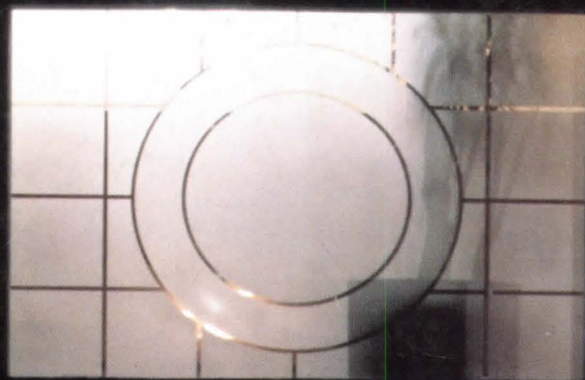
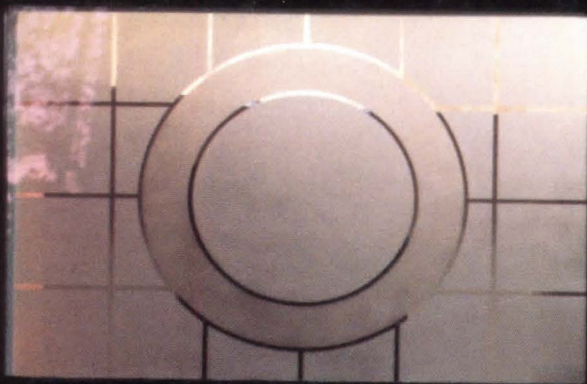
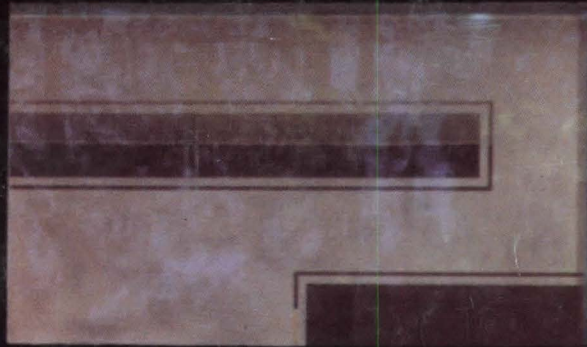
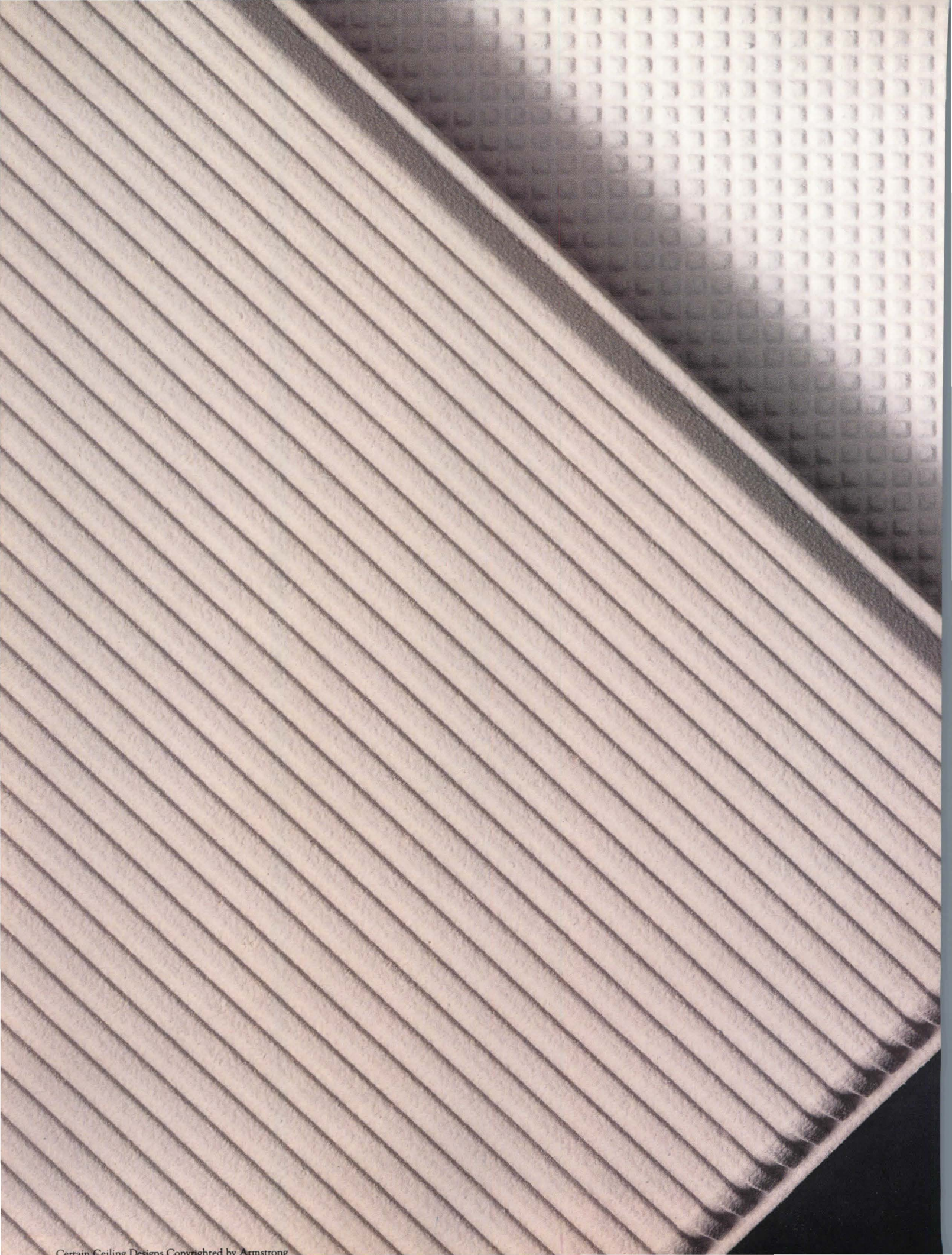


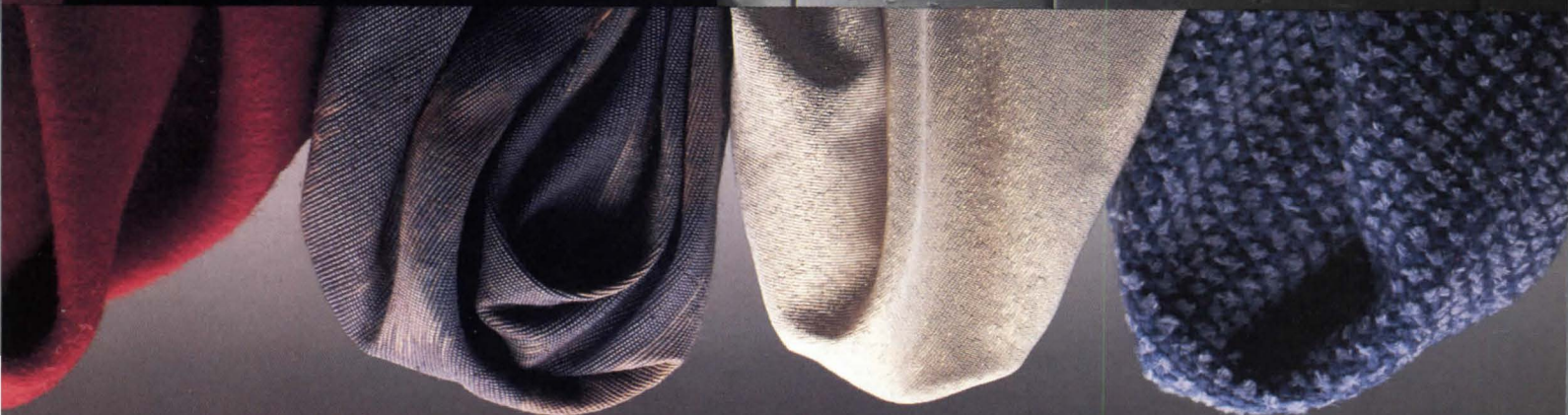
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Armstrong

Circle 2 on inquiry card

There's been such a flurry of publicity on the architectural event of the year—birdhouses—that I've only just caught up with your contribution to the literature [ARCHITECTURAL RECORD, May 1987, page 71].

I don't believe that those who are truly connoisseurs of this important building type would confuse the two, but just for the Record, Graves's design is the one on the right with periscopes at full extension, and mine is on the left with mixed religious symbols—not vice versa, as reported.
*John Belle, FAIA, RIBA
Beyer Blinder Belle
New York City*

P. S. All the birds involved in this housing project are busily applying for second mortgages since the auction placed a value of \$153,000 on the full complement of houses.

In reference to your article "A far, far better thing: the Guggenheim and Whitney redesign their expansion schemes" [RECORD, April 1987, page 45 et seq.]:

No good can be seen in Michael Graves's expansion of New York City's Whitney Museum except one of quantity of square feet. It's almost incomprehensible that an institution dedicated to artistic merit could sanction an act of esthetic vandalism against itself and the memory of Marcel Breuer. In brutalizing Breuer's brutalism, the museum abandons its role as guardian of art, performing the architectural equivalent of painting a mustache over an Old Master.

When even major museums can't be trusted with the masterpieces of the best architects, the need for public policies for the preservation of modern architecture, as well as of older styles, becomes disappointingly apparent.
*John Helmeke
Le Sueur, Minnesota*

The article by Porter and Dombek on the use and misuse of graphic representation [RECORD, May 1987, page 45 et seq.] warns of a fundamental problem: the divorce of graphic representation from how and what we perceive spatially.

Two- and three-dimensional representations are used less and less as tools for perception, and more and more as ends in themselves. Graphics—and especially the messy, patched, and reworked study models—are the best means of replicating or "dress rehearsing" reality. But these means elevated to ends preclude the interactive process of perception. In abandoning this process, we have resorted to propaganda.

Porter and Dombek suggest certain mechanisms of perception—

e. g., "... based on the Eye Movement Recorder research ... compositional balance, focal point location ... orchestration of degrees of optical interest," or in my view, primary, secondary, and tertiary form recognition, or a hierarchy of visual afterimages. Awareness of this perception process helps us confirm, refine, understand, and experience space. This is a fundamental and verifiable optical-visual-intuitive process. In abandoning it, we are prone to the superficial, easy, quick, and disturbing influences of the mass marketplace.

*Ben Weese, FAIA
Weese Hickey Weese Architects
Chicago*

Having just finished the 1987 Record Houses [RECORD, mid-April 1987], I find many of the houses quite lovely, creative, and beautifully detailed, but I must comment on some of the statements made within the documentation.

In the article on the Bjornson house/studio, it is stated: "... but a Medici (or deMenil) she is not. Her \$500,000 budget and 3,200-square-foot program suggested restraint. . . ." In the article on the Schwartz/Fieskowsky house, it is stated: "If Schwartz had slavishly copied Scamozzi—doing the best he could with the \$190,000 budget—we would have simply averted our eyes . . . and pitied the poor architect his delusions of grandeur." These statements and a pervasive elitist attitude throughout this issue explain why so little housing is designed by architects.

I am an architect and educator who maintains a practice in a small college town in western Michigan, and a budget of \$500,000 for a 3,200-square-foot residence (\$156 per square foot) is not restraining but inconceivable. Consider residential architecture where a restrictive budget is \$35 to \$40 a square foot, and a generous budget is \$45 to \$50 a square foot, and fees range from 5 to 10 percent of construction. We have to deal with reality, with clients having truly limited resources, with clients who cannot afford to treat houses as design experiments, with contractors who cannot afford to deviate from traditional construction, and with limited availability of materials. This is architectural reality in much of the United States, and it is time the profession, the schools, and the journals dealt with it.
*Mel Kantor, AIA
Big Rapids, Michigan*

Correction

The photograph of Straus-Edwards Associates' bathroom (RECORD, May 1987, page 74) should have been credited to John Cessna.

Through October 12

John La Farge, an exhibit of paintings, graphics, and stained glass; at the Smithsonian Institution's National Museum of American Art, Washington, D. C.
August 20 through October 4
Mario Botta, an exhibit of works by the Swiss architect, organized by New York's Museum of Modern Art; at the San Francisco Museum of Modern Art.

September 9-11

"Bringing Back Urban Vitality," a conference focusing on urban commercial-district revitalization, sponsored by the National Main Street Center of the National Trust for Historic Preservation; in Detroit. The program will be repeated September 28-30 in Oakland, Calif. For information: National Main Street Center, National Trust for Historic Preservation, 1785 Massachusetts Ave., N. W., Washington, D. C. 20036 (203/673-4219).

September 25-26

"Church Design: Mission/Ministry," Workshop for Architects, sponsored by the Church Architecture Department, Sunday School Board of the Southern Baptist Convention; in Nashville, Tenn. For information: Howard McAdams, AIA, Church Architecture Department, The Sunday School Board, 127 Ninth Ave. N., Nashville, Tenn. 37234 (615/251-2466).

September 30 through October 2

Society for Marketing Professional Services National Convention, "Winning Better Business"; in Chicago. For information: SMPS, 801 S. Fairfax St., Alexandria, Va. 22314 (800/292-SMPS).

October 9-10

8th Annual Chautauqua in Mississippi, "Civic Architecture in the Small Town and City," a national symposium on town planning and design, sponsored by the School of Architecture and Center for Small Town Research and Design, Mississippi State University; in Mississippi State, Miss. For information: Michael Fazio, School of Architecture, Mississippi State University, P. O. Box A. Q., Mississippi State, Miss. 39762 (601/325-2207).

November 11-17

International Symposium on Self Help Housing 1987, sponsored by the Ministry of Housing Victoria, University of Melbourne, University of Sydney, and *Australian Owner Builder Magazine*, as part of the International Year of Shelter for the Homeless; in Melbourne and Sydney. For information: Dennis Ingemann, Ministry of Housing, GPO Box 1670N, Melbourne 3001, Australia (03/669-1351).

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Every possible effort will be made to return material submitted for possible publication (if accompanied by stamped, addressed envelope), but the editors and the corporation will not be responsible for loss or damage.

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Publication Office: 1221 Avenue of the Americas, New York, NY 10020. ARCHITECTURAL RECORD (ISSN0003-858X) published monthly with additional issues in April and September by McGraw-Hill, Inc. Second-class postage paid at New York, NY and additional mailing offices. Postage paid at Windsor, Ontario, Canada. Registration Number 9617.

Postmaster: Please send address changes to: Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 2025, Mahopac, NY 10541. THIS ISSUE is published in national and separate editions. Additional pages or separate editions numbered or allowed for as follows: Eastern Section 32Ea through 32Ej. Central Section 32Ca through 32Cb. Northern Section 32Na through 32Nb.

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Can there ever be too many architects?

One of the more stimulating discussions at this year's AIA convention in Orlando occurred under the auspices of the Walter Wagner Education Forum, established by RECORD to honor the memory of our late chief editor. Held in conjunction with the Education Committee of the AIA, a small but distinguished group of architect / educators courageously dealt with a delicate subject: are the schools of architecture accepting and graduating more architects-to-be than the economy can absorb? If so, should the schools have higher admission standards, tougher courses, encourage the not-so-gifted to quit, and award fewer degrees? Are there indeed too many architectural schools? And how good are most of them anyway?

Panelists included John Fasano, a student at the Boston Architectural Center; architectural faculty members Hugh Burgess of Arizona State and Fred Stitt of the University of California at Berkeley; and architects Denise Scott Brown of Venturi, Rauch and Scott Brown and Jack Train of Train Associates. Moderator for the second year in a row was Jack Hartray of Nagle Hartray and Associates, who began by reminding everyone that the subject of the symposium was hardly new. "On the days the developers don't call, architects look around and say, 'My God, there are too many of us!'" noted Hartray, blaming this response on a kind of Malthusian gloom / boom mentality that he believes underlies the profession.

Hugh Burgess, however, argued that the pessimists, among whom he counts himself, have a real case, maintaining that the notion that there may be an overabundance of practitioners and students is not the subjective, cyclic myth suggested by Hartray but objective reality that has already resulted in a decline of services. He suggested that the profession would benefit from an outside evaluation of its standards modeled on the famous 1910 Abraham Flexner study of medical education, conducted to determine the reasons for diminishing health care. Said Burgess: "Few architectural programs are equipped to educate students for high-level entry into the profession, while large numbers offer an outdated, underfunded, and oversubscribed program for the sake of their own perpetuity. A similar state existed in medical education 75 years ago." Flexner made three recommendations: first, that the ratio of the number of physicians to the general population be quantified and controlled; second, that adequate financial support for research and instruction be quantified; third, that programs incapable of meeting these standards be closed. Burgess called for a similar long, hard look at present and future architectural demographics, markets, and practice, proposing an equally sweeping revamp of professional education in response.

While all the other panelists agreed that the schools could stand improvement, none of the rest believed that the profession suffers from too many present and future practitioners. Scott Brown questioned the type of scientific evaluation proposed by Burgess: "The Flexner study gave doctors higher incomes and less compassion." Arguing that new fields are opening up to graduates, she predicted that the "too many" architects of tomorrow will help redefine the profession. Fred Stitt went further: "There will be no shortage of potential design work and no such thing as 'too many' architects or students of architecture." He pointed out that economic forecasts predict that over the next 50 years there will be twice as many buildings designed and built as we have now. He predicts nearly 50 emerging design-related services—all new careers in themselves. And he reminded us that many existing buildings will be renovated again and again. "On top of that," he added, "new building types for almost unimaginable technological developments will be coming down the line—new environments to be created."

The down side, according to Stitt, is that new technology will allow nonprofessionals to perform competent design services. Even would-be clients, he claims, will be able to design for themselves with no need of architects. Architectural education must be restructured to meet this challenge. Stitt pointed out, however, that extensive research should come first. Urged Stitt, "We need to know if there is any correlation between formal education and the quality of design practice . . . We don't know if any of the educational tools and methods we use are any good or not . . . If we don't find out what we are doing and *know* how to fully and truly educate our future architects, the profession as we know it is likely to be displaced and die out from irrelevance." Stitt is right. The profession and the schools must get on with the studies and surveys that have been lacking for so long, and improve education and practice accordingly. This year's Walter Wagner Education Forum will act as a catalyst. That's why we held it. *M. F. S.*

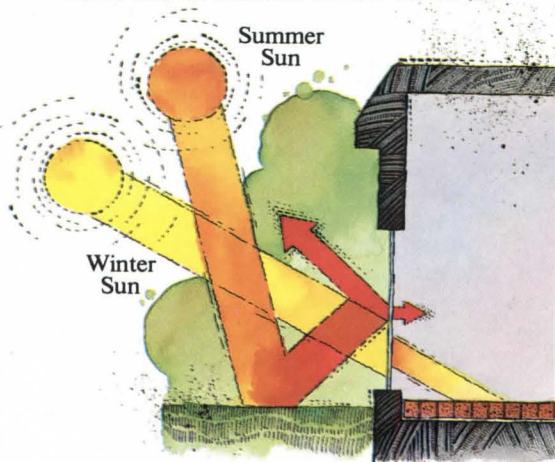
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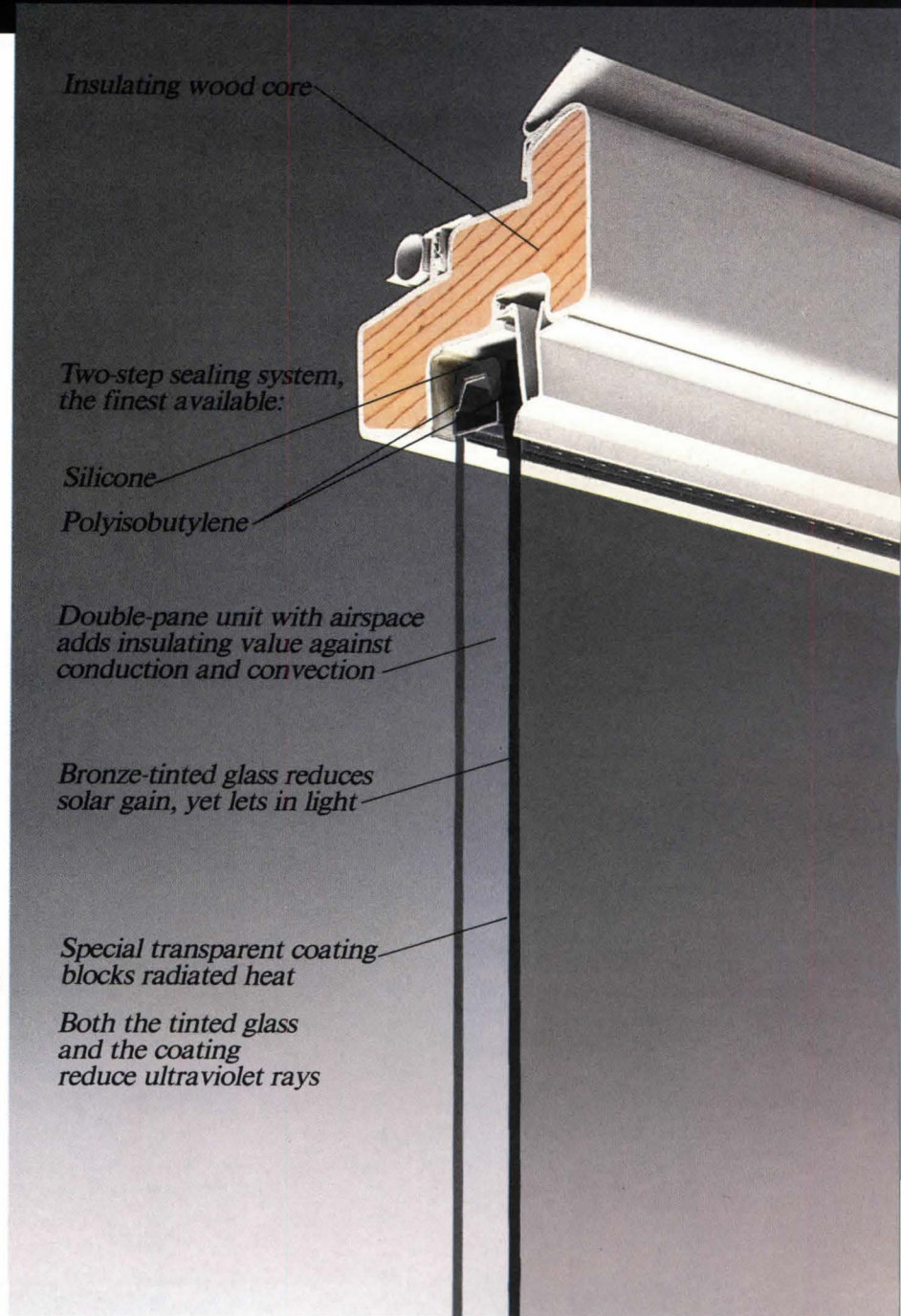
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AIA convention forums on professional development anticipated a startling period of far-reaching change

A construction-market forum, moderated by *The Boston Globe* architectural critic Robert Campbell, was packed with those who came to hear what they didn't want to—that some segments of building are in for a nosedive. Singled out, in particular, were offices and apartments. The speakers and their views:

• **George A. Christie.** The vice president and chief economist of the McGraw-Hill Information Systems Company's Economics Department led off with a reminder that we are faced with a problem of overbuilding that, thanks to incentives prior to tax reform, took five years to create. He estimated that it would take at least three years to get rid of it. "Shrinking work on drawing boards," he said, "should come as no surprise. The new need is to shelter people profitably instead of taxes."

He saw hope in shifting demographics. More adults entering the housing market with specialized needs mean that some segments still could be strong. "There's plenty of potential left, if you pay attention to what's going on. Flow with the demographics."

• **J. Chandler Peterson.** An investment banker and president of The Peterson Wealth Management Companies, he opened a recurring theme: "Those who are in building should look for work abroad."

He underscored the theme with the startling prediction that fully half the current U. S. design firms would cease to exist within five years—and that up to a third of the personnel in them would be looking for work in other related fields. "If you're not prepared to go international," he said, "you're likely to be among them."

The reasons? He pointed to the weak position of the U. S. economy and the shifting locations of economic activity: Currently only two of the world's 23 largest banks are in this country. "The Western world is destabilizing." Flight capital from such places as Hong Kong is a big influence. So is the burgeoning capital in pension funds worldwide. But it's not coming here because, "nothing can replace the dollar—and it almost has."

"The cost of capital in the U. S. has been dramatically impaired by tax reform," he said. "In looking for the golden mean, Americans never stop in the middle." He estimated that it would now cost corporations 41.9 percent more to build, simply through the loss of such incentives as shorter depreciation schedules. At the same time, interest rates relative to inflation are at a 30-year high. And the economy in general is not going to fare very well when wage earners figure out how little tax reform really helps.

• **James Kersey.** A principal of Lincoln Development Company, he hit hard at the bleak future in office construction. He described an Arthur Anderson/MIT study: Between 1975 and 1985, some 11-billion square feet of space was built—36 percent of the nation's total; the resulting glut means that only 350-million square feet will be needed between 1985 and 1995—a catastrophic drop. But, because some areas of the nation can support no development whatsoever, there will be localized opportunities in others. He thinks one-third of all developers will be out of business in the next five years. "Tax reform didn't just create a down-swing cycle but a whole new ball game."

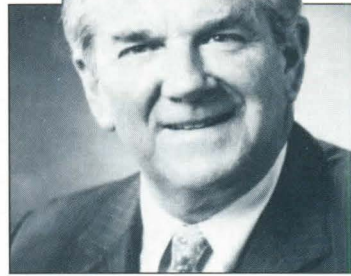
• **Thomas Ventulett.** The principal of architects Thompson, Ventulett, Stainback & Associates, Inc. saw architects in a future of spiraling contention. Specifically, he saw them, because of the client being so much in the driver's seat, churning out endless designs in competitions that will be organized for even the smallest of jobs.

• **Pat Choate.** An economist and the director of policy analysis at the technology firm TRW Inc., Choate, at a previous "focal point" address (see page 37), had already painted a disturbing picture of the U. S. as a society obsessed with quick profits instead of a solid economic base as it slides rapidly from a second-rate power to a third. Now he was ready to suggest one remedy that seemed only slightly more palatable: a 4-percent reduction in our standard of living to bring us into line with what we produce. Singled out in particular was government spending, including defense and social programs.

Another remedy was to cut the amount of our economy that goes into debt-carrying costs. "Build buildings faster. The Empire State Building took 13 months to build and the Hart Office Building in Washington, eight years."

He pointed out that our generation grew up used to world dominance. That period is over. "Our best shot now is to concentrate on price, quality, information, and service."

• **George Hartman.** The principal of Hartman-Cox Architects talked about what approaches architects, in particular, could take in the coming economic downswing. "We should work harder and smarter but a lot less," he said. "No more 80-hour weeks. Instead, hire better people—staff and consultants—pay them more money, and farm out more work." Because developer clients will be in such high competition, good design is going to be worth more [and bring presumably better fees].



He was not worried that a third of the architects might disappear from the scene. "They aren't making a living anyway," he said in apparent reference to many professionals' ability to endure any adversity no matter how bad.

Peterson continued his theme of looking abroad for design work but advised investigating particular markets before jumping in—especially how you will be taxed. "Get plugged in with developers in those locations where rental rates remain high." He said small firms are in the best position because they can operate on a lean basis: "The three- to five-man firm isn't dragging along huge overheads and slow reactions."

Christie pointed out that most of the discussion here had focused on offices, which are, he said, only one-quarter of the spectrum. Instead, look at single-family housing, stores and shopping centers, and institutional construction—especially for the elderly and the corrections system. These building types, his research had shown, can be expected to go on doing well. "Tax reform is like Butte, Montana," he said. "It's not the end of the world even if we think we can see it from there."

Ventulett reinforced Christie's view on the strength of shopping centers and also his own on the strength of building rehabilitation by telling of the many commissions his firm is now getting for, in fact, rehabilitating shopping centers.

A forum on the architect-client relationship produced such heavily-crossed swords that no quick resolution seemed possible

• **Chip Davidson.** A senior vice president of Gerald D. Hines Interests, he was not so sure that design vision will continue to be what Hines will be seeking for an office market impaired by not only overbuilding but the growing insistence of mortgagees and tenants on controlling what is built. "There will be much more emphasis on pricing and track records. Cultivate the design clients you already have, even if at the expense of looking for new ones."

• **Roger Pickar.** A principal with consultants The Marketing Consortium, Pickar was critical of

Elevated to 1988 first vice president/president-elect, Benjamin E. Brewer of architects Sikes Jennings Kelly & Brewer will promote the use of computers and the enhancement of public-participation programs, education, and design.

architects, saying that client complaints his company had found among 178 major-corporation heads seven years ago "continue to exist today." First is "insensitivity to our needs." Architects are viewed as technicians, he said, who do not understand the client's business on which they are giving advice. The most frequent reason for switching architects is "service"—lateness and unresponsiveness. The reasons given for selecting an architect are "trust" (88 percent), "punctual delivery" (53 percent), "sticking to budgets" (51 percent), and "technical capabilities" (41 percent).

"The wave of the future is the specialist who understands one or two building types, the economics of the client, and has a broad geographic base." Nowhere was "design ability" even mentioned.

• **Robert Boerema.** The in-house architect for the Florida Department of General Services said that, because his department does much of the preliminary work on budgets, programs, and user needs, he expects a maximum amount of openness to client input at the beginning of a job and has fired architects who go off on their own tangent. "We're careful of award winners," he said, only half jokingly. "We want good hvac and no leaks." Still, he thought the specialist should be under the control of the "form-giver."

• **Antoine Predock.** The proponent and practitioner of architecture with regional awareness described how he was also interested in viewing his work in the context of history. He was definitely not offering answers for a profession in crisis but for his own peace of mind when he said, "Clients can go along for my ride or I'm not interested."

• **Eugene Kohn.** The principal of Kohn Pedersen Fox, on the other hand, came out fighting. He said that the profession, even without economic crisis, was on the verge of losing control through its reliance on computers and specialists.

"It's the most complicated and difficult of the professions." And now there are the new pressures exerted by clients, governments, communities, and, finally, critics, who all want an increasing say in what is produced. "We get abused more than any other group, but we don't do anything about it. If we don't take it seriously, we're not going to be taken seriously."

His advice? "In fact, research your clients' needs, give them your best, and don't give in when what they ask for is not in their best interests. Would you expect a doctor to take out your healthy gall bladder because you think it might be a nice thing to do?"

Charles K. Hoyt

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AIA convention news: Fact and fantasy under the Florida sun

Richard Cook, convention chairman; Donald Hackl, AIA president; and Kenzo Tange "open" the exhibits.



Perhaps it was the predictably sultry June heat and humidity, or maybe it was the suburban atmosphere of the Orange County Convention and Civic Center, located some 12 miles south of downtown Orlando. Whatever the reason, the annual AIA national convention, though clearly a success from the standpoint of attendance, was an unusually staid affair this year. Even those invited speakers who might have been expected to generate some rhetorical fireworks—Miami Vice creator Michael Mann, for instance, and the usually provocative Philip Johnson—seemed uninspired, and it was left to the Walt Disney Company to produce a brief bit of spontaneous excitement for the some 7,000 architects and guests attending the AIA's 119th annual meeting. As Martin Sklar, director of creative development at Disney, completed his remarks to the convention, a 14-piece band burst into the auditorium, followed by the familiar costumed figures of Mickey, Minnie, Donald, Goofy, and Pluto. The architects rose to their feet in appreciation and happily followed the parade out into the exhibition hall, but they quickly resumed their more workaday business of attending 330 professional-development seminars, consultations, and training programs in practice, management, and design. RECORD's report on some of the convention's more significant events follows.

Focal-point speakers addressed creativity, the economy, and the future of architecture

Sticking with a well-tested formula utilized over the past several years, organizers of the Orlando meeting presented a core program of nationally known "focal-point" speakers whose talks in some way reflected the 1987 convention theme of "Fact, Future + Fantasy." The results of this year's so-called "main events" were, as in the past, uneven. Most disappointing, perhaps, was the conference-opening presentation by Michael Mann, the creator and producer of the popular television shows *Miami Vice* and *Crime Story*, whose rambling address belied the slickness that distinguishes his work on film. Characterizing television and movie production design as "the filmmaker's architecture," Mann showed several clips of his work meant to illustrate how "architecture in film has but one function—to express feeling." Psychosis, danger, violence, and decay—depicted in such varied architectural settings as Art Deco Miami Beach, the tunnel-like streets

of Chicago, and Richard Meier's High Museum in Atlanta (the latter used as a psychiatric hospital)—are some of the "feelings" that Mann's backgrounds seemed to express most vividly.

Back in the real world Pat Choate, director of policy analysis at TRW, had some sobering comments regarding the American economy. Although current figures seemingly indicate an overall prosperity with low unemployment, low inflation, and a high stock market, Choate warned that American industry "no longer does what it once did best—compete in the global economy." The United States, said Choate, has gone from 15 percent of the world market share in 1973 to 7 percent today, and even the country's legendary agricultural surpluses have disappeared. Choate added that the much-heralded switch from blue-collar to white-collar industry as a solution to American industrial ills is overrated, and he pointed out that even such service industries as banking and insurance are increasingly subject to foreign competition. American economic woes are exacerbated, moreover, by a long-standing antagonism between government and business, which Choate called "inherent to the U. S. psyche," a marked decline in the public infrastructure (we currently invest only one-half as much of our Gross National Product in capital improvements as we did in 1965), and an "undereducated, underskilled, and unmotivated workforce" that is causing U. S. manufacturers to go abroad. Most significantly, the American economic system, based on the open market and free trade, no longer works in a global economy that essentially has no rules, said Choate, and the U. S. must now formulate an economic strategy based on the way the world is, not on the way it was.

After Choate's somewhat ominous message, it was a relief to hear two executives from the Walt Disney Company observe that "the guest is king" and "making people smile" are the underlying themes of one of the America's most successful corporations. Following a short film about the nearby Walt Disney World complex, Peter Rummell, president of the Disney Development Company, revealed some current Disney building projects outside the park that "marry successful development with the Disney philosophy of entertainment." Some of these "user-happy" projects include the Grand Floridian Beach Resort, whose design bears a remarkable resemblance to the 19th-century Hotel del Coronado near San Diego; two proposals by Michael Graves

for a 300,000-square-foot office building, the first depicting a variation on the ancient Greek caryatid-porch theme with the Seven Dwarfs standing in for Greek maidens, the second sporting enormous Mickey Mouse ears on the roof; and another, 250,000-square-foot office-building project by Cesar Pelli with bright blue-and-yellow cones resembling sharp pencil stubs.

Martin Sklar, executive vice president for creative development at Disney Imagineering, gave a brief history of Disney World, and he showed a film clip of Walt Disney in 1966 discussing the plan drawn up for the Orlando site. Sklar described the company as a place where "all ideas are good ideas," and he characterized its creative approach as "freewheeling and highly collaborative." The aim, he added, is a sense of harmony that



Miami Vice creator Michael Mann spoke about architecture's influence on people's moods.

gives visitors to Disney parks "the reassurance that the world does not have to be chaotic."

The final focal-point presentation featured an address by Philip Johnson, followed by a panel discussion comprising Johnson, his partner John Burgee, and the critics Paul Gapp of the *Chicago Tribune*, Paul Goldberger of *The New York Times*, and Kurt Andersen of *Time*. Franz Schulze, Jr., professor of art at Lake Forest College, moderated. Although the session was billed as "an exploration of the future of architectural design," the participants spoke more of the current diversity that characterizes the profession than of any upcoming trends. Johnson in particular heralded today's

"dizzying gamut of projects," and cited such esthetic extremes as Leon Krier versus Frank Gehry, and Robert Stern versus Norman Foster. Though he reiterated his contention that "the International Style is dead," Johnson dismissed the notion of Postmodernism as "a handy word for journalists since they have to use categories when they write." In the end, he concluded that while one might divide architectural practice into four approaches—profit motive, sociological aims, the technological struggle, and pure art—the final approach "subsumes the other three and is surely the overriding passion of all of us."

Struggling to come up with some ideas on the future of architecture, the panel of critics differed from Johnson only in their reluctance to confirm the demise of Modernism. Kurt Andersen contended that architects are once again turning to "simpler forms and sparer compositions," while Paul Goldberger claimed that the wave of the future might be something he dubbed "Romantic Modernism"—a hybrid mode practiced by architects like Cesar Pelli, Helmut Jahn, and Kohn Pedersen Fox that is characterized by historicist forms executed in modern materials.

Building security: fighting terrorism with architecture

Even before bugging devices were discovered in the American embassy in Moscow, securing buildings against surveillance and terrorism has been a source of concern for architects and laymen alike. The convention's session on the topic, moderated by Thomas Vonier, U. N. consultant for security and terrorism, addressed both the nature of terrorism and ways of combating its tactics. Panelist Brian Jenkins, a counterterrorism consultant to the Rand Corporation, predicted terrorism's future manifestations, concluding that it will be conducted by nongovernmental groups using six basic tactics, including bombing and chemical contamination.

Florida Congressman Larry Smith, who serves on the House of Representatives' Foreign Affairs and Judiciary Committees, then discussed action recently taken by

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"We need architects with creativity so that our embassies don't look like bunkers."

U. S. Congressman Larry Smith

Congress to fight terrorism. Since the issue was first addressed in 1980, \$1.3 billion has been allotted for embassy security, 126 buildings have been targeted for improved security, and \$9 million appropriated for counterterrorism research to be conducted by 25 government agencies. "We need architects with creativity so that our embassies don't look like bunkers," he stated, citing the boulders in front of the U. S. Embassy in Stockholm as one innovative solution.

Other examples of design deterrents to terrorism were presented by George White, the architect of the U. S. Capitol, whose measures to secure its grounds include retractable barriers and reinforced concrete pots placed around the perimeter. Even though most architects are faced with routine domestic, not international building security, he said, they should make certain for liability purposes that all security consultants are certified experts. (For more on building security, see pages 126-131 in this issue).

Florida's built and natural environment: a case study in vanishing resources

Among the most enlightened programming in Orlando was a series of design case studies that addressed the enormous challenges that Florida faces over the next decade in the related areas of growth management, waterfront conservation and development, and the retention of the state's vanishing architectural heritage. In the latter category Beth Dunlop, architecture critic of the *Miami Herald*, led a panel discussion on preservation in the Sunshine State. "Florida is an unsung storehouse of architectural treasures," claimed Dunlop in her opening remarks, and as if to prove her point F. Blair Reeves, director of the University of Florida's graduate program in historic preservation, began the session with a survey of Florida architecture. Illustrating the stylistic variety of buildings around the state, he explained how preservation efforts have increased since the formation of the Florida Trust for Historic Preservation in 1976. Speaker David Ferro of Florida's Bureau of Historic Preservation expanded this overview by discussing the role played by the state government in promoting preservation. As a result of grants for surveys and educational programs, 34 Florida cities have set up standards for rehabilitation and design review. An example of one community's efforts to preserve its Art Deco architecture was shown by Denise Scott Brown, who outlined the

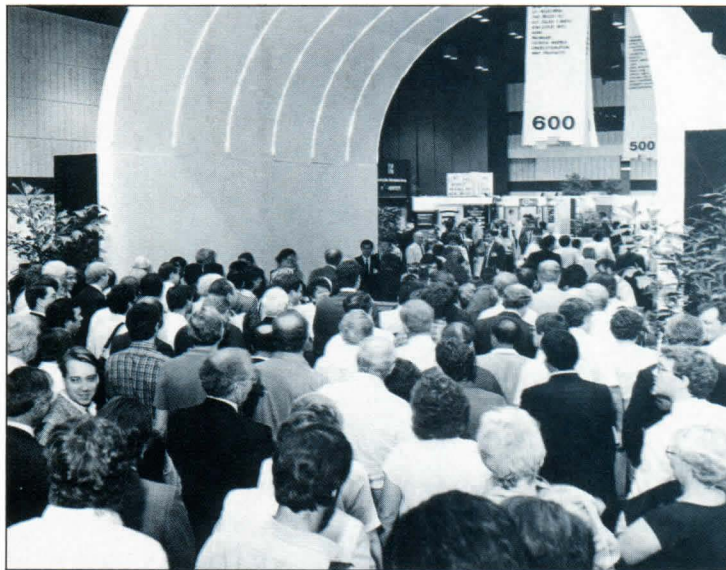
implementation of her firm's 1978 master plan for the Washington Avenue shopping district in Miami Beach.

Other presentations underscored the diverse architectural history of Florida. Architect Robert Broward focused on the work of Henry John Klutho, a Jacksonville architect who introduced the Prairie School to Florida in the early 1900s. The flamboyant, Mediterranean-inspired architecture that has become synonymous with the region was the subject of a talk by Donald Curl of Florida Atlantic University. He pointed out that this revival style was not archeologically derived from original Spanish Colonial architecture, but became popular because it evoked a romantic image of Florida's original conquistador settlements.

The session concluded with humorous but pointed commentary

erosion as an especially vexing problem, Healy observed that runaway development is threatening to destroy the natural resources that brought people to Florida in the first place. By the 1970s, noted John DeGrove of Florida Atlantic University, the state had "messed up" its shoreline to the point that many now feel that the coast can be reclaimed only by some "creative post-hurricane redevelopment."

On the positive side, both DeGrove and Thomas Lewis of the Disney Development Company described legislation passed between 1984 and 1986 that has given Florida a comprehensive growth-management plan limiting development in environmentally sensitive areas, increasing public beaches, monitoring water quality, and protecting the coastal dune system.



from Linda Bassett of Tampa's WEDU-TV and executive producer of the documentary *Fantasy Florida, Dreams Expressed*. In comparing Florida to a matron with a gold front tooth, she warned that "our Eden is in serious jeopardy" as real estate speculation and development erode the state's history. "The matron has become insecure, putting her Hawaiian shirts further back into the closet," she noted, adding, "She's in danger of losing her identity."

Much of that identity is inextricably tied to Florida's coastline, which is second in length only to Alaska's. The overdevelopment of that resource, and recent efforts to control growth along Florida's 1,350-mile strand, were discussed during a session on waterfront management, moderated by Jane Healy of the *Orlando Sentinel*. Citing beach

Women in architecture: more questions than answers

Heated debate over the future of women in the profession has subsided during the past few years, and an hour-long program entitled "Women's Issues in Architectural Practice" was no exception. Led by Carol Sakata of Chapman, Desai, Sakata, and this year's chairperson of the AIA's National Women's Committee, the seminar ended up as a gripe session over the hurdles that still face women architects: job discrimination, low salaries, and invisibility within the profession.

The seminar began with a recitation by Sakata of grim statistics reflecting the professional gap that still exists between male and female architects. According to a 1983 AIA poll, only 27 percent of female respondents are partners or principals; when compared to men who have received the same

education, women earn only 68 cents to every dollar; the highest concentration of women in the profession is found in large offices, but there are few opportunities within these firms to advance.

The 12 women and one man attending the session shared their experiences on issues ranging from maternity leave to lack of female role-models within the profession. Cynthia Weese, the president of the AIA's Chicago chapter, noted that her organization has had a hard time attracting women members: "They are hesitant to get involved. Many are just starting out and can't afford to pay the required dues." AIA statistics concur, revealing that only 25 percent of all women architects are members. Many are too busy fighting battles within their own firms. As one attendee declared, "You still have to prove yourself every step of the way."

British architect Bernard Feilden's guide to preservation

This year's speaker at the annual preservation breakfast was Bernard Feilden, whose anecdotal presentation resembled a mini-course in building conservation. Drawing upon his vast experience in rehabilitating historic monuments and buildings throughout Britain, including Norwich Cathedral and York Minster, his advice to architects undertaking conservation (a term he prefers over "preservation," explained as "keeping buildings as they are" and "restoration," defined as "putting them back as they were") was "to do as little as possible." Existing conditions should be documented by the architect before intervention by outside consultants, with facts and opinions recorded separately. "I never let an engineer look at a building before I do," he claimed to a round of applause.

In devising remedies to the structural repair of historic buildings, he advised looking at several alternatives and avoiding drastic solutions—"never replace when you can repair." Other considerations such as cost estimates, safety-code compliance, and maintenance which often inhibit the best preservation intentions were discussed with practical suggestions. He ended the talk by reminding the audience that historic structures are systems; if one element is altered, another will be affected. Architects, therefore, should have general construction experience before tackling old buildings. "Conservation requires artistic interpretation, but a designer shouldn't leave his signature on a historic building. It should be invisible." *Deborah Dietsch and Paul Sachner*



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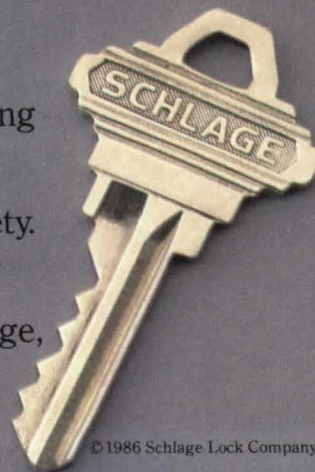
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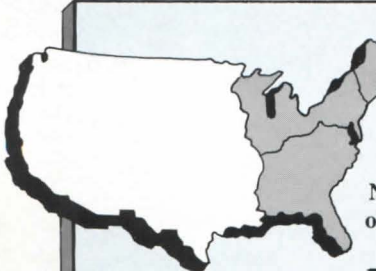


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Construction costs: A modest spurt is inevitable even if ill-timed

Summary of Building Construction Costs



	Number of metro areas	Districts Eastern U. S.		
		1/87 to 4/87	4/86 to 4/87	1977* to 4/87
Metro NY-NJ	18	1.40	5.08	1809.97
New England States	33	1.01	3.30	1728.05
Northeastern and North Central States ...	120	0.40	1.89	1686.98
Southeastern States	106	0.09	1.40	1733.05
Average Eastern U. S.	277	0.42	2.08	1717.49



	Number of metro areas	Districts Western U. S.		
		1/87 to 4/87	4/86 to 4/87	1977* to 4/87
Mississippi River and West Central States	122	0.46	1.08	1681.22
Pacific Coast and Rocky Mountain States	106	0.05	0.99	1744.91
Average Western U. S.	228	0.27	1.04	1710.83
United States Average	505	0.35	1.61	1714.49

* Using only cities with base year of 1977

In the little swings between what, in historical perspective, can be seen to be less and more cost moderation lately, the first quarter of this year catches us in mid arc. The nation's overall rise in costs of 0.35 percent almost doubles the previous quarter's 0.20 percent but is only a little more than half of the 0.76 rise in the quarter before that. Once again, the rise in costs in metropolitan New York and New Jersey led all others with a hefty 1.4-percent increase that reflected, according to Dodge vice president George A. Christie, the fact that tax reform has yet to catch up with and dampen construction volume in this particular region.

There are those who might argue that any rise at a time when most construction sectors are expected to show a downturn is ill-timed. But then, despite tax reform (and rising interest rates as well), construction is holding up better than expected in all regions. And it well may be that building-product manufacturers especially, who have watched a continuing erosion of their prices when compared to inflation, have seen some small opportunity to catch up.

Individual product-price rises were modest. Concrete and concrete block, which showed virtually no change in the previous quarter, went up .011 and .026 percent,

respectively. Plywood went up .019 percent; lumber .025 percent; gypsum board (the biggest gainer in the previous quarter) .008 percent, structural steel .011 percent, electrical conduit .014 percent, and copper pipe .006 percent. Labor costs for the period reflected contract adjustments negotiated in 1986 and were consistent with the average 2.8-to-3.1-percent increases projected for the period.

(McGraw-Hill Information Systems Company studies are conducted quarterly by direct contact with union and nonunion sources, direct-mail suppliers, construction-labor consultants, and both general and specialty contractors in each city.)

*Cost Information Systems
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Historical Building Costs Indexes

Average of all Nonresidential Building Types, 21 Cities

1977 average for each city = 1000.0

Metropolitan area	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986				1987
										1st	2nd	3rd	4th	
Atlanta	1171.5	1712.6	1925.6	2098.6	2078.0	2360.6	2456.7	2448.7	2518.3	2526.3	2534.1	2561.0	2561.9	2577.0
Baltimore	1018.4	1107.7	1304.5	1446.5	1544.9	1639.5	1689.7	1703.7	1743.8	1744.5	1762.2	1764.0	1765.2	1788.0
Birmingham	1029.7	1142.4	1329.9	1407.2	1469.9	1468.1	1535.7	1594.7	1565.7	1578.8	1574.6	1580.1	1587.4	1572.8
Boston	1028.4	0998.6	1236.0	1283.7	1432.5	1502.0	1569.9	1646.0	1721.0	1725.7	1730.0	1762.0	1773.6	1806.2
Chicago	1007.7	1032.8	1199.7	1323.6	1344.7	1425.8	1439.5	1476.7	1528.0	1556.4	1559.1	1586.7	1599.9	1599.1
Cincinnati	0848.9	0991.0	1323.9	1385.2	1350.4	1362.6	1430.8	1484.5	1486.6	1489.1	1494.2	1500.6	1499.4	1512.0
Cleveland	1034.4	1040.8	1287.5	1388.2	1459.5	1511.4	1475.9	1464.0	1474.1	1482.6	1503.7	1516.3	1525.7	1538.3
Dallas	1042.4	1130.6	1431.9	1481.9	1750.6	1834.3	1925.9	1958.0	1963.3	1964.2	1963.6	1984.9	1973.9	1995.1
Denver	1038.8	1100.4	1495.6	1487.4	1632.2	1679.1	1800.1	1824.3	1821.8	1798.8	1772.5	1811.6	1795.8	1778.5
Detroit	1018.1	1087.3	1275.3	1447.4	1580.3	1638.0	1672.1	1697.9	1692.6	1696.0	1708.6	1700.5	1696.6	1690.8
Kansas City	1023.5	0951.5	1125.8	1233.2	1323.4	1381.8	1407.5	1447.1	1472.5	1476.9	1478.8	1487.7	1484.7	1492.1
Los Angeles	1022.5	1111.0	1255.3	1387.5	1474.3	1503.3	1523.9	1555.1	1571.0	1598.4	1575.7	1601.3	1609.7	1628.8
Miami	1004.5	1080.9	1330.1	1380.6	1369.1	1392.1	1467.6	1522.2	1540.6	1549.9	1552.2	1563.0	1566.2	1567.7
Minneapolis	1060.2	1196.8	1286.9	1327.7	1442.6	1576.8	1624.6	1640.4	1661.0	1641.9	1647.5	1676.6	1674.0	1691.6
New Orleans	1001.3	1138.8	1291.9	1505.7	1572.7	1616.9	1650.5	1691.4	1762.5	1782.0	1784.6	1773.0	1760.2	1749.1
New York	1005.4	1043.0	1247.1	1319.4	1419.2	1491.8	1672.5	1747.2	1806.7	1803.3	1831.7	1863.7	1899.9	1938.1
Philadelphia	1013.8	1074.2	1487.5	1539.5	1660.7	1769.4	1819.5	1922.1	1967.9	1974.2	1968.5	1968.1	1992.7	1985.0
Pittsburgh	1016.1	1015.0	1227.0	1341.7	1493.2	1479.5	1497.2	1576.1	1611.0	1607.7	1619.2	1653.2	1665.8	1668.7
St. Louis	1039.1	1198.8	1275.9	1320.0	1397.3	1451.2	1524.9	1625.5	1641.8	1652.4	1644.1	1647.0	1647.4	1657.7
San Francisco	1083.2	1326.8	1473.4	1644.8	1776.4	1810.1	1856.8	1935.3	1961.8	1955.9	1960.2	1992.0	1995.5	1993.1
Seattle	1142.5	1137.9	1373.4	1616.8	1814.9	1962.7	1979.0	1948.9	1937.9	1925.2	1916.7	1920.3	1925.3	1915.4

Costs in a given city for a certain period may be compared with costs in another period by dividing one index into the other; if the index for a city for one period (200.) divided by the index for a second period (150.0) equals 133%, the costs in the one period are 33% higher than the costs in the other. Also, second period costs are 75% of those in the first period (150.0 divided by 200.0 = 75%) or they are 25% lower in the second period.

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Finance: Improvement in trade renews our real growth

By Phillip E. Kidd

Evidence is emerging that the dollar's long decline is altering the trade equation in favor of the U. S. Confronted with more expensive foreign goods, both domestic and overseas buyers are gradually increasing their purchases of American goods. As exports climb and imports slip, the outlook improves for real economic growth in the second half of the year.

The change in the climate for U. S. manufactured and agricultural output comes at a fortunate time For most of our current economic expansion, rising consumer expenditures have supported the advance. Now domestic consumers, overburdened with debt, and experiencing both slower gains in

income and deteriorating savings, are curbing their outlays. Forced to stretch their budgets, they are becoming careful comparison shoppers and are discovering that their money goes further when purchasing domestic rather than foreign goods. Although the increase in their disbursements is moderating, the proportion expended on domestic products is mounting. In turn, American manufacturers are gradually regaining domestic-market share.

Similarly, foreigners are also substituting less-expensive American-made goods and farm produce for higher-priced products from other countries. Bolstered by this stronger demand, some companies are already returning production from offshore to the U. S., a trend that is just starting.

Certainly, the erosion of the dollar's value has been a major contributor to the resurgence of domestic manufacturing. Equally important, layoffs and wage concessions from workers and the replacement of inefficient, outdated facilities with modern automated plants and equipment, although traumatic and disruptive, have been necessary to make our manufacturing industries more competitive in world trade. As a result, labor costs have fallen (although still well above those in the emerging developing nations), productivity is better, and the quality of our goods is improved. In the future, it is the continuation of these trends, rather than any further downward movements in the value of the dollar, that will determine the extent of our manufacturing (and also agricultural) rebirth.

Significantly, the reawakening of domestic manufacturing and agricultural production adds new forces for economic growth at a time when the economy is lagging. As manufacturing and farm production gain momentum, their expansion will promote more activity in other sectors. Employment will grow, personal income will expand, and consumption, which has been sluggish, will pick up. Real growth, rebounding from its poor second-quarter performance, will return to the 2.0- to 2.5-percent rate that has characterized the economic advance since the middle of 1984.

Rejuvenation of the manufacturing and agricultural sectors will affect the financial markets in several ways

With sales turning up, investment needs will mount. Until now, the 1986 Tax Reform Act has penalized business investment through the elimination of the investment-tax credit, and tougher rules on

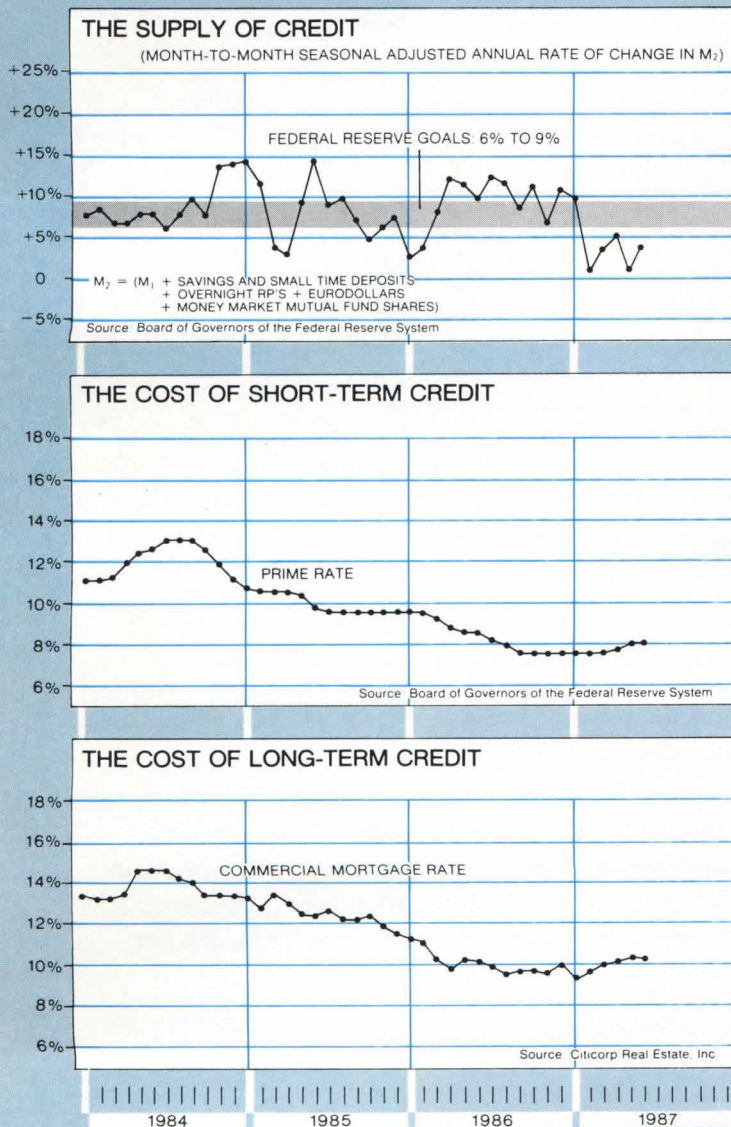
depreciation calculations and the netting of operation losses against other taxable income. Some of the harshness of the act for business was alleviated on July 1, when the maximum corporate-tax rate dropped from 46 percent to 34 percent. With their incomes on the upswing, business concerns will have more after-tax funds to finance fresh investment, which will moderate the growth in their borrowings from the financial markets.

As the trade deficit clearly stops expanding and begins a grudging decline, the downward pressure on the dollar will ease. The Federal Reserve, which shored up monetary policy to support the dollar in the first half, will gradually loosen its restraint to accommodate renewed expansion in the second half.

Nevertheless, in the complicated interaction of supply and demand for credit, a more relaxed monetary policy will be insufficient to lower interest rates in the face of slowly rising business and consumer demand, an enormous federal deficit, and continued poor domestic savings. As we have done throughout this recovery, we will have to borrow from abroad to meet our financing needs. To encourage such inflows, interest rates will erratically move up 50 basis points (one hundredth of a percent) in the second half. Short-term rates will range between 6.25 and 7 percent, 7- to 10-year government bonds between 8.50 and 9 percent, and mortgages between 10.50 and 11.50 percent.

Even with slightly higher interest rates, the better tone of the economy will help speculative housing and retail building maintain their present levels. The already lengthy decline in multifamily housing plus a more buoyant economy will end the slide in this building type later this year or early next year; but office building will continue its downturn under the weight of overbuilding. For a change, industrial building could show a little life in the coming months.

Mr. Kidd is a prominent economic consultant and former director of economic research for the McGraw-Hill Information Systems Company.



Liability insurance: Is the time right for captives?

The 1986 Risk Retention Act was passed by Congress and signed into being by President Reagan on October 27 specifically to simplify the organization of "captive" insurance companies—those owned by groups composed of, among others, professional-service organizations such as architects and engineers. In the process, of course, it was intended to resolve the current problems of affordability and availability of liability insurance at a time when traditional insurance companies are faced with rising claims and falling revenues to cover them. (RECORD, June 1986, pages 35 through 39, for a fuller explanation of the problems.)

Prior to passage of the act, the AIA investigated setting up its own captive company and rejected the idea—although it is not certain that the act may not cause the institute to investigate the idea again. The advantages were found to be:

- Insurance could be custom-tailored to meet the member firms' specific needs.
- The group would have the clout to fight instead of settle claims in which precedents were involved.
- The group could set up a rate-stabilization reserve that would guard against future insurance-cost gyrations.

The advantages also applied to groups set up to buy insurance on the commercial market with the cost leverage that volume purchase would produce, another arrangement that the Risk Retention Act addressed. Significantly, immediate rate reductions were not anticipated.

The reasons for the initial rejection were:

- A captive company would have higher costs than the larger conventional company because it would be at a disadvantage in both the reinsurance marketplace and money-management experience.
- A return to competitiveness among conventional companies could mean a flight to them by the best risks.
- A large amount of capitalization would have to be raised; \$10 million was deemed a minimal figure by AIA consultants, The Wyatt Company.
- Wyatt found very little support for the idea among AIA members it polled.

Here is how a new program, initiated by C. Roy Vince, whose company, C. Roy Vince Associates, handles claims and adjustments for design professionals, responds to the advantages and problems that the AIA found in its earlier analysis. Charles K. Hoyt

According to a draft operating plan, a new Architects' and Engineers' Insurance Company would be owned by the construction-design professionals insured and would "offer an approach to determining premium rates that is both understandable and controllable." It also would offer assistance in the design of loss-prevention programs, including the establishment of quality-control procedures.

The base premium for the first \$1 million in coverage would be developed as a percentage of a firm's gross revenues. An initial percentage of 1.75 percent of gross revenue is proposed with a minimum premium of \$35,000. As the gross revenue increases, the percentage would be reduced to a proposed minimum of 0.75 percent. "The resulting premium," according to the plan, "would be adjusted by a specific formula to reflect type of practice and loss experience."

The company would stress the adequacy of its capitalization

"Without sufficient capitalization to demonstrate its independence and financial viability," says the plan's authors, "AEIC will become dependent on the reinsurance market for its existence. And then it will be no more able to solve the problems of its membership than any other insurance company."

It is anticipated that 70 member firms will be required to achieve a capitalization level of \$10 million. "The initial \$10-million level has been selected to provide AEIC the means to issue policies at a \$1-million limit. It is a normal insurance-company practice not to expose more than 10 percent of its surplus on any one policy."

AEIC strategists do not foresee imposing a strict cap on capitalization and policy sums. The operating plan, in fact, notes that a \$50-million capitalization would enable AEIC to issue policies at a \$5 million limit. But it does not dwell on plans to achieve that amount.

The new company's formation seems to be on the fast track

After the passage of the Risk Retention Act, C. Roy Vince, along with representatives of three other companies with varied backgrounds in the insurance industry, polled architectural and engineering firms to test their interest in forming the captive company. Some 350 businesses returned the survey forms and more than 90 percent expressed interest. Of the 350 respondents, 25 percent were multidisciplinary or combined architectural and engineering firms, 18 percent were architectural firms, and the rest engineers.

In May, representatives of 82 building-design firms from 30 states

A new proposal to form a company owned by architects and engineers once again raises the question of how good and appropriate such a measure is in dealing with the design professionals' liability crisis.

met in Chicago to explore the idea further. Here, 39 percent of the firms were multidisciplinary, 19 percent were architectural, and the rest engineers.

The meeting was well-organized and convincing, and even representatives with reservations were not ready to reject the proposed formation at that time. But it was by no means certain that the company, would be formed.

A 10-member steering committee was formed to continue the effort. It was asked to review the draft operating plan and make recommendations for a final document. The comprehensive draft plan had been written by Vince and Richard J. Gundlach. (The caption below lists the full cast of the new company's instigators.)

More recently, a board of directors has been appointed which includes, besides Vince, representatives of architects and engineers HOK; the Architectural Team, Inc.; architects and engineers Ewing, Cole, Cherry, Parksy; architects and engineers Casco Corporation; engineers Richard Weingardt Consultants, Inc.; architects Treffinger, Walz & MacLeod; engineers H2M; architects and engineers Everett I. Brown Company; and engineers Peratrovich & Nottingham Drage.

A final operating plan is scheduled to be completed by the time you read this. A securities offering is expected to raise \$2.5 million in capital by September 15; licensing is anticipated by January 1; and the beginning of operations, when \$10 million are raised.



Instigators of the new Architects & Engineers Insurance Company are, left to right, Lawrence Farano (now deceased) and Richard Gundlach, both principals of Professional Liability Brokers & Consultants; C. Roy Vince of C. Roy Vince Associates, who first came up with and pushed the idea forward; Erwin Kranberg, also a principal of Professional Liability

What the 1986 Risk Retention Act says specifically is that, once a risk-retention firm is approved by a designated state, it can do business immediately in all states with only nominal restrictions. "It is conceivable," says the plan, "that a company could be operational within 30 to 60 days of meeting minimum capitalization requirements." Another advantage is an exemption from the registration clauses of the federal-securities law.

The most serious reservations to date are by companies with more than \$20 million in gross receipts Robert E. Stauder, vice chairman of HOK, says he is convinced that AEIC is going to have to offer much more to the larger companies. His opinion is important to promoters because, at the Chicago meeting, he was designated the spokesman for all but one of 10 participating businesses that have gross receipts exceeding \$20 million.

"The research (so far) has been largely targeted toward the big market and the big market is small firms," he says. "There's no way any of the large firms could commit to AEIC based on the information presented at the meeting. Our primary interest is really for over \$1 million in coverage." And the discussions at the conference clearly indicated that the higher levels are only future possibilities. Stauder, nevertheless, is willing to work with AEIC strategists to see if new provisions can be developed to please the larger corporations. *Jeff Trehwhitt, World News, Chicago*

Brokers & Consultants; and John Madsen of construction-dispute consultants Madsen, Okes and Associates. Together with another partner, Jack R. Janney of J. R. Janney Associates, they form the Architects and Engineers Risk Management Company, which proposes to run the new client-owned company and, in fact, be partially owned by it.



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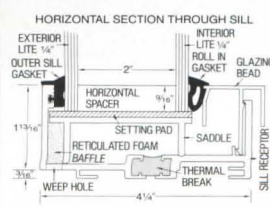
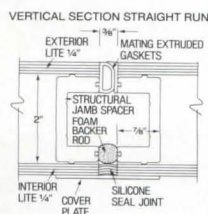
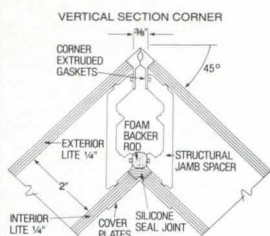
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Computers: Practical tips for CAD selection and management

By Hans-Christian Lischewski

As costs keep falling and capabilities increasing, computer-aided design and drafting systems are becoming feasible as design and production tools in architectural offices of all sizes. These CAD systems differ in cost, performance, and expandability. Selecting the right system and using it efficiently requires in-depth research, task analysis, and thorough CAD management. Beyond the actual price of the system, your investment has to cover costs for training, management, and developing libraries and production standards.

Before selecting a system, a firm must analyze its production requirements

In a small firm, one of the principals and an assistant can handle this task. In a large firm, a CAD committee needs to be established. The committee should include individuals with the time, authority, and motivation to evaluate, select, and supervise system implementation. In either situation, it is vital that senior management be committed to the process of converting the office from manual to automated production.

To find out what your production requirements are, you should perform an applications study. This means assembling information on building types worked on in your office, methods of design and drawing production, and methods of working with consultants.

Once a list of work functions is established, you are able to select those for which the use of CAD could improve production. Concentrate initially on those that will benefit from the speed and accuracy of the computer. In general, such tasks are labor-intensive, require high precision, have easy-to-learn input and output procedures, or represent repetitive activity.

Besides making a wish list, you have to find out what's feasible for your particular office

When complete, the applications study described above helps you make a preliminary feasibility analysis of planned CAD operations. This analysis works from a list of desired applications for computerization and takes into account the anticipated productivity improvement for each one. To be

complete, it must consider *all* costs generated by implementing and maintaining a CAD system.

By comparing the time needed to perform a task manually with the time required to do the same task with CAD, you can produce a productivity ratio. For example, casework-elevation drawings are needed for every project. Certain components are constantly re-used for similar projects and could easily be stored in a pattern library. By recalling such patterns from the library and creating composites of these graphic elements, new elevations can be produced faster.

Taking overhead costs for setting up and maintaining CAD into consideration, productivity ratios can be established. For instance, one draftsman working manually for 30 hours at \$45 per hour means an overall cost of \$1,350; one CAD operator, doing the same work, takes 10 hours at \$50 per hour and means a cost of \$500. Overhead costs, calculated at \$25 per hour, bring the total cost of the task done with CAD to \$750. The productivity (or profit) ratio then is the manual cost divided by the automated cost, or 8/1.

Although the actual increase in profitability in this one example is not that high, the repeated use of CAD on many tasks can mean large productivity gains—especially if the same or similar patterns for layouts are generated for all projects in your office.

A study of the different systems' performance and prices starts you towards actual selection

At the same time you are doing the feasibility study, you should be investigating system performances and prices. After determining which tasks to perform on CAD, you can begin the selection process,

Here are some basics for those firms that have yet to take the plunge. Most basic is the advice to "be cautious if a desired feature of a new system you are considering is still under development."

which uses short- and long-term criteria. Short-term criteria are:

- Those tasks and procedures you now want computerized.
 - Integration of those tasks.
 - Required hardware, software, and personnel to do them.
 - Compatibility of the proposed system with other systems.
 - Implementation of the system.
 - Its flexibility for future expansion.
 - Its financing advantages, if any.
- Long-term criteria include:
- Anticipated growth.
 - Integration with other disciplines.
 - Ways of installing new hardware during expansion.
 - Ways of adapting new applications to the system.

Your request for proposal gives requirements for applications and specific performance

Systems consultant Eric Teicholz says your RFP should include the following points on which suppliers can base their response:

- General systems' capabilities and how and why they will respond to your firm's needs.
- Detailed hardware specifications (including memory needs and number of workstations).
- Application software and operating system recommendations and specifications.
- Support and maintenance requirements.
- Education, training, and documentation recommendations.
- Inspection and testing procedures for acceptance.
- Installation and environmental requirements.
- Shipment and delivery schedules.
- Warranty conditions.
- General terms and conditions.

Once RFPs are returned from selected suppliers, their systems have to be evaluated on

performance. Take into account only the capabilities that are actually available—not those promised for the future. In other words, be cautious if a required feature of a system is still under development. System enhancements take time. If the system cannot be used from the beginning as planned, it could mean substantial losses in productivity.

Bench-mark tests tell whether your desired applications can be integrated into systems that otherwise seem satisfactory. Such system demonstrations should be scheduled for the preferred systems after CAD research is complete. It is useful to test a variety of applications to see how they can be integrated into the system.

Demonstrations and bench-mark tests are usually given by application engineers who know intimately the system under consideration. Those in your office who will use the system should also participate so they can have hands-on experience with the workstation. Only this will guarantee that you can complete the procedures you want efficiently.

Bench-mark results play one role in final system selection. Other factors to be considered include product support, existence of an active user group, the supplier's general competence, and the supplier's financial stability.

The final selection of a CAD system always involves compromise

In general, the more system performance expected, the higher the cost. Performance demands must balance against money available for the system.

Normally, contracts are produced by suppliers and support their interests. The contract should be reviewed by a lawyer representing your interests. In his manual, *Guidelines for A/E Computerization*, Fred Stitt lists these important contract clauses:

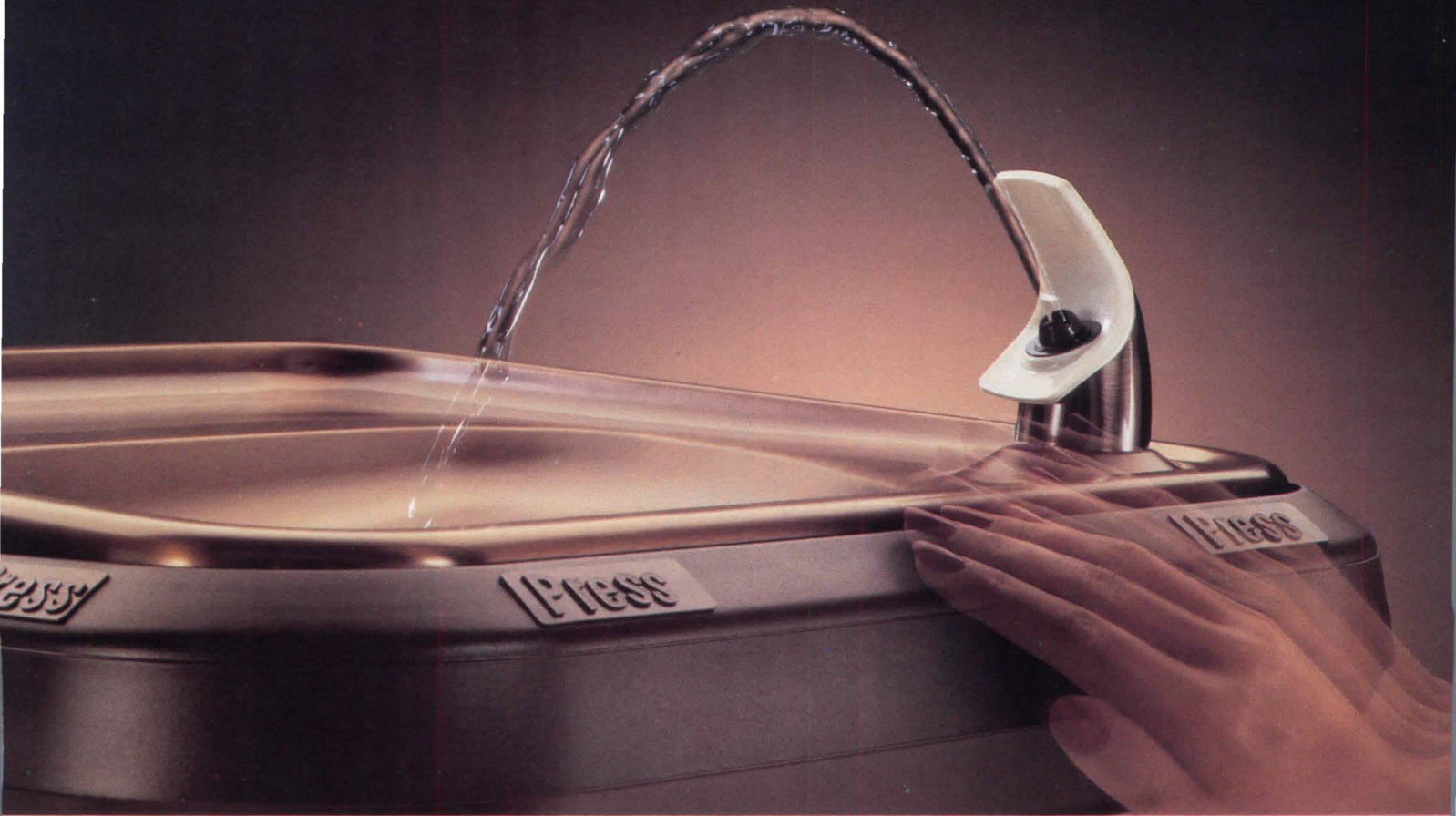
- Definition of all key terms in the contract.
- List of attached specification documents.
- Price and payment terms.
- Relationship of payment schedule to delivering, installing, and testing schedules.
- Your right to reject any components or software that fail testing or do not comply with previously stated requirements.
- Stated terms of maintenance costs and warranty periods.
- The responsibility of the supplier to provide all software and documentation necessary to operate the system.
- The responsibility of the supplier to provide software updates.

Continued on page 53



Hans-Christian Lischewski is the director of CAD resources for Russo + Sonder, Architects, in New York City, and a visiting associate professor at Pratt Institute. He recently conducted a tutorial on the implementation and management of CAD at The National Computer Graphics Association's annual conference in Philadelphia.

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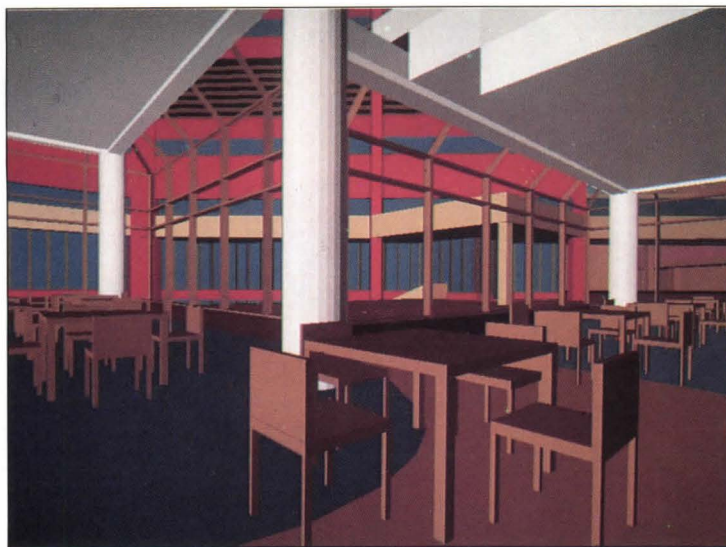
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Two examples of advanced-capability, three-dimensional modeling in the system used by the author's firm, Russo + Sonder, Architects, are shown on this and the previous page. First is a massing study of a building at Fort Wadsworth on Staten Island. At left is an interior view of a cafeteria at Vanderbilt University, in Nashville.

There are a number of important steps in starting out with your new system

One of the first considerations in setting up an architectural office for CAD is the system's environment. In meeting standards suitable to the system, the environment should be considered for cleanliness, air quality, temperature and humidity, lighting, electrical power, and user access.

Upon delivery of the system, you must thoroughly check all parts and software. If the system does not perform as specified in the contract, you have the right of not accepting the product until all corrections are made.

Having the CAD system up and running is only the technical part of the implementation process. The next step is to make it familiar to all members of your staff who will use it. In a large firm, members of the staff, who may only be working through a CAD team which does the actual implementation, should still be introduced to the system's characteristics and capabilities.

Successful training, development of standards, and the selection of appropriate tasks on the system will be the basis for productive operations. The schedule for CAD implementation must take into account pre- and post-installation training, systems' management procedures, setting standards for libraries and production, and selection of appropriate tasks for the system.

In a big firm with a separate staff for CAD use, here is how that team might be structured

Certain characteristics are necessary for every member of a CAD team, regardless of position or title. All must be able to relate to the specific needs of their operations. They should be motivated to explore the capacities of the system and think of new methods of production efficiency. They should be able to communicate and collaborate in a manner that will allow them to maintain a dependable level of production and meet assigned schedules.

On a typical CAD team, there are the following positions: the manager, responsible for planning, implementing and coordinating all activities; the supervisor, in charge of directing and coordinating all work assignments; and the operator, whose primary function is the development of databases.

There are different approaches to training staff on a CAD team. Exposure to the system can start after it is installed or the system supplier can provide pre-installation training at its office or training facility. A combination of both approaches is the most efficient.

The system manager and a few operators can be trained before the system is installed. They, in turn, can then train additional staff in-house. Techniques they can use for micro-based systems include combining the operating manual with interactive teaching software. Training is also available at CAD software centers in most cities.

Post-installation training can be done by representatives of the supplier or staff already trained in-house. Engineers from the supplier provide the best post-installation training initially, since they know the system and have teaching experience.

Training must be continued after the start-up phase. All staff who will be using CAD should be given enough time to exchange information and update knowledge about new versions of software.

Most big firms tend to schedule CAD work on shifts

As could be seen in the experience of determining productivity ratios, CAD systems generate a substantial amount of overhead costs just by being in an office. There are expenses for hardware and software, maintenance, and office installation. Even if the system is not used, the meter is still running, and the office is losing potential profit. If the productivity ratio is low, the CAD system might have to be used for more than just one shift to become efficient.

Shift schedules should always include open time for overspill or crisis situations, even if such reserve slots have to occur during night hours or on weekends.

Graphic standards are needed to assure consistency

Especially if more than one person is involved in producing a set of drawings, graphic standards are needed to ensure consistency. Most offices have manuals of graphic standards for traditional drafting. CAD production has to be based on similar agreements.

To produce new standards, you need to look into existing standards for manual drafting and adapt them to the capabilities of the system. Symbols have to be developed for all descriptions, ranging from ceiling plans to demolition to fire

partitions. Standards are also needed for material indications, lettering, dimensioning, and the generation of plans.

Standards for system management include procedural agreements, such as which parts of a project should be done on a CAD system and which should be done by hand. These procedures need to be documented in a manual, so that any project architect can schedule production accordingly.

Making CAD profitable means making it an integrated part of your office

A CAD operations manual is important in establishing the role of CAD within an office. The manual introduces new staff to CAD, helps in the training of new operators, and serves as a constant reference. Such a manual should describe the CAD system and its components, provide a detailed overview of training, and review all facets of production. In order for it to be used, the manual must be constantly updated, so that users are confident that it is correct.

Another important aspect of managing CAD is establishing guidelines for security, backup, and productivity. Security controls are enforced to keep data in the office and make them accessible only to those who are authorized. Data backup acts as an insurance policy against fires, theft, and system crashes. Productivity control makes certain that the system is achieving the cost and time savings intended.

Most offices are committed to CAD when a system is purchased. Problems with the system, however, often cause enthusiasm to disappear. Most problems can be corrected through objective analysis. Improvements might require restaffing the project, eliminating unfeasible CAD applications, or acquiring additional application software.

Initial expectations should not be excessively high. Attention should be focused on the development of CAD material, such as symbol libraries, which can be reused later. Repetitive tasks should be selected from different projects and integrated with those computer applications that are too tedious to be done manually.

Once CAD has proven efficient, you will find an increasing number of tasks for it

CAD production has to be scheduled more carefully than manual work because of the limited resources available for computerized projects. The number of trained operators and available workstations is fixed. Depending on the plotting equipment, only a certain number of drawings can be generated in a given time without using an outside service.

CAD operators can take an active role in making the system more productive. Operators who are especially adept at a given task should be given the opportunity to demonstrate their skills. This sharing of information helps all operators take full advantage of CAD benefits.

Sooner or later, operators discover that CAD is only a tool for architecture. If they are constantly assigned to do electronic drafting and database-management production, they will feel locked into work that is very different from architectural design and production.

To keep good staff members from leaving, it is important to give them a chance to grow within the firm. They should be offered career paths that allow them to make use of all their skills in both architecture and automation.

Advanced CAD training should be made available in your office, the supplier's office, or user groups.

Into the future . . .

New technical developments can make CAD systems obsolete within a few years. You must keep track of these developments and how they might affect the architectural field—and you.

Because hardware performance continues to improve while prices drop, you will have to buy new hardware just to stay competitive. At any time in the future, if you compare your existing hardware with the performance of new products, you may well decide to update your equipment.

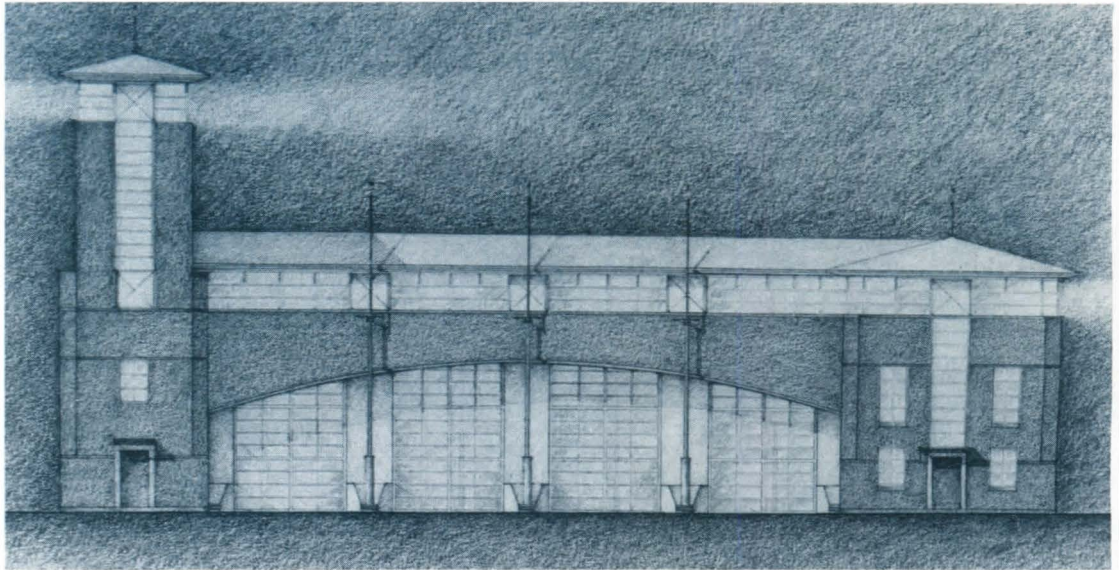
At the same time, new developments in application software may open fresh markets to you. Analyze these developments carefully, since new applications may require additional hardware or specialized staff. New operations could actually decrease the productivity of existing work.

To avoid unpleasant surprises, prepare a business analysis. New services should be considered only after careful evaluation of the financial risks, the size of the market, the size of the competition, and expected profits.

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Practice makes perfect: Wellesley fire fighters will train at new facility



Schwartz/Silver Architects, the Boston-based firm that brought us the Berkshire villa that looks like a spaceship which has permanently touched down in an otherwise idyllic landscape (RECORD, mid-April 1987, pages 114-121), is at work on a far less alien addition to another New England town—a fire station in Wellesley, Mass. The 21,000-square-foot structure is to be located on the eastern edge of the town proper,

and, as a result, the architects took their cues from the gracious and often quirky buildings that line the main streets. The station will be composed of two separate units: a traditional L-shaped brick building with low-pitched roofs, which will consist of a 60-foot-high hose tower connected to a three-story administrative block with an arched dormitory bridge that will span 80 feet across the top of the second

structure—a more mechanical-looking metal-clad storage building with four truck bays, which will be inserted into the elbow of the L. The hose tower, equipped with a fire escape and balconies, will also double as a training facility; when not busy responding to actual alarms, the fire fighters will park their truck behind the tower and practice their rescue techniques.

A camp for all seasons

What has been dubbed by its owner "The Hole In The Wall Gang Camp" is, as a closer look will reveal, anything but that. But then, the owner, actor and philanthropist Paul Newman, named this year-round camp/retreat for children with life-threatening diseases not for mere descriptive purposes but after the band of outlaws in his movie *Butch Cassidy and the Sundance Kid*. Chicago-based

Hammond Beeby and Babka has designed a campus of buildings (with access to state-of-the-art medical care) for the heavily wooded, 300-acre lake-front site in northeast Connecticut that is evocative of the frontier towns immortalized on the silver screen. The camp is being built from proceeds of Newman's Own, the actor's salad-dressing, popcorn, and spaghetti-sauce company.



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Mario Bellini: Designer on view at the Museum of Modern Art



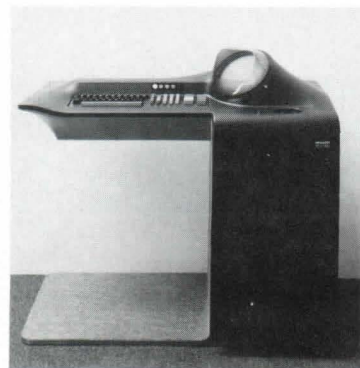
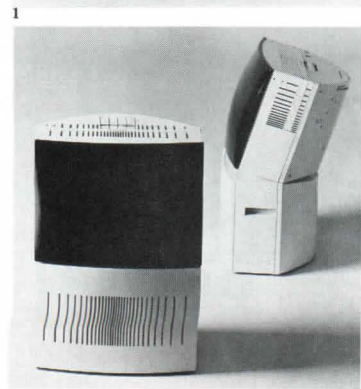
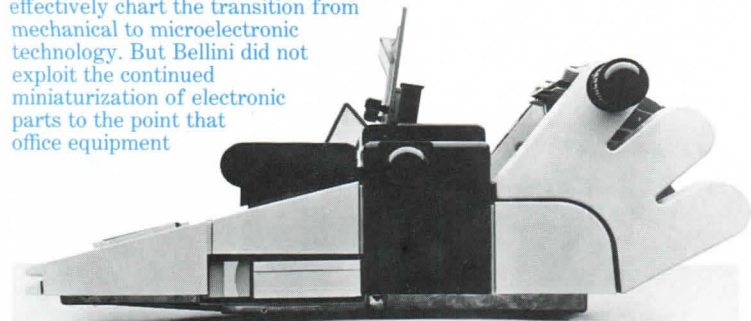
An exhibition focusing on the industrial and furniture designs of Mario Bellini is currently on view at the Museum of Modern Art in New York City through September 15. Organized by Cara McCarty, assistant curator of MoMA's department of architecture and design, this is the museum's first major retrospective devoted to one of Italy's leading architects.

The industrial designs (in particular the typewriters and accounting machines for the Olivetti Company and the electronic equipment for Yamaha) of the now 52-year-old Bellini, who began his career upon graduation from the Milan Polytechnic in 1959, effectively chart the transition from mechanical to microelectronic technology. But Bellini did not exploit the continued miniaturization of electronic parts to the point that office equipment

square and circular perimeters of a particular shape.

Bellini's furniture designs also reveal his fascination with curvilinear, anthropomorphic forms. Here, too, Bellini took full advantage of the fluid character of plastic to form sculptural frames for his upholstered pieces. The idea of making a one-piece chair from a single substance led to Bellini's use of polyurethane as both a shape and a finishing surface. Although the accordion-like *Teneride* never entered production, it demonstrates the designer's endless enthusiasm for experimentation.

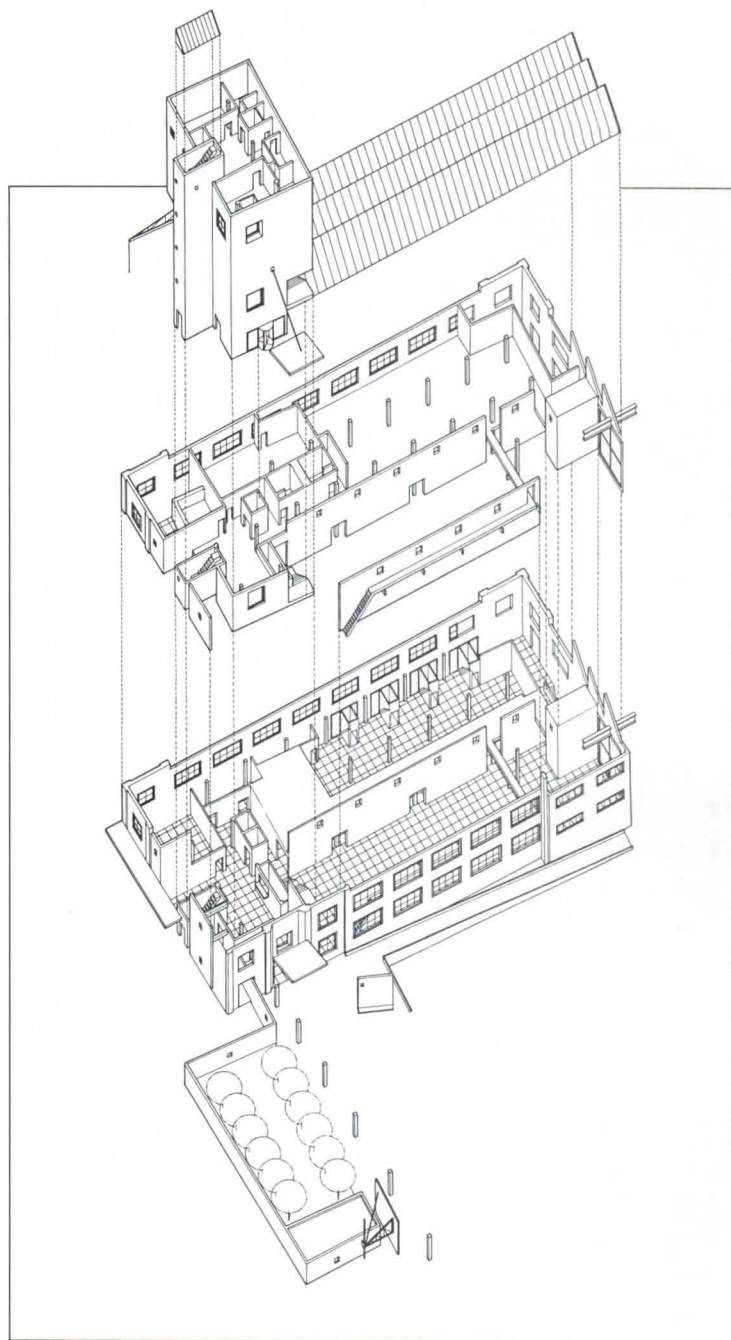
The exhibition, which consists of approximately 50 of Bellini's objects executed from the early 1960s to the present (including some previously unseen prototypes), benefits from the architect's collaboration on the layout of the space. By no means a typical MoMA presentation, items are displayed in niches off of a corridor that diagonally bisects the gallery; the office machines are set out on pedestals, allowing viewers to circle each object and delight in the innovation for which Bellini is now receiving due recognition.



became mere shells for some microchip-based mechanisms. Bellini's designs, in fact, recognized that the encasement of a product could have a life of its own; a sensuous shape separated from the rational organization of its internal parts. To manufacture these items, Bellini explored the possibilities of plastic and uses of a stretched membrane for modeling, which permitted smoother transitions between

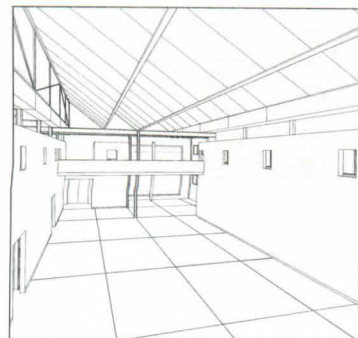
1. A 4 accounting/invoicing machine; Olivetti, 1973.
2. Aster 20 television; Brionvega, 1968.
3. Video display terminal; Olivetti, 1966.

Philadelphia's new ICA



In 1989 the Institute of Contemporary Art at the University of Pennsylvania will double its present gallery space when it relocates to a nearby 25,000-square-foot renovated industrial building currently owned by the university. Once a toy factory, the building will be converted by New York architects Henry Smith-Miller and Laurie Hawkinson—their winning scheme (above) subsequently has been revised (right)—and embellished with a stair tower extension and new forecourt. The architects plan to remove portions of the existing structure in order to create the feeling of a "building in transition"; a carved-out main entrance and the addition of cranes and ramps are intended to reinforce that rough-and-ready esthetic. The museum, which has no permanent collection, will contain three principal gallery

spaces, including a 120- by 40-foot "great hall" that will be capped by saw-tooth skylights. Exhibition space will extend outside the confines of the building, where Smith-Miller and Hawkinson propose two garden spaces for temporary sculpture installations.



What made manual AEC drawing obsolete in Japan?

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Image courtesy
Ragan Design Group

The Gamble House in Pasadena, Calif., has been given a \$2-million gift of early 1900s furnishings designed by its architects, Charles and Henry Greene. The anonymous donation nearly doubles the house's collection of original Greene and Greene furniture and also enables, through an agreement between the University of Southern California School of Architecture and the Huntington Library, the establishment of the Greene and Greene Center for the Studies of the Arts and Crafts Movement—a permanent exhibition and research library.

The San Antonio Conservation Society has appealed to Pope John Paul II, who is scheduled to visit Texas later this year, to intervene in plans for the proposed demolition of the 1899 Motherhouse of the congregation of the Sisters of Charity of the Incarnate Word, designed by Texas architect Alfred Giles.

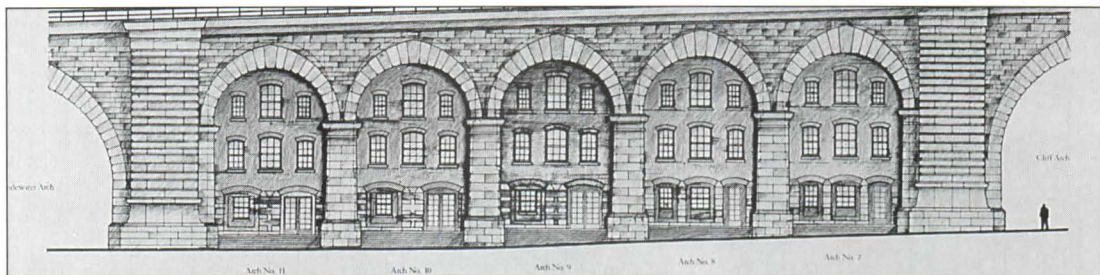
Bill N. Lacy has resigned as president of The Cooper Union for the Advancement of Science and Art in New York City, a position he has held since 1980. Lacy was recently appointed secretary to the jury for the Pritzker Architecture Prize.

Genster and Associates with Daniel Mann Johnson & Mendenhall will design a \$131-million addition to the Moscone Convention Center in San Francisco. The expansion will include 90,000 square feet of new meeting rooms and an additional 480,000 square feet of convention/exhibition space.

James Oleg Kruhly has been named the recipient of the first annual Young Architect Award of the Philadelphia Chapter of the AIA. The honor is bestowed on architects between the ages of 25 and 39, and is intended to "recognize accomplishment as opposed to promise alone."

Massimo Vignelli was awarded the honorary degree of Doctor of Fine Arts by the Pratt Institute in Brooklyn at a June ceremony.

The Loeb Fellows at the Harvard University Graduate School of Design for the 1987-88 academic year include architects, planners, and other professionals in design-related fields. The 12 fellowship recipients, who will be able to pursue a year of independent study at Harvard, are Rebecca Barnes, Linda Bassett, Laurie Beckelman, Ann Beha, Philip Borrero, Jeffrey Froke, William Geary, Edith Netter, Bradford Paul, Luiz Santana, Patrick Too, and Fei Tsen.



A recent addition to that growing list of believe-it-or-not, only-in-New-York real-estate and development tales is currently on the drawing boards of Perkins Geddis Eastman. The firm is exploring a plan to enclose 29 arches under the Manhattan approach to the Brooklyn Bridge and convert the 120,000 square feet into a mix of residential, office, and retail space. Although the architects plan to

restore the exterior fabric of the arches (through a combined process of cleaning, repointing, and replacing the brick) and recreate a 19th-century townhouse row in what would become the northern edge of the regentrified South Street Seaport district, the noise pollution from heavy interborough traffic hardly recommends the location to prospective tenants. The architects, however, point out

that the thick arches deaden the sound and vibration from above, and that the space was originally intended as tanneries and warehouses, and, in fact, recently has been used for workshops and offices. Currently the project is being reviewed by the New York Landmarks Commission and, if approved on schedule, construction will begin in late fall of this year.

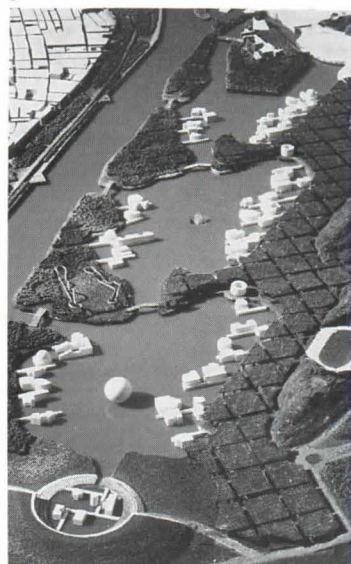
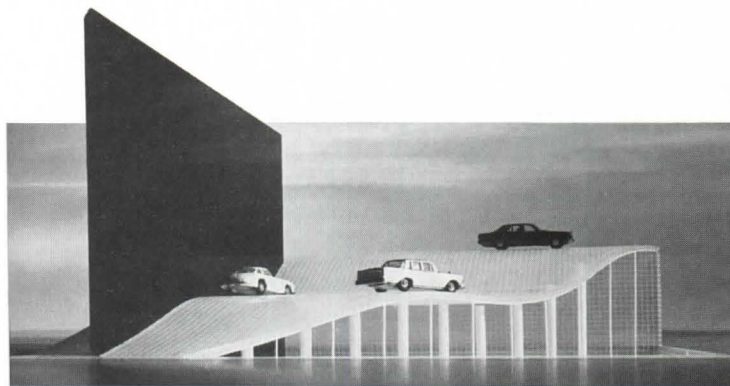
Emilio Ambasz: Technology and myth, a traveling exhibition

1. Mercedes-Benz showroom, Englewood, N. J.
2. Universal exposition, 1992, Seville, Spain

In an age of specialists, Emilio Ambasz resists definition. An architect, industrial and graphic designer, and author of critical monographs and children's fables, the U. S.-based Argentinian calls himself an inventor. An exhibition currently touring Europe, the first to explore the totality of his work, elucidates the principles that govern his diverse activities.

"I sometimes fancy myself to be the last man of the present culture, and dream of designing a house for the first man of a culture yet to arrive," muses Ambasz, who uses technology and myth to coax the present into the future. As a designer, he extends the industrial sciences to derive esthetic satisfaction from functional improvement. As a writer, however, his taste for metaphor and hermetic aphorism tends to obscure the real achievements of his work in a haze of apocalyptic significance.

Ambasz cites Alvar Aalto and Frank Lloyd Wright as influences, and his work echoes their rationalism and personal lyric sense. He rejects external continuities to engage the building and its immediate environment in a direct, active relation. Ambasz considers "architecture as man-made nature," and his extensive use of water and earth exploits their symbolic and practical values.



Like Ambasz's rhetoric, the exhibition emphasizes the buildings' poetic qualities and blurs the details essential to complete understanding. Renderings present idealized forms—while circulation or hvac systems are often impossible to read—and most of his larger projects are still unfinished.

Ambasz has made significant contributions in design and criticism, and their juxtaposition demonstrates his abilities. Architecture, however, seems more likely to embody the complexity of his ambitions and so far the record is incomplete. The realization of the Universal Exposition in Seville, Spain, in 1992, an immense water-based urban park and fair, will better indicate the true significance of Ambasz's work. Until then, the rich ambiguity of his writings will doubtlessly keep discussion alive. *Thomas Matthews*



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How not to design a park: Seattle settles on a Rouse project . . .

Henry James once described Seattle as having one of the most romantic settings in the world, but finding a suitable frame has proven problematic. For nearly a quarter of its existence, for example, Seattle has debated about how—or whether—to develop one small piece of its downtown.

Known as Westlake Mall, the piece in question is a triangular slice of land that for years was home to a dilapidated collection of small shops and a terminal for the city's 1960s-era monorail. A park first was proposed for the site in 1959.

During the ensuing years four separate proposals surfaced, then sank—scuttled by retailers' fears of a derelicts' hangout, inability to secure funding, or political squabbling. The plans ranged from a European-style piazza to a fortress-like structure that would have jammed a 300-room hotel, parking garage, movie theaters, and dozens of shops into the site. Finally the Rouse Company was called in. Its Solomon-like solution—designed by RTKL Associates—is a 24-story office tower, a three-story shopping mall, and a small park.

Along the way, park and development proponents acquired some unlikely allies. Charles Royer won election as mayor on a pro-open-space platform, then flip-flopped to back the Rouse proposal.



The influential *Seattle Times*, which long had opposed a park on the site, switched its opinion earlier this year. (The newspaper's conversion was attributed to demolition of the old buildings, which allowed people to see what an open Westlake would be like.)

For a while it appeared that a mini-revolt by park supporters might force the city to abandon the Rouse project. More than 10,000 signed petitions asking the city council to reconsider the retail-office complex. But the park putsch was short-lived; Mayor Royer vetoed a move by some council members to buy back a portion of the mall from Rouse for \$10 million. And the *Times* suddenly dismissed its opponents as a "pack of petition-bearing park-lovers" in a front-page lead-in to a spread extolling other Rouse projects.

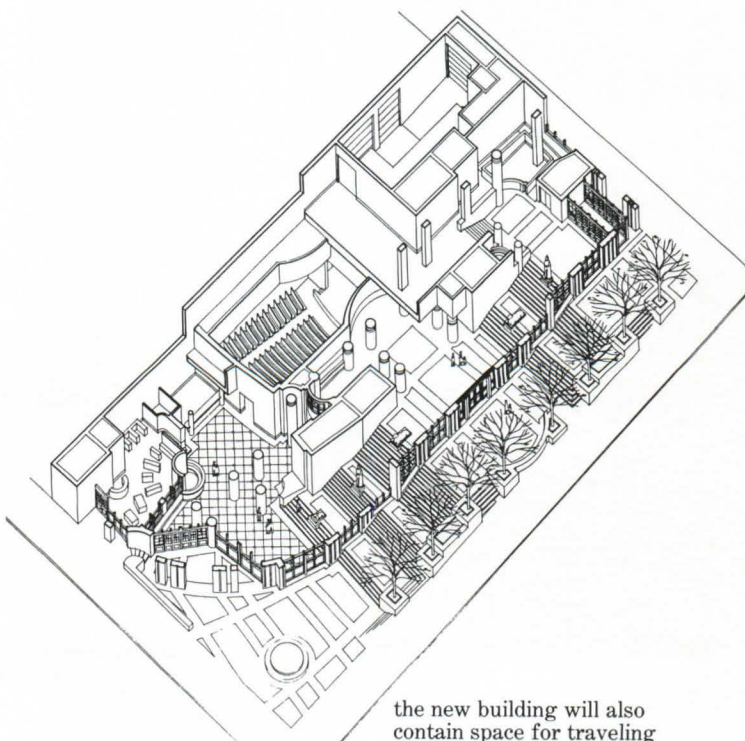
Completion of Westlake Center is slated for 1988. But its detractors dismiss the \$100-million project as just another bland office tower in a city already glutted with them. Even its supporters stop short of saying Westlake Center will provide a focal point for a notoriously unfocused downtown. Better Westlake Center, they say, then another 30 years of arguing. Born of woe, the Westlake Mall seems destined to go unloved even when brand new. *Douglas Gantenbein*

. . . and awaits a new museum



The Seattle Art Museum, currently exhibiting at Volunteer Park and the Pavilion at Seattle Center, will have in 1990, if all proceeds according to schedule, an architectural focal point in the form of a new 150,000-square-foot building designed by Philadelphia-based Venturi, Rauch and Scott Brown. Eventually the building, which will be set back 30 feet to

be surrounded by skyscrapers, and the architects designed the facades accordingly. The scored vertical fluting of the limestone exterior will visually extend the building's presence. The name of the museum will be incised across the top of the front facade, and a pattern of granite, marble, and terra cotta will band the ground floor. In addition to increased gallery space for the museum's permanent collection,



the new building will also contain space for traveling exhibitions, an auditorium, a gift shop, a restaurant, and classrooms.

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A college dormitory at Princeton University, New York City's new convention center, and social housing in Berlin were among the seven awards and nine citations cited in the 1986 Distinguished Architecture Awards program, sponsored annually by the New York Chapter of the AIA. The winning designs were chosen by jurors Gae Aulenti, Rafael Moneo, and Cesar Pelli from the 116 entries received. In reviewing the jury's selections, Pelli noted that although

he and his colleagues were impressed with the overall quality of the submissions, "the best entries were mature entries or reiterations of ideas that had already been resolved, presented, or enunciated."



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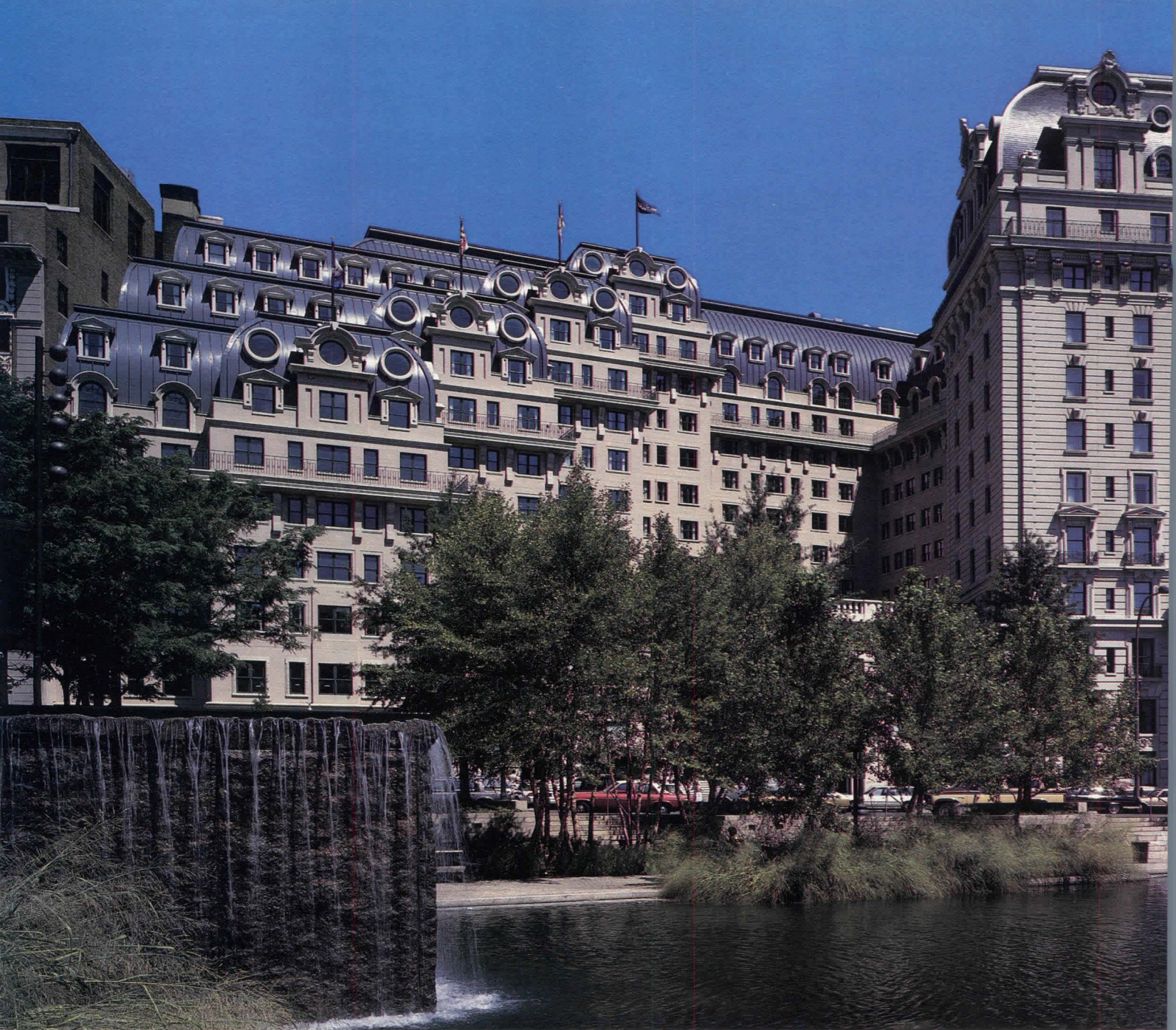
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5. Pardo House, East Hampton, N. Y.; Smith-Miller + Hawkinson, Architects (Award). This house (RECORD, mid-April 1987, pages 134-139), dubbed "Sticks" by the architects, is located in a dense pine forest. The ground floor is organized around a cylindrical communal space, while the arrangement of the bedrooms on the second floor is linear. The jury praised this project for its "compactness," noting that "the organism unfolds functionally along its height with a calm and composed language, even though some of the details are ambiguous and uncertain."

6. Astor Place Station, New York City; Prentice & Chan, Ohlhausen, Architects (Award). The restoration of this subway station (RECORD, January 1987, pages 80-83), designed by Heins & LaFarge at the turn of the century, included the repair of original terra-cotta ornament, the installation of new tiles and graphics, and the fabrication of a new cast-iron entrance kiosk based on old photographs and drawing fragments. The jury commended the architects for the "care and love with which a difficult problem was tackled," noting that "the old decrepit elements that existed and had value were preserved and reinforced."

7. Restoration of the Research Library, New York Public Library, New York City; Davis, Brody & Associates, Architects (Award). The restoration of Manhattan's public library, which was designed by Carrère & Hastings and completed in 1911, included the removal of partitions, restoration and reproduction of original finishes and details, and repair of the Fifth Avenue facade. New heating, air conditioning, and electronic communication systems were added and concealed in "found space" between marble walls and bookshelves, above ceilings, and below floors. The jury praised the architects' approach, which the firm characterized as "architecture by subtraction," remarking that "this is quite accurately done work that brings back the beauty of a magnificent building."

Citations (not shown): Jennifer Reed Showroom, New York City; Margaret Helfand Architects; North River Water Pollution Control Plant, New York City; TAMS Engineers, Architects and Planners, Gibbs & Hill, and Feld, Kaminetzky & Cohen; Aplix, Inc., Charlotte, N. C., Wolf Associates; Boys Club of Jersey City, Jersey City, N. J., Oppenheimer, Brady & Vogelstein; Bulk Mail Storage Building, Denver, Colo., Hoover Berg Desmond; Washington Court, New York City; James Stewart Polshek & Partners; Prospect Point, La Jolla, Calif., Robert A. M. Stern Architects with Martinez/Wong and Wheeler/Wimmer; Library Science Building, Westover School, Middlebury, Conn., Gwathmey Siegel & Associates; Studio House, Woodstock, N. Y., R. M. Kliment & Frances Halsband Architects.



Orange Roofs, Golden Arches: The Architecture of American Chain Restaurants, by Philip Langdon. New York: Alfred A. Knopf, 1986, \$27.50 (\$19.95 paper).

Populuxe, by Thomas Hine. New York: Alfred A. Knopf, 1986, \$29.95.

Reviewed by Douglas Gantenbein

When I was a kid in Portland, Ore., it was a big deal to pile into our coral-and-black '56 Chevrolet and drive to the suburb of Beaverton. There stood a glowing apparition in yellow arches and red-and white tile stripes—a McDonald's. Between bites of 19-cent hamburgers, my brother and I would receive stern admonishments not to spill chocolate milkshake on the seat. We rarely failed to do so.

I was reminded of both the car and the restaurant while reading two books that deal separately with the etymology of fast-food restaurants and the cultural esthetic that spawned coral-and-black Chevies—*Orange Roofs, Golden Arches* by Philip Langdon and *Populuxe* by Thomas Hine.

Langdon's book, subtitled *The Architecture of American Chain Restaurants*, takes the reader from the iron griddle of Walter Anderson—the Kansas fry cook who founded the White Castle chain—on a gastronomic-visual tour through the welter of Dairy Queens, Sambos, Burger Chefs, and Whataburgers that now dot the country like sesame seeds on a bun. Along the way he lays to rest any notion that eating at the turn of the century was any more gracious than elbowing through a pack of teenage protomorphs at the local burger emporium of 1987. A measure of discomfort was part of chain thinking as far back as the early 1900s, when restaurants such as the Waldorf Lunch chain in the Northeast plopped customers into iron one-armed chairs resembling elementary school seats and bade them to nosh quickly.

Small wonder, then, that people eagerly ate in their cars when the opportunity arose. In the book's middle chapters, Langdon details the rise of chains that catered to a newly mobile, post-World War II clientele. Among them was Sivil's Drive-in in Houston, where carhops hired for their looks "dressed in satin majorette costumes with white boots and abbreviated skirts." He also examines the genesis of the classic (dare the word be used?) late-1950s style McDonald's.

Langdon dismisses claims by architect Stanley C. Meston that it was Meston who conceived of the

golden arches. Instead, Langdon believes, it was Richard McDonald, noodling on a sheet of typing paper in the fall of 1952.

California, the primordial soup that burped forth McDonald's, proved a fertile environment for other restaurant species as well. Even before the first arches went up, Los Angeles architect John Lautner's 1949 design for Google's restaurant on Sunset Boulevard was inspiring a bevy of imitators. Serious architects were appalled at the wild rooflines and seemingly gravity-defying engineering. As a result, critic Douglas Haskell succeeded in making the word "Google" a term of architectural derision. But no matter, soon Google-style coffee houses were everywhere. "With Google architects, there was a new kind of coffee shop, one that projected a big note from the dining room right out

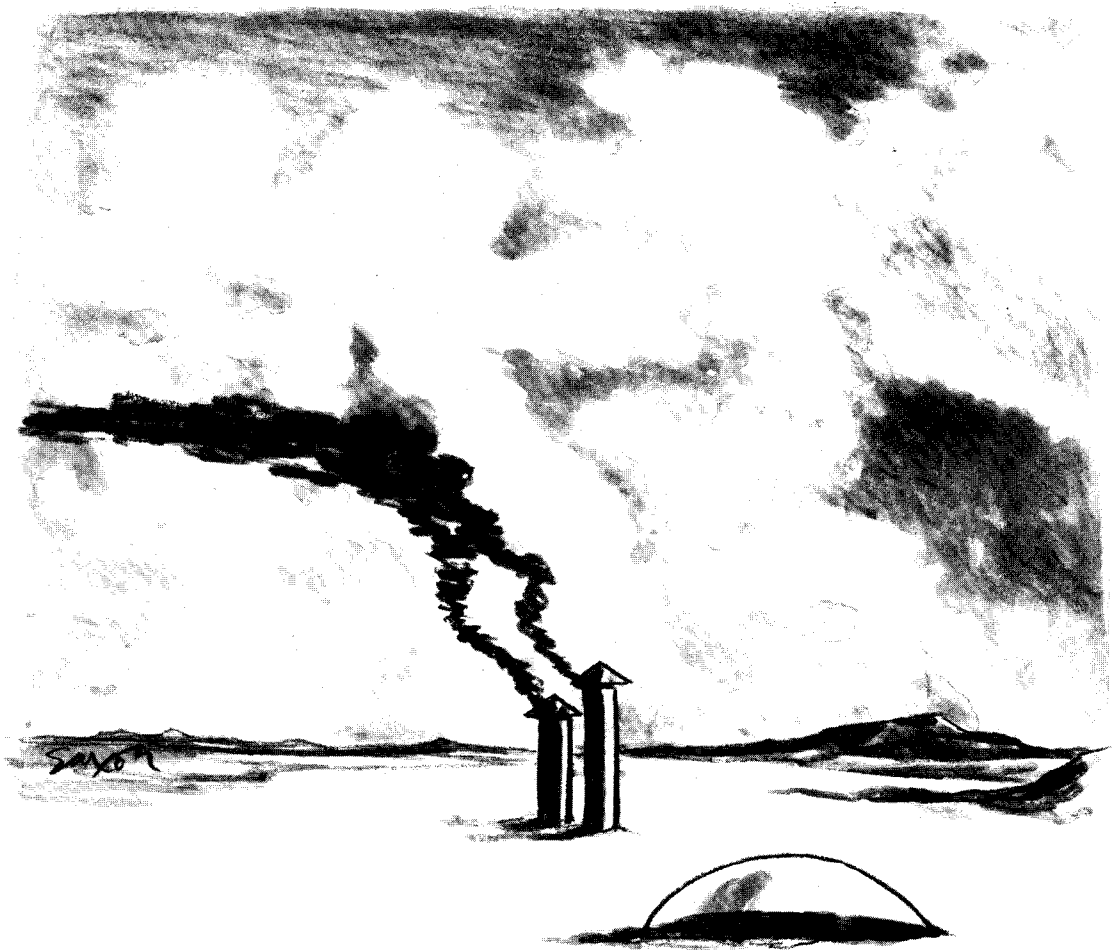
into the freeway traveler's line of vision," Langdon writes. "The nation applauded."

Ultimately, however, the proliferation of chain restaurants (today, 340 chains operate 60,000 restaurants) led to indigestion of the landscape as well as the alimentary canal, Langdon concludes. Once the province of a quirky vernacular, such as Anderson's White Castle designs, the chain restaurant's insistence on uniformity eventually reached a common denominator—a comfortable banality best expressed by the mansard roof, which proved to be the perfect architectural condiment for just about any meal served beneath it. Uniformity became the key. "A truly divergent setting—one with an unusual level of comfort or a markedly different spirit—would inject uncertainty into the chain's image," writes Langdon.

"And ambiguity of this sort is rarely tolerated by chains."

Throughout his book, which derives its name from the aforementioned parables and Howard Johnson's eye-catching paint, Langdon strikes just the right tone. He neither pokes fun at his subject nor credits it with doing much more than catering to the predilections of a public that generally beat a broad path for the chain-restaurant industry to follow.

Langdon has written a vertical work, examining a discrete genre as it evolved over a century. Thomas Hine's approach in *Populuxe* is horizontal, zeroing in on a single decade and inserting its complete design environment under the microscope. The architecture and design critic for the *Philadelphia Inquirer*, Hine also has written a more polemical book, one that *Continued on page 75*



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Continued from page 73
casts a jaundiced eye on the decade that begat tailfins, *Con-Tac* paper, push-button appliances, and the Fontainebleau Hotel. He coins the book's title from an amalgamation of "popular" and "luxury," with the "e" on the end serving as the typographic equivalent of the breast-like bumper protruberances that some automobiles of the day sprouted.

Hine deals with architecture in the book's penultimate chapter—as if the task were too distasteful to tackle earlier. To him, the Populuxe era was characterized by the aggressively garish hotel concoctions of Morris Lapidus, the barren and vaguely menacing offerings of the Modern Movement, and the bogus Main Street of Disneyland. Moreover, nothing was even built especially well. "It was important that most architecture be inexpensive," he writes, "because nobody cared very much about architecture. Architecture deals best in collective expression; this was a time of private indulgence." Hine saves what little praise he has for Eero Saarinen, who he believes came closest to combining the concerns of "serious" architecture with the love of jet imagery and free-form design that characterized the Populuxe ideal.

Hine probably is right in almost everything he says. The decade he details was rife with silly architecture, pointless associations between satellites and vacuum cleaners, and cars that looked like "a chorus girl coming and a fighter plane going." But his Puritan humorlessness about the whole thing strikes one as petty. And it seems hard to conclude that home design, which proposed bringing the automobile into a "living garage" as part of the furniture, is any more absurd than today's vogue among wealthy young stock wizards—suburban copies of 15th-century Florentine palaces, complete with split-shake roofs.

It has been said that nothing is improbable until it moves into the past tense. No doubt that what is accepted today as transparently normal will in 20 years be seen as patently absurd. What will Hine say about Michael Graves's Humana building when, two decades hence, he writes "Reaganluxe?"

Books received:

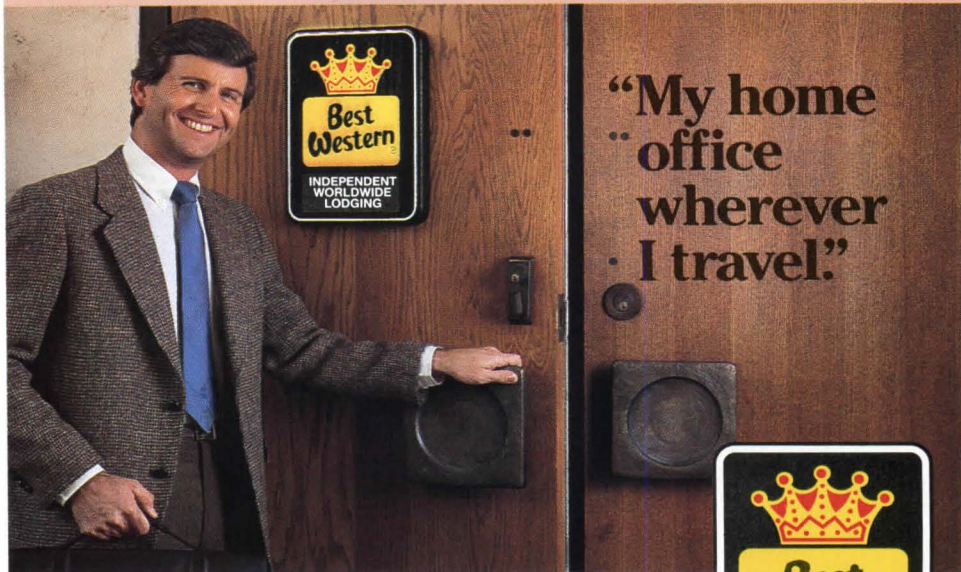
L A Lost & Found: An Architectural History of Los Angeles, by Sam Hall Kaplan. New York: Crown, 1987, \$27.95.

Wallace Neff, Architect of California's Golden Age, by Alson Clark. Santa Barbara, Calif.: Capra Press, 1987, \$50.

Building the Slope: Hillside Houses 1920-1960, by Dominique Rouillard. Santa Monica, Calif.: Arts + Architecture Press, 1987, \$14.95 (paper).

Creating Architectural Theory: The Role of the Behavioral Sciences in Environmental Design, by Jon Lang. New York: Van Nostrand Reinhold, 1987, \$34.95 (paper).

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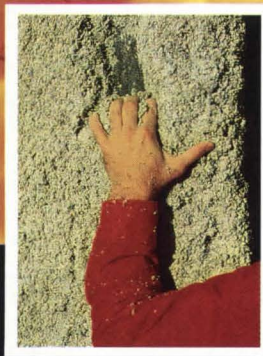
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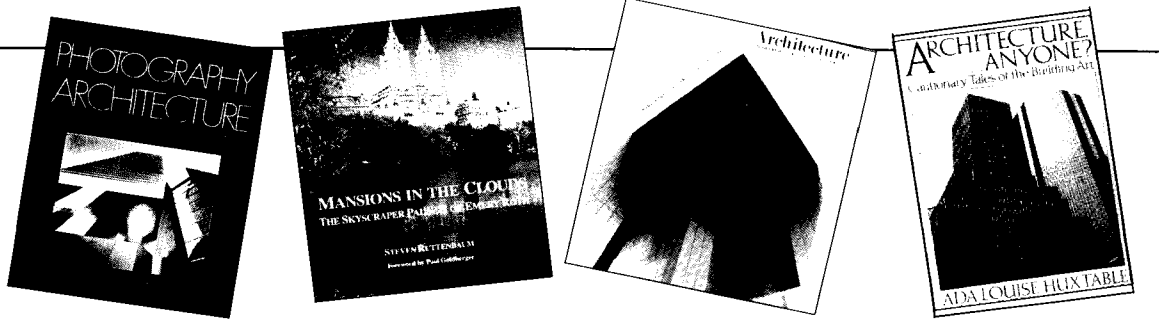
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Books



Reviewed by Scott Gutterman

The Photography of Architecture: Twelve Views, by Akiko Busch. New York: Van Nostrand Reinhold, 1986, \$39.95.

Transference from one art form to another is always problematic, raising questions of fidelity to the original subject and manner of representation. In the case of architecture and photography, it is generally assumed that the latter ought to serve the former; that at its best, photography should be relatively "artless" in its depiction of form. Akiko Busch, an architectural writer here examining the work of 12 of America's leading architectural photographers, calls that assumption into question. She finds a few whose chief purpose is to document; more often, however, the photographers choose architecture as a subject for its manifold formal possibilities, finding everything in it from linear rigor to multidimensional complexity to animated wit.

The work on display in these pages expresses a wide range of styles, and much of it is remarkable: Tim Street-Porter's California tableaux, which brim with some of the loving playfulness exhibited in the work of his mentor, Henri Cartier-Bresson; Judith Martin's ethereal abstractions, which abandon representation entirely in favor of a study of variations in light and texture; and Norman McGrath's powerful explorations of depth and the interrelationship of forms, to name three. Some work favors building elements, such as Robert Perron's fascination with staircases; other work seeks to show architecture in context and in use, such as Steve Rosenthal's effective studies of spaces in Boston. Several of the photographers on view defend the autonomy of their art in written introductions to their work. There are frequent references to professional demands and regular discussions of working methods and philosophies. Generally, the photographs speak articulately on their own, and the essays on them might be best appreciated by other photographers. Still, this is a welcome look at a relatively unexamined field, and the opportunity to see the many ways that architecture—the quintessentially three-dimensional art form—can be transferred to two dimensions is enlightening.

Scott Gutterman is a New York-based freelance writer specializing in art and architecture.

Mansions in the Clouds: The Skyscraper Palazzi of Emery Roth, by Steven Rutenbaum. New York: Balsam Press, 1986, \$40.

What is the quintessential New York building type? Right up there with the skyscraper would have to be the high-rise apartment building. If skyscrapers define New York's starry crown, apartment houses—particularly the elegant, austere buildings that line Park and Fifth Avenues, Central Park West, and Riverside Drive—constitute much of its exquisitely solid body. Emery Roth, a successful architect during the city's building boom of the 1920s, is unquestionably a founding father of the classic New York apartment house. But just as the buildings he designed have at times been overlooked, blending into the neighborhoods they helped to create, so has Roth been a neglected figure in architectural history. In his own day, Roth was heralded for his ability to squeeze more space out of apartment plans, rather than for his overall schemes. Subsequently, his name became associated with his sons, who took over his firm and abandoned his stately, conservative approach in favor of the kind of faceless glass and steel office towers that define and diminish much of midtown Manhattan.

The timing could hardly be better for Roth's critical resurrection. His intelligently employed historicism—particularly his use of Renaissance models—predates by 50 years the Postmodern fascination with the subject. But his designs bear little of the self-deprecating irony that hampers much current work. Buildings such as the sublime Beresford and San Remo apartment houses appear confident and refined; they provide city living with a distinct form that is graciously grandiose.

Steven Rutenbaum's detailed, if undramatic, account of Roth's work in New York is a good start toward restoring the architect's reputation. Rutenbaum dwells equally on Roth's personal history and on a social and economic history of New York during the 1920s and '30s. Unfortunately, he is a fairly turgid writer, with a knack for obtuse pronouncement and grating repetition. His black-and-white photography, by contrast, is stylishly understated, a natural complement to Roth's perfectly civilized, uniquely civic-minded architecture.

Architecture: From Prehistory to Post-Modernism, by Marvin Trachtenberg and Isabelle Hyman. New York: Abrams, 1986, \$45.

The authors of this massive compendium thank, first of all, the late H. W. Janson "for his role in initiating the project." They might also have thanked him for showing them how it's done: how to contemplate, organize, and execute a single-volume history of architecture, nearly on the scale of Janson's now-classic *History of Art*. The result is mostly impressive and thoroughly welcome. Trachtenberg and Hyman, both professors at New York University, start wisely by making the scope of their inquiry clear. The text is confined almost exclusively to Western architecture, in terms best defined by a deftly employed Nikolaus Pevsner epigram: "A bicycle shed is a building. Lincoln Cathedral is a piece of architecture." There is also a stated bias toward "neglected" 18th-century architecture and toward contemporary work (labeled, unconvincingly, "Second Modernism.")

Evident throughout is a scrupulously maintained balance of emphasis: materials, techniques, places, and people all receive their due. The illustrations and photographs (a number of them by Trachtenberg himself) are no less complete than the text: hundreds of plans, axonometrics, drawn reconstructions, interiors, facades, and details give a wonderful sense of the beauty and complexity of architecture. The writing is detailed, technical when it needs to be, and for the most part, quite sober. Yet it remains surprisingly fresh for most of its near 600 pages, and what it lacks in humanist self-congratulation and dramatic zeal, it makes up for in range. Discussions of structural innovations like the Roman arch easily complement historical commentaries on the enormous influence of Christianity on building needs and styles. It is less well-advised in its hasty and idiosyncratic assessment of figures on the current architectural scene. Nonetheless, the book that has resulted from this decade-long collaboration represents an extraordinary effort of condensation, and it emerges as the indispensable single-volume guide it is no doubt intended to be.

Architecture Anyone? Cautionary Tales of the Building Art, by Ada Louise Huxtable. New York: Random House, 1986, \$27.50.

Ada Louise Huxtable's latest collection of essays, bearing a characteristically flip title, is only further proof of her consummate craftsmanship. Although Huxtable is eminently reasonable and occasionally provocative as a thinker, it is as a stylist that she leaves an indelible mark. Indeed, it is difficult to separate her prose from her ideas, so seamless is her writing. At times, she is fully on par with as fine an essayist as E. B. White, who surely would have delighted in the controlled exuberance and perfect vision of this introduction to her title essay: "If you are driving on I-91 through Connecticut, don't miss the Colt Firearms Building on your way to New England diversions. You can't miss it anyway; how many expressways offer a view of a deep cerulean-blue onion dome, gilt-trimmed and studded with stars, set on a crown of white columns, atop a large 19th-century brick factory with a mirage-like 20th-century Hartford behind it?"

Here, concisely but richly conveyed, are several of the hallmarks of her style: graceful turn of phrase, feather-light irony, and a tone that is direct, intimate, almost casual, and yet unfailingly elegant. Huxtable manages to personalize a sometimes daunting subject—the high-stakes world of "the building art," as she refers to it—without ever trivializing it. Not only does she take in beauty with eyes open, she does battle with shirt sleeves rolled in. "Zoning: The End of the Line," Huxtable blasts developers for using every conceivable loophole in New York City's 1916 zoning law in order to overbuild to a dangerous level. As she states in her introduction, she is unafraid to stand at "the center of the urban storm in a city where the winds of profit and power blow at steady gale force." Her distaste for critical jargon sometimes allows her to dismiss subjects like Marxist architecture as just "cosmic gloom;" still, her willingness to approach such complex theorists as Aldo Rossi and John Hejduk, and ability to distill the poetic essence in their work, is impressive.

These essays, which are collected from her final five years as architecture critic for *The New York Times*, represent her last work in this form. They perfectly exemplify the great service she provided in her 19 years of newspaper work: the championing of architecture as a topic of esthetic consideration and social concern.

D U P O N T



Working out

For reasons of vanity and health, most Americans nowadays have at least attempted the rigors of physical fitness, if not made them a permanent part of their daily routines. The current popularity of indoor recreation has forced architects designing new facilities to rethink the limits of the conventional gymnasium and field house, which no longer are adequate to accommodate the variety of athletes, activities, and equipment now in vogue. Called health clubs or sports centers, these building types are focused on social occasion as much as physical exercise. Increasingly, restaurants, lounges, and day-care centers are being interspersed among the set dimensions of swimming pools, running tracks, and ball courts, and rooms for weightlifting, aerobics, and exercise machines.

For the architect, the disparity between the size and character of these spaces compounds the usual problems of circulation, hvac requirements, and program. Hugh Hardy of Hardy, Holzman Pfeiffer Associates, whose Wellesley College Sports Center begins this Building Types Study (pages 90-95), likens the design of a recreational facility to a theater, requiring the same separation of spectator and performer. Adds G. Gray Plosser of Kidd/Plosser/Sprague, the architects of Birmingham's new downtown YMCA (pages 96-99), the expertise of a skilled mechanical engineer is especially crucial to ensuring the energy-efficiency of environments that range from the large, open spans of a basketball court and chlorine-filtered indoor pool to the sealed enclosure of a racquetball court. More importantly, according to Robert Frasca of the Zimmer Gunsul Frasca Partnership, the principal responsible for the design of Portland's new RiverPlace Athletic Club (pages 100-105), "You have to be familiar enough with the demands of the building type so you don't get bogged down in the program and forget the architecture."

Recognizing that "there's not a lot of opportunity for things to happen on the outside of these buildings," as Plosser points out, the architects of the three projects illustrated in the following portfolio have, nevertheless, managed to overcome the ponderous, boxy anonymity associated with the building type. In providing prominent centers of activity for a New England women's college, a revitalized downtown in the Deep South, and a new riverfront development in the Pacific Northwest, they have supplied each with the public imagery and scale appropriate to the community it serves. Punctuated with windows to furnish daylight and views, their designs reflect the newfound role of the recreational facility as athletic club in promoting social relaxation as much as physical exertion. No longer limited to the physically fit, these buildings encourage membership as diverse as a professional body-builder pumping iron, a conscientious amateur sweating it out on the courts, and an interested spectator, whose most strenuous effort is lifting a fork.

Deborah K. Dietsch

A picture of health



"The girls are accustomed to exercise . . . and look very rosy and healthy," wrote women's rights activist, Lucy Stone, of her 1879 visit to Wellesley College. Over a century later, Wellesley coeds are still rosy-cheeked and even more accustomed to exercise. The daily hour of walking prescribed by the college founders has been increased to a one-year course of physical-education instruction in activities ranging from windsurfing to playing golf on a nine-hole course. But until two years ago, student participation in indoor sports was limited by an antiquated, 1939 recreational building and neighboring 1909 gymnasium. When an outside accreditation report judged these facilities inferior to those of comparable academic institutions, Wellesley was prompted to appoint a committee of alumnae, trustees, and faculty in 1981 to solicit the capital necessary for a new sports center. Once funds were raised, the task of designing the \$12-million building fell to Hardy Holzman Pfeiffer Associates, which began by surveying the campus to pinpoint an appropriate site. Unlike the axial, Beaux-Arts organization of the typical American college, Wellesley comprises a picturesque landscape of Collegiate Gothic halls scattered among wooded hills and winding paths, a plan conceived by the Olmsted Brothers in 1902. It is this informal arrangement to which HHPA deferred in concluding that the

Norman McGrath photos



best place for the sports center would be where it had always been, in the northwest corner of the campus near the main entrance, auditorium, and residence halls, rather than farther afield on the shores of Lake Waban. Faced with an ambitious program but a tight budget, the architects decided to renovate the existing recreational building to house locker rooms, weight and training areas, dance studios, squash courts, and a multipurpose gymnasium, and to subordinate its undistinguished brick volume to a series of new structures. To the west, they added a new field house with running track and courts for tennis, basketball, and volleyball, and to the south, an indoor swimming pool on the site of the demolished 1909 gym. The resulting complex belies the dimensions of its 140,000 square feet through an L-shaped configuration that is sensitively contoured to conceal its bulk from the rest of the campus, its full expanse apparent only at a distance from the adjacent playing fields (left).

In treating the design as a series of slowly unfolding perspectives, HHPA distilled the picturesque essence of Wellesley's Collegiate Gothic architecture without painstaking imitation. The most literal element of this translation is a crenellated, diaper-patterned stairtower in the entrance courtyard (page 92), which echoes the brick vocabulary

of adjoining Alumnae Hall. On the side of the complex facing the playing fields, the natatorium (above) and field house more freely interpret the gabled profiles of the recreational building and its older neighbors. Delineated by ceramic tile stringcourses, the tautly drawn, steel-paneled and brick-clad volumes of the new structures restate the architects' familiar practice of combining seemingly incompatible building materials into decorative coherency despite budgetary constraints. "It's always risky to take architecture like the Gothic Revival and abstract it," states Hugh Hardy, who has taken the chance and made it work. *D. K. D.*

Wellesley's new sports center reflects the picturesque spirit of the college's Olmsted-designed landscape and Collegiate Gothic architecture. Nestled into a wooded hill at the northern edge of the campus (opposite bottom), the complex is entered from a parking lot next to the college's Alumnae Hall, through a landscaped courtyard sandwiched between an indoor pool and renovated recreational building to

the pedimented public entrance (below). Spanning either end of the courtyard are elevated corridors that separate swimmers from the spectators who watch them compete from a gallery. The two bridges at the north end connect the women's and men's locker rooms to the pool (opposite), while the one at the south end leads from the crenellated stairtower to the pool's grandstand (below).



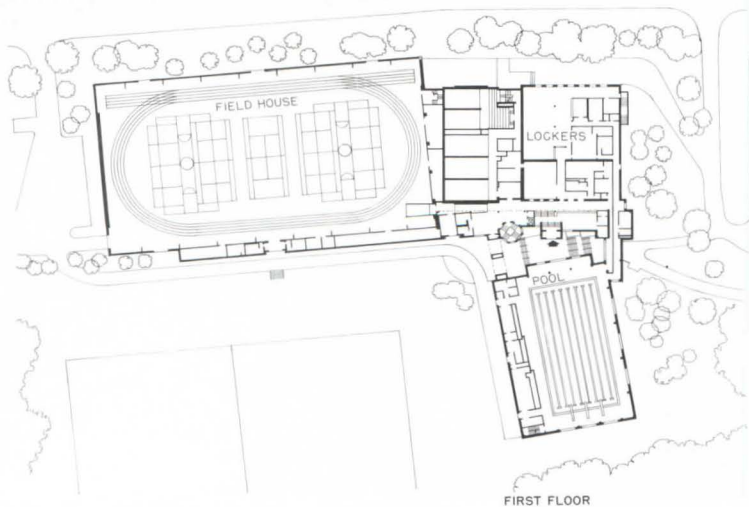
The existing 1939 recreational building that once served as the college's primary indoor sports facility has been reapportioned to house such recreational activities as dance, fencing, squash, and racquetball. Its functions have been expanded by a new field house to the west and administrative wing to the south containing the reception lobby, faculty offices (below), and a classroom (opposite bottom).

The southern exterior of the 1939 building has been preserved within the new interior. Its entrance arches now serve as doorways to the locker rooms and its metal-sashed upper-story windows partition the offices. Its peaked roof, visible from the playing fields, (opposite bottom) is echoed in the forms of the new entrance bay, office wing (below), field house, and pool pavilion (opposite bottom).

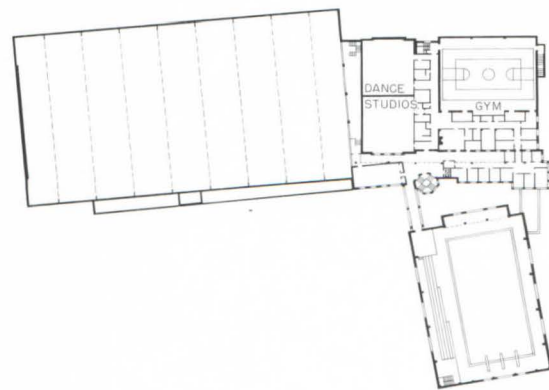


"In their explorations of large spans and liberal use of daylight, 19th-century architects created gymnasiums that are more personable than modern examples," claims partner-in-charge Hugh Hardy, who made every effort to model Wellesley on their example. The large spans of the field house (below and left in plans) are supported by a network of roof trusses that allow for a running

track and court sports. The pool (opposite and bottom in plans) is naturally illuminated from every side, decorated with patterned ceramic tile both inside and out, and placed off-center to accommodate a spectator grandstand. The public spaces of the new building exhibit a wealth of crafted details, such as the balustrades framing the entrance lobby (opposite left) and staircase (opposite right).



FIRST FLOOR



SECOND FLOOR

Wellesley College Sports Center
Wellesley, Massachusetts

Architects:
Hardy Holzman Pfeiffer
Associates—Hugh Hardy, partner-
in-charge; Victor Gong,
administrative partner; Don Lasker,
project manager; Diane Blum, Tom
Wittrock, project architects; Joseph
Briggs, Beth Barnhill, David Cagle,
Hobson Crow, John Newman, Susan
Oldroyd, project team; Hilda

Lowenberg, John Bossung,
construction team; Fay De Avignon,
field representative; Darlene
Fridstein, Amy Wolk, interiors
Engineers:
R. G. Vanderweil (mechanical);
Le Messurier Associates (structural);
Sippicon Consultants International
(civil)

Consultants:
Jules Fisher-Paul Marantz, Inc.
(lighting); Peter George Associates,
Inc. (acoustical); Carol Johnson &
Associates (landscape)
General contractor:
Turner Construction Company

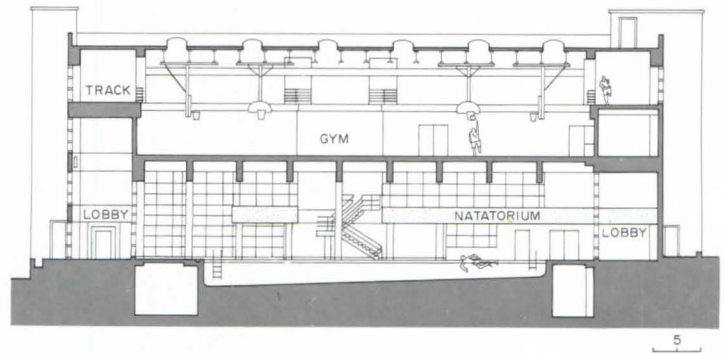


Southern comfort



A gritty city of steel mills, Birmingham, Alabama, has never matched the genteel stereotype of the antebellum South. The evolution of its economy from manufacturing to service industries over the past decade, however, has spurred Birmingham to acquire a graciousness befitting its growing legions of white-collar inhabitants. Slowly, a patchwork of historic commercial buildings has been reclaimed, a new public library and courthouse built, and a cluster of office highrises redeveloped in an ongoing renewal of the city's core. An important catalyst to this change is the local firm of Kidd/Plosser/Sprague/Architects. In 1980, when Birmingham was just awakening to its preservation potential, the architects moved their offices from the outskirts of the city to an 1890 Richardsonian Romanesque structure downtown, transforming it into a live advertisement for adaptive reuse. One of many clients impressed by their pioneering spirit was the YMCA. Like other inner-city branches across the country, the organization was faced with a dwindling demand for its residential hotel and recreational programs, which had become restricted to businessmen engaged in roofball—a local derivative of handball—on top of its dilapidated headquarters. Seeking to attract a larger and younger membership of both men and women, the Y commissioned Kidd/Plosser/Sprague to design a fitness center on a site a few blocks from its existing facility. The architects were faced with not only the functional demands of 20 activities, but the contextual challenge of the site, which adjoins several neo-Gothic landmarks, including St. Paul's Cathedral and School, and First Presbyterian, the city's oldest church.

Surprisingly, given the firm's preservation-minded sensibility, the new Y shuns mimicry of its ecclesiastical neighbors. Instead, the brick of the old buildings is mirrored in a sympathetically scaled Modern structure that efficiently streamlines the assigned program into a compact volume. To attract nearby office workers, the architects stacked the gymnasium and pool at the street (section below) and enlivened the elevation with strip windows and a shimmering, glass-block wall that transforms the building into a glowing lantern at night. Around the notched entrance corner, they gave the Y's administration views of First Presbyterian's courtyard (lower left), and relegated those functions undemanding of natural light—racquetball courts and weight rooms, for example—to the core. They anticipated growth by paving the roof for a future outdoor running track and exercise area, and by providing interstitial, multipurpose spaces that can be absorbed by the adjacent locker rooms. Already, this strategy has paid off: membership has more than doubled since the Y's new facility opened two years ago, and the old guard still has its roofball courts. *D. K. D.*



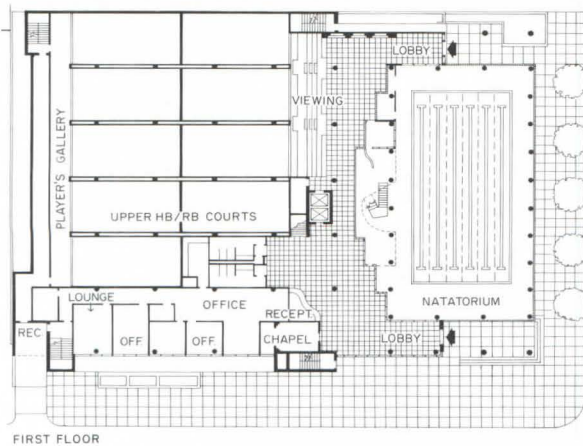
© Timothy Hursley/The Arkansas Office photos



Tautly bound by concrete and brick, Birmingham's downtown YMCA projects an air of forthright functionalism in a mixed neighborhood of spired churches and prosaic commercial blocks (opposite top). Behind the west elevation, the basketball court and running track are stacked over the pool (section) and exposed through glass block and strip windows (above). On the north elevation, administrative offices are framed in brick, forming a fourth wall to the courtyard of the historic 1889 First Presbyterian Church (opposite bottom).

The stacked volume of gymnasium and natatorium at the western edge of the 87,000-square-foot YMCA (right in plans) is divided by a zone of circulation from the racquetball courts, exercise areas, locker rooms, and multipurpose spaces in the core, and the administrative offices at the northern perimeter (bottom in plans). A banked running track encircles the basketball court (below), which is supported by the deep

concrete beams spanning the pool (opposite). Extensive daylighting in the pool and gym is coupled with automatically dimmed, centrally controlled luminaires to reduce electrical loads. Reflective glass block and tinted windows mitigate potential heat gain.



Downtown YMCA
 Birmingham, Alabama

Architects:
 Kidd/Plosser/Sprague/Architects/
 Inc.—G. Gray Plosser, Jr., principal-
 in-charge; Hugh B. Thornton, Jr.,
 project architect; Libby Sims Flynn,
 project interior designer

Engineers:
 Hudson, Ball, Marlin, Barnett &
 Associates (structural); Cone,

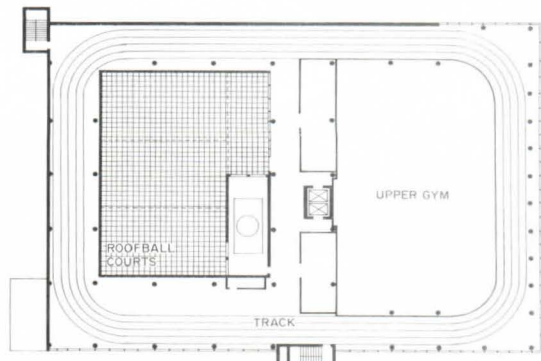
Hazard & Nall, Inc. (mechanical/
 electrical)

Consultants:
 Grover & Associates (landscape);
 YMCA Building and Furnishings
 Service, Chicago (programming and
 furnishings)

General contractor:
 Brasfield & Gorrie, Inc.



THIRD FLOOR



FOURTH FLOOR

All in the family



Stroud Eckert

Seven years ago, Portland, Oregon, became notorious for *that* building designed by Michael Graves. But long before the commission for the Public Services tower was announced, the Rose City had begun developing a more substantial reputation as a model downtown by experimenting with physical improvements now routinely employed by cities across the country, including competitions for public architecture, light-rail transit, preservation of historic commercial districts, building-height restrictions, and vest-pocket parks. In the early 1970s, when most urban waterfronts served as backdrops to expressways, Portland decided to reclaim its frontage along the Willamette River by demolishing the elevated Harbor Drive, and designating a 130-block area southwest of the river for new recreational, residential, and commercial uses. A sizable portion of the resulting master plan has been constructed over the past two years—a 10-acre site developed by the Cornerstone Development Company called RiverPlace that exemplifies Portland's commitment to humane urban design.

Unlike waterfront developments in other cities whose sole aim is the tourist trade, RiverPlace functions as an autonomous, residential neighborhood, reflecting a suburban and resortlike character despite its proximity to the central business district (top left). Clusters of gabled townhouses surrounded by lawns are connected by tree-lined paths to shops, restaurants, and a 74-room hotel. A curving esplanade bordering a marina links the development to Governor Tom McCall Park at the northern edge of the site. At the southwest boundary of the enclave is its public focus—neither a religious nor a civic building—but, true to 1980s “lifestyle,” a 47,000-square-foot health club (left in top photo) that is used by both RiverPlace families and the nearby business community. It was designed by the Zimmer Gunsul Frasca Partnership, the local architectural firm responsible for planning McCall Park and infusing Portland's boxy skyline with a more faceted silhouette, including the ziggurat-topped KOIN Center (top left, center; RECORD, November 1984, pages 134-141).



The RiverPlace Athletic Club reflects the firm's selective application of the past in recalling both the timbered residential vernacular of the Pacific Northwest and the chunky massing of a Richardsonian train station. Principal Robert Frasca admits that he aspired to the “quiet dignity” of McKim, Mead and White's 1881 Casino at Newport, Rhode Island, in designing a shingled clubhouse visually compatible with the low scale and gabled roofs of the adjacent condominiums and appropriate to both social and recreational functions. More practically, the segmented, horizontal massing serves to organize the building's numerous and conflicting activities in three sunlit volumes that are contoured to a sloping site and slightly angled to avoid obstruction of an existing public utility line that runs through the site. The bullet-nosed pavilion that encloses a 25-meter pool at the building's north end (foreground in opposite photo) is joined to an oblong gymnasium with a 13-lap running track at the south end by an intermediate structure containing locker rooms, racquetball courts, meeting rooms, administrative offices, a day-care center, and restaurant. To erase any doubt as to where to enter this expanse, the architects heralded the front door within a clocktower, housing an elevator and stairs off the center of the building.

Like its Shingle Style precedent, the new club establishes a bond with the surrounding landscape, avoiding the glum, hermetic atmosphere of the average gym. The peaked roofs and round-arched dormers that project a recognizable profile from a distance create vaulted, sunlit interiors for the pool, basketball court, and running track, and views of the riverfront and city skyline. In elevating the utilitarianism of the building type through historical imagery, the architects quietly announce a public purpose, creating a symbolic gateway to the new waterfront community. Unlike Graves's brashly idiosyncratic Portland Building, Zimmer Gunsul Frasca's latest contribution to its city evokes civic tradition without disturbing the neighbors. *D. K. D.*

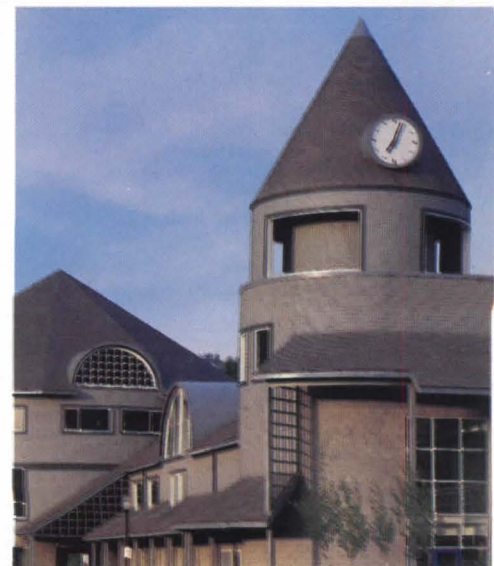
© Timothy Hursley/Arkansas Office except as noted



Separated from the skyscrapers of Portland's central business district by a major thoroughfare, RiverPlace sits on the banks of the Willamette River like a quiet Pacific Northwest village (opposite top). Anchoring the north end of its 10-acre site is the athletic club designed by the Zimmer Gunsul Frasca Partnership. In evoking the proportions of a Richardsonian building, the new facility has become an instant landmark for the new waterfront community.

Like the Art Deco-inspired KOIN Center which rises in the distance (center of photo below), Zimmer Gunsul Frasca's RiverPlace athletic facility presents a segmented profile that is rooted in the past. The firm's latest design draws upon the 1880s Shingle Style for its horizontal massing, material palette, and picturesque elements, which include a cylindrical stairtower, low-pitched roofs, stylized eyebrow dormers, and

lattice-work (bottom). At the base of the building, a front porch (below) extends from the covered parking lot located under the gymnasium (opposite top) around the clocktower to the front door. Separate entrances lead to a day-care center (below) and, at the north end of the building (right of photo below), to the pool (opposite bottom).



At the south end of the club, the lozenge-shaped wing containing a gynasium, running track, and covered parking for 31 cars is cranked away from the rest of the building to avoid a public utility line that runs through the site. To the west, the foundations of a former machine shop were left intact as an industrial ruin that buttresses the adjacent slope (below). Their concrete piers, used to divide parking spaces,

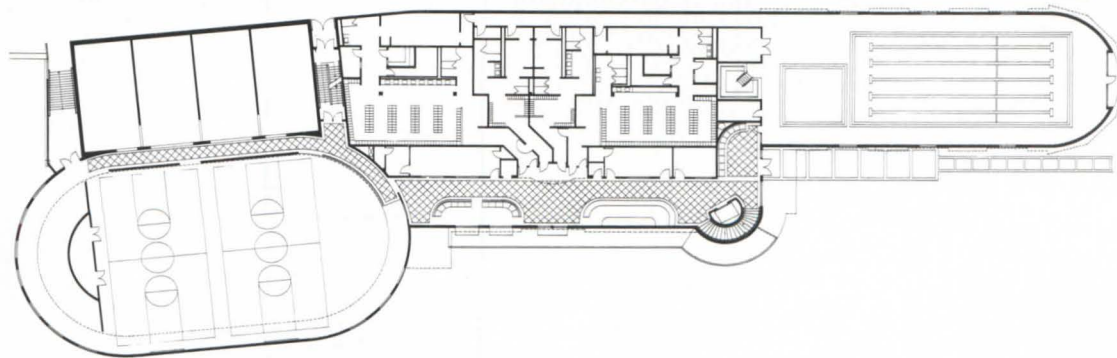
are complemented by the split-face block of the new building. Behind them, a partitioned deck extending from the multipurpose rooms on the upper floor to the street provides an outdoor space for exercise.



Strode Eckert

Planned as three separate, interconnected volumes, the RiverPlace Athletic Club houses various activity centers that are linked by a public corridor and stairtower along the east perimeter of the building. Locker rooms, exercise spaces, racquetball courts, and administrative offices are clustered in the center, while a 25-meter pool is relegated to the north wing (right of plan) and a

gymnasium with elevated running track to the south (left of plan). Both pool and gym are housed in lofty "naves" with exposed ductwork and wooden ceilings braced by steel rafters and tie-rods (below). Clerestory dormers and windows suffuse the spaces with daylight and provide swimmers and runners with views of the Portland skyline and the Willamette River.



FIRST FLOOR

*RiverPlace Athletic Club
Portland, Oregon*

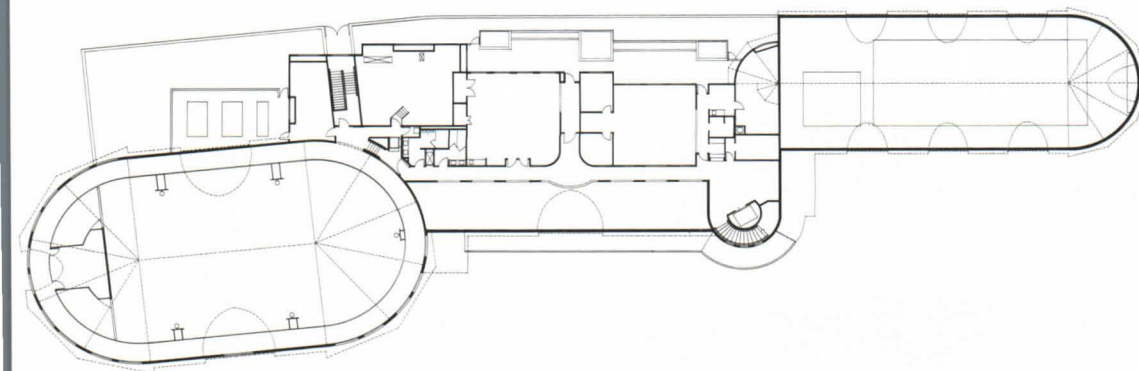
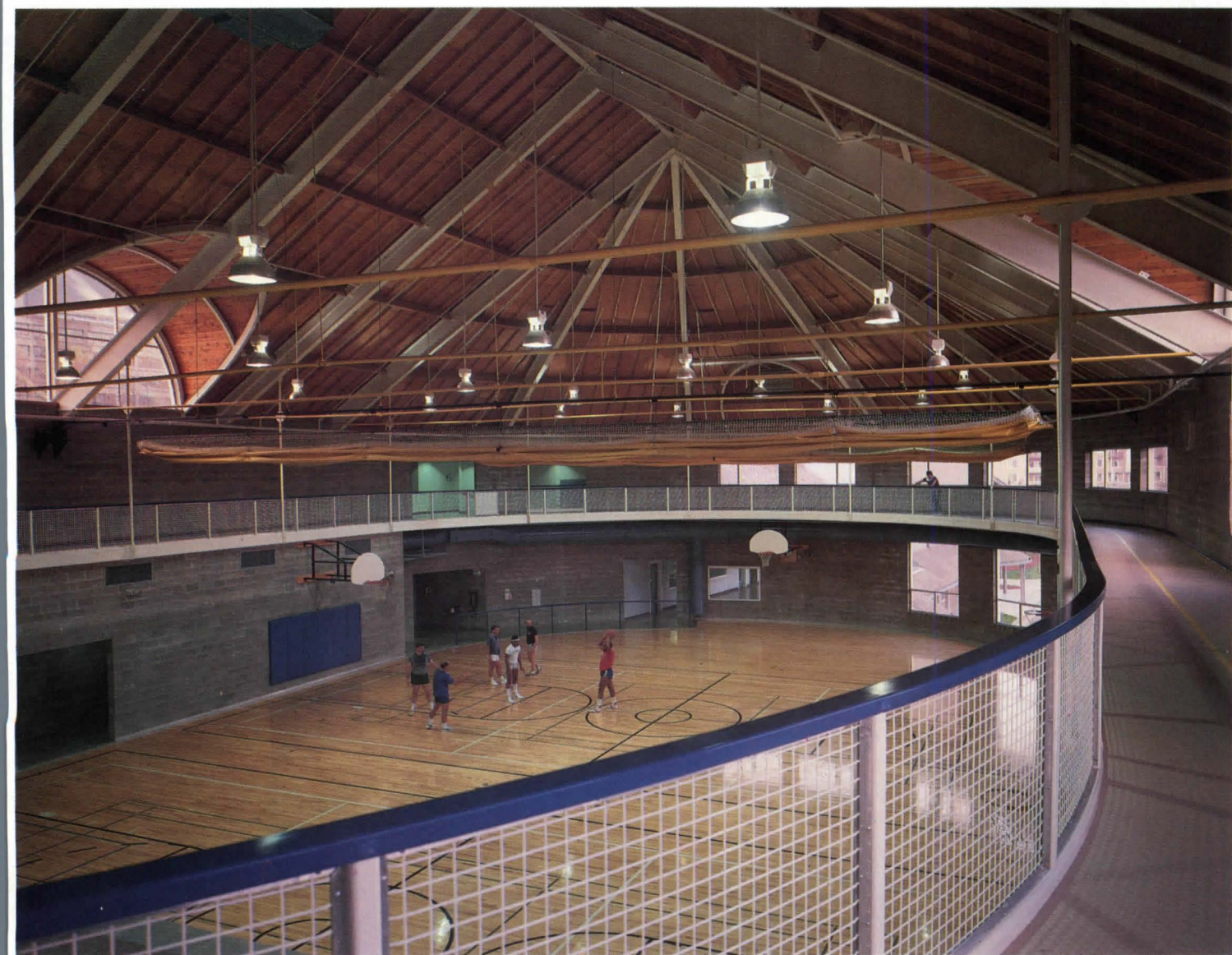
Architects:
*Zimmer Gunsul Frasca
Partnership—Robert J. Frasca,
design principal; Brooks Gunsul,
Jack Cornwall, Richard Brown, Lee
Kerns, Dennis Harper, project team*

Interior designers:
ZGF Interiors—John Walling

Engineers:
KPFF Consulting Engineers

*(structural); Carson Bekooy Gulick
& Associates (mechanical); James
Graham & Associates (electrical);
David Evans & Associates (civil);
Hart Crowser & Associates (soils);
The Mitchell Nelson Group
(landscape)*

General contractor:
Sellen Corporation



SECOND FLOOR

The University of Iowa/
College of Law
Iowa City, Iowa
Gunnar Birkerts and Associates,
Architects



Uncommon law

Along the Iowa River, a circular building houses classrooms, offices, and a large library for a law school. Despite the circle's simplicity of form, the design gives the various building parts extraordinary geometric complexity.

The circular building, though not unknown, remains uncommon. The fixity of its form renders it incapable of expansion or indeed of any but the most insignificant change. Moreover, the curved wall is difficult to execute: wood, stone, and glass can be made to curve only with skill and expense, and though steel, concrete, and plastic are more malleable, even they must be molded in rigid materials.

Nonetheless, the circle and the cylinder yield architectural advantages that straight lines and right angles cannot. Gunnar Birkerts, designing the University of Iowa's College of Law, thought of the circle as an expression of "perfection, clarity, integrity, and geometric purity," a symbol especially appropriate to justice and the study of law. What's more, the same circular form, when seen as hemispherical ribbed dome, suggests still other references—the silos seen all over Iowa's agricultural landscape, for one thing, or the gold-leafed dome of the Old Capitol (and former home of the College of Law) visible across the Iowa River.

Functionally, Birkerts could fashion a circular building on this site with impunity. Because the college has no intention of enlarging the student body beyond its current 650, the form's preclusion of expansion had no significance, especially since the library could double its 435,000-volume collection within the walls. On the outside, furthermore, the hilltop site provided no orthogonal axis—the Iowa River to the east, a curving highway to the north and west, a splendidly wooded ravine to the south. If the tall limestone walls somehow suggest a fortified monastery, the image is not inappropriate for a professional school where students perform spend a more or less cloistered life of comradeship and intense study for three years.

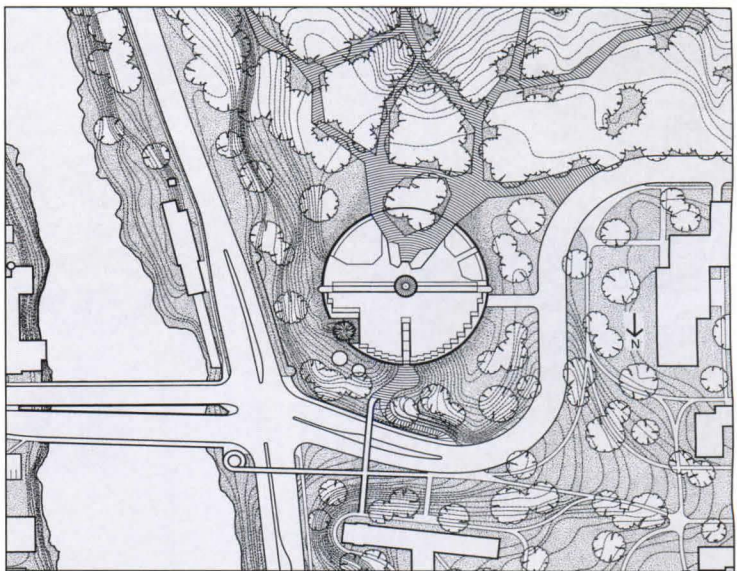
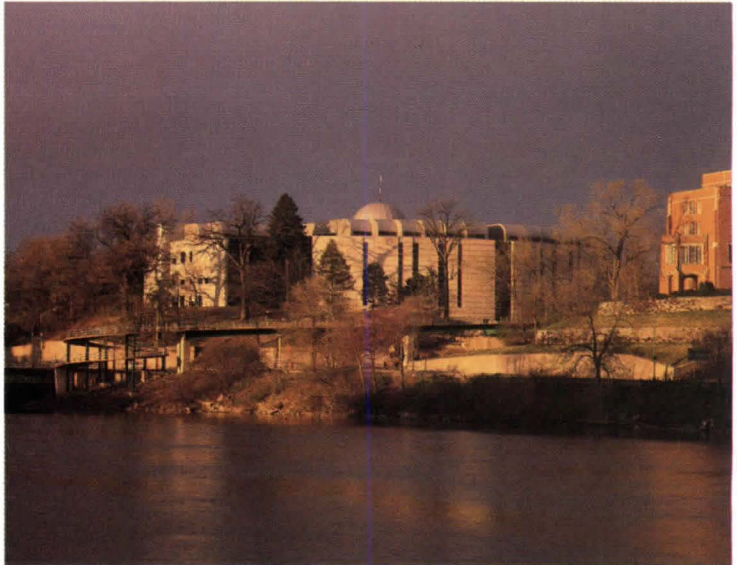
Bisecting the plan almost directly through its center, Birkerts divided the circle into two working halves—a low-lying semicircle for such shared activities as classes and moot courts, and a taller semicircle for study and introspection—that is to say, the library. On the level above the library, aluminum hoods cover a multitude of private faculty offices, each daylighted from the front as its ceiling curves down to the roof. A skylight marking the east-west diameter illuminates the 300-foot-long corridor that serves classrooms (see plans on pages 110-111).

Though Birkerts has a long-standing partiality to daylighting and to windows that enhance its functional and esthetic effectiveness, here he has used fenestration also as a compositional element. A variety of window types at the College of Law distinguishes the building parts. On the tall northern facade, which parallels the curve of the hill, the architect patterned the limestone wall with vertical strips of windows to light the library and to create a rampart above the river. On the low-lying semicircle, which faces the ravine and the campus, and which Birkerts considers the "soft" facade, the walls are glass and metal (page 109). The same materials line geometric penetrations of the circumference (opposite, for example). On the east and west, fenestration assumes still another arrangement: the seemingly casual placement of small punched windows reflects the functional needs of the support spaces they light, at the same time easing the exterior transition from "hard" to "soft" textures.

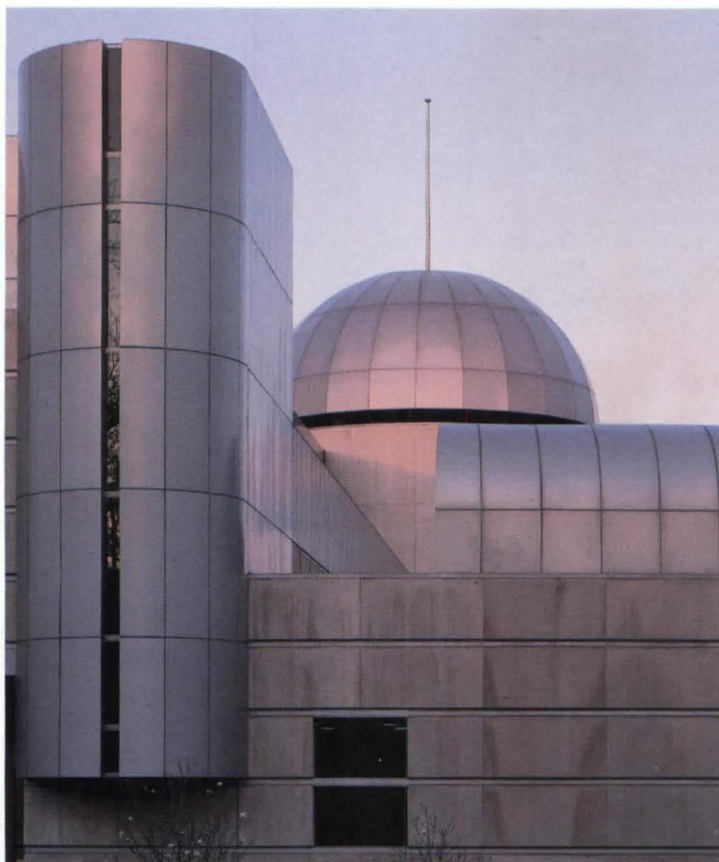
The large circular building, with its stability of form and impregnability of material, bespeaks the consequence and permanence the college envisioned for its home. The dome itself, though a traditional symbol of lofty nobility, is in this case pure iconography: the hemisphere, invisible from inside the building, merely protects mechanical equipment from the weather.

Another quality of circle as building is its ambiguity of orientation—no front, no back, no sides. Birkerts thinks of the tall door opposite and its imposing stone surround, which face the city and the public, as the building's front door. Dean N. William Hines, on the other hand, considers the softer facade, with its cordial footbridge reaching out to the woods and the campus, as the front door. A noncombatant can only observe that either way, the architect wins. *Grace Anderson*

© Timothy Hursley/The Arkansas Office photos



Seen in plan, the wall that circumscribes the College of Law nestles neatly into the curvilinear building site outlined by highways. The building sits on top of a hill that drops off sharply to the north, however, allowing the northern half of the circle to rise five stories (opposite). The 185,000-square-foot building cost \$18.8 million.



The college's dome is silver-colored aluminum, as are the protruding turrets that house fire stairs and mark the ends of the diametric corridor (top and opposite), and the rooftop hoods that contain faculty offices (directly above). Other metal hoods on the roof of the lower semicircle (top) capture backlighting for classrooms. Aluminum strips also band the walls—limestone panels hung on a poured concrete shell—to create a kind of modern rustication (left and top). The patterns of fenestration glimpsed through the woods (above) shade from the undeviating vertical windows lighting library stacks to

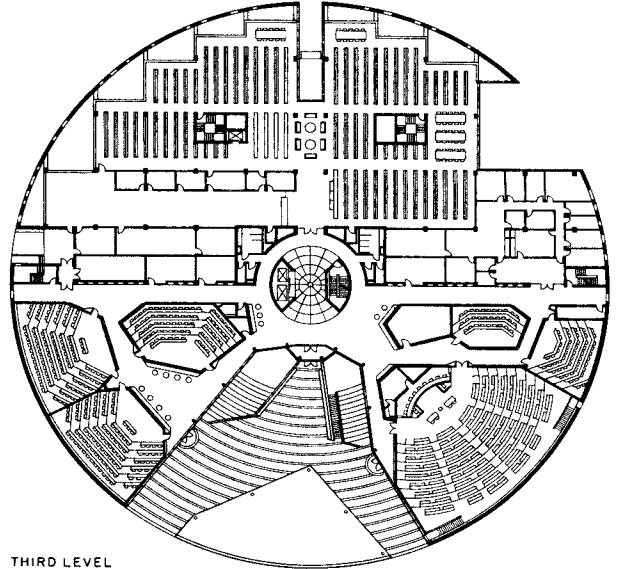
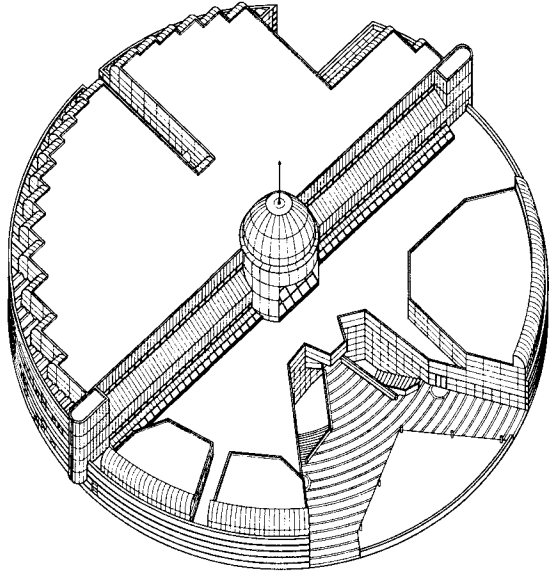
the more relaxed placement of punched windows lighting workspaces to the still more accessible "soft" campus entrance finished with glass and aluminum (opposite). Beneath a footbridge leading to the south entrance, a paved plaza serves seminar rooms and a student lounge. In fine weather, the footbridge becomes a canopy for hot barbecue lunches on the plaza.



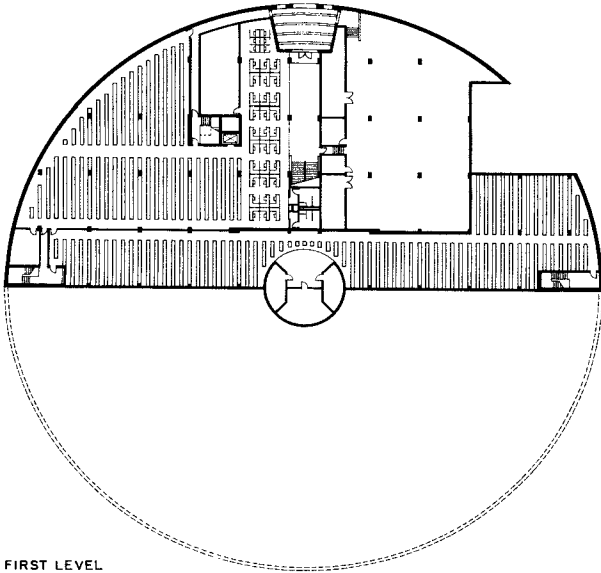
COLLEGE OF LAW

Because the College of Law sits at the top of a steep slope, the northern semicircle, which is five stories high, comfortably houses library stacks, reading tables, and a generous number of carrels. (The college boasts the tenth largest law library in the country.) On the fifth floor of the library's semicircle, faculty offices line the periphery, while offices for student activities like the Law Review and the Client

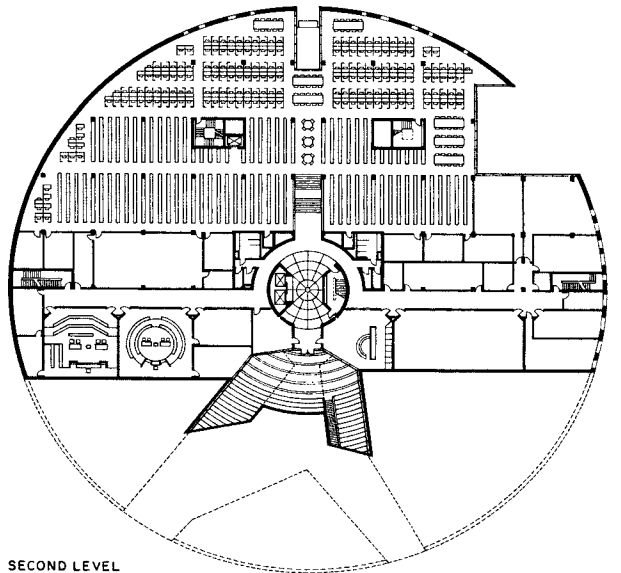
Counseling Program cluster in the center. The student offices, it is worth noting, have new furniture and equipment worthy of working professional offices. The low-lying southern semicircle houses seminar rooms and, on the third level, standard law-school classrooms, with characteristic long curving tables and seats, as well as a large auditorium/courtroom. An assortment of interruptions of the



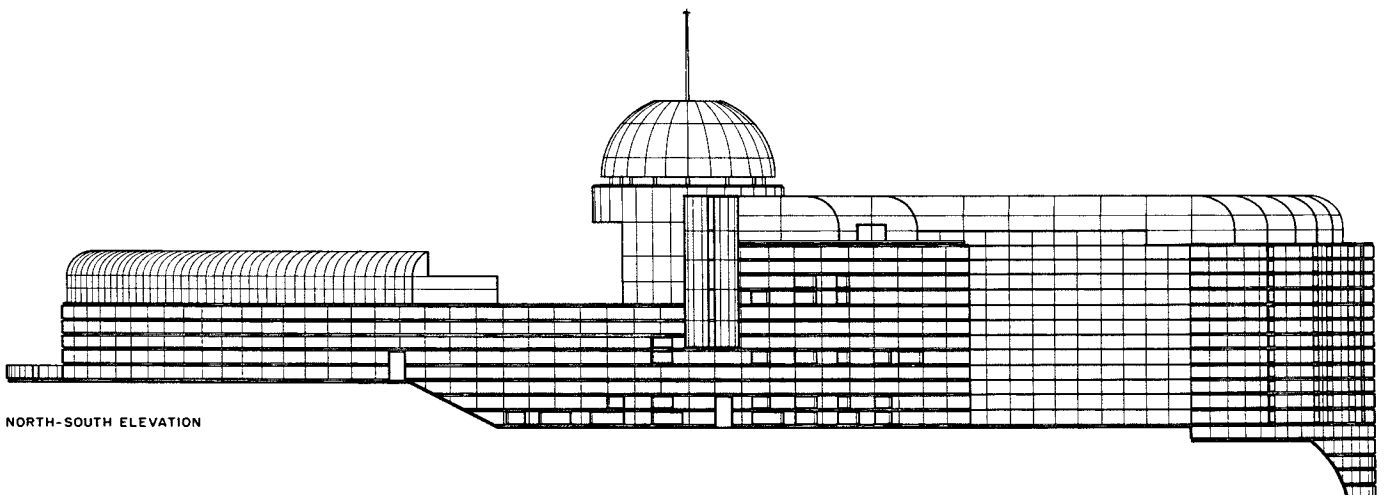
THIRD LEVEL



FIRST LEVEL



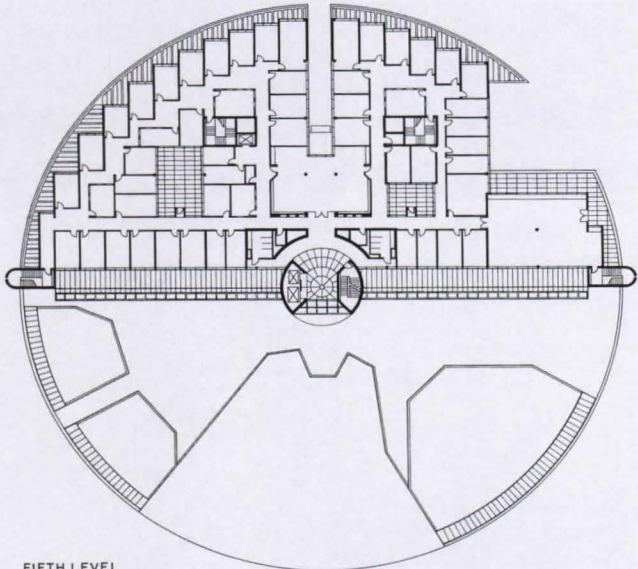
SECOND LEVEL



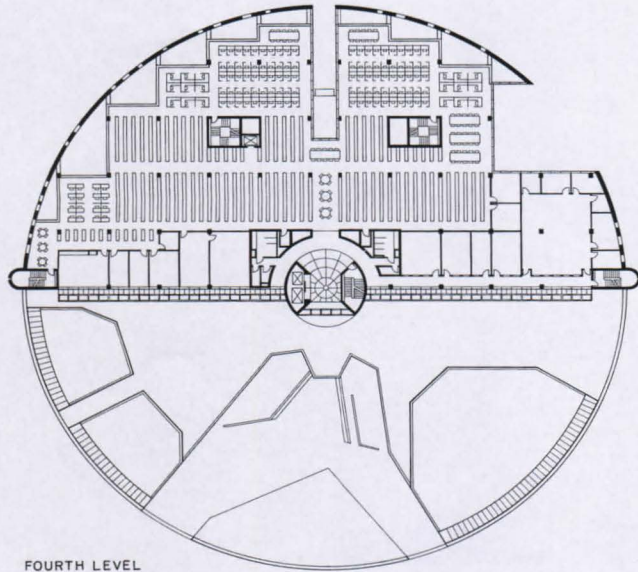
NORTH-SOUTH ELEVATION

circumference alter the pure geometry of the circle. A deep notch, pointing directly north, is lined with a glass curtain wall to light offices and the library. It also has at each level a light scoop that reflects light into the building and onto the gardens that grow on the balconies (at right of section below and page 106). Two other secret gardens can be seen through glass walls in the fifth-floor corridor. In the southern

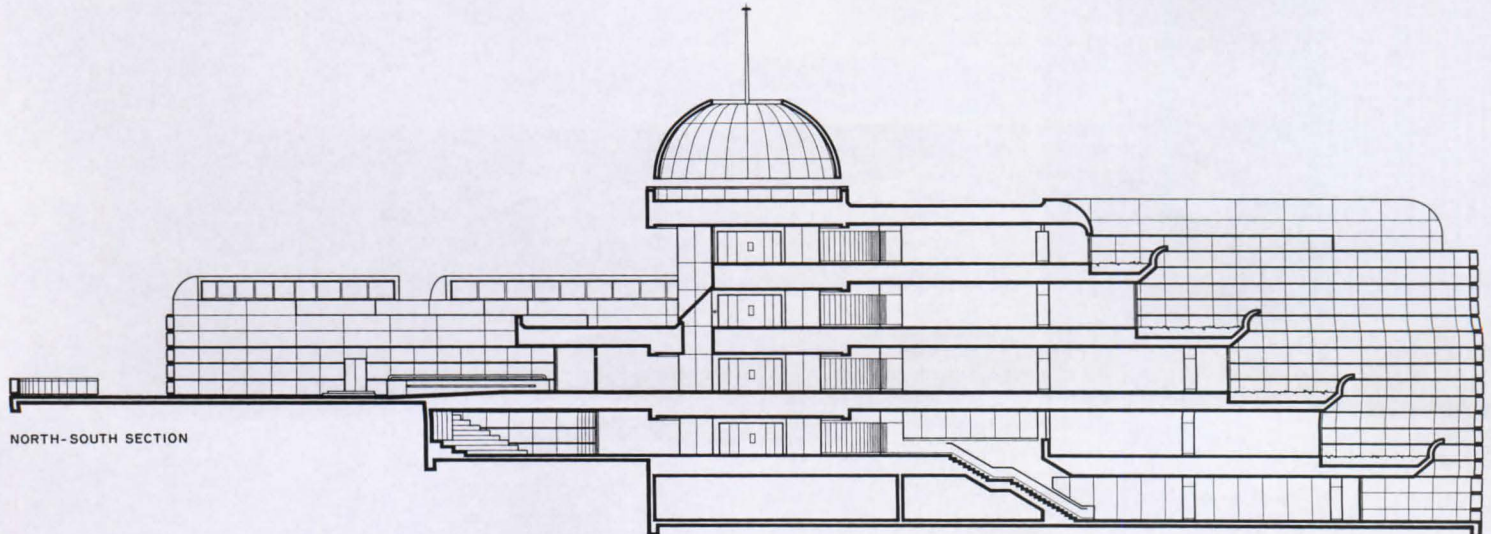
semicircle, a large wedge, eroded in both plan and section, was removed to open up views to a lovely stand of trees downhill. And at the northeast, a right-angled wedge was excised to save a mighty pine tree. On one side of this excision, a large common room on the fifth floor opens onto a terrace (photo right), which overlooks the city and the gold dome of the Old Capitol, once the home of the College of Law.



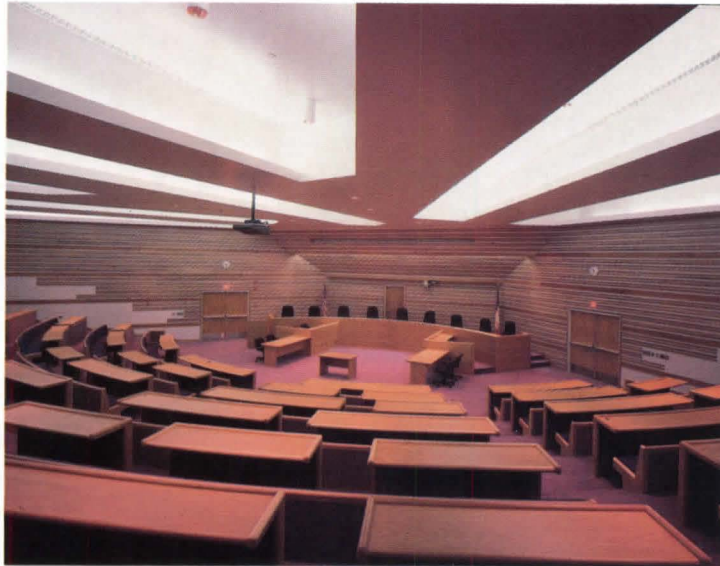
FIFTH LEVEL



FOURTH LEVEL



NORTH-SOUTH SECTION



Complex geometries within the circular building gave Birkerts many opportunities to play with daylighting. Around the library (opposite), white plasterboard lining the curved concrete shell and white fascias on the rectilinear overhangs bounce daylight back and forth across the light atriums and into the stacks. In the auditorium/courtroom (above), backlight entering through transoms reflects off-white plastered girders above the oak ceiling fixtures. The architect-designed furniture and decorative laths around the judges' bench at the front of the room are also oak, a material that the school especially regards as a symbol of permanence.

*Willard L. Boyd Law Building
The University of Iowa/
College of Law
Iowa City, Iowa*

Owner:

The University of Iowa

Architects:

Gunnar Birkerts and Associates, Inc.—Gunnar Birkerts, Anthony Gholz (project director), Barbara Bos (interiors), Anthony Duce, Mary Jane Williamson, David Chasco

Associated architects:

Wehner, Nowysz, Pattschull & Piffner

Engineers:

Robertson, Fowler and Associates, P. C. (structural); Joseph R. Loring & Associates, Inc. (mechanical/electrical)

Consultants:

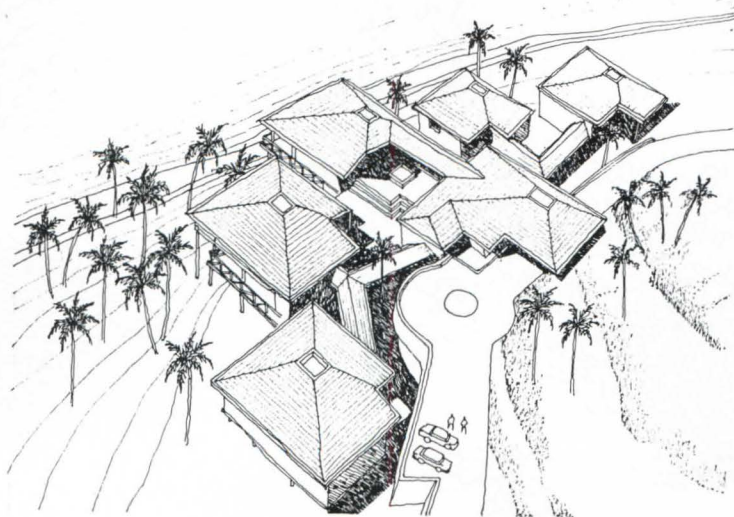
Wolf & Company (costs); Geiger and Hamme, Inc. (acoustics)

General contractor:

PCL Construction, Inc.



Climate as context



Not many Americans or Europeans are likely to take a holiday in the Andaman Islands, which lie to the southwest of Rangoon in Burma. Port Blair is the main town in a world described by architect Charles Correa as one of "primordial beauty, of whales and robber crabs—a throwback to the time and voyages of Charles Darwin." In many ways the islands still look as they must have to the naturalist from *H. M. S. Beagle*. They continue to be inhabited by a number of different tribes, many of whom have never had contact with any other human beings. These days, however, every primitive paradise seems to have at least one sybaritic enclave for well-to-do seekers of the unspoiled who are not about to go native. The Andamans are no exception. Overlooking the deep blue waters of Port Blair is a simply built hotel designed with great elegance and craft for those who know how to get there.

This project, while not exactly in Correa's back yard (his office is in Bombay), inhabits a climate, ecology, and culture that the architect has long endeavored to understand and design for. The principal concern of his career has been man's relationship with built form in a hot climate. His work is rooted in the traditional architecture of India, buildings characterized by the presence of inhabited roofs, verandas, deeply shaded courtyards, open colonnades, elements that shade the sun

Bay Island Hotel
Port Blair
Andaman Islands
India
Charles Correa, Architect

Joseph St. Anne photos



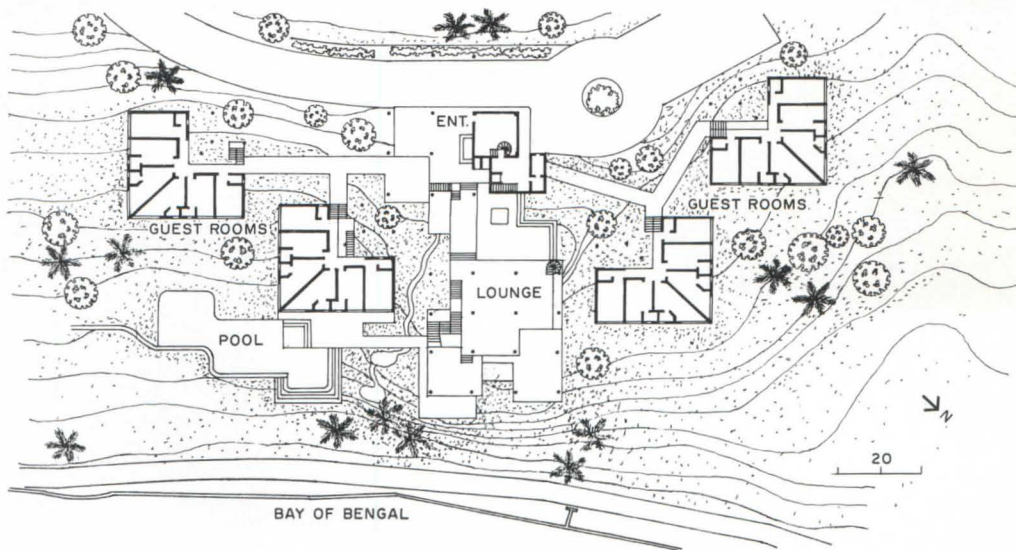
during the daytime heat while capturing its warmth for the cool evenings. In India, almost every vernacular building type, ranging from simple village dwellings to temples and palaces, is remarkably responsive to prevailing breezes and light. Correa reinstates these traditional qualities in his own work, transforming ancient modes of construction to serve contemporary building programs.

Each of the pavilions of this 100-guest, 50-room resort is roofed by a *chatri*, a canopy in the Indian tradition with deep overhangs. Such roofs offer extreme contrasts of light and shade, and encourage the movement of breezes. The hotel *chattris* are supported by tall, thin reinforced-concrete columns, so proportioned as to make the roofs appear to float on air. Correa's use of platforms and steps are also in the Indian tradition, layered in stages down the slope to the beach.

As the drawing indicates, the apexes of the pyramidal roofs are slightly off center, adding a subtle complication to the roof profiles and varying depths of overhang. The swimming pool appears to be edged by the bay, and one of several verandas (right) seems suspended over the water. Correa devised the diagonally patterned railings to, in his words, "generate a movement as continuous and lyrical as the sea itself." A peaceful idea for an out-of-the-way place. *Mildred F. Schmertz*



Guest rooms are clustered in groups of 12 (six per floor) in two-story pavilions interconnected by open corridors recalling old verandas. The pavilions are so placed as to form interconnecting courtyards. Each guest room overlooks the Bay of Bengal. As the plan below indicates, the public areas form a series of decks, cascading down the hill. These spaces are open to the breezes, protected by large overhanging roofs

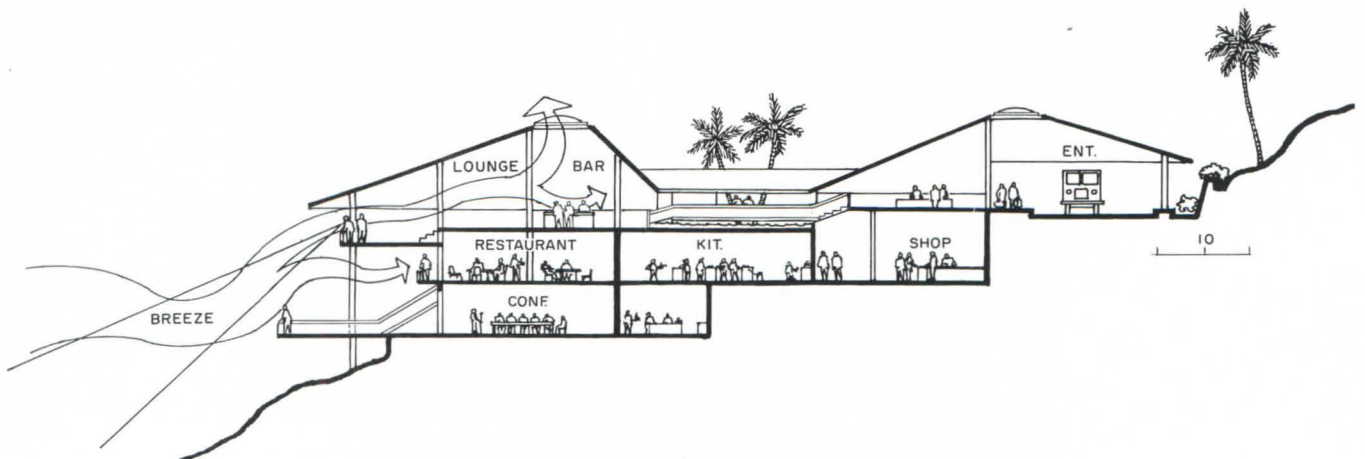


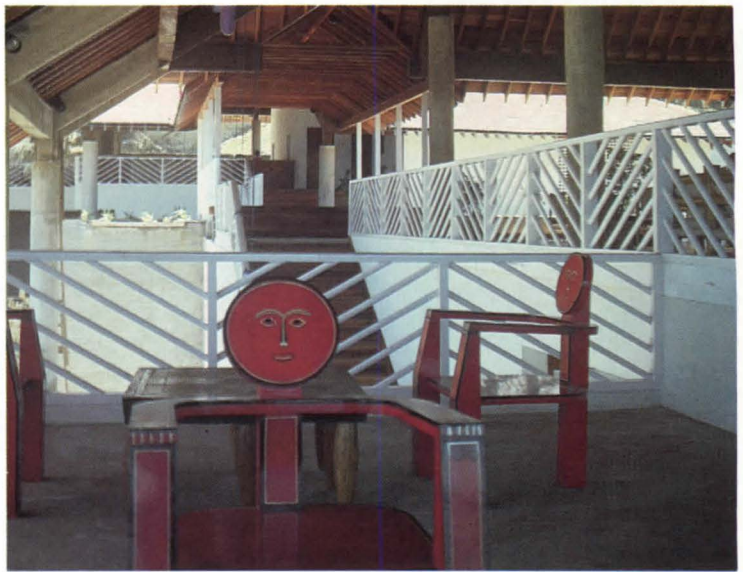
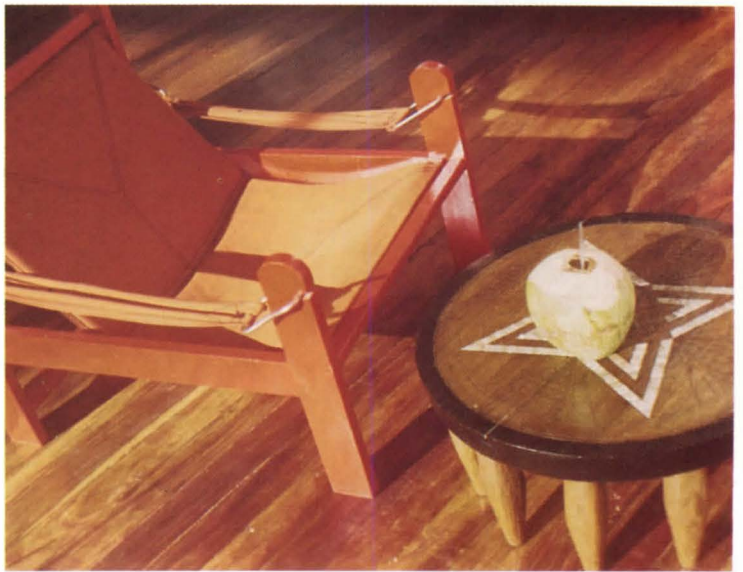
constructed of a local redwood called padauk, which is also used for floors, steps and railings. Foundations, walls, and columns are of reinforced concrete. The public spaces do not require enclosing walls to keep out the sun and the rain, and views are unobstructed and directed downward to the courtyards, sloping terraces, and bay.



The great overhanging roof of the main lounge (below) acts as a giant eyebrow, cutting off glare and rain. All the roofs are pyramidal in shape, each with a skylight at its apex (opposite left). The entry, reception, and lounge are at the top level. The dining and kitchen areas are directly below. Conference rooms and offices are located on the lowest level. Furniture and artifacts, textiles and color schemes are

relaxing and playful in spirit. All were designed by Correa, his wife, the noted textile designer Monika Correa, and their staff. Wherever feasible the interior furnishings and textiles were locally made. The chairs (bottom right) ornament the lounge and were, according to the Correas, inspired by North American Indian art. The view is from the lounge looking toward the entrance level.





*Bay Island Hotel
Port Blair
Andaman Islands
India*

Owner:
*Caseem Jadwett & ITC;
Welcomgroup Hotels*

Architect:
Charles Correa

Engineers:
*Beacons Pvt. Ltd. (structural);
Maneck Dastur Co. (mechanical/
electrical)*

Consultants:
*Kishore Pradhan (landscape);
Gautam Suri (acoustics)*

A Helsinki designer revitalizes a venerable local restaurant—and revives interest in early 20th-century Finnish functionalism.



Fotark photos

Northern light

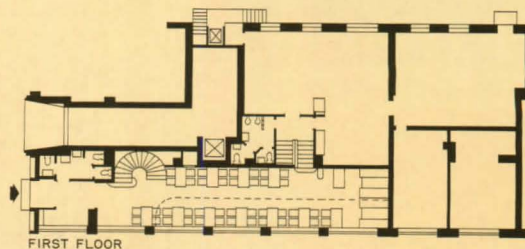
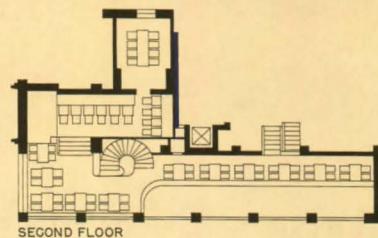
Bulevardia
Helsinki, Finland
Studio Kaisa Blomstedt,
Designers

It was cold and rainy the morning I arrived in Helsinki, but even the dismal early May weather could not dampen the anticipation I had brought on my first visit to the Finnish capital. As my taxi traveled south along Mannerheimintie, Helsinki's broad main street, the city opened up dramatically into a textbook of 20th-century landmarks, from Lindegren and Jäntti's Olympic Stadium complex and Alvar Aalto's Finlandia Hall, to J. S. Siren's mighty House of Parliament and Eliel Saarinen's great railway terminal. That afternoon I walked down gracious tree-shaded esplanades, past shops bearing the internationally known design houses of Marimekko, Arabia, and Artek, to the busy waterfront, where I saw a much different Helsinki—a little 19th-century Leningrad that seemed to belie the city's reputation as a center for architectural Modernism. To the east rise the gilded onion domes of Uspenski Cathedral and to the north, the serene, pastel-hued facades of Senate Square, a Neoclassical acropolis that German architect Carl Ludwig Engel designed for Czar Alexander II during the 1820s. This appealingly paradoxical marriage of old and new, of Eastern mystery and Western pragmatism, is the very essence of Helsinki; likewise, it is the dual impulses of nostalgia and contemporaneity that underlie the work of many modern-day Finnish architects and designers, including Kaisa Blomstedt and the six-person studio she oversees.

Although I had been introduced to Blomstedt earlier that week at the Scandinavian Furniture Fair in Copenhagen, my first "official" meeting with the Finnish designer came the morning after my arrival in Helsinki. Over breakfast, she enthusiastically described her abiding interest in the functionalist, or *funkis*, style—the spare, Bauhaus-inspired mode that characterized Finnish architecture during the 1930s—and her redesign of Bulevardia, a 50-year-old restaurant that occupies the ground floor of a *funkis*-style apartment building designed in 1936 by Arvo Aalto (no relation to Alvar). Located directly across the street from Helsinki's opera house, Bulevardia had never lost its popularity as an artists' hangout, but by 1980 the restaurant's dark, brown-curtained décor was, according to Blomstedt, "falling apart," and new owner Aleksander Zenkovitch proposed redecorating the place with a prepackaged interior shipped from England that might best be described as "Victorian pub." When Blomstedt heard what was in store for one of her favorite haunts, she hastily drew up an alternative proposal—a tracing-paper sketch that bears a remarkable resemblance to the final redesign—and argued that the higher cost of her neo-*funkis* plan would be easily offset by free publicity and increased business. (Blomstedt's design, in fact, has been the subject of numerous articles in the Finnish press, and patronage has indeed picked up since Bulevardia reopened.)

Working within the restaurant's 115- by 20-foot, bi-level shell, Blomstedt had to deal with just one major structural change: widening the mezzanine two feet to accommodate new air-conditioning ducts. Throughout the renovation she utilized certain existing details—curved chrome-plated steel mezzanine brackets (opposite), a mirrored rear wall and abstract clock (overleaf), and, outside, some original neon signs (right)—together with new elements that are meant to reinforce a consistent geometry of circles in a rectilinear field. Along the way she had a little help from her family: brother-in-law Juhana Blomstedt produced new sandblasted-glass windows and doors (cover), and her husband's late uncle, architect Pauli Blomstedt, either designed or inspired the restaurant's period-style occasional pieces (pages 124-125).

The result is summed up by a dinner that Blomstedt and I enjoyed after our interview. As the stubborn northern light finally faded and Bulevardia filled with artists, politicians, and local residents, I would not have been surprised to see the young Greta Garbo walk in, requesting a solitary table on the mezzanine. Toward evening's end, Blomstedt raised her glass of red wine for a final toast. "It is wonderful to meet people whom you feel you have known all your life," she said. "Welcome to Bulevardia. Welcome to Helsinki." *Paul M. Sachner*







Faced with the difficult task of making Bulevardia's tall, narrow interior less tunnel-like, Kaisa Blomstedt created the illusion of spaciousness by incorporating carefully selected horizontal elements into her 150-seat redesign, and by replacing heavy brown-velvet draperies along the restaurant's southwest wall with geometric-patterned, sandblasted-glass windows. Smoothly finished walls

banded with black-lacquered wood strips are painted light terra-cotta, a hue that complements the dark wine color of dining-chair upholstery. Sandblasted-glass and chrome-plated steel chandeliers and wall sconces are original Blomstedt designs that pay homage to the sleek, machine-tooled esthetic advocated by northern European architects during the late 1930s (previous pages). Funkis is the Finnish word

for this mode, which Blomstedt characterizes as "the art of function," versus the slightly earlier Art Deco, which she calls "the art of decoration." Her long-standing interest in Nordic functionalism may be due in part to the history of her husband's family: two late uncles—Aulis and Pauli Blomstedt—were among Finland's best-known early and mid 20th-century architects, and Kaisa

Blomstedt operates a small gallery, dubbed Post Deco, which exhibits original and recreated funkis furniture that Pauli designed shortly before his death in 1935, at the age of 35. One of those designs, a mahogany-and-chrome sideboard, graces Bulevardia's mezzanine (top right). Additional decorative objects—a small serving cabinet (top left), an étagère (top left opposite), ceramic vases



placed throughout the restaurant, and even the menu and wine list—were designed by Kaisa Blomstedt but clearly inspired by Finnish artists working between the wars. Another, not-too-surprising, influence has been the interior design of Alvar Aalto: witness the famous zebra-striped fabric, first used by Aalto in 1932, that Blomstedt specified to upholster a pair of ground-floor booths (bottom left

opposite) and, for an intimate private dining room on the mezzanine, chairs designed by the contemporary Finnish artist Joukko Jarvisalo (bottom right). Less specifically Aaltoesque, but perhaps more generically Finnish, is Blomstedt's extensive application of 3mm-thick curly-birch veneer, which she used at Bulevardia to sheathe booths, chairs, and the curving mezzanine wall.

Bulevardia
Helsinki, Finland
Owner:
Aleksander Zenkovitch
Designers:
Studio Kaisa Blomstedt—Kaisa Blomstedt, principal-in-charge; Pia Toivola, project assistant
Consultant:
Juhana Blomstedt, sandblasted-glass windows and doors



Insecurities about security: Face to face with the building-protection crisis

By Ira Wolfman

"There are many areas where terrorism and crime parallel each other. Today, more and more buildings are going up with security planning as a major consideration."—Chris Degenhardt, of EDAW, San Francisco.

It was to be one of the world's safest and most secure group of buildings, equipped with sophisticated technology and supported by a budget that exceeded \$191 million. Top firms, including Skidmore, Owings & Merrill, were involved in the design. In many cases, security clearances were required to work on the project, and checks were conducted to insure the structures' secret status was not breached. The result was to be a showplace of democracy, a compound both open and secure.

But something that wasn't supposed to happen happened. Last spring, it was announced that the unfinished buildings' security has been so utterly compromised that the compound may have to be demolished before construction is complete. The bizarre story of the U. S. embassy compound in Moscow made headlines around the world. Not only was the chancery said to be riddled with listening devices—many supposedly implanted by agents working as part of the construction crew—but the incident also revealed amazing ingenuity. *Time* magazine reported, for example, that "signs of bugs" were apparently discovered in the way steel reinforcing rods had been arranged in the concrete, configurations designed to convert structural pillars into antennas!

The near-comic side of the Moscow story has a tragic counterpart. In a little over 10 years, more than 119 Americans have been killed in hundreds of attacks and attempted attacks against U. S. embassies and personnel abroad. Most dramatic was the virtual demolition in 1983 of the U. S. Beirut embassy (caused by a suicide car bomber who broke through security), which resulted in 86 deaths.

The Beirut attack brought angry American demands for improved protection against terrorist violence, and the Moscow fiasco unleashed Congressional calls for increased intelligence security. But growing awareness for security needs has not been limited to international intrigue or overseas embassies.

Petty crime, information theft, and violence against people and property in American facilities has been growing at an alarming rate over the past 10 years. As a result, more and more buildings today are being planned for extensive security. The major concern, naturally, is for symbolic buildings like American embassies. But ordinary clients in the U. S. are increasingly asking how their buildings will work from a security standpoint. Chris Degenhardt, president of EDAW, a San Francisco-based planning and design firm that has frequently analyzed sites for security-conscious international firms, points out that there are many areas where terrorism and other types of crime parallel each other. No one has a bad word to say about improving building security, but the growing demands for built-in protection have raised many questions for architects, questions that range over a very broad field:

- What are the threats that have to be defended against? How does the design professional go about identifying them?
- Will the growing concern over security turn buildings into fortresses? Must architects become experts on locks and closed-circuit cameras, motion detectors and infrared monitors? And does making security hardware blatantly obvious to the public make an institution safer—or merely oppressive looking?
- What is the role of the growing ranks of "security consultants"? Where do their responsibilities intersect and even supersede those of the architectural firm?
- And finally: How can architects protect their reputations, and their designs, from being needlessly harmed by the new concerns for security?

Ira Wolfman is a New York City-based freelance writer who frequently addresses architecture and design issues.

The rising concern for security is affecting the architectural design of nearly every building type. In the following article, the issues of security are discussed as well as the technologies available for creating an environment capable of deterring foreseeable threats to lives, property, and information.

The first step: An early warning system

"The most important thing for any architect—whether experienced or not in security matters—is to be clear with the client or owner's rep about security requirements," says Thomas Vonier, a Washington, D. C., architect and security consultant to the State Department. Vonier, who has worked on a variety of highly classified buildings around the world, states flatly that, "At your first meeting, you should ask, 'What are your security requirements?' If the answer is 'Gee, I don't know,' 'We don't have any' or 'We're going to have to look into that,' that's the time for you to insist that security personnel be brought into the process, by interview or other means. The architect has to insist that these needs are laid out, as clearly as possible, just as you would other, more functional and routine requirements."

The crucial thing is to define what needs protection. "You've got to look at the potential threats to your building, and assess which are most significant. Then you've got to defend against them," Vonier counsels. "There are generally three sets of assets to be protected: people, information, and facilities, usually in that order."

Some clients need to be led through this process. Others are ready: "Large multinational corporations are often well-prepared," according to Vonier. "They have probably learned from experience that they have to be." IBM, among many corporations, provides every architect with whom the company works with a security checklist.

One growing trend is that of bringing in independent security consultants. Probably the consultant's greatest value to the design professional is in his knowledge of the quickly changing hardware field. "The development of security technology has been very rapid in a short period of time," says Fred Moyer, a Chicago architect who has designed many correctional facilities and criminal-justice buildings over the past 20 years. "It's not possible for any architect, no matter how knowledgeable, to say, 'We know all the technology in the field,' because at just that moment, there's more, newer material coming out. The technology is arriving so fast that it usually falls to the specialist architect to track it and evaluate it."

Tom Vonier agrees that hardware plays a significant role in a facility's security. "But," he notes, "no amount of expenditure on hardware systems can overcome a plan that has flawed security."

Exploring the plan: A checklist of problem points

No matter who designs the security plan and what hardware it includes, the architect who raises security questions must carefully review the answers. Experts agree that these are among the most crucial areas:

Siting. What are the problematic aspects of the site? If it is located in a city, what are the threats from adjacent buildings? (Examples cited by EDAW's Degenhardt include break-in threats from roof to roof and potential sniper locations.)

If the site is suburban, what are possibilities for approach roads? "For example," says Degenhardt, "the best perimeter roads are circuitous. This reduces the speed of arriving cars and increases arrival time, which allows any warning system you have to do its work."

Also key is delineation of public and corporate space. Carl Kellem, group security administrator for more than 500 IBM facilities in the U. S., says that at his corporation, "We start from the site and try to establish formal or informal barriers that indicate a transition from public space to IBM's territory. At a minimum, I want that person going from non-IBM space to IBM space to know they've made the transition."

Perimeter security. How are the surrounding areas to be secured and monitored? Options include fences and other obvious physical restraints, plus video-camera monitoring and microwave and infrared sensors that detect movement. These systems can be applied to hallways, delivery sites, parking lots, and other places where intrusions

are possible—but have limitations that must be taken into account.

Parking sites. "There are a number of considerations here," says Degenhardt. "Should the parking be on-site or under the buildings? Should it be controlled access by security personnel?" It is difficult, if not impossible, Degenhardt concedes, to search every car that comes into a facility. "But," he suggests, "you can separate staff parking and guest parking, which will make the security job easier."

Zoning. This is one of the most crucial aspects of any plan, according to Kellem of IBM. "The fundamental of zoning is a hierarchy of space. Architects should be prepared to work with us to establish those boundaries in an esthetically pleasing way."

Generally, there should be a progression within the facility from public to private to confidential space, thereby creating rings of protection. "We want access controls through those boundaries," Kellem notes. "As we get closer to our restricted areas, we need a higher degree of access controls. This requires that the architect understand security systems and hardware, or that he be in partnership with someone who does."

Hardware and systems. You cannot know all the newest security systems, but you must know where to get the information. This includes everything from alarms to access controls. There are currently more than 25 types of access control on the market and, according to Fred Moyer, "The new wave of pneumatic locks didn't exist three years ago. Today there are five types, and next year there may be 10. But a number of vendors fail quickly—and two years from now, there may be five again. I know of facilities that have not opened because of locks that worked in all the wrong ways."

Lighting, both interior and exterior. "We're always concerned about pedestrian connections around buildings and how well lit they are. The intensity of the light is less important than its evenness," says Chris Degenhardt. "The greatest danger is created by shadows. The best way to ensure good lighting around the building is to flood the ground plane with even light." Degenhardt also stresses the importance of lighting in often-ignored areas: "We've done a lousy job of lighting parking structures, service entries, and other transitional areas. These are places where muggings and other crimes often take place."

Security problems architecture can solve

Good security design frequently can limit the number of people needed for security control, a priority for Joseph Rosetti, worldwide director of security for IBM International. The employment of security personnel is often unavoidable, but it adds an expense that is ongoing and can, over the life of a facility, reach astonishing proportions. "There's been an evolution that's taken place in corporate thinking," says Rosetti. "In the late 1960s, when concern first surfaced about security, the response was, 'Put a guard in front of the store.' But we've discovered in the 1970s and '80s that a guardpost is a minimum expenditure of \$100,000 per post per year. That means millions of dollars of recurring cost—\$20 million in 20 years!—versus the one-time installation cost of electronic technology."

Does this mean that facilities should be weighted down with obvious security machinery, so the absence of uniformed guards is not misinterpreted? Not according to Fred Moyer: "The bristling of security devices may appear to carry the message of deterrence, but in fact systems can be equally good whether they are apparent to the outside or not."

Carl Kellem adds that at IBM, "We want our security designed so it's not oppressive." One of the many ways this is accomplished is by the use of staff members—receptionists—in public spaces. Moyer heartily endorses this approach: "A person does not have to be armed, and is not expected to intervene, but serves a definite security purpose by being there."

"In the late 1960s, when concern first surfaced about security, the response was: 'Put a guard in front of the store.' But we've discovered that one guardpost is a minimum expenditure of \$100,000 per year versus the one-time installation cost of electronic technology."—Joseph Rosetti, Worldwide director of security, IBM International.

Successfully devised security measures vary greatly from facility type to facility type. In the three case studies that follow, tradeoffs required by three different buildings are examined. Two are brand new, state-of-the-art—an overseas embassy and a mixed-use public safety building. The third is a 1978 addition to a great museum—with a security system that overcomes some unusual problems.

Case study: A security system for a U. S. Embassy

In designing embassies, American architects are confronted with an avalanche of security concerns. Such buildings must be made secure from bomb blasts, snipers, rockets, electronic snooping, and many other threats. At the same time, as symbols, these structures must somehow reflect the openness of American society, and offer a welcome to visitors. Francis Bulbulian, in designing the U.S. Embassy in Santiago, Chile, had to take all of the above into consideration.

Bulbulian, with the Minneapolis firm of Leonard Parker Associates, is designing a complex that will combine in a suburban setting three U. S. facilities currently in downtown Santiago—the embassy, consulate, and the United States Information Service. The new 5.3-acre site, a five-minute drive northeast of Santiago, is a triangular-shaped plot between the Mapocho River and busy Andres Bello Avenue. It was chosen after many other sites were rejected.

The Office of Foreign Buildings Operations asked Weidinger Associates, a New York structural-design engineering firm, to develop guidelines for embassy design. Among the advisories given for Santiago were these:

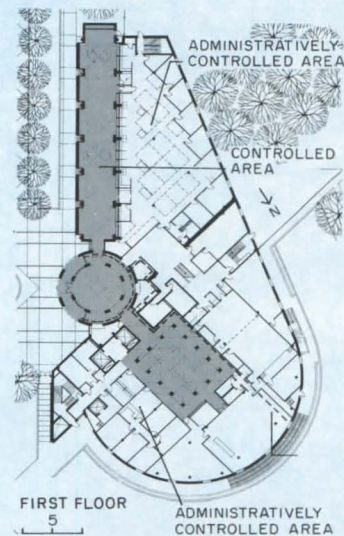
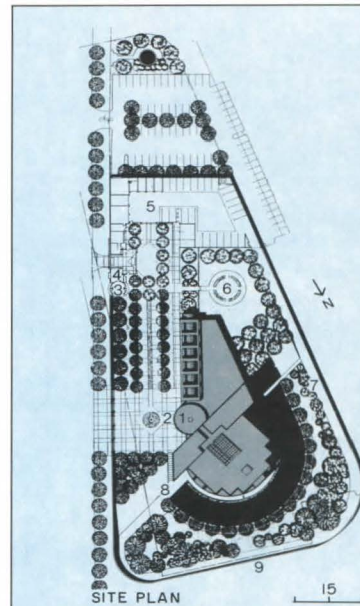
1. A major setback from the property line on all sides.
2. Exterior walls to be as nearly impenetrable as possible, and smooth (no ridges) to discourage attempts to scale the building.
3. Fenestration to be minimal—limited on the first floor, and totaling only 15 percent of the exterior structure.
4. Building height not to exceed five stories.
5. Nineteen different security systems installed, and operated from a central place.

The setback determined much of the geometry of the building, according to Bulbulian, who noted that it was exceedingly time-consuming to work out these problems in a unified design. And, in fact, some of the security requirements are so secret, the architects didn't know exactly what they were designing security for. Said Bulbulian: "We were simply told, 'We can't tell you why, but you've got to do this over.'"

Operating with all these restrictions, how can security be achieved without making the end result a forbidding fortress? "We broke the fortress effect of the building by layering it," Bulbulian explains. The embassy is a two-part composition, marked by extensive use of screen walls and divided into four distinct zones.

The ceremonial entrance to the entire complex is through an airy, open, two-story rotunda. Windows and a skylight fill the rotunda with light. The first-floor fenestration consists of special polycarbonated glass. The rotunda links the two major elements of the composition—the private, confidential, highly secured five-story embassy tower with the open consulate areas serving the public. The major public space is the low wing to the left of the rotunda, where the consulate and USIS are located. It consists of a two-story-high waiting hall with a vaulted copper roof, partially visible through the six square openings of the facade.

To the opposite side of the rotunda is a kind of banner wall—a narrow rectangular service tower that is poised diagonally between the private embassy and the open rotunda. The tower, by housing all the vertical service shafts, including mechanical, electrical and stairs, frees the rest of the building's floor space. "We think this is a very clever solution, packing the lifeblood into the building and providing some security for mechanical elements," says Bulbulian.

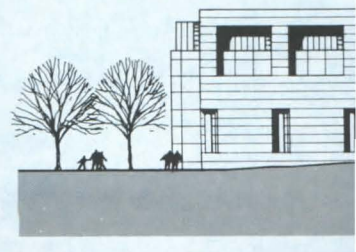


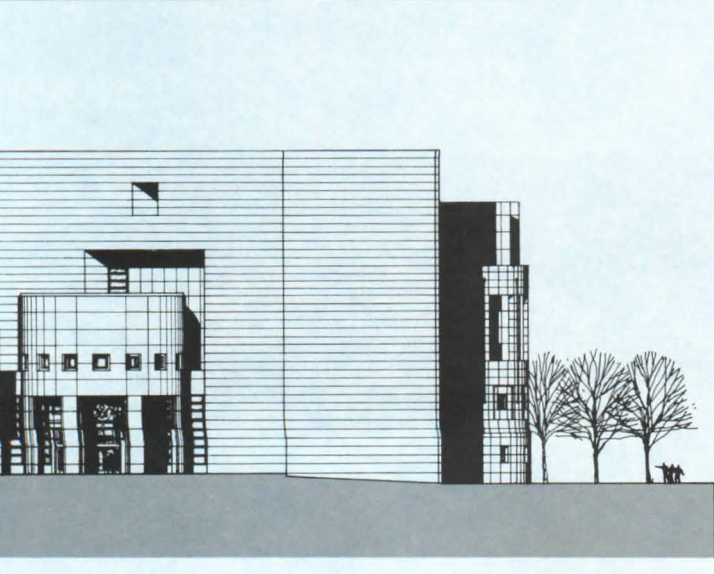
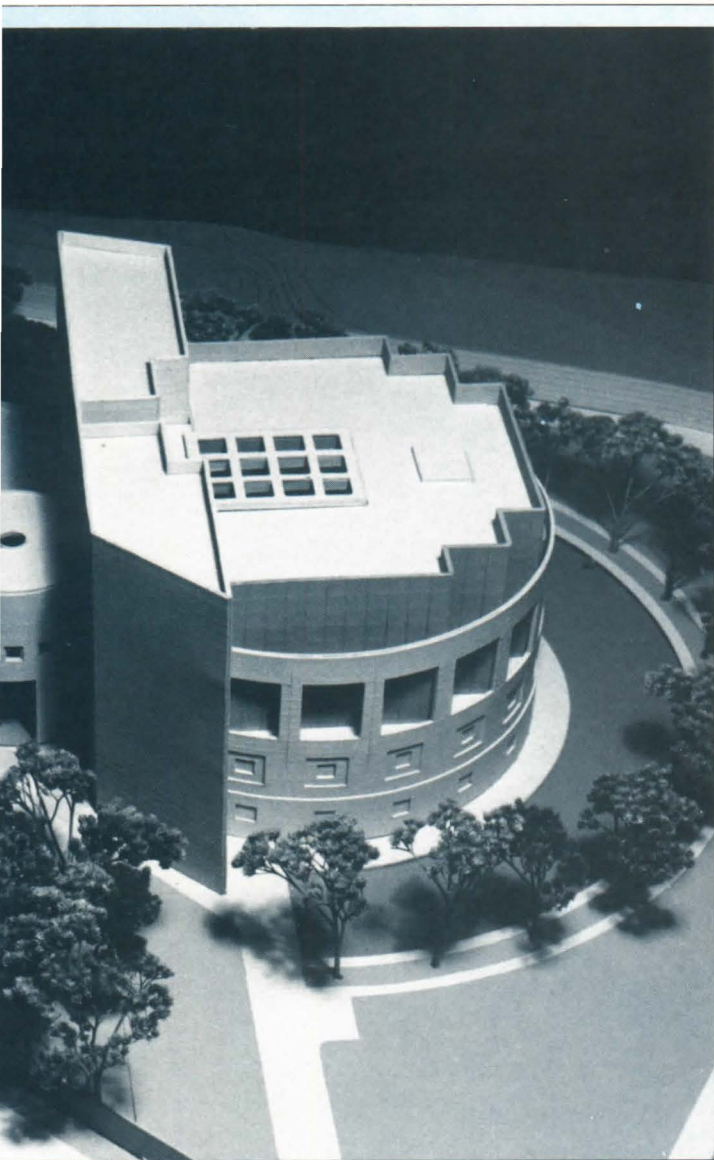
The U. S. Embassy Santiago, Chile

Operating within the many design restrictions set by the Office of Foreign Buildings Operations, the architects for the embassy, Leonard Parker Associates, tried to achieve security without creating a forbidding fortress. "We broke the fortress effect of the building by layering it," explains LPA's Francis Bulbulian. The complex is designed as a two-part composition with a five-story circular embassy arranged around an atrium to bring light to interior spaces that would otherwise be dark (there are few windows on the restricted upper floors). This building also has a screen wall with simulated openings that give the surface a more varied and interesting look.



1. Embassy building
2. Entry/drop off/flagpole
3. Pedestrian sally port
4. Guard booth
5. Car service/garage/parking
6. Ceremonial garden
7. Service drive
8. Loading dock
9. Perimeter wall





Though Parker Associates has done much overseas work, this is its first embassy. Probably 50 percent of the security measures used here are too expensive or unnecessary for other buildings—but Bulbulian points out that “We will be using, on and off, half of the things we have learned here.”

Case study: Adding security to a museum addition

“We began with an already existing building that had an elaborate security force, and a client who knew what types of protection it wanted,” recalls Leonard Jacobson, managing partner of I. M. Pei & Partners and the architect in charge of the East Wing addition to the National Gallery. The client also provided Pei with a security-consultant—Joseph Chapman, a former FBI agent whose security-protection agency in Wilton, Conn., specializes in designing systems for museums. Chapman prides himself on his sensitivity to the designer’s work: “We respect the architect’s plan. We met in the Pei office every month for a year and a half before there was a single drawing produced, and we continued to meet until everyone was satisfied that there had been a sufficient information exchange.”

One of the features of museum security systems is that these open-to-the-public places have to defend, not only against outside intruders, but also against “stay-behinds.” As a result, Jacobson points out, “We had to have a number of interior elements that would monitor the passage of a person in off-hours.”

This was particularly complicated due to the design of the East Wing’s most spectacular element—the atrium, a vast open space with few walls and a ceiling that reaches up 70 feet (bottom photo, page 130). “The magnitude of the space was not something security-hardware manufacturers had in mind when creating motion detectors. Most detectors will not provide a pattern if they are more than 20 feet above the floor,” Chapman notes. “We had basically no walls and no ceilings to work with. Yet we knew we couldn’t say, ‘You can’t do that.’ So we had to adapt our security designs.”

Chapman’s adaptability led him to install devices in the atrium’s escalators: “There are tiny openings in the sides of the escalators which are infrared photocells; if someone should attempt to travel from one level to another during off hours, an alarm is tripped which automatically engages a TV camera that switches to that location.”

Another rather ingenious surveillance trick Chapman employed in the courtyard involves a reception desk. When visiting hours are over, the top of the desk slides away and a closed-circuit camera on a periscope arm rises up. This camera pans and tilts, swivels 360 degrees, and inspects virtually the entire area and, with its video motion detection, is a good bet to catch any intruder or stay-behind.

Yet another problem throughout the museum is the fact that it has many open doorways, but few doors. Chapman’s solution: concealed motion detectors in two consecutive door headers, so the alarm system can then determine in which direction the intruder is moving.

“When you design a museum, you want to create a building that welcomes the public,” says Jacobson, who has worked on a large number of museums. “Security is important to museums which, after all, are repositories of very valuable items.” If security overwhelms design, however, the battle has been lost in a war that need not have been fought. Security and good design, Jacobson believes, are not in basic conflict.

Case study: A mixed-use civic and criminal facility

For 40 years, the White Plains, N. Y., police department worked out of a converted Elks lodge, an overcrowded and poorly adapted building that made no provision for separation of highly secure functions from routine activities. Finally, in the mid-1980s, the city chose an undeveloped site adjoining a prominent downtown plaza and agreed to construct a state-of-the-art facility that would include police offices,

Even technology that works properly has important limitations. For example, an in-depth study of the efficiency of closed-circuit-television cameras identified 105 potential applications, and found that 88 of them were ineffective.

courtrooms, and related public-safety activities.

The architects in a joint venture were Geddes, Brecher, Qualls and Cunningham (GBQC) and Moyer Associates, Fred Moyer's firm. In consultation with the commissioner of public safety, and after a great deal of research, they developed a building plan that Moyer proudly says reflects the best current thinking on the integration of architecture and security.

"This is not a standard design that you add a security system to and solve all the problems," says Russell Swanson, the GBQC project architect. "In this case, the architecture solves the problems; the security system just reinforces the solutions."

Because very different functions will be going on simultaneously—court proceedings, routine public business like payment of traffic tickets, police office work, intake and holding cells procedures for prisoners, and even firing-range activity—secure zoning was crucial to the design. Moyer's solution is a vertically stacked building that allows public spaces to be open and free of heavy security, and facilitates more secure circulation patterns. The site is a sloping one, which will allow two floors to be below grade, an ideal place for the utilities, firing range, and prisoner-intake functions. A sally port permits private access for police officers.

The third floor (first above-grade) will be a vast, open, skylit area with minimal security, grand and reminiscent of the old-fashioned civic buildings that celebrated government. The courts are on this floor, with the holding cells on the floor below. Separate security elevators take prisoners from the lower level directly to the courts, eliminating any mixing of prisoners with general public.

The upper two floors include the district attorney's office and other private space. The building is zoned well enough so that there is no need for a security person in the lobby. By letting the public have access to all its functions on the first floor, the plan diminishes the requirement to have people control the path through the building. Checkpoints are manned by receptionists and secretaries. Where extra security is needed—for example, on the way to the courtroom—there is a metal detector and security officers.

Future security

The emphasis on building security will probably increase in the future. Because of cutbacks in the size and efficacy of public safety and police forces, more and more emphasis will be put on private protection.

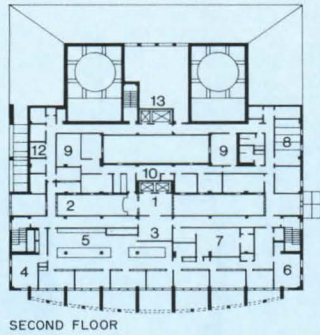
This means more emphasis on architecture to help save lives, money, property, and information. In this context, debate within the architectural community is yielding benefits. Symposia on security were held at this year's AIA convention in Orlando. In addition, the AIA committee on architecture and justice has a subcommittee on security and the built environment. The subcommittee's under the direction of Fred Moyer is attempting to create a security-information clearinghouse for all architects. It hopes to develop a design guide for security issues, and would include places to get product information, checklists for particular situations, and guidelines for handling all the different types of security issues.

All the technical help in the world is only one part of the equation, however. Some private clients continue to feel that architects are not serious enough about security. "We've become accustomed to not expecting a heck of a lot from architects on security," says IBM's Carl Kelle. "They want to talk esthetics and functional needs. But this issue is vital to us—and though I sense things changing a bit, the level of interest in security is still not what it should be."



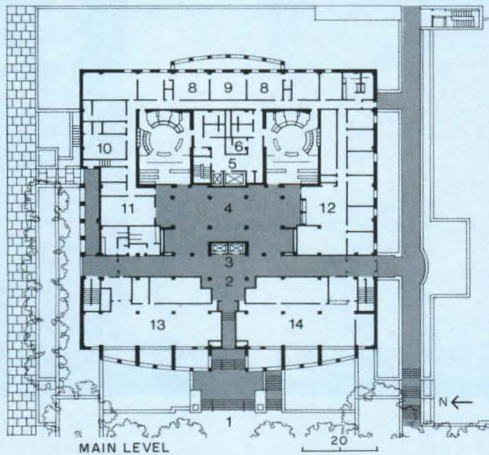
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1. Public elevators
2. Gallery
3. Reception/control
4. Vice Unit
5. Detective Bureau
6. Police Chief
7. Youth Division
8. Police Training
9. Conference room
10. District Attorney
11. Line-up and Viewing rooms
12. Interview and Holding
13. Security elevators



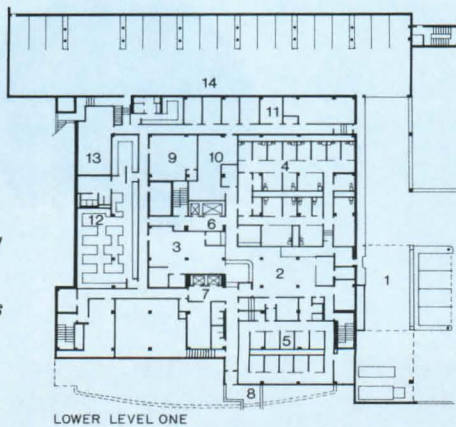
SECOND FLOOR

1. Public entrance
2. Gallery
3. Public elevators
4. Foyer to courts
5. Security elevators
6. Court holding
7. Courtrooms
8. Judges' chambers
9. Law library
10. Jury room
11. Multipurpose room
12. Court clerical
13. Traffic Violations Bureau
14. Records

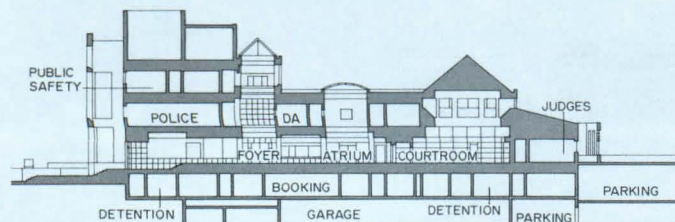


MAIN LEVEL

1. Vehicle sally port
2. Booking
3. Communications
4. Male detention
5. Female detention
6. Secure elevators
7. Public elevators
8. Public night entry
9. Squad room
10. Property room
11. Support functions
12. Locker rooms
13. Physical fitness
14. Garage parking



LOWER LEVEL ONE



The East Wing of the National Gallery of Art Washington, D. C.

The East Wing (opposite page) features heavy security, much of it hidden. According to Leonard Jacobson, architect-in-charge of the I. M. Pei & Partners project: "This client had an elaborate security force and very strong views about the types of protection." Two particularly troublesome spots were the open gallery spaces (center) and the vast atrium (bottom). "We had a lot of pressure to incorporate cameras," Jacobson recalls, and security consultant Joseph M. Chapman helped devise solutions in which the cameras were not visible to the public during the hours of operation. The atrium, with its 70 ft-high ceiling, was a security consultant's nightmare. "We didn't have walls on which we could mount motion detectors," Chapman notes, and those detectors will not work properly if located more than 20 feet above the floor. So Chapman used a reception desk where he placed a hidden camera on a periscope arm with tilt-and-pan capacity. The camera can do a 360-degree inspection of the area and detect "stay-behinds," one of the major concerns of museums. In creating security devices, Chapman says, "Our inclination is to use the elements the architects give us."

Public Safety Building White Plains, N. Y.

The plans of the building (left) indicate a mixed-use structure that has been carefully zoned for security (section, bottom). Circulation for such public areas as courtrooms and the traffic-violations bureau on the first floor has been carefully separated from vertical movement for prisoners detained on the lower level. The five-story building on a sloping site will have three floors above, and two below grade level. The second floor above-grade (top) is reserved for private police offices. Public functions take place on the first floor (middle), where courtrooms and clerical offices are located around a vast, monumental atrium intended to convey civic grandeur. The two floors below-grade are reserved for high-security functions. At the lowest level is an underground parking garage. Directly above (bottom plan), most police functions are conducted. Included are facilities for prisoner intake, booking, and temporary detention cells for both male and female prisoners. This plan allows police to bring prisoners into the building through the underground garage or sally port without ever encountering the public.

New products: NEOCON 19

A record 50,000 jammed Chicago's enormous Merchandise Mart June 9 to 12 for this year's NEOCON—number 19 in the series. Architects, interior designers, space planners, and manufacturers seemed to pay a lot of attention to fine points: textures, colors, and, of course, what to do with the PC.

1. High-gloss tables

The *Venue* table comes in a large selection of mix-and-match components: four base styles in 14 basic colors plus metallics; laminate, resin, and hardwood veneer tops, in dimensions of 24- to 288-in.; and a choice of 16 edge treatments. Krueger, Inc., Green Bay, Wis.
Circle 300 on reader service card

2. Wooden seating

The frame, base, and armrests of the *Pinocchio* work chair from *HarterMartin Stoll* are black, but the wood seat and back come in many bright colors, such as the red and blue shown here. Its mechanical functions are the same as the maker's *D Collection* chairs, with tilt and resistance adjustments, and gas-activated lift. Harter Corp., Sturgis, Mich.
Circle 301 on reader service card

3. Wood tables

Robert De Fuccio's *Capital* design sets a bull-nosed wood top squarely onto a column-shaped leg in a series of work desks and side and conference tables. There are a number of top and base configurations, in 14 different wood species. Domore Corp., Elkhart, Ind.
Circle 302 on reader service card

4. Eastern influence

Several versions of the *Shogun* chair are pictured, including both padded and ladderback styles. By Jan Des Bouvrie for the maker's *Classic Design in Wood* series, *Shogun* may be used as a side or dining chair. The beech frame comes in natural wood and colored finishes. Brayton International, High Point, N. C.
Circle 303 on reader service card

5. Lounge furniture

For both executive reception and residential use, John Rizzi's tables have 3/4-in.-thick glass tops frosted in concentric circles, set on a rod-supported base of polished or painted metal. The seating includes club chairs, sofas, or sectionals, with a lumbar-support cushion and double-stitched edging. CorryHiebert Corp., Irving, Tex.
Circle 304 on reader service card

6. Carpet tiles

Dots of all sorts are some of the patterns offered in commercial carpeting produced on integrated pattern-tufting equipment. Carpet tiles come in three backing types, including the *Self Lock* free-lay system; the 18- or 24-in. squares carry a 10-year performance warranty. Lees Commercial Carpet Co., King of Prussia, Pa.
Circle 305 on reader service card

7. Library furniture

An addition to this maker's Library Collection, a reading table of solid cherry also reflects the Mission Style of the straight-back chairs. The standard size is 48-in. wide by 70-in. long; custom sizes as well as different woods are available. Thos. Moser Cabinetmakers, Portland, Me.
Circle 306 on reader service card



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8. Children's furniture

Constructed of tubular steel and plastic laminates, Jim Hayward's *Scamps* tables and chairs for nursery schools and day-care centers look happy, but can withstand—on their padded feet—the abuse handed out by the pre-K set. Kinetics, Rexdale, Ont.
Circle 307 on reader service card

9. Vinyl sheet and tile

Optima sheet vinyl is now offered in the eight pastel colors and solids of the existing *Expressions* tile and accent strip line. Each colorway includes dabs of every other color in the series, said to facilitate unique and harmonious patterns with an Impressionist effect. Tarkett Inc., Parsippany, N. J.
Circle 308 on reader service card

10. Side chair

The compound curve of the back of the *Torca* chair is formed by hand from a single piece of wood. The V-shaped slats flow into the back legs for an effect described by designer Ward Bennett as evocative of the Art Nouveau works of Gaudí. Brickel Associates Inc., New York City.
Circle 309 on reader service card

11. Handwoven fabric designs

The *American Craftsman Collection* interprets the handwoven textures of fabric designer Robin Whitten in contract upholstery. All five wool-blends are Class-A rated, and are also offered in a program of customized colors and designs. Knoll Textiles, New York City.
Circle 310 on reader service card

12. Semi-rock

Architect Mark Mack calls his design for the *Opus Collection* a "Rocker Chair": one can both tilt back and sit up straight—but not rock. Priced for the contract market, it is an unusual piece offered in a variety of natural and opaque stains. Bernhardt Furniture Co., Lenoir, N. C.
Circle 311 on reader service card

13. The office as stage

Architectural Elements glazed and fabric-covered panels, fanlights, and doors in a variety of geometric shapes are intended to enliven and punctuate the open-office environment. Fanlit doors can be used to create an office landmark, or denote a specific department. Haworth, Inc., Holland, Mich.
Circle 312 on reader service card

14. Modular wood group

A compact system of hardwood leg frames and connecting stretchers, Daniel Cramer's *Cedilla System* is now completely modular: seating units and tables may be joined with a steel-on-steel connection in an unlimited sequence of assemblies. Tuohy Furniture Corp., Chatfield, Minn.
Circle 313 on reader service card

15. High-tech workstation

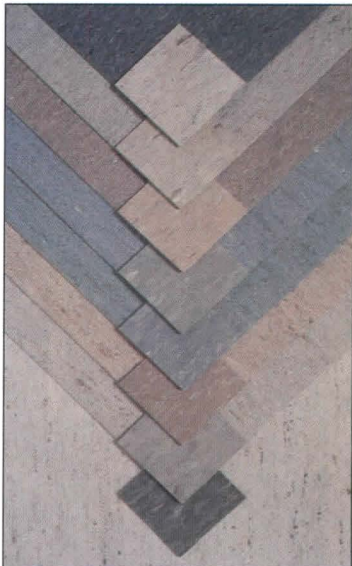
The *TechSpace* system transfers the color and responsive design of office systems to a light industrial setting. Components include worksurfaces, drawers and shelving, lighting, bins, footrests, and power distribution, all adjustable to the working comfort of each individual. *TechSpace* offers special laminates and grounding features to dissipate static charges. Cramer Inc., Kansas City, Kan.
Circle 314 on reader service card

16. Savoir faire

French designer Pierre Paulin, whose furniture is found in the Elysée Palace, is responsible for a new collection for the American executive office. The desk shown here uses bird's-eye maple with a distinctive walnut inlay, and appears to float above the floor. Baker Executive Office, Grand Rapids, Mich.
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17. Create-a-ceiling

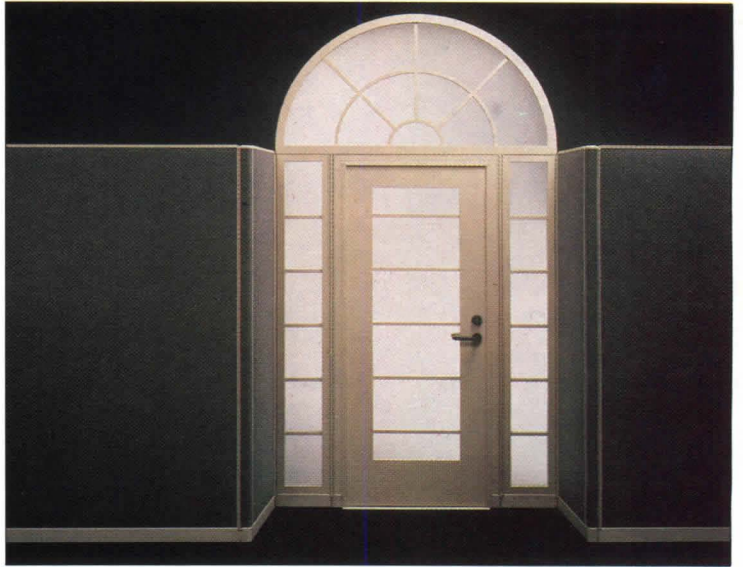
An addition to the *Syllables* acoustical ceiling series, *System H* provides distinctly patterned panels that can be combined to make linear patterns or borders. A set of three V-shaped in-relief details is asymmetrically placed on the 2- by 2-ft panel, permitting flexible use of partial sections. Armstrong World Industries, Inc., Lancaster, Pa.
Circle 316 on inquiry card
More products on page 136



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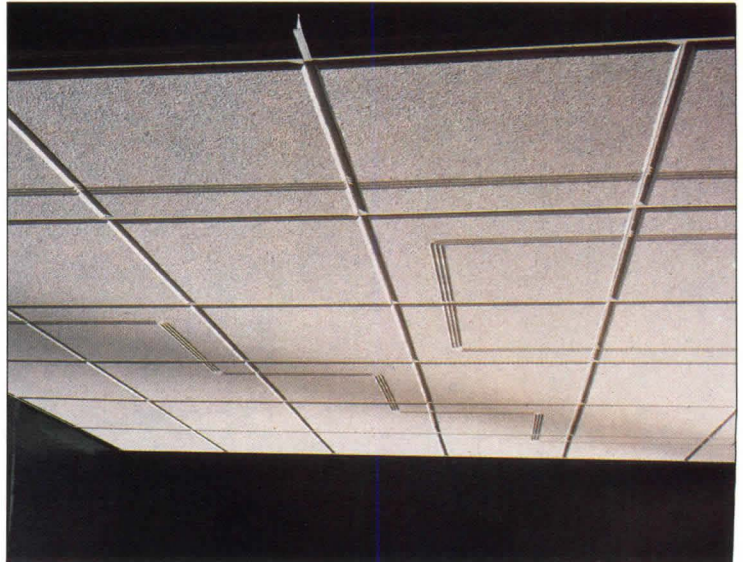
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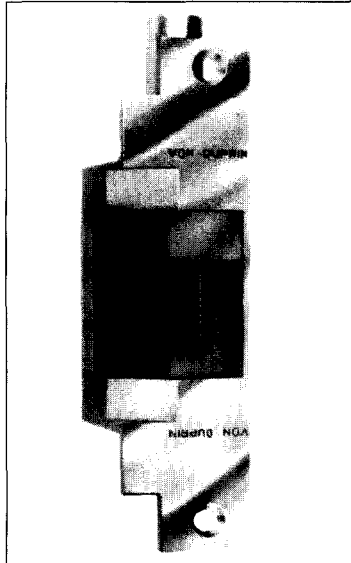


17

New products: security

1. Electric strike

The 3146 strike has been designed to work with a wide variety of locks and most electronic security systems; it can be installed in new or existing doors with a minimum of frame preparation. The stainless-steel strike is UL-listed for fire (Class A) and burglary protection. Von Duprin, Indianapolis.
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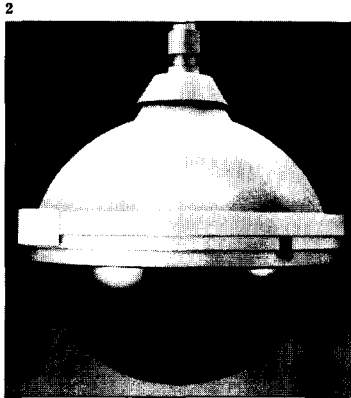
2. Programmable access control

A single-door device, the *Dentco II* system offers five levels of access control, including card only, card and PIN or common access code number, and remote activation. Bronze and aluminum face-plate finishes are available for such highly visible locations as private clubs. Detex Corp., New Braunfels, Tex.
Circle 318 on reader service card



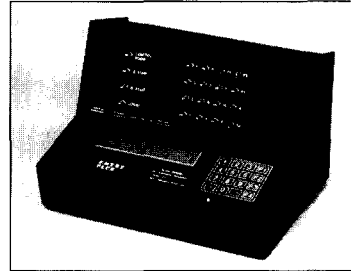
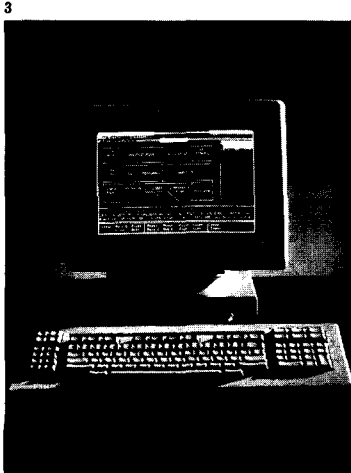
3. Outdoor surveillance

The *V336APTH Omniscan* is said to be weatherproof, with an upper dome of insulating structural foam housing the positioning device. For discreet, 360-deg outdoor surveillance, the lower dome is distortion-free plastic, concealing the camera and lens. Vicon Industries Inc., Melville, N. Y.
Circle 319 on reader service card



4. Security management

The *System 10* proximity-card system now offers several new features said to provide more versatile security management in large-scale installations. Up to 32 user descriptions may be entered for each of up to 8,000 cardholders: for example, hair color, type or color of car, medical training, and languages spoken. Sielox Systems, Inc., Sunnyvale, Calif.
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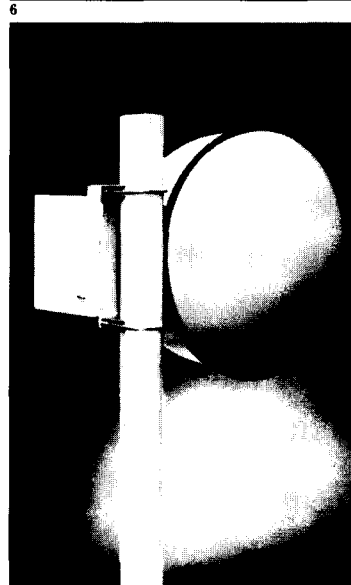
5. Keypad-operated access

The *EntryPlus* system works like a bank cash machine, with each building tenant or apartment occupant assigned a 4-, 5-, or 6-digit code number. Entering that code into a keypad at entrances and elevators permits access only to those floors cleared for that particular user—at that particular time. A hard-copy record can be printed to let building managers know who went to which floor when. EntryPlus, Kirkland, Wash.
Circle 321 on reader service card



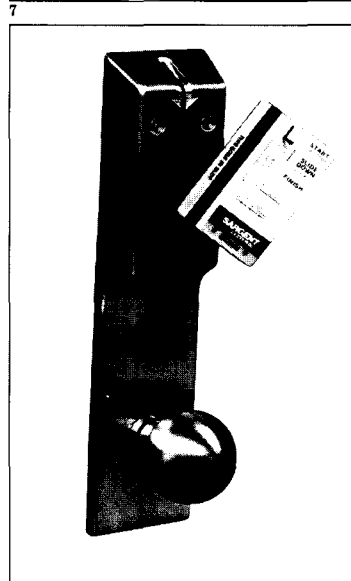
6. Door viewer

Made of cast metal with two polarized lenses and a shatter-resistant mirrored exterior lens, the *Private Eye* door viewer lets the occupant see a caller clearly enough to read an ID card, while remaining invisible to those outside. When not in use, the lens handle flips down so that no light is visible through the viewer. Rejan, Inc., Beaverton, Ore.
Circle 322 on reader service card



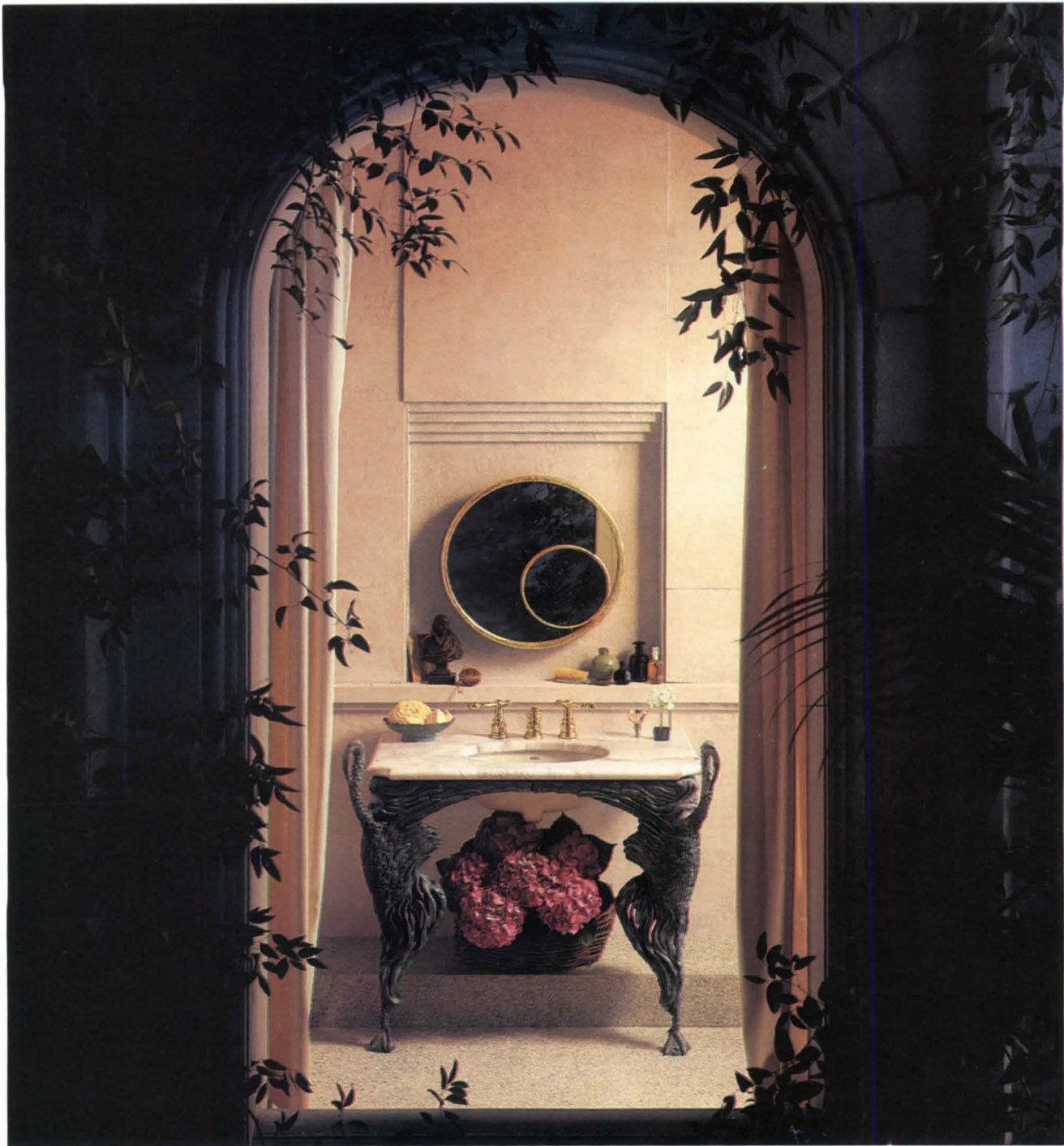
7. Microwave fence

The *Racon 1400LC* microwave intrusion-detection system is said to provide simple-to-install, cost-effective high-security outdoors. Individual perimeter units (photo) can cover zones of from 25 to 1,500 feet; detection sensitivity is field-adjustable. The *1400LC* can be battery- or solar-power operated, drawing only 60 ma of current; no special power cables are needed. Racon, Inc., Seattle, Wash.
Circle 323 on reader service card



8. Cardlock system

For hotel security, the *System 45* includes a plain-English card-encoding computer, 11 levels of magnetic keycards, and the battery-operated door unit pictured. The vertical-slot card reader is said to be virtually unjammable. Located on the guest side of the door, a microcomputer operates a mortise lock, with guarded latchbolt and 1-in. deadbolt. The 11 card levels provide a hierarchy of security, ranging from the guest card that expires at checkout time, to a card that can only open one door once. The manufacturer provides factory training, full warranties, and in-field service. Sargent, New Haven, Conn.
Circle 324 on reader service card
More products on page 144



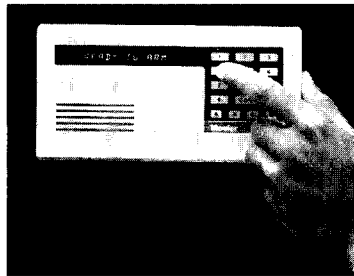
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The Uccello™ console table, of classic sculptured bronze with marble top, recalls the formal fountains found only in other times, on other continents. Acquire it in your lifetime to enhance your bath, dressing or powder room. Shown with IV Georges Brass™ faucet in polished brass. To see other elegant Kohler fixtures and fittings, visit your nearest Kohler distributor or write Kohler Co., Department RA8, Kohler, Wisconsin 53044. **Circle 57 on inquiry card**

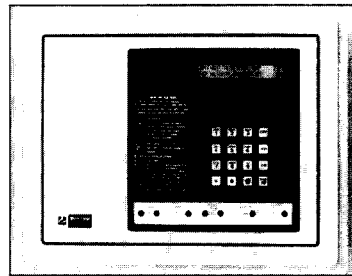
17022 Copyright 1987 Kohler Co.

9. Digital alarm

The *ProGuard* alarm system meets several specific requirements for 24-hour security and loss prevention in retail stores and businesses. It identifies which monitored door, window, smoke, or motion detector has been activated, and can be connected to the manufacturer's *Command Center* for quick response. The system is flexible enough to permit partial monitoring of the premises during business hours, to discourage internal theft. Mosler Inc., Hamilton, Ohio.
Circle 325 on reader service card



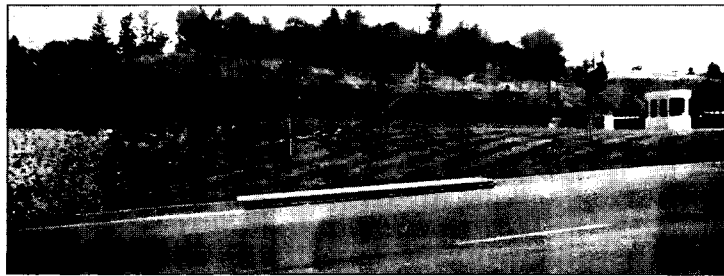
9



13

10. Landscape fences

From *Cyclone*, landscape fences of roll-formed steel provide a custom-built appearance, following ground contours and curves without shop fabrication or field-welding. Support posts are high-strength steel; all framework surfaces are now *Galfan*-coated, a continuous zinc-alloy process said to give a life expectancy up to three times greater than conventional hot-dip galvanizing. For ornamental applications, a bonded PVC coating is offered in three colors. Cyclone Fence, Joliet, Ill.
Circle 326 on reader service card



10

11. Bullet-resistant door

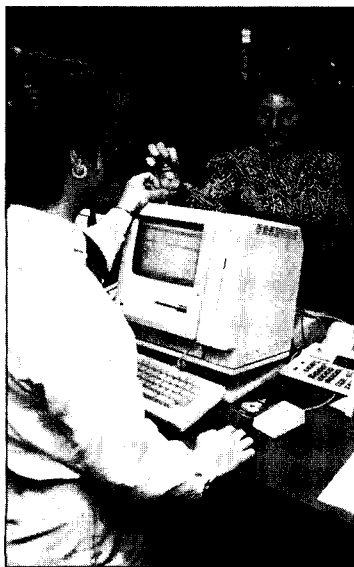
The *Armorshield* door comes ready to install, including ball-bearing nonremovable hinges, a reinforced mortise lock, and heavy-duty hardware. The entry door conforms with UL 752, resisting the force of a .44 Magnum bullet. Listed view windows are also available. Flush door faces are seamless; doors and frames are supplied primed, or with a urethane enamel finish in a range of colors. The *Armorshield* has an insulating foam core, and is said to offer excellent thermal- and sound-barrier properties. Ceco Door, Oak Brook, Ill.
Circle 327 on reader service card



11

12. Hotel security

The photograph shows the front-desk key-encoding computer terminal of the *Intellis* security system installed in New York City's Days Inn. Based on the Apple *Macintosh*, *Intellis* software communicates with other computers and hotel systems, including a property-management interface. Electronic locks, which read the magnetic card vertically, retrofit to existing mortise or cylindrical door preparations. One encoded keypad can provide secure access to as many as five common guest areas, such as pools and garages. Schlage Lock Co., San Francisco.
Circle 328 on reader service card



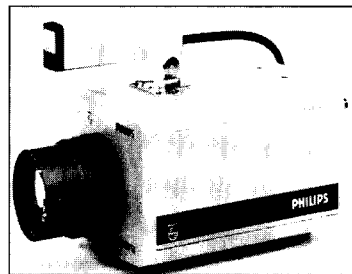
12

13. Active security

Described as an "active" system, the *ExactPoint* displays the precise location and nature of security violations and alarms, in English, on the unit's front panel. It communicates with the 90 burglary and fire detectors every few seconds, getting positive feedback on the status of each monitored point, minimizing undiscovered detector failures or tampering. The system uses randomly encrypted communication, and immediately detects jumpers, taps, or cuts in the loop. Alarms are sent via telephone wires to the nearest of over 50 central monitoring stations. Wells Fargo Alarm Services, King of Prussia, Pa.
Circle 329 on reader service card

14. Remote observation

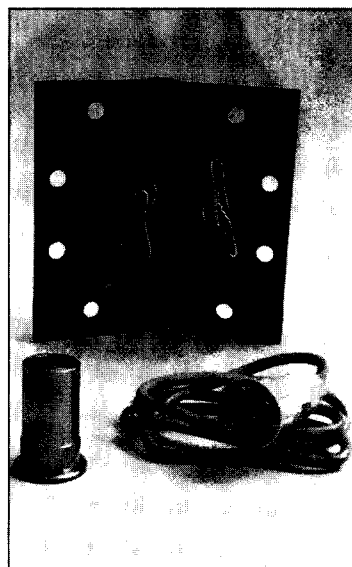
Said to be both sturdy and compact, the *Philips CCD* observation camera uses a silicon chip in place of a picture tube. It supplies sharp, distortion-free color images under a wide variety of lighting conditions, providing extra clues for identifying people and vehicles. Philips, Industrial & Electro-acoustic Systems, Eindhoven, The Netherlands.
Circle 330 on reader service card



14

15. Magnetic monitoring hinge

The *Model MMXCC* looks like a regular full-mortise hinge, while hiding a reed switch in the jamb and a magnet in the door. It is UL-listed as a magnetic monitoring device, and also operates as electric strike on the lock set. Concealed switches on both components activate security signals, turn on lights, and register on a remote monitor. McKinney, Scranton, Pa.
Circle 331 on reader service card



15

16. Passcard entry management

The *Century* access control is designed to replace on-site guards, providing limited access to buildings after hours and on weekends. Uniquely coded passcards permit authorized entry to specific doors at specified times; doors can be automatically locked and unlocked at predetermined times. Visitors can be let in by calling the central service center, where all programming and system management for *Century* takes place. Honeywell Protection Services, Minneapolis.
Circle 332 on reader service card



16

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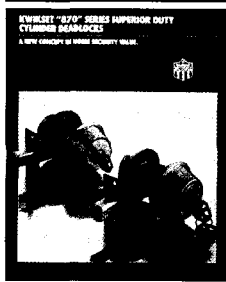
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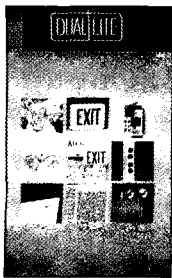
Circle 58 on inquiry card



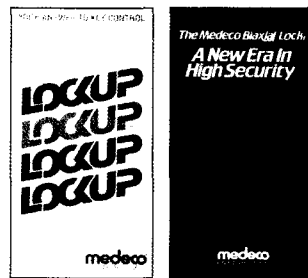
Cylinder deadlocks
The 870 Series single- and double-cylinder deadlocks for residential use are introduced in a 4-page brochure. The lock can be adjusted to fit both 2 3/8- and 2 3/4-in. backsets; the interior turnpiece has wording and directional arrows to indicate at a glance when the bolt has been thrown. Kwikset, Div. Emhart, Anaheim, Calif.
Circle 400 on reader service card



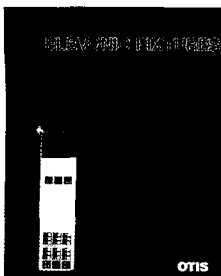
Sprinkler systems
A 32-page booklet covers the layout and installation of wet- and dry-pipe, deluge, and preaction fire-suppression systems. Sprinklers are shown in color, along with complete technical data on each type. The low-profile *Aquarius* quick-response sprinkler is particularly suitable for residential interiors. Gem Sprinkler Co., Providence, R. I.
Circle 406 on reader service card



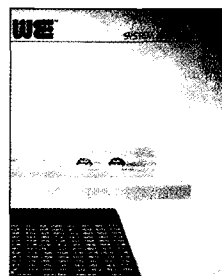
Emergency lighting
An 8-page color folder profiles a number of lighting and power systems for commercial, institutional, and industrial emergency situations. A new product featured is the *Spectron* central battery/inverter unit for standby AC service. Dual-Lite, Newtown, Conn.
Circle 401 on reader service card



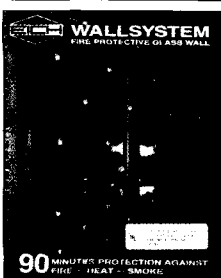
High-security lock systems
Two brochures present extensions of the *Medeco* security line. *Lockup* software maintains lock and key inventories for masterkey programs, providing instant records of duplications and hardware replacement. An interchangeable core lockset, with a biaxial UL-listed cylinder, is described in a color folder. Medeco, Salem, Va.
Circle 407 on reader service card



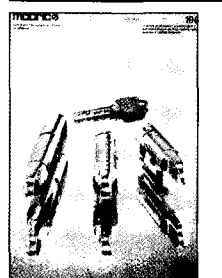
Elevator security
Various tenant security and life safety features offered by *Elevonic Fixtures* are discussed in a 10-page booklet. Floor access can be restricted to those punching in a 3-digit preset code using any of the 216 combinations of the lower six elevator car buttons. Otis Elevator Co., Farmington, Conn.
Circle 402 on reader service card



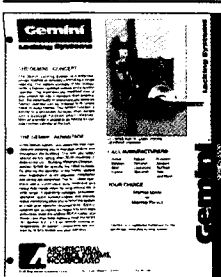
Low-power wireless system
A folder cites the advantages of wireless smoke detectors, especially the ability to immediately alert a main control center as to the location and progress of the fire. The system uses the same principles as the cellular telephone, and has earned certification under a temporary NFPA standard. World Electronics, Inc., Coral Springs, Fla.
Circle 408 on reader service card



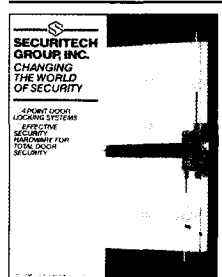
Rated glass wall
A brochure explains how the *Eich* fire-protection glass wall can achieve a 90-minute rating under UL 263. Interior separation walls are made of glazed units of up to 4-by 7-ft each, which may be installed in any length. Fire-resistance is supplied by *Contraflam* clear gel between two panes of safety glass. Eich Corp., Los Angeles.
Circle 403 on reader service card



Double-locking cylinder
Catalog insert presents an addition to a line of British-made security hardware: UL-listed high-security cylinders, which work with special *Allgood* controlled keying. Rim, oval, and profile cylinders are offered; locks come in several metal and all *Spectra* color finishes. Modric, Inc., Chicago.
Circle 409 on reader service card



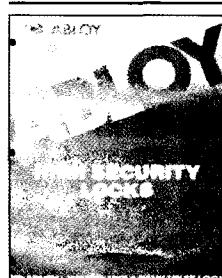
Fire-door controller
A product data sheet describes how the 1400 Series fire-release locks that allow controlled doors to be directly interfaced with a building's fire and smoke alarm and power-failure system. The listed device works with mortise locks from all manufacturers. Architectural Control Systems, Inc., St. Louis.
Circle 404 on reader service card



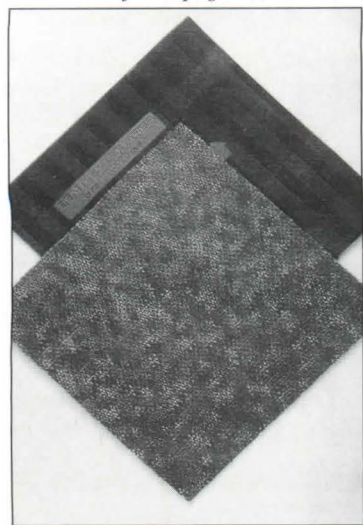
Multiple-point locking
Illustrated catalog describes a UL-listed panic-exit deadlock said to combine safety and security for all emergency exits. The *Series 8000* has hardened-steel deadbolts at all door edges. These retract at the push of the panic bar, yet withstand extraordinary methods of forced entry. Securitech Group, Inc., Maspeth, N. Y.
Circle 410 on reader service card



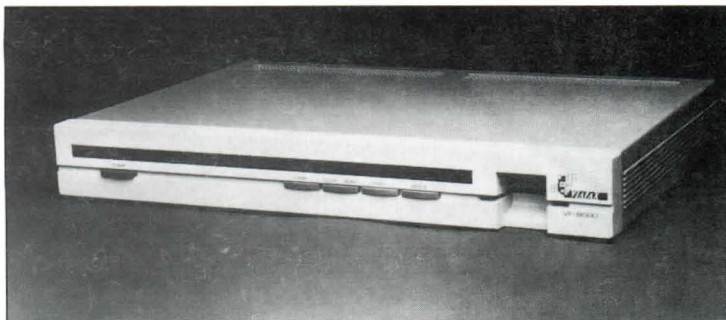
Locks
A full-line color catalog from the American subsidiary of a Swedish manufacturer of locks and security hardware highlights product features. A Function/Selector Guide includes lever handles, mortise locks, deadbolts, and electric locks. ASSA, Inc., Chicago.
Circle 405 on reader service card



Rotating disc cylinder
A six-page catalog shows how the *ABLOY* lock uses rotating detainer discs instead of spring-loaded pins, an extremely pick-resistant design said to reduce wear, and fouling from dirt and rust. Cabinet, mortise, and deadbolt locks are included, as well as several types of padlocks. ABLOY Security Locks, Dallas.
Circle 411 on reader service card

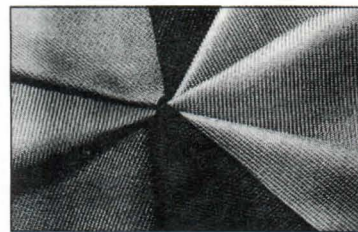


Carpet backing
A random-pattern cut pile of *Antron* nylon, *Crystal Palace* from Bentley Mills is one of the first commercial modular carpets constructed with the *Keldax* EVA resin tile-backing system. Said to be quite dimensionally stable, the fiberglass-reinforced resin backing rates very high against standard modular carpeting tests, including flame spread and smoke generation. The backing's light weight and flexibility at a wide range of temperatures are said to make the squares easier to lay; the *Keldax* backing has an embossed grid pattern that increases the surface area for adhesion. Bentley Mills, Inc., City of Industry, Calif.
Circle 333 on reader service card

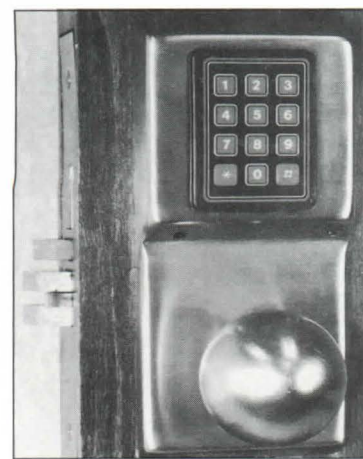


Color fax
The *Viafax* uses any existing video camera to convert TV-quality images into digital data, transmitting these via telephone lines anywhere in the world in less than 90 seconds. The images can be received on an ordinary color video monitor, video printer, or a black

and white facsimile machine. *Viafax* color video transmission is said to be especially useful for layout and color decision-making on architectural renderings and interior design. JL International Trading Co., USA, Inc., Los Angeles.
Circle 335 on reader service card



Durable upholstery
An acrylic-backed upholstery fabric constructed entirely of *Cordura* nylon, "Endurance" is suggested as an alternative to vinyls for high-abrasion contract applications. It has passed 3-million double-rubs, and meets the California 117 flame test standard. "Endurance" comes in 18 colors; custom shades are also available. Rudd International Corp., Washington, D. C.
Circle 336 on reader service card
Continued on page 161



Pushbutton electronic lock
Marketed as a mid-price lockset for use in commercial, industrial, hospitality, and multifamily residential applications, the *2700 Touchcode* can recognize up to three separate groups of 6-digit access codes. *Touchcode* is available with three separate locking functions, including a 3/4-in. deadlocking latchbolt and separate 1-in. deadbolt. The lock operates from a self-contained internal battery pack, with a useful life of about one year. Yale Security Inc., Charlotte, N. C.
Circle 334 on reader service card



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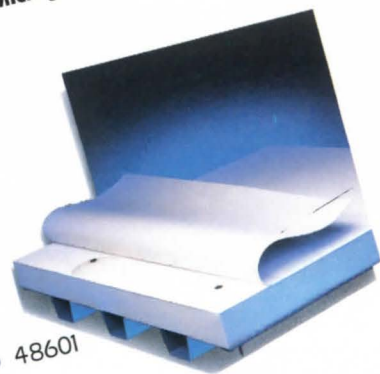
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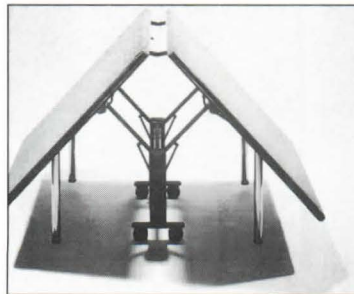
CRT accessory

Designed by Douglas Ball for use with the *Race* and *DOCameron* office, as well as systems by other manufacturers, the corner work center is based on a black metal turntable and keyboard shelf that converts the intersection of two worksurfaces—even those of different depths—into a CRT station. The base plate supports the monitor with no clamping or drilling. Accessories include a fully articulated, retractable version of the keyboard tray. The base plate also supports telephone-machine and document holders. SunarHauserman, Cleveland. Circle 337 on reader service card



Auditorium seating

The *Centennial* chair has been designed by Hugh Acton with a free-floating, spring-mounted seat, and a supportive back that responds to occupant movements. The oval-shaped steel frame provides armrests in either plastic, upholstery, or solid wood; a connected version of the *Centennial* seat shares an armrest. American Seating Co., Grand Rapids, Mich. Circle 338 on reader service card



Mobile conference table

The *Concorde* table has a unique base construction that makes it possible for one person to fold a table as large as 4- by 12-ft into a compact, 14-in.-wide by 6 1/2-ft-high configuration, which can then be rolled as needed on its own large casters. Top options include wood veneers, plastic laminates, and *Finesse*, a leather-like, stain-resistant material. Howe Furniture Corp., Trumbull, Conn. Circle 339 on reader service card More products on page 179

1	Exxon
2	General Motors
3	Mobil
4	Ford Motor
5	IBM
6	Texaco
7	E.I. du Pont
8	Standard Oil (Ind.)
9	Standard Oil of Cal.
10	General Electric
11	Gulf Oil
12	Atlantic Richfield
13	Shell Oil
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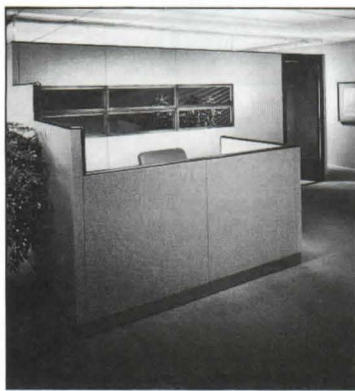
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Glazed partitions

Using this manufacturer's IOP office partition as a base, various stack components let the user add a number of heights and widths to existing panel installations. For example, *ClearStory* glass lights provide the extra height needed to enclose the office, while allowing light into the interior. JG Furniture Systems, Inc., Chicago.

Circle 340 on reader service card



Felt-backed roofing

The addition of a polyester felt backing to this manufacturer's single-ply roofing membrane is said to make the system particularly suitable for reroofing applications over existing smooth surfaces, lowering costs by eliminating the need for any recovery board. The backing also enhances the puncture resistance of the membrane itself, and is offered in all *Sarnafil* membrane roofing and waterproofing products. Sarnafil Inc., Canton, Mass.

Circle 341 on reader service card



Marble-topped casework

The *Kane Desk Group* has desks and cabinets in two widths, desks with returns, and a gallery reception desk. Bases are finished with polyester resin on all sides, said to be easily refurbished on-site. Tops may be marble as shown here, as well as resin, natural wood, or leather. Metropolitan Furniture Corp., South San Francisco, Calif.

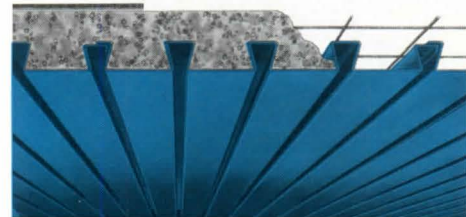
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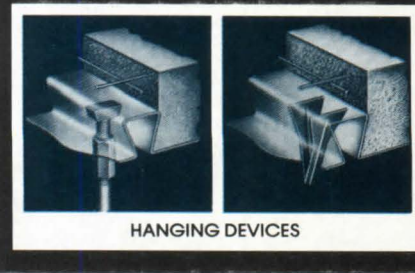
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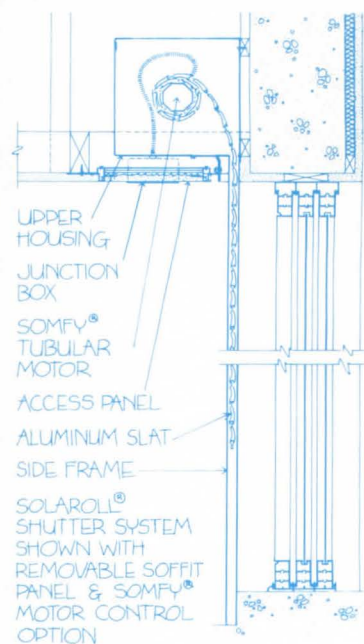
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Manufacturer sources

For your convenience in locating building materials and other products shown in this month's feature articles, RECORD has asked the architects to identify the products specified

Pages 90-95
Wellesley College Sports Center
Hardy Holzman Pfeiffer Associates
Pages 90-93—Metal roofing and curtain wall panels: H. H. Robertson. Built-up roofing: Carlisle Tire & Rubber.
Architectural louvers: Arrow. Flag poles: Morgan-Francis Co. Aluminum-framed windows and entrances: Kawneer Co., Inc. Wood-framed windows: Pella.
Page 94—Railings: American Architectural Iron Co. Paints: PPG. Track surface: Mondo Rubber. Quarry tile: American Olean Tile Co. High-bay fixtures: Sterner Lighting Systems, Inc. Basketball backstops and bleachers: Hussey Seating Co.
Page 95—Swimming pool tile: American Olean Tile Co. Wall and mosaic tile: U. S. Tile. Paint (on steel): Tnemec. Scoreboard: FairPlay. Motorized shades: Mecho. (bottom left) Wood-top rails: A. H. Leeming & Sons, Inc. (center) Metal railing: Poma Aluminum & Steel Fabricators, Inc. Diffusers: Titus. Ceiling: Celotex. Paint: PPG Industries (right). Pendant fixtures: Bergen Art Metal.
Pages 96-99
Downtown Birmingham YMCA
Kidd/Plosser/Sprague/Architects/Inc.
Pages 96-97—Glass block: Pittsburgh Corning. Aluminum-framed tinted-glass curtain wall: Kawneer Co. Inc.
Pages 98-99—High-bay fixtures: Hi-Tek. Parabolic troffer fixtures: Lite Control. Track surface: Mondo Rubber. Gymnasium floor: Robins Sports Floor. Railings: custom by architect. Paints: Pratt & Lambert; Benjamin Moore; PPG Industries.
Page 99—Pool, ladders and pumps: United Industries. Lifeguard chair: KDI Paragon. Accessories: Standard Bronze. Pool tile and deck pavers: Dal-Tile Corp.
Pages 100-105
RiverPlace Athletic Club
Zimmer Gunsul Frasca Partnership
Pages 100-103—Fire retardant wood shingles: Wesco Cedar Inc. Sheet metal roofing, gutters and leaders: Pacific Rainier Roofing. Paints and stains: Fuller; Tnemec; Cuprinol. Clock: Electric Time. Steel and aluminum-framed windows: Milquard Mfg. Co. Wood doors: Cenco Door Systems. Locksets: Russwin. Hinges: Stanley. Closers: LCN; Norton.
Checks and operators: Ives; Cipco. Exit devices: Von Duprin. Security controls: Detex; Simplex.
Page 104—Paints: Tnemec (HiBuild 66).
Pool and equipment: William M. Smith & Associates. Alarm and detection: Advanced Services Corp.

Page 105—Gym wood floor: Horner Thrust-a-Pad. Track surface: Versature 360. Divider curtain: Stagecraft Industries.

Pages 106-113
University of Iowa, School of Law
Iowa City, Iowa
Gunnar Birkerts & Associates, Inc.
Pages 106-108—Limestone panels: Harding & Cogswell Corp. (Select Gray). Spandrel glazing: Environmental Glass Products. Windows: Kawneer Co. Inc. Tinted glazing: Cardinal IG (Gray). Safety glass entrance and hardware: Blumcraft of Pittsburgh. Bollards: mcPhilben. Foot grille: Reese

Enterprises. Limestone: Harding & Cogswell. Aluminum plate on roof and dome: Swanson Gentlemen, Inc. Aluminum rail: Breuer Metal Craftsmen, Inc. Recessed downlights: Moldcast Lighting. Bronze signage: Metallic Arts. Ballasted roofing: Carlisle Tire & Rubber Co. (Sure-Seal B).
Page 111—Roof-level deck pavers: Metropolitan Ceramics.
Page 112—White oak walls: PLC Construction Co., Inc. Cylindrical downlights: Omega Lighting (PS613C). Recessed downlights: Lightolier (1100-1127). Carpeting: Talisman Mills. Aluminum diffusers: Carnes. Interior wood

doors: Landquist and Son. Desks and upholstered seating: Woodcraft Architectural Millwork. Drywall: U.S. Gypsum. Sprinkler heads: Central Sprinkler Corp. Paints: Glidden; Iowa Paint. Exit signs: mcPhilben.
Page 113—Skylight: EPI Architectural Systems, Inc. Smoke alarm: Fenwall, Inc. Metal stacks: Library Bureau. Wood cases: Smulekoff's/Woodsmith. Ceiling tile: Capaul. Parabolic downlights: Columbia Lighting, Inc.

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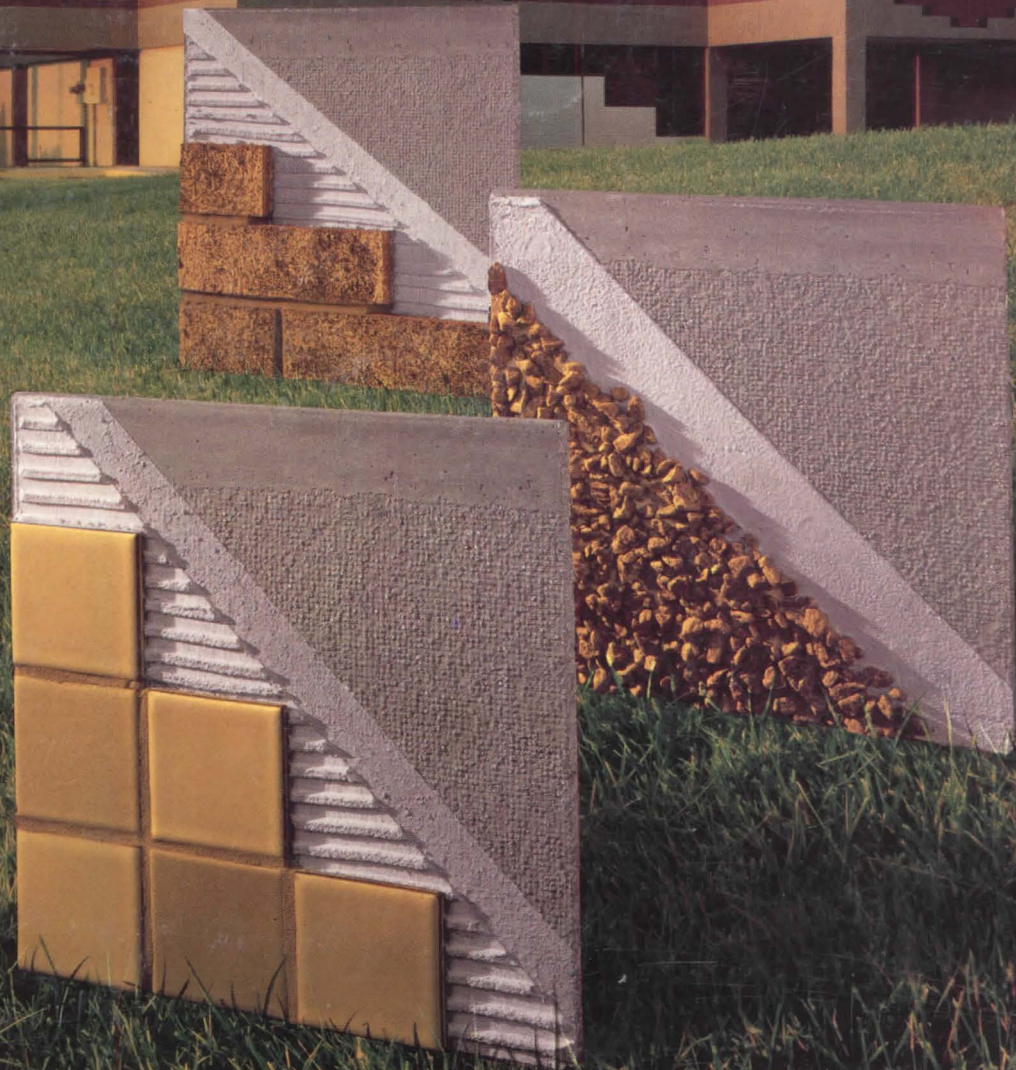
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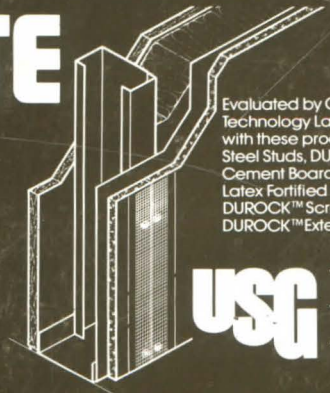
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