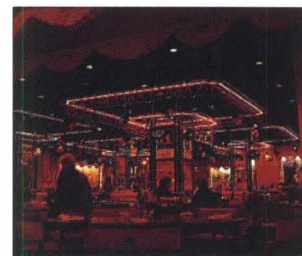
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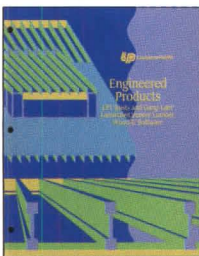
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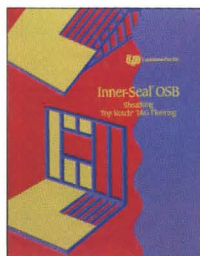
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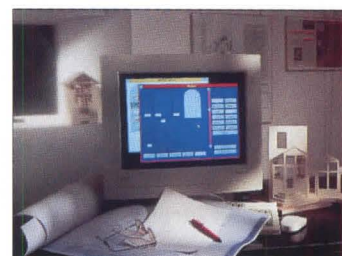
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(continued on page 108)

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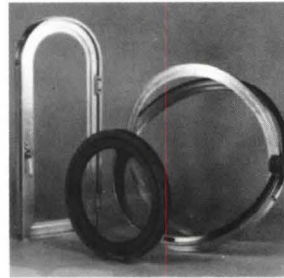
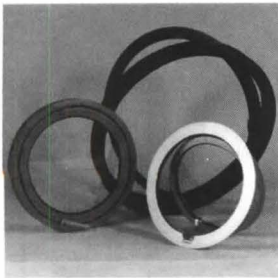
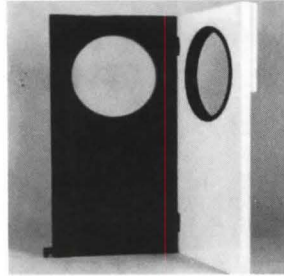
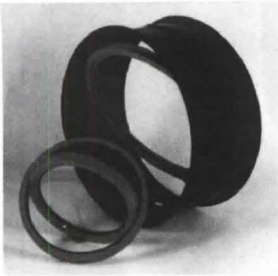
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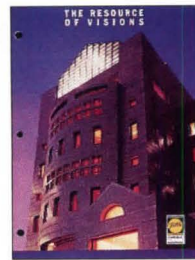
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Critique

From Highboy to Boom Box

(continued from page 105) space in the absence of the AT&T "Genius of Communication" statue that once dominated the room. (Already, a kiosk with video monitors has shattered the reverent silence here. Sony won't rest until we're unable to *not* watch TV.)

Sony Wonder, the company's replacement for AT&T's InfoQuest, is set to open this month. Preview tours revealed an interactive – and hyperactive – environment done up with galvanized steel, dramatic lighting, a high-definition video theater, and – you guessed it – lots of video monitors. Here, visitors will be able to play at producing records, making videos, and operating robotic equipment, with no admission charge. This is a heavily programmed environment, but one that will be popular, especially with younger people; it's another reasonable way for Sony to work off its floor-area debt to society, and another reason the galleria space should be as unprogrammed as possible.

Who Comes Out Ahead?

In the end, do Sony Plaza's amenities constitute a reasonable trade for the increased density and decreased sunlight caused by the building? Most people would probably say yes. But the business of applying qualitative – and nearly always subjective – criteria to zoning and planning is inherently problematic. The same process that gave us Sony Plaza, after all, also gave us its intensely disliked predecessor. Our understanding of what makes good urban places ought to be complete enough to keep cities from making bad trades like the one they made with AT&T. But wherever there is room for negotiation, there is room for cities to capitulate to developers and corporations. Sony has manipulated the process so as to allow its public space to be as self-serving as possible. In this case, the aesthetic result is not so bad. But with this kind of precedent for privatization and "activation," what will the next developer's negotiations bring? □

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Architect, Mayor, Environmentalist: An interview with Jaime Lerner

(continued from page 84) for a city. A city too must be a shared cause, and I think that this is what Curitiba represents. You don't change a country with economic methods alone. There is no economic tool that can endure in the absence of a national will if the people as individuals don't feel respected. The most visible sign of respect for the citizen is in the quality and delivery of services.

I'm going to say a couple of things that explain why so much has happened in Curitiba. First, it was the determination of an idealistic team, fantastic people. Second, I think, is the simplicity of our approach. Cities are not as complicated as the merchants of complexity would have us believe. Third, is getting started. We don't ask for all the answers, because if you want all the answers, you are always postponing the possibility of the intervention. You can always do better studies, you can always do better projects, but sometimes, you just have to start.

Di Giulio: What do you think are the most viable cities in the world?

Lerner: I find the European vision in relation to the city very good. It is the dispersed city that is the most difficult to resolve; living here, working there, leisure over there. The more you mix functions within a city, the more humane it becomes. The more you mix functions, the more you mix income, the better the city becomes.

I think that many of the disastrous problems we see in the world's cities stem from a misinterpretation of the Charter of Athens. The Charter of Athens defined the functions of urban

life; living, working, circulation, recreation. It didn't say that they necessarily have to happen separately. All the times in history that economic activity was conceived of as separate from human feelings, from the way that people actually live, it has led to disaster. So the American cities that are more integrated, like Boston and New York, are much better.

Di Giulio: How do you see the role of the architect in the next century?

Lerner: I think that the role of the architect is to propose possibilities. If the architect loses this characteristic, he ceases to be an architect. We've been blessed with this ability by our training. It's important that we fulfill our role as professionals, because it's only by proposing that things are changed. We have to direct the planning of megacities in three fundamental ways. The first is to direct growth. The second regards decisions about technology (transportation, sewage). And the third is to integrate the formal economic sector with the informal sector of the economy. If not, we'll have the illusion that we are planning a city, when in fact we are only planning 60 percent of a city, because 40 percent is informal. The informal sector isn't a tragedy; we just need to learn how to use it. A street fair, for example, is an informal sector that installs itself for four or five hours within the formal sector, and then retreats. We have to incorporate the informal sector into the life of the great cities.

Di Giulio: How can other cities in Brazil and around the world best learn from Curitiba's example?

Lerner: When you think about your particular reality, you can solve a problem. It's the same thing as in music. Tolstoy said if you want to be universal, sing about your village. When you set your mind to solving a problem within a specific reality you can arrive at a universal solution. □

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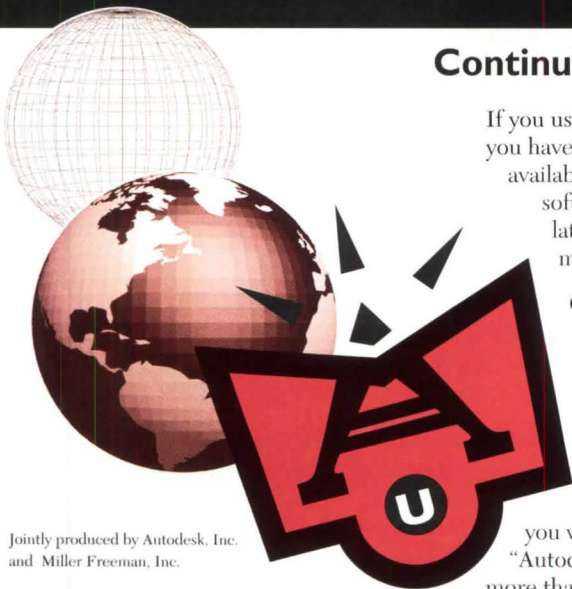
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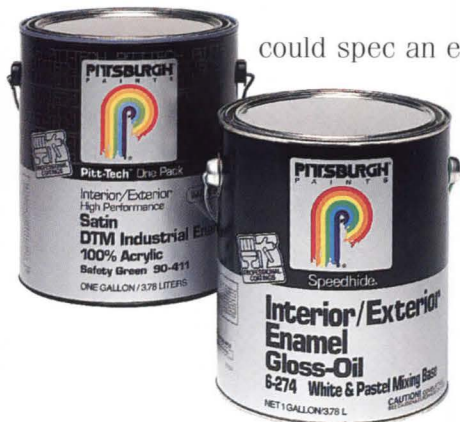
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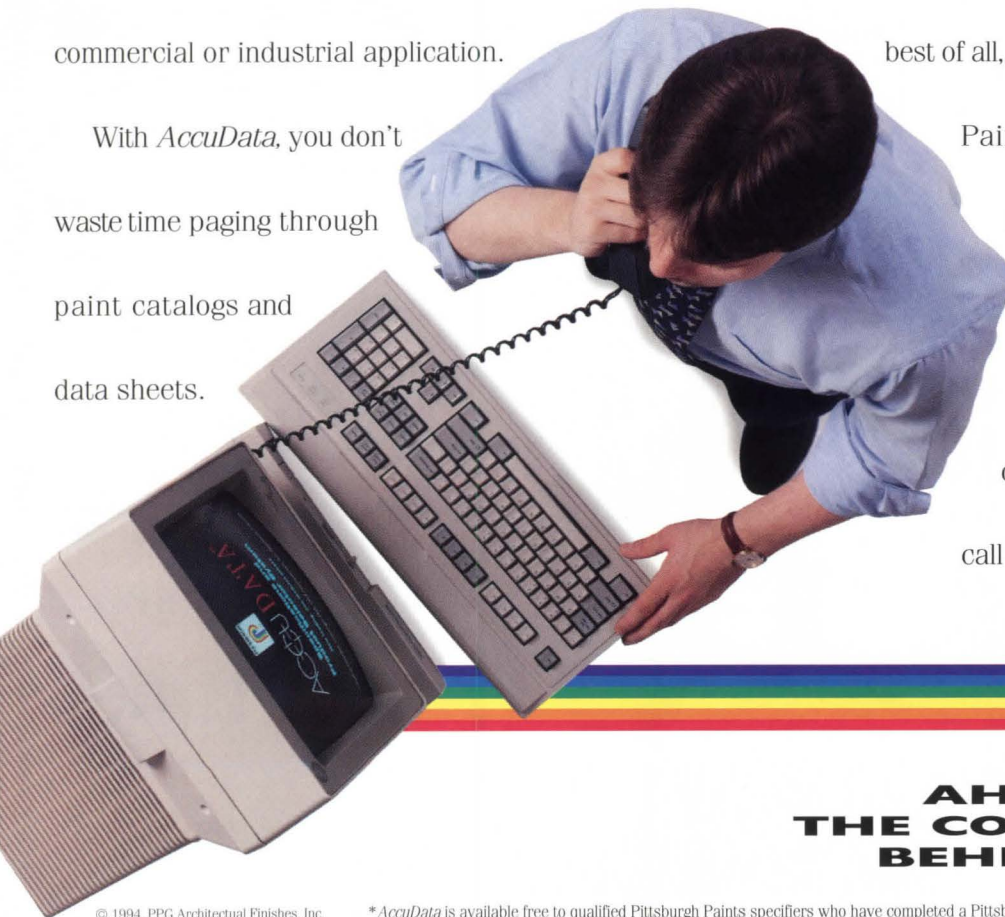
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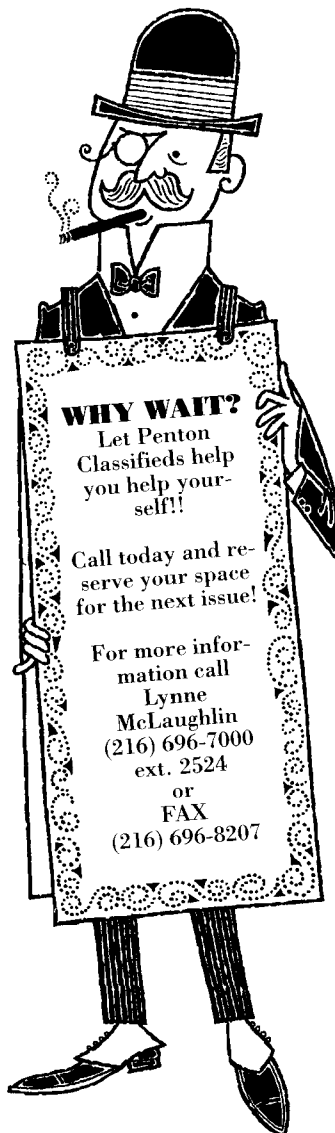
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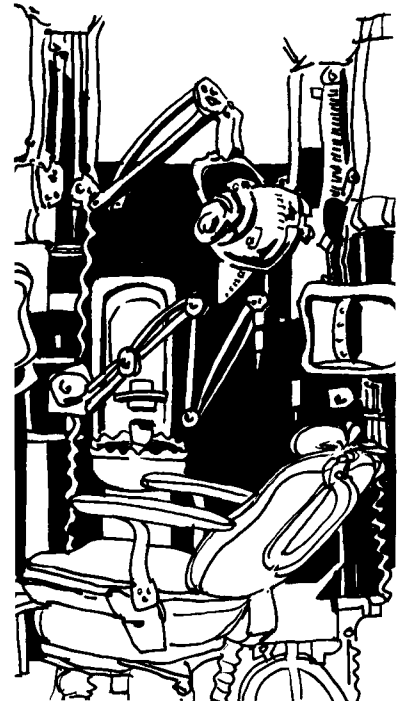
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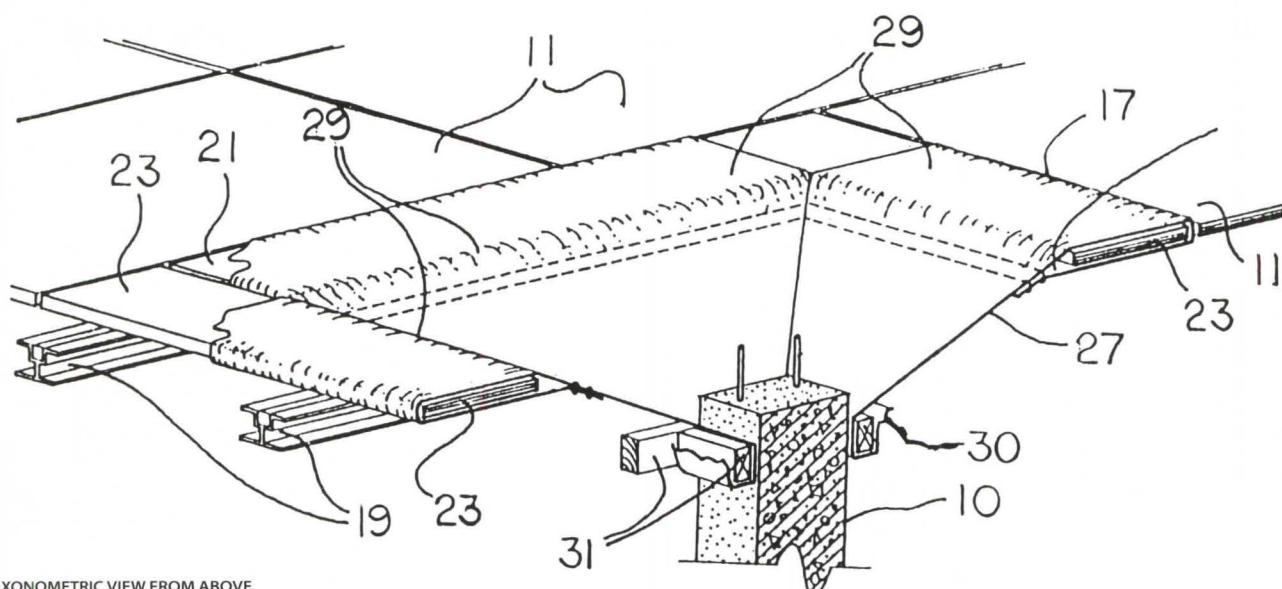
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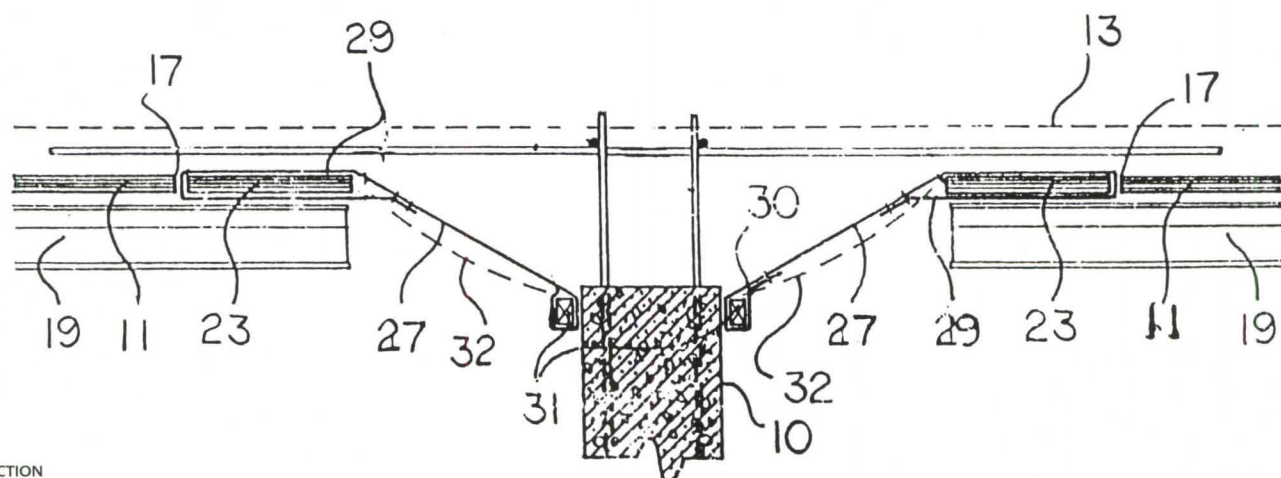
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AXONOMETRIC VIEW FROM ABOVE



SECTION



Occasionally an architect's ideas are novel enough to patent. Such is the case of Mark West's fabric formwork for concrete, which won an award for architectural research (see page 88). These drawings, part of West's patent application and drawn to the style required by the Patent Office, show the detailing and construction of fabric formwork for column capitals. West has also developed techniques for concrete columns.

The flared capital is square in plan. The capital surmounts an existing column (10) and is integral to a concrete floor poured on a plywood deck structure (11). The inverted pyramidal shape is formed by looping an impervious fabric (27) around flat plywood panels (21, 23). The panels are joined by connecting plates to create a compression ring and are supported from below by beams or joists (19).

According to West's patent application, the fabric sheets are cut, folded, stitched, and joined mechanically or with adhesives around the panels. The details indicate stitching on the underside of the form. The fabric is stretched and secured around the top of the column with an annular collar or frame (31) which holds the flexible material tight against the column. Conventional reinforcing bars extend up through the column and are tied into the horizontal reinforcing in the concrete deck. When the concrete is poured, some bulging of the fabric is expected, indicated by a dashed line (32).

West says that the column capitals in the photo (left) are more elaborate than this detail would produce. "The device illustrated here is the 'basic Chevy,'" he explains. More expressive profiles are achieved by billowing the formwork. Michael J. Crosbie □

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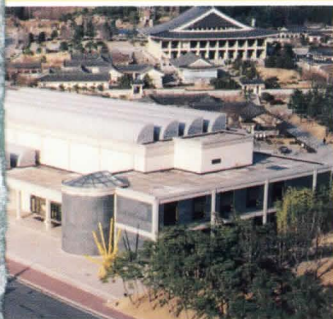
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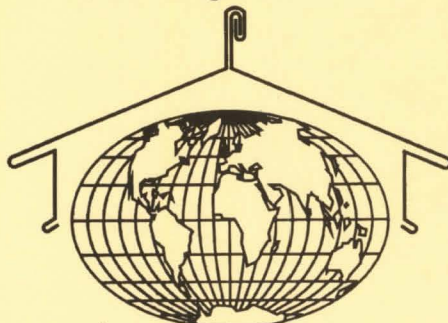



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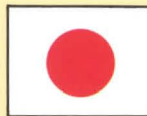


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