

ARCHITECTURAL
RECORD

Business Design Engineering
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June 1984



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Your mid-April 1984 issue of RECORD HOUSES brought back to me the sense of awe and wonder I once felt as a student of architecture. That such a breathtaking issue could be produced is a credit to the editors, the graphic designers, the photographers and the architects themselves.

Vincent Colangelo, Architect
Stamford, Connecticut

How can you write an editorial such as you did for RECORD HOUSES 1984 and then present the houses you did? Some look like tract houses or houses of another era. Some are downright ugly and mannered. Architects Jacobsen and Barnes are again repeated, year after year.

Next year, please, no repeater architects and a more varied sample of houses.

Alfredo Larin, AIA
San Diego

While other letter writers have also mentioned Mr. Barnes as a "repeat" in RECORD HOUSES, the publication has shown his work only five times in 29 years, the last time in 1976, we're sorry to say. Mr. Jacobsen's record, we're glad to say, is quite different (see below). Moreover, five of this year's houses are by architects new to us.—Ed.

I have just received RECORD HOUSES 1984 and am pressed to tell you what an exquisitely beautiful edition it is. The range of work and the geographic spread are awesome. The houses selected neither run with the pack nor reinforce the current clichés but are simply beautiful, sensible buildings that will last and be loved.

Much should be said of Massimo Vignelli's sensitive Italian hand for magazine design once again. Although this is my 18th RECORD HOUSE, I am extremely proud—even more than ever before—not only because of the company of work my own is with but also because of the simple and elegant beauty of the issue.

Hugh Newell Jacobsen, FAIA
Washington, D. C.

After reading this year's RECORD HOUSES, I felt a little shortchanged. Having seen many fine houses going up or on the drawing boards here in New Mexico, I am puzzled that little if anything being done here is represented in this issue.

The relationship between earth and shelter may be of little consequence to those who seek a New England vernacular

historicism, but to anyone who has seen the gentle patience of El Santuario de Chimayo or the tin roofs in Abiquiu, there is a greater spirituality to architecture that one can grasp and explore. This spirituality is echoed by Prince, Predock, Lundeen and others. I hope that future issues will celebrate their spirit.

Karl Conrad
Las Cruces, New Mexico

The annual RECORD HOUSE awards program is open to any registered architect who submits material. This year's entries included only one from New Mexico. We hope for better luck next year.—Ed.

I am not in the habit of writing letters to magazines as a rule, but something struck me about "Risen from the ashes," the Immanuel Episcopal Church, New Castle, Delaware, by John Milner Associates [RECORD, February 1984, pages 108-111].

I thought the entire work of reconstruction/rehabilitation was so sympathetically brought off as to be disarming. I have been somewhat involved in a similar project in London, England, in which that architect's personality, in the end, came across a bit too strongly. Not so at IEC.

Congratulations to Messrs. Steenhusen, Hollenberg, Schooler and Roberts on their control. They have every right to be proud of a job well done.
Glenn Shriver, Architect
Chicago

Corrections

The photograph on the right side of page 129 in RECORD's mid-April 1984 issue should have been credited ©Robert Ward & Associates.

Our work shown in the April 1984 issue of RECORD (pages 124-137) could not have been accomplished by one person. In addition to the input from my partner Philip Bobrow, the results are due to a close collaboration among my colleagues Kenneth Frampton, Miles Cigolle, Jay Johnson, John Robins, Virginia Wirt, Clint Diemer, Brigitte de Cosmi, Diane Lasko, Barbara Weiss and Michael Imrie.

Of particular significance in the representational portion of the work is the exceptional painting technique of Jay Johnson and the incomparable line work of Miles Cigolle.
Michael Fieldman, AIA
Bobrow & Fieldman, Architects
New York City

June 14-15

"Wright in Wisconsin: Spring Green," tours of buildings designed by Frank Lloyd Wright, the first day in Racine; the second day at Taliesin; the programs will be repeated October 11-12 and October 18-19. For information: Pat Blankenburg, Tour Director, Wright in Wisconsin: Spring Green, Box 370, Spring Green, Wis. 53588.

June 22-23

Workshop and panel discussion on housing, "Working Together—Public/Private Partnership," co-sponsored by AIA Housing Committee and the St. Louis Chapter, AIA; at St. Louis. For information: Ravi Waldon, AIA, 1735 New York Ave., N. W., Washington, D. C. 20006 (202/626-7452).

June 25 to July 28

"Urban Architecture: A New Perspective," a special summer institute for professors; at DePaul University; sponsored by National Endowment for the Humanities, DePaul University and Chicago Architecture Foundation. Contact: Prof. Sally Chappel, Director, NEH Institute, DePaul University, Art Department, 2323 N. Seminary, Chicago, Ill. 60614 (312/321-8207).

July 15 to September 1

Architectural Crafts, exhibition of ceramics, fiber, metal, wood and glass as integral parts of architecture; at the Fine Arts Center of Tempe, Tempe, Ariz.

July 29 to August 2

1984 Workshop on Architectural Technologies: Acoustics, Lighting, Energy/Design and Life Safety; sponsored by New England Regional Council/American Institute of Architects and Roger Williams College; at Roger Williams College. For information: Lois Lannon Architecture Division, Roger Williams College, Bristol, R. I. 02809 (401/255-2130).

August 2-3

Toxicity '84, conference sponsored by National Institute of Building Sciences (NIBS) and National Fire Protection Association (NFPA), addresses fire safety of building products; at Plaza Hotel, Washington, D. C. To register, contact: Baldev Sikka, NIBS, 1010 15th St., N. W., Suite 700, Washington, D. C. 20005 (202/347-5710).

ARCHITECTURAL RECORD (Combined with AMERICAN ARCHITECT, and WESTERN ARCHITECT AND ENGINEER) (ISSN0003-858X) June 1984, Vol. 172, No. 7. Title® reg. in U. S. Patent Office, copyright® 1984 by McGraw-Hill, Inc. All rights reserved. Indexed in Reader's Guide to Periodical Literature, Art Index, Applied Science and Technology Index, Engineering Index, The Architectural Index and the Architectural Periodicals Index. 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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Change of Address: Forward changes of address or service letters to Fulfillment Manager, ARCHITECTURAL RECORD, P.O. Box 2025, Mahopac, NY 10541. Provide both old and new address; include zip code; if possible attach issue address label.

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Publication Office: 1221 Avenue of the Americas, New York, New York, 10020. ARCHITECTURAL RECORD (ISSN0003 858X) published monthly except April and September when semi-monthly, by McGraw-Hill, Inc. Second-class postage paid at New York, NY and additional mailing offices. Postage paid at Montreal, P.Q. Registration Number 9003. 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 48Ea through 48Ed. Central Section 48Ca through 48Cb.

The ten best of the 1984 Convention in Phoenix

Editorial

Best news for architects and writers—from the keynote speech by futurist/forecaster Marvin Cetron: “The jobs that will be the highest-paying jobs in the world will be the writer, the sculptor, the painter, the professional athlete, and the architect—the people who do something unique and creative that cannot be computerized or robotized. . .”

Best quote by a developer/builder in the cause of architecture—from the excellent talk by Herman Chanen, president and chairman of the board of Chanen Construction Company, Phoenix: “Far too often, you, the architect, against your better judgment, go along with your clients. . . permit yourselves to be intimidated by developers, builders, and owners who want to make quick profits at the expense of our entire society. . . . Unfortunately, I’ve come to this conclusion after building for many years and making many mistakes and discovering on my own that the greater the investment in ‘the top line,’ the greater the results on the bottom line. I think you should have told me this a long time ago.”

Best resolution dealing with re-establishing matters of principle—the resolution by the New England architects to develop a new Code of Professional Responsibility. The resolution, which passed almost unanimously, argues that “Whereas, in the past, a valued aspect of the AIA has been a mandatory code of ethics. . . and Whereas, despite the aspirational quality of the present voluntary principles, there remain many specific areas of conduct where mandatory principles are necessary. . . Resolved, that there be developed, at the highest collaborative levels of the profession, one, a model code of professional responsibility, and two, a comprehensive investigation of alternative methods of establishing strong and effective mechanisms for enforcement of the code of professional responsibility”—and by this time next year! And thus, one can only hope, the pendulum begins to swing back. It was 12 years ago that the AIA Board voted to accept a Justice Department consent decree permitting (and as I wrote at the time, that means encouraging) architects to submit fee quotations for architectural services at the time they offer their services. Signing that consent decree did not, as some of us thought at the time, spell an end to professionalism, but it sure didn’t do anything to help the profession hold its head above the line of the lowest common denominator. Over the years since, under continued prodding from the Justice Department and architects who think that “the most important thing is what the market demands,” we gave up constraints on design/build, with its built-in conflicts of interest; on advertising; on competing for jobs by doing not just “free sketches” but big chunks of the preliminary design before being retained (in the name of “design competitions”); on sidling up to a client after a fellow architect had been retained and offering to “supplant” said fellow architect and do it wholesale, et cetera, et cetera, et cetera. Until, in 1980, the delegates to the convention folded under the pressures and replaced the mandatory Code of Ethics with a voluntary Statement of Ethical Principles. (Along the lines of “Thou should not steal.”) I for one hope that the work over the next year to develop the new Code of Professional Responsibility re-examines all those matters of principle and professionalism given up by architects because the Justice Department considered them restraint of trade and a few architects thought they had to “meet the market.” What’s involved are matters of principle.

Best news about attendance at professional programs: A three-hour-long architect-client discussion of the Honor Awards outpulled by far the siren song of sessions on computer-aided design, improving your firm’s productivity, even “maximizing your marketing for best advantage.” I take this, idealist to the end, to mean that design is still the most important interest of architects. That’s a relief.

Best quote overheard at a cocktail party—after the first national meeting of Architects for Social Responsibility and the passage of a resolution calling for the profession to make “an urgent commitment” to achieving total nuclear disarmament: “Can you imagine an organization of ‘Contractors for Social Responsibility’?”

Best reminder of how important good architecture is in affecting the hearts and minds and spirits of people: Frank Lloyd Wright’s Arizona Biltmore. It is still, after these considerable years, elegant and exciting. You could sit in its major spaces for weeks studying design and detailing and decoration—and a lot more time just walking around considering the nature and importance of good architecture to people. Which is, of course, the only real thing good architects are all about. *W. W.*

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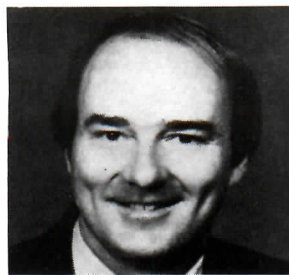
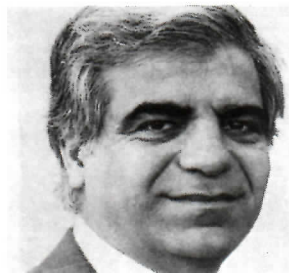
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Convention news: Public spirit under the Southwestern sun



Officers elected to the AIA Executive Committee at the Phoenix convention were (top to bottom) John A. Busby, Jr., first vice president; Robert E. Gramann, vice president; Donald J. Hackl, vice president; Ted P. Pappas, vice president; and Philip W. Dinsmore, secretary.

Although the Phoenix weather in early May was torrid even by Arizona standards, the 5,000 registrants at the 116th AIA national convention seemed undaunted by the 100-degree daily temperatures. After all, a visit to the Southwest offered an opportunity to combine AIA business with Sunbelt pleasures, and many convention participants and their families were found by hotel poolsides or out on excursions to Taliesin, Arcosanti, and other natural or manmade attractions around the desert city (Dinner at the magnificent Wright-designed Arizona Biltmore was a particularly popular diversion that allowed convention-goers to have their architectural cake and eat it too).

If there is one word that sums up the spirit of this year's convention, it is "public." The theme of the event, "American Architecture and its Public," was selected to explore the relationship between architects and the people they serve. Not incidentally, the convention coincided with the annual Cinco de Mayo festival, and events on Saturday and Sunday saw architects and native Phoenixians mingling on the city's sun-baked Civic Plaza. In his conference-opening remarks, given beneath diamond-shaped tensile structures that are a gift from the Institute to the city, AIA president George M. Notter, Jr. (right) spoke of design excellence as a byproduct of the creative interaction between architects and the public. "We want to involve the public in the work we do," said Notter, "and show that architects make a unique, important contribution to America's potential as a place to work and live." Accordingly, Notter used the occasion to announce the formation of the AIA public membership program. Available to anyone who is not an architect but "who appreciates good design and has an active interest in improving the built environment," public membership will offer such benefits as a quarterly color magazine, a quarterly newsletter, and discounts on publications offered by the AIA bookstore.

In annual elections for the Executive Committee, the position of first vice president was won by John A. Busby, Jr., principal of Jova/Daniels/Busby in Atlanta. Elected as vice presidents were Robert E. Gramann of Cincinnati, Donald J. Hackl of Chicago, and Ted P. Pappas of Jacksonville. Philip W. Dinsmore of Tucson was elected secretary. *P.M.S.*

Bylaw changes and resolutions: Professional responsibility and architects' compensation lead the list



At their annual business meeting the 643 delegates to the AIA convention in Phoenix unanimously passed a resolution for the Institute to develop a model code of professional responsibility and to investigate alternative methods of establishing "strong and effective mechanisms" for enforcing the proposed code. The resolution, as amended, also proposes that an interim report on the model code and enforcement alternatives be presented at Grassroots '85, leading to a resolution at the 1985 convention. Peter Forbes, president of the Massachusetts State Society of Architects, submitted the resolution and explained that widespread member consensus supports the need to "clearly articulate" the professional responsibility of architects working in the public trust.

On another resolution, delegates voted for the Institute to place high priority on the economic status of the architectural profession. The adopted resolution proposed that "the establishing of a fair return on architects' investments in their practices and the establishment of fair compensation for employees be a major AIA issue for the 1980s." The resolution includes an amendment calling on the AIA to address the reasons for declining profitability among architectural practices nationwide and to take steps to remedy the causes.

George S. Lewis, executive director of the New York Chapter, introduced the compensation resolution "in the conviction that the economic health of the architectural profession is central to its ability to serve society well, and that there is no more important issue facing the Institute."

Other actions taken at the business meeting included the following:

- An amended resolution submitted by the New York Chapter calling on the Institute to intensify efforts to implement a nuclear disarmament resolution passed at the 1982 AIA National Convention, and to

designate this issue as "an urgent priority" within its government affairs program. The resolution passed.

- A resolution submitted by the Seattle Chapter to retain national AIA dues at the present level through 1985 and to organize national staffing, programs, and services to operate "effectively within the resulting income amount." Those supporting the resolution stressed that a proposed dues increase could reduce chapter membership. Opponents said that dues should be increased by the Board of Directors because components need assistance to carry out more Institute programs and activities. The resolution was defeated.

- An amended resolution submitted by the Iowa Chapter to implore Congress and the Reagan Administration to reduce the national debt. A delegate from Texas supporting the resolution contended that the reason "our practices are in jeopardy is that interest rates are so high, many potential clients cannot afford our services." The resolution passed.

- An amended resolution charging the AIA Executive Committee with the responsibility of making funded AIA national committee assignments and striving to assure that proportional distribution of funded members by region is maintained. Submitted by the Florida Chapter, the resolution passed.

- An amended resolution submitted by the California Council on convention actions that would diminish the Board's management role and allow membership to participate directly in AIA policy. The resolution failed.

Delegates also voted to table a proposed AIA bylaw amendment that would increase the number of public Board members from one to two. Former AIA president Robert Durham of Seattle argued that it is inappropriate to increase Board membership in light of last year's resolution to study the Institute's governance.



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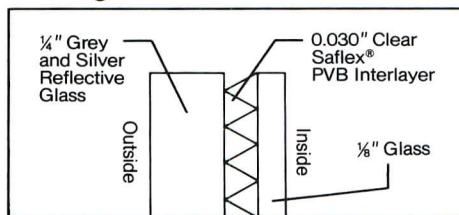
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AIA theme and regional programs: An examination of what the public wants in its architecture

The theme of the 1984 convention, "American Architecture and its Public," focused on the question of the public's role in the design process. A strong correlated sub-theme at the event was an examination of the Southwest in general and Phoenix in particular as microcosms of public input into the development of the visual environment. Excerpts from some of the more significant speeches and seminars follow.

Technological forecaster Marvin Cetron spoke of changes affecting architects and society

In his keynote address at Phoenix Symphony Hall, Cetron, founder and president of the Arlington (Va.)-based think tank Forecasting International, warned that "architects must be re-educated and become computer-literate" to serve the needs of a healthier, older, and more leisure-oriented society.

He stressed the importance of education in preparing young people for a high-tech world of fifth-generation computers, robotics, and shorter work hours. "Our major problem today is our kids: we're doing a rotten job of educating them," noted Cetron. He called for substantial salary increases for teachers—especially for those involved in math and science courses—and demanded higher standards for those who wish to become teachers.

In addition to not funding education adequately, America is not spending enough on long-term efforts in research and development, he said, adding that our emphasis on short-term results is based on the "bottom-line" syndrome fostered by the Harvard Business School. Cetron further complained that the United States is giving away its technology to Japan and other nations—a process he dubbed "Our Lady of Perpetual Guilt." In order to compete, he observed, "we cannot continue to give away our technology."

As for some much anticipated forecasting, Cetron predicted that Germany will be reunited this century and that Japan will be a "second-rate" nation by 1990. He explained that Japan imports most of its resources, energy, and food, and is not innovative. The nation to worry about as competition to the United States over the next several years, according to Cetron, is China.

Cetron also predicted that by 1990, 50 per cent of all homes will have computers, 20 per cent of factory workers will be women,



Theme speakers at this year's AIA national convention in Phoenix included Marvin Cetron (top left), founder and president of the think tank Forecasting International; Hugh Sidey (top right), Washington, D.C.

and the normal work week will be cut to 32 hours. Finally, he stunned the audience by forecasting that although President Reagan will be handily re-elected in 1984, he will turn the government over to Vice President Bush after two or three years. The Republican ticket in 1988? Bush and Supreme Court Justice Sandra Day O'Connor, said Cetron.

Prologue panel urged architects and the public to demand quality

At the convention's opening theme program, a panel representing various "publics" served by architects discussed ways for practitioners to understand the public's needs and desires, and how they can respond to those needs.

Herman Chanen, head of a major Phoenix construction firm, said that "architects in modern times have failed to create quality by neglecting to plant a human heart in their steel and

contributing editor for Time magazine; and Herman Chanen (above), chairman of the board and president of the Chanen Construction Company in Phoenix.

glass structures." Function and efficiency, he added, have replaced "the remembrance of human need." He urged architects to "reassert yourselves as the dominant force in planning and design... and respond to the demands of the public." Chanen stressed that architects have an obligation to educate their clients, including developers, and show them how concern for the "top line"—i.e. those elements of design that create a high-quality lifestyle and environment—can have a positive influence on the essential "bottom line" of a building project.

John P. Robin, chairman of the Pittsburgh Redevelopment Authority, described his experiences renewing Pittsburgh's downtown and Philadelphia's Society Hill. He explained the key role that architects played in the design and planning process, especially in Philadelphia: without them, Robin observed, the city "would

have become another Camden."

During the panel discussion that followed, Beth Dunlop, architecture critic for the *Miami Herald*, said that the public "is crazy about architecture," a result, perhaps, of the preservation movement and the appeal, to many, of postmodernism. Richard T. Gilbane, vice-president of the Gilbane Building Company, agreed. "The public loves good architecture," he said, adding that architects should concentrate on the quality of their clients and "steer clear of those with rotten taste."

Housing panel concluded that good design can make a home affordable

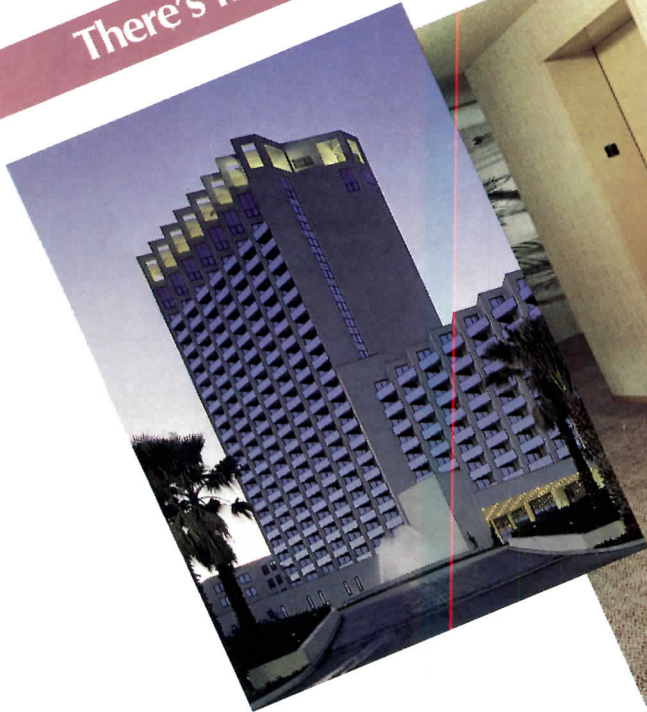
"The smaller the house gets, the more valuable the architecture becomes," said George M. Notter, Jr., AIA president and a participant on a panel entitled "Housing America's People." Commenting on the fact that the size of the average house has decreased as its cost has gone up, Notter pointed out that architects "need to convert past perceptions of what quality housing is by creating new designs that are smaller yet just as livable—and more affordable." To achieve the inexpensive, high-quality house, architects must cooperate with America's builders, said Notter. Peter D. Herder, president of the National Association of Homebuilders, concurred and added that builders are becoming increasingly sophisticated in responding to shifting marketing constraints as they try to meet the strong demand for new housing. "I see builders using more architects," Herder observed. "Many are dropping their in-house design staffs in favor of using architects directly."

Herder cited high interest rates as the number one threat to the homebuilding industry. "Every time the prime rises one per cent, 2 million Americans are kicked out of the conventional market." He concluded his comments by challenging the audience to lobby for common legislative priorities that affect the building industry.

Architectural regionalism: the past, present, and future of Phoenix and the Southwest

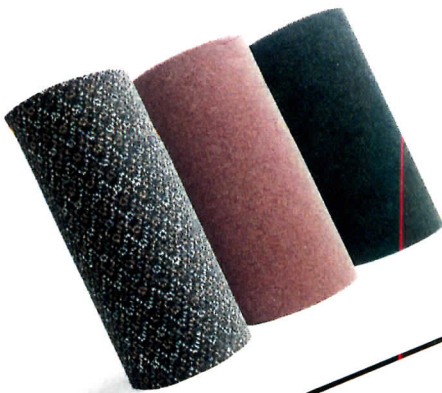
Phoenix Mayor Terry Goddard opened a public forum on the future of the Arizona capital by referring to the city's "Concept Plan 2000," which envisions the city evolving into eight high-density, residential "urban

There's no 'or equal' for performance



Architecture and interior design: McEly, Jennewein, Steffy & Howard, Architects/Planners, Inc. and MacDonald Becker, F.A. Leonard Parker Company carpet. Buena Vista Palace, Lake Buena Vista, Florida. Jonathan Hillier photography.

Fountainhead: commercial carpet coordinates from Lees



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Professional development: The basics of running a firm, buying in or selling out—and of course, computers

villages" closely tied to a ninth village—a revived downtown. Goddard stressed the role of citizen involvement in setting priorities for the city, a sentiment echoed by Rick Counts, director of planning for Phoenix, who said "it is vital to let the public perceive that they have a role in the planning process."

Stewart Udall, former Secretary of the Interior, lamented that in Phoenix there was a tendency to ape the skylines of other American cities and recreate "Wilshire Boulevards." "The glass box," he contended, "doesn't belong here."

In another panel on architectural regionalism in the Southwest, Jeffrey Cook, professor of architecture at Arizona State, examined such indigenous elements as the persistence of the adobe tradition, thermal solutions, solar-control and shading devices, bold colors and textures, and the transitional space between a building exterior and interior.

George Anselevicius, dean of the School of Architecture and Planning at the University of New Mexico, said that "the Southwest has the most pervasive regional architecture in the United States." He added that "it is both wonderful and foolish," illustrating his point with slides of vernacular architecture in New Mexico.

Hugh Sidey told architects to "rekindle the spirit of excellence"

In an epilogue address entitled "Social Perspectives on American Architecture and its Public," Hugh Sidey, Washington, D.C. contributing editor for *Time*, said that "few leaders have as much to say as architects about how the world sees and judges itself," and he cautioned the audience against "glorifying the mediocre."

Sidey complained that after World War II, "we began to build sprawling suburbs that...have robbed us of some of our identity. There were no neighborhoods and towns. Families began to disintegrate. Yet we also produced other structures in those years that are some of our most imaginative buildings. It is one of the great contradictions of this free society."

"American architecture is our national signature," Sidey concluded. "It is a measure of our concern, of our imagination, of our courage and daring, of our belief there is a reason for being." *P.M.S.*

Subjects for this year's practice programs ranged from daylighting design theories to buying and selling a firm. Two programs—one on finances and one on marketing—were aimed at the smaller firm. Two others dealt with buying or selling a firm. And a group of programs addressed topics as diverse as productivity, effectiveness and managing marketing, making use of psychological tests so that participants could determine their personality and management styles and those of their firms.

Who makes the decisions can affect morale and productivity

There are four common management systems, according to Dr. Stuart Rose, former director of continuing education for the AIA, and now executive director of Professional Development Resources Inc., of Washington, D.C. The first, which he described as "autocratic" is essentially "I make the decision. I may or may not announce it to others on the staff." The advantage to this system is speed, the disadvantage is possible morale problems.

A second system, in which the principal retains his power but tries to build cooperation, is benevolently autocratic—"I decide. Then I sell the decision to the firm." This system, according to Rose, has the advantage of creating higher morale, but at the cost of some speed.

A third system, which seemed to be most prevalent among those in the audience, is consultative—"I ask, then I decide." Here the principal does not delegate decision-making, but listens to what people have to say before making up his mind. "Because people tend to influence the decision, they buy into it," said Rose.

And a fourth system, the participatory "we decide" involves a greater investment of time and the risk that there may be no decision at all. "When it's working well, this system creates the highest motivation and the highest productivity," said Rose. "But for design firms, a well-executed system 3 seems to be the most productive. Best candidates for system 4: firms with fewer than eight people."

Small-firm finances—

What are the issues in preparing a fee proposal?

Peter Piven, principal and general manager of Geddes Brecher Qualls Cunningham, of Philadelphia, and principal

consultant of the Coxe Group Inc., Management Consultants, posed a problem: A potential client intends to develop a small office building on a suburban site. He lists the program requirements. And he asks for a fee proposal for site selection, including zoning assistance, if required; design; and preparation of construction documents for single lump-sum bidding.

"What issues need to be addressed for you to prepare the fee proposal?" asked Piven. The audience's answers provided a good checklist: What would the project timetable be? Would it require overtime? Down time? How would it fit in with the current workload? Where is the job located? How much travel would be necessary? How many people would have to be assigned? At what salaries? Would outside consultants be required? Should the cost of consultants be part of the fee? What is the budget? The payment schedule—"Will I use the developer's money or will he use mine?" How to bill for time spent dealing with zoning? With reviewing agencies? What is the developer's financial strength? His track record? How sophisticated is he? What is the market price of the building?

"Is it important to make a profit on every project," asked Piven. Only half the audience thought it was.

"What multiplier will you propose for work to be performed on a time basis?" Here the answers ranged from 2.5 times direct personnel expense to 3 times salary. Piven demonstrated that using the direct personnel expense factor, which includes salaries and benefits, could have a significant effect on profits. The direct personnel expense factor for members of the audience ranged from 1.25 to 1.45 times salary; a recent industry survey had found a mean of 1.32.

The minimum profit for the firms surveyed was 5 per cent of gross, but some firms were making 15 per cent and more. "The first thing you can do to increase profits," said Piven, "is to start keeping accurate time records."

What are you selling? The answer determines your marketing plan

"Most firms say, 'We're selling good design,' but how does that make you different from your competition?" said Carol McConochie, principal of McConochie Consulting of Philadelphia, who specializes in design-firm management. "Or on

time and on budget. Or principal involvement. How do any of these things distinguish you from your competition?"

According to McConochie, clients always buy comfort, safety and freedom from risk. "The question is, what does it take for that client to be comfortable? The answer will be different with each one," she said, "but you see some common ground among clients in a particular marketplace. What tends to make a developer comfortable is knowing that he will rent up his building or sell it—whichever is his goal."

McConochie outlined three basic strategies for going after work: lead-oriented, client-oriented and market-oriented strategies. The lead-oriented strategy is to wait for the opportunity to come by and act on it. If you were to go after developer work, for example, this would mean to call up every developer in town and to keep calling in cycles asking if they had anything coming up.

The client-oriented strategy, on the other hand, means identifying specific people or institutions that you want to work with and courting that client knowing that sooner or later there will be a job you can submit a proposal on. There may

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AIA president George M. Notter, Jr. (left) is shown congratulating Walter F. Wagner, Jr., editor of *ARCHITECTURAL RECORD* at the investiture of new Institute Fellows in Phoenix. Wagner was one of 83 AIA members honored at this year's convention.

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be only one or two developers in town you want to work for, so you ignore all the rest and stay in touch with those two.

The market-oriented strategy means positioning yourself in a particular marketplace so that the lead comes and finds you. This works where expertise is the major criterion—for example, with a firm that has become known as a restoration expert.

"The least expensive approach is the client-oriented strategy; the most expensive is the lead-oriented," said McConochie. "But they're all valid and you could use different strategies in different markets or you could take one market and use a different combination of them."

How much should you invest in a marketing program? What you need most is time, according to McConochie. If you're really doing an active and well-thought-out program, you're probably spending about 10 per cent of your gross, although you may not be counting it all because 7 or 8 per cent will be time that never shows up because you're billing 40 hours a week and working 80.

How do you market when you're busy? Should you start looking for someone to help? "Firms with about 15 people are beginning to afford some kind of a marketing coordinator," said McConochie, "but all a coordinator can do is organize you better so that you can go out and get the work." In busy periods, McConochie recommends using a client-oriented approach because it's comfortable and cost-effective. "It may mean eight hours a year with that client plus whatever time you take on the phone," she said. "At the same time you're going to have a lot of information about him so that if you do have to compete for a job when it comes up, you know something about the client—what kind of comfort he's buying. That helps you write a good proposal."

Ownership transition: What's good for the firm—and good for the old and new owners?

"How do you transform an owner-entrepreneur's transitory 'heartbeat' firm—a firm that lives only as long as the founder's heart keeps pounding—into a stable, self-renewing organization capable of quality design over time?" Douglas Bevis, chief financial officer of the NBBJ Group, Seattle, and also former president of the Professional Services Management Association, pointed out that the answers to this question provide present as well as future benefits to a firm. "Planning for ownership transition forces us to deal with the big issue, which is organizational development," he said. "It makes us answer all the questions we should ask ourselves every day about our goals of quality design, technical excellence and making a profit."

Bevis believes that the best designs come from firms that are not totally dominated by one

owner-entrepreneur—what he calls "heartbeat" organizations. Nor do they come from firms that are a collection of prima donnas with no one in charge. Instead, he said, they come from firms with prima donnas in an organization—firms with continuity, meaningful dialogue and checks and balances between technical and design functions.

"Don't wait too long to get started," he warned, "and don't drive too hard a bargain, because the firm as a going concern is worth a lot more than the firm that's being liquidated. The value of the firm may erode if you don't get a buyer early enough."

Know your goals and those of your potential buyers so that you can have a dialogue, said Bevis. Typical goals for an owner: maximum return, maximum cash payout, rewarding loyal

employees, estate and tax planning, choosing strong successors. Typical goals for a buyer are quite different: least cost, least cash payout up front, tax advantages, to participate in management and control, to build from an existing base instead of starting from scratch, to belong and be accepted, to satisfy ego, to lead and to create, to be committed to something.

The seller has three main options: to sell to a few key staff members; to make a broad-based distribution to the entire staff; to sell to or merge with an outsider. Bevis recommends sale to a few key staff members, making the new leaders the new owners. "It should not be a token dollar sale or a token management role," he emphasized. "It must be something of substance." Making a broad-based distribution to the

staff, frequently done with employee stock ownership plans, may mean the few key leaders leave because the benefits of ownership and the decision-making capability have been spread so thin, according to Bevis. And selling the firm to an outsider, which may result in the highest profit, may also mean that key staff members leave because they have been passed over.

Some further advice:

Start the transition by the time you are 50. If you start the transition early, you can have continuity with the clients, which is important to the success of both buyer and seller.

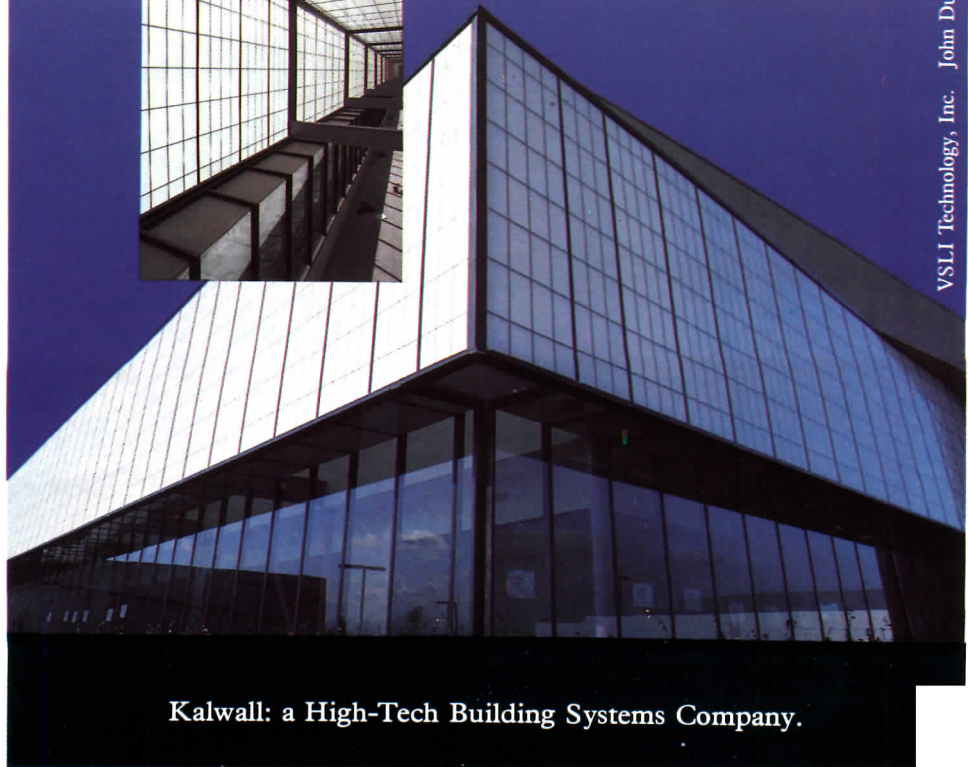
Yield operations first and policy only gradually. Hold 51 per cent of the ownership as long as possible, for your veto can be

Continued on page 31

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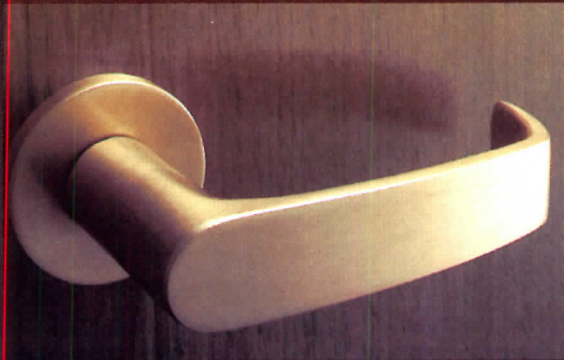
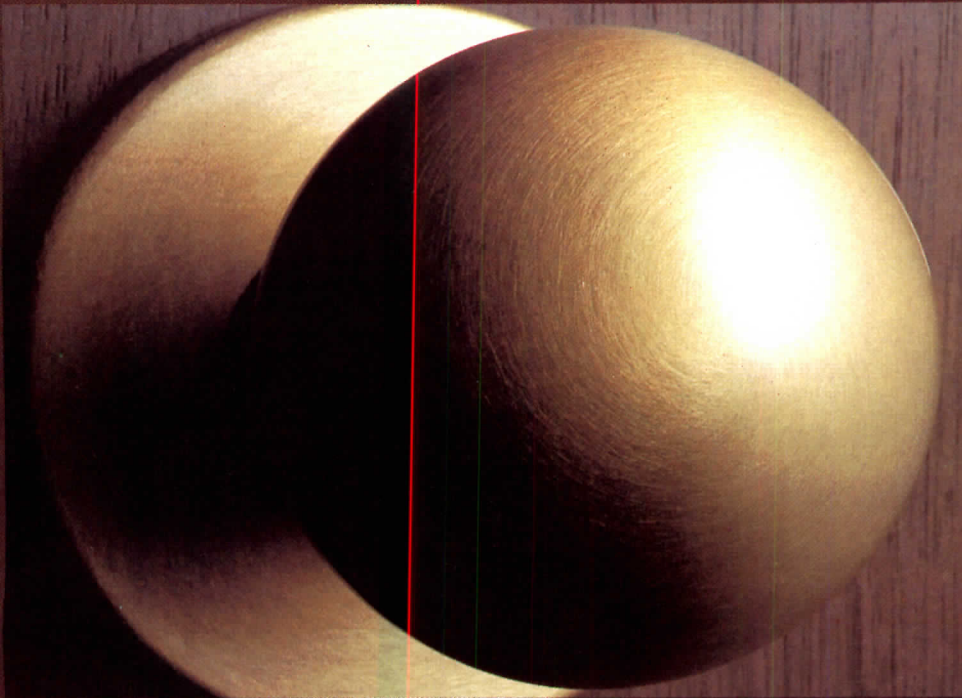
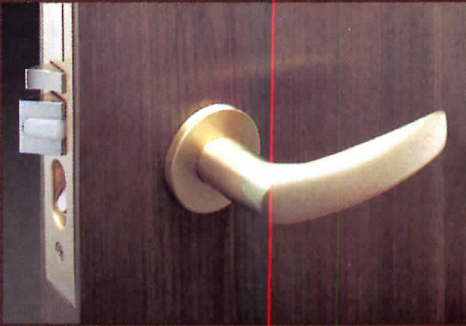


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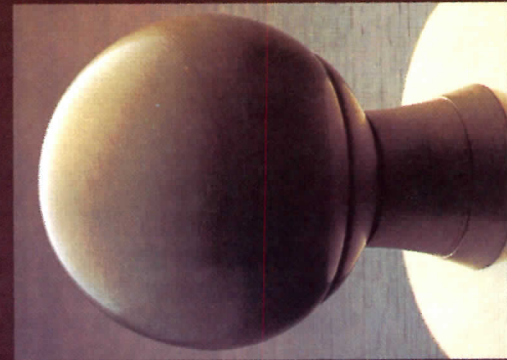


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vital. People have to have room to make mistakes, and it's best to have them in operations and early instead of in a major policy decision later on.

Valuation is difficult for both buyer and seller. The seller has a limited market, and not necessarily an open one. And the buyer is ill-informed. Remember that both are acting on emotion and are not necessarily prudent, and that both parties are under compulsion to act.

When you get down to building an ownership transition team, be aware that the lawyers, just by their bent, will be thinking capital accounts, which is raw book value. The bankers are also going to be looking at the balance sheet and also at adjustments to book value. The engineers will think in terms of multiples of earnings. So will the accountants, and they will also look at gross fees. Different people will bring different perspectives to the discussion, and you should have a consultant or outside mediator who can embrace all these perspectives and lay them before you.

Whatever deal you make, be sure that voluntary and involuntary retirement are clearly defined to protect your veto. What is the definition of a serious disability? Usually a serious disability will force the buyers to buy the rest of your holdings, whereas with a voluntary retirement it may be only at the option of the buyer to pay you X amount for your remaining holdings.

Another key item for the seller is a hold-harmless agreement from the buyer on future claims on past work.

And, finally, acknowledge the transition that the spouses are going through.

A small firm can survive computerization—if it asks the right questions

And Chief Charles Boyd, of the Tulsa firm of Brase, Boyd, Sober, Broach, Workman, a well-known lecturer on computerization, provided some guidance for the smaller firm that is starting to look at computer systems.

Does the system function well in the production of construction documents? "You can go out on the exhibit floor and see a bunch of really sexy-looking things happening on the computer screens," Boyd said. "Those systems are great if you're competing with SOM out of Chicago or CRS out of Houston. But they won't make you any money in a small firm. A major proportion of your time in the office is spent dealing with the production of construction documents, and it's important to get a system that does them well."

Does the firm have any architects or engineers on staff that you can call when you have problems? "A computer person will never understand you," said Boyd. "And when you hang up the telephone, you'll be sitting

there trying to figure out what happened."

Does the system require any special environments or electrical services? That is likely to be true more of larger systems than smaller ones.

Are there any plans for further enhancements of system software? According to Boyd, 60 per cent of probable software needs are available today; the last 40 per cent will be hard to develop. But you're going to need it down the road, so make sure that the company is committed to going the rest of the route with its software.

What are the proposed enhancements? For example, if you are looking at a 2-D system, does the company plan to provide a 3-D system in the future? If they have a 3-D system, do they plan to get into the tracking of

areas and quantities?

Does the company plan to stick with the construction industry and continue to enhance its product to fit our needs? "Our industry is not a major buyer of computer products," Boyd reminded the audience. "You've got to deal with a company that's committed to the industry, not just to computer profits."

What is the financial stability of the company you're dealing with? "Pretend you're evaluating a contractor for an owner," Boyd recommended. "Is the company capable of doing the job and is it going to be around next year? Is it going to finish the job?"

Are the people who develop the software architects and engineers? If they're not, you won't have a user-friendly system, said Boyd.

Does the company plan to have

systems that will interface with other systems? Here Boyd was thinking of information exchange standards, such as IGES (Initial Graphics Exchange Specification), that allow CAD data to be transferred from one system to another through modems. The Navy Department, in particular, he said, insists on computerized documents so that it can make fast changes.

Is all the hardware supplied by one source? "You don't want the guy with the plotter telling you 'It's not my plotter that's at fault; it's the computer.' And then the computer guy says, 'No, it's the plotter that's bad.' And everyone sits around pointing at the other guy." Does the firm offer a maintenance agreement for both the software and the hardware? You want single-

Continued on page 33

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source responsibility so that you can call and get a problem solved. How easily can you make changes in your documents?

"When you see somebody out there whizzbanging you with their demo," says Boyd, "forget about all those colors on the screen. Look at it as an architect and visualize a change that you think you'd be faced with. And ask the demonstrator to make that change and watch what happens. If he can't make a change, tell him outright that you're not interested in the system. See what he does."

"Remember," said Boyd, "you're an architect or an engineer, and you're still going to be an architect or an engineer after you get one of those funny little machines. Look at it and respond to it as an architect or an engineer."

Can the system store entire sheets of documents and entire projects? Ask to see entire sets of documents that have been produced on the machine and stored and get an idea of how long it takes to produce them. If your typical project takes 25 sheets, or 50 sheets, find out whether the system can handle that many.

How long it will take to learn to use the system productively? Boyd said that it takes about two days to learn the system he has in his office—but no one is productive after that time.

Generally, it takes about three jobs to become productive, which could be anywhere from six weeks to three months. "If you're not prepared for that and not committed to going through that learning process, you'll be a basket case," said Boyd.

Unlike most, Boyd does not budget any training time for his firm. Instead, he encourages his staff to moonlight—and learn the system in the process. "You wouldn't believe all the porch additions and funny little things that come off our machines at night," he said, laughing.

Is any special computer knowledge required to operate the system? And if so, is the manufacturer going to teach it? Or will it be necessary to have a computer person on staff? "Remember," said Boyd, "that computer person will be overhead."

And Boyd concluded with some words of warning: "If you have a badly organized office and you buy a computer to get organized, you're going to be in shock. Because the only thing the computer does is compress time between decisions. You used to have problems every month; now you're going to have them every other day. Don't get a computer until you get organized. People who think a computer is going to be a panacea are going to have a disaster on their hands, because it is just going to intensify the bad organization problems they had before." *N.G.G.*

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Computers: Their real advantage can be in giving a thorough grasp of design

In an interview, architect Charles F. Davis, III argues that computers' efficiency is only one reason for integrating them into your practice

Generally you hear that computers' main value lies in the obvious efficiency factors—getting a job out faster, more accurately and with lower overhead. Davis, too, believes that computers aid in these particular efficiencies, in fact enabling his 13-person office, Davis Associates, to do space planning for some 4.5 million square feet of offices annually. But computers' real value, according to Davis, comes when these new tools of efficiency are fully integrated into everything that architects do—from billing to information management to drawing. By understanding and using computers at every step, he says, architects can do better what they basically do—which is to design.

Davis also believes that computers can open a whole new range of possible activities to architects, activities that challenge them and enhance their involvement in design-related decisions, thereby enhancing the public's perception of the profession. At the very least, says Davis, new computer-aided activities can keep offices busy in lean times when traditional design commissions just aren't around. He calls these "special services." And he avidly adds them to his distinguished basic practice of design.
Charles K. Hoyt

"I'm not interested in a job that has as its only criterion getting it done," says Davis. "It is true computers save time—especially for information tracking and in such graphic areas as modifying on-line plans and reproducing repetitive elements, but that's not their true value to me."

While there is some controversy on computers' ability to produce new one-time plans faster, Davis points to a redesign of an earlier project originally done by traditional drafting. "Even when we were just learning our current system, we were able to do the redesign, which had more complications, in a third of the time required for the original."

He repeats a thought expressed by others: "Computers' efficiency can leave time to think, to produce better results and to use real creative skills." But he wishes more people would see the benefits that way.

Offices have to have an ultimate goal of doing every office process on computers

There are certain things such as sketching or one-time correspondence and small plans, Davis acknowledges, that will always be more easily done by traditional means and should be done that way. "But until everyone in an office learns to think on computers, to use them as an extension of themselves and as the central assimilation and distribution point for all knowledge and almost all activities in an office," Davis says, "they will not be getting the benefits their effort in getting involved in the first place deserves. Nor will they be using them really to create anything." What he is arguing for is the benefit of interlocking functions that cooperate by use of a common memory.

Davis disagrees with the practice of many larger firms of having only selected functions done on computers using operators as distinct from designers. He blames this separation of functions for the fact that many such firms have had only partial success with computers. By full involvement, Davis does not mean tearing up a practice and forcing unnatural and unfamiliar ways of doing things on it. What he means is a careful step-by-step integration of computers into workable ways of doing things—starting first with the simplest word processing, billing and accounting functions, working toward an information database and finally to graphics.

Especially on graphics, he recommends starting with the *smallest* jobs first, not the big ones where the most mistakes due to unfamiliarity can be made. He estimates that this process of gradual familiarization reduced the time for his staff's proficiency on CAD from the usual six months to one when his firm finally went to CAD some two years ago.

Davis argues for integrating operations through a thorough mastery of options available

Davis spent three years looking for his current basic CAD system, researching 12 in all. He finally bought a system that cost in excess of \$200,000 at reduced price. (He notes however, as a sign of how fast costs are falling, that the same system would now cost only about 85 per cent of that today.) Davis's CAD system has a wide range of capabilities at high speeds but no color. Although his office works in drawings with many layers for which color is often thought necessary and uses CAD to produce three-dimensional drawings, Davis doesn't feel the payback for color exists in his particular operation because of the increased costs of printing and workstations.

It is computers' mastery of knowledge that means more to creativity than efficiency

"First," he says, "creative architectural design comes from knowledge about the design problem." Here he is talking about the gathering of all those bits and pieces that constitute the program—from the clients' preferences and processes to those elements that are germane to the basic functioning of the building type (most appropriate structure, number of water coolers in an office building, width of doorways for moving specific furniture in and out, etc.).

Second, Davis says, "the true quality of the design is limited by the number of alternatives explored." Clearly synthesizing information that has been gathered into a program and showing the alternatives that can be derived is an area in which computers far outstrip human capacities in terms of analyzing alternate building massing, floor plans, etc.

Third, says Davis, "decisions reached in the early phases of a design control its success or failure, meaning that no amount of tinkering with a bad basic decision later on can make it right. Davis has programmed

both his design process and software to assure that those basic decisions are faced at the beginning of his projects—e.g. the best-looking massing of elements among many choices that all meet optimum program and bulk and budget considerations.

Jana Davis, who runs the office administration, points out: "One big advantage of computers is that they allow younger people to become full-fledged professionals before they might otherwise have done. With traditional ways of assimilating and applying knowledge," she says, "architects didn't hit their stride until they were in their forties. It took that long for the intuitive processes to build up the necessary body of knowledge."

Computers allow architects to go into areas where they never have been

When Charles Davis talks about "special services" that computers enable a design firm to offer, he is not just talking about a more thorough and technically correct professional performance within the usual concept of services but about whole new services as well. He says: "Architects have a lot of skills in general management they don't use." He talks about the example of potential clients going out to lease office space. "Real estate consultants will typically get into the issues of spatial implications without understanding them," he says. "Here clearly is an area where architects should shine."

"Architects can quickly grasp such concepts as how a program of enclosed spaces or open ones will fit into a particular available floor area. They do this intuitively. Now with computers, they can quickly put the implications into precise form to present to clients, something that might have taken a discouragingly long time to do by traditional methods when the client had to make a quick decision on a particular offering or lose it."

Another area in which Davis feels that more architects should shine is the constantly changing space needs of organizations that must meet constantly changing ways of doing things. "Here again," he points out, "such organizations as hospitals and banks that are constantly updating and revising their needs have often in the past gone to specialized consultants who may have a very good understanding of their operations but lack knowledge of spatial implications."

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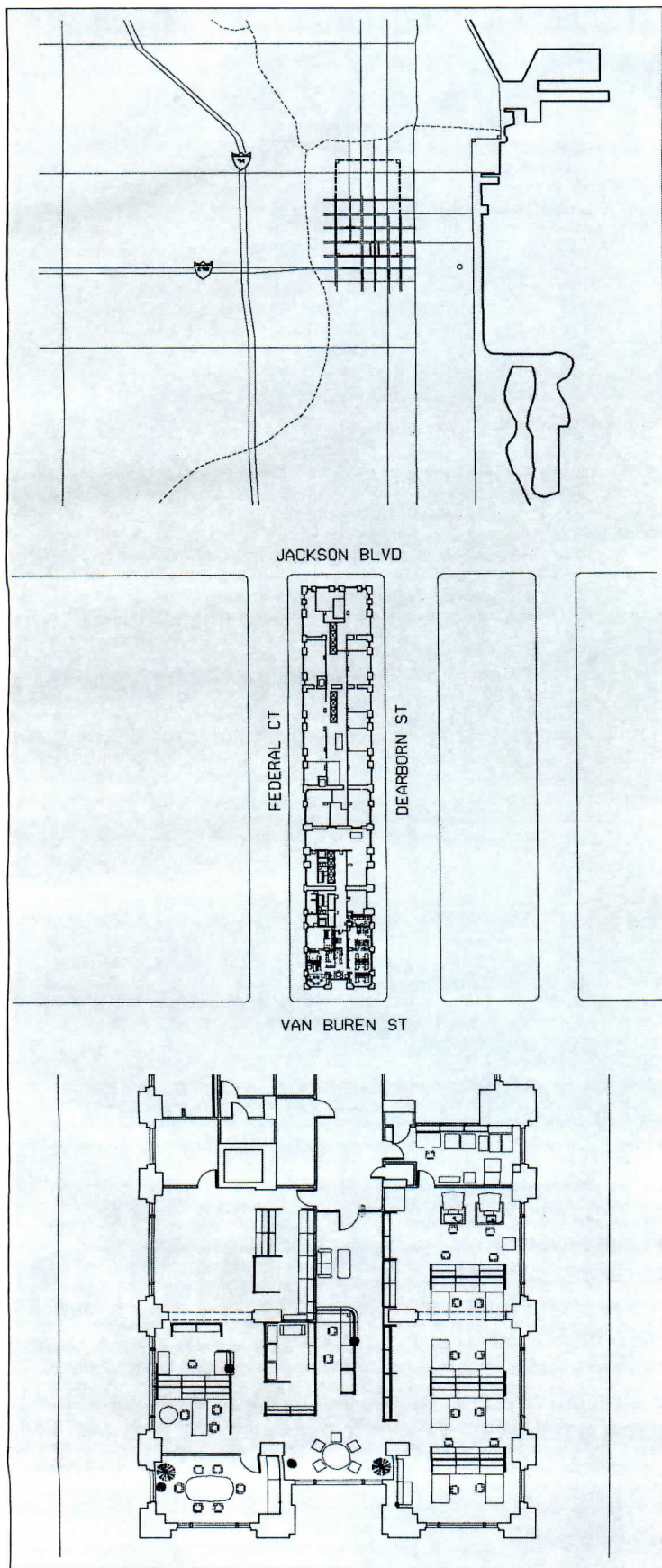
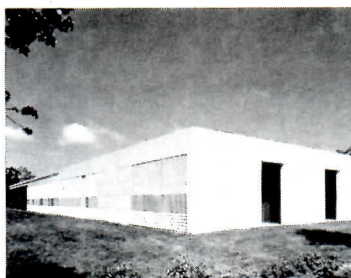
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Davis likes to demonstrate one aspect of computerized drawings that particularly intrigues him, the ability to store many different kinds of information on one drawing, by the successive increase in scale of the drawing shown below on this page and the next.

The photo right shows Davis Associate's addition for the ARDCO office building for which the decorative design of the screens was produced by solar-load analysis.



Davis illustrates how computers help basic design and special services as well

He points to his firm's current commission for one Chicago bank employing some 10,000 people for which his firm is planning space needs until 1987 with projections beyond that to 1990. "Banks, and this one in particular," he says, "are constantly expanding and evolving functions and redefining services because of today's fast pace of economic change and to meet their own increasing use of computers. They are a prime example of organizations that require constant space development services—both in existing and newly acquired space.

"The plan for this particular bank documents existing space occupied, space available, future requirements based on growth and change, target stacking plans at future time periods, identification of specific required construction or relocation projects, a time and cost schedule for each project and an estimate of the resulting annual impact on earnings over the planning period. Keeping track of just the space assignments and requirements with manual techniques is all but impossible. No time would be left for identifying alternatives and analyzing the consequences of each. Through a systematic process and with the use of computer tools we were able to present alternatives to the client with information which allowed a rational basis for decision making."

It was this ability to keep track of things that caused Davis's relatively small firm to be hired as implementation consultants for a campus master plan by a major firm—just to make sure that current phases of that plan match changing needs. "Someone could say this is just number crunching" says Davis, "but it is the ability of architects that turns those numbers into usable pleasant spaces to work in." He also points to architects' better understanding of more subtle things like character. For instance, his large bank client's check processing function requires a very different kind of space for its paper processing than for merger and acquisition services—which are frequently visited by company executives. Again, an architect has the ability to put this in quantifiable terms, and again he now has the tools to do this quickly.

When he gets down to translating the statistics from this bank's graph into usable

space, Davis gets to the ability to study alternatives: The bank at one point wanted 60,000 square feet for a whole new department, and it had 14 alternate possibilities in existing spaces. "With a computer," says Davis, "we could weed down the possibilities quickly by calculating such items as relative efficiency, the number of window offices required compared to the length of the perimeter wall and the possible stacking plans compared to desired adjacencies."

The most valuable thing computers do in clients' view is to save their money

"Architects have, when they think about it, the ability to save clients money: the most valued ability in many clients' view, even ranking above basic design services." When asked to provide four conference rooms for a middling size organization, Davis questioned their real need for so many. And he had the figures on line from past user interviews to quickly summon the backing for his argument: The staff actually only spent two per cent of its time in meetings, a large portion of which were devoted to six-month salary reviews. By recommending a restructuring of the way that people communicated on the salary issue (i.e. memos), and coupling this administrative change with a schedule to rotate other meetings, he was able to make a substantial reduction in the number of rooms the organization finally needed—saving not only space and construction costs but staff time as well.

Similarly, an examination of another company's filing system revealed that they were occupying large amounts of space with files that were used seldom or in fact were dead. A comprehensive analysis of alternatives, including cheaper rental space, led to reinforcing an existing floor to carry the unused files in a stacked arrangement. Davis was able to show that the savings of this new construction, even though it was in another owner's building, far outweighed the projected cost of the alternatives.

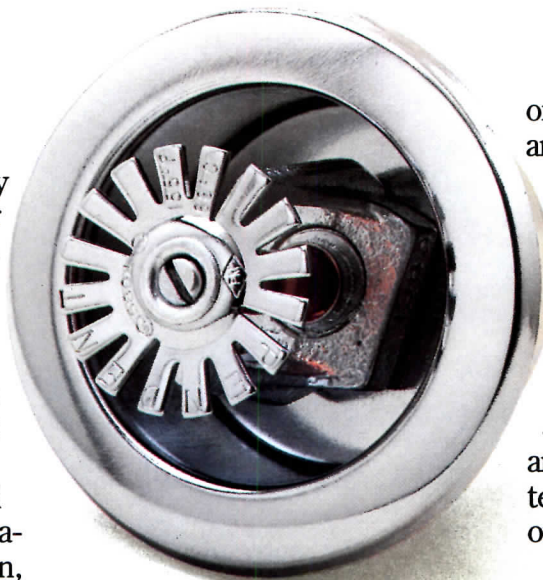
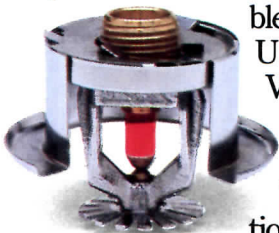
Davis has firm views on software, preferring to do the programming himself

The capacity to program and reprogram is the third big criterion Davis looks for in any system after user friendliness and good data-base capabilities. He enjoys programming and had

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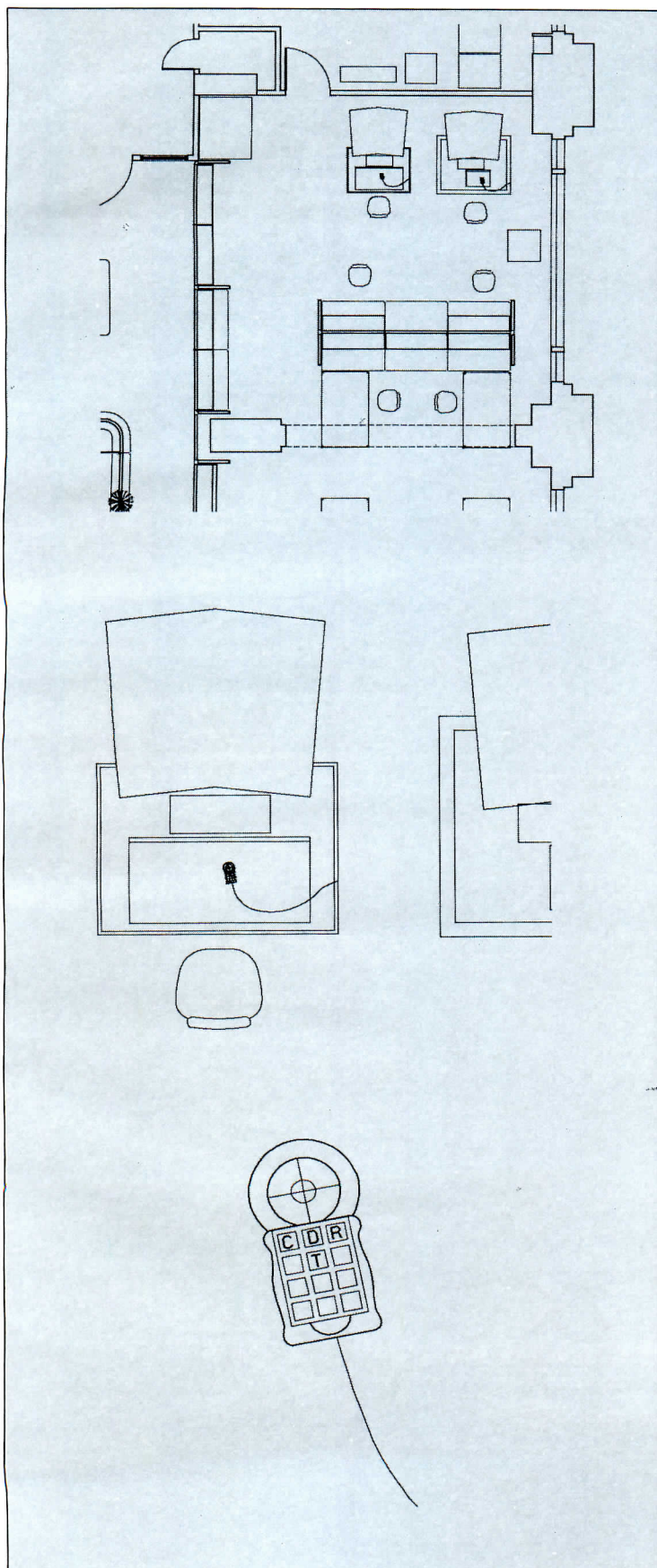
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The successive increase in scale of one drawing shown below and starting on the previous page shows first a map of downtown Chicago, then the plan of the historic Monadnock Building on that map in which the architects' offices are located, a plan of the

architects' offices in that building, their computer workstations and finally a mouse on a workstation.



done most of the office's programs up to the time it purchased its graphic system.

"That," he says, "even for a person who enjoys programming is just too time consuming. It's far better to leave it to experts."

Even here, however, he has reprogrammed, feeling that the best available graphics package had limitations that he would rather not live with. For instance, the designer had to specify the configuration of the workstation in all its detail, including each furniture component before he could begin space layouts. "Our first system design wasn't much better," Davis says. "The system let the designer use simplified sketch designs for initial space planning, but even this was too specific and froze the designers thinking process. Very good designers became mediocre. The cooky cutter approach just seemed to restrict vision. We immediately redesigned the system to provide much freer 'sketching' capabilities. Once again designers could design."

Another change that Davis made to the basic graphics package was the typeface. Although he was offered a choice of nine different typefaces for drawings, he programmed one—Helvetica—to make it closer to hand-lettering. He notes that some firms, proud that they have computers and wanting it to show, pick the typeface that appears most mechanical—even in one case training draftsmen to produce lettering that looked like a computer type for their nonmechanized drawings.

This, he points out, is a prime example of why it is so difficult to package programs. "Besides often not understanding what architects are looking for," he says, "software suppliers must also cope with the varied goals, ways of doing things and attitudes of all these different offices. No two are alike."

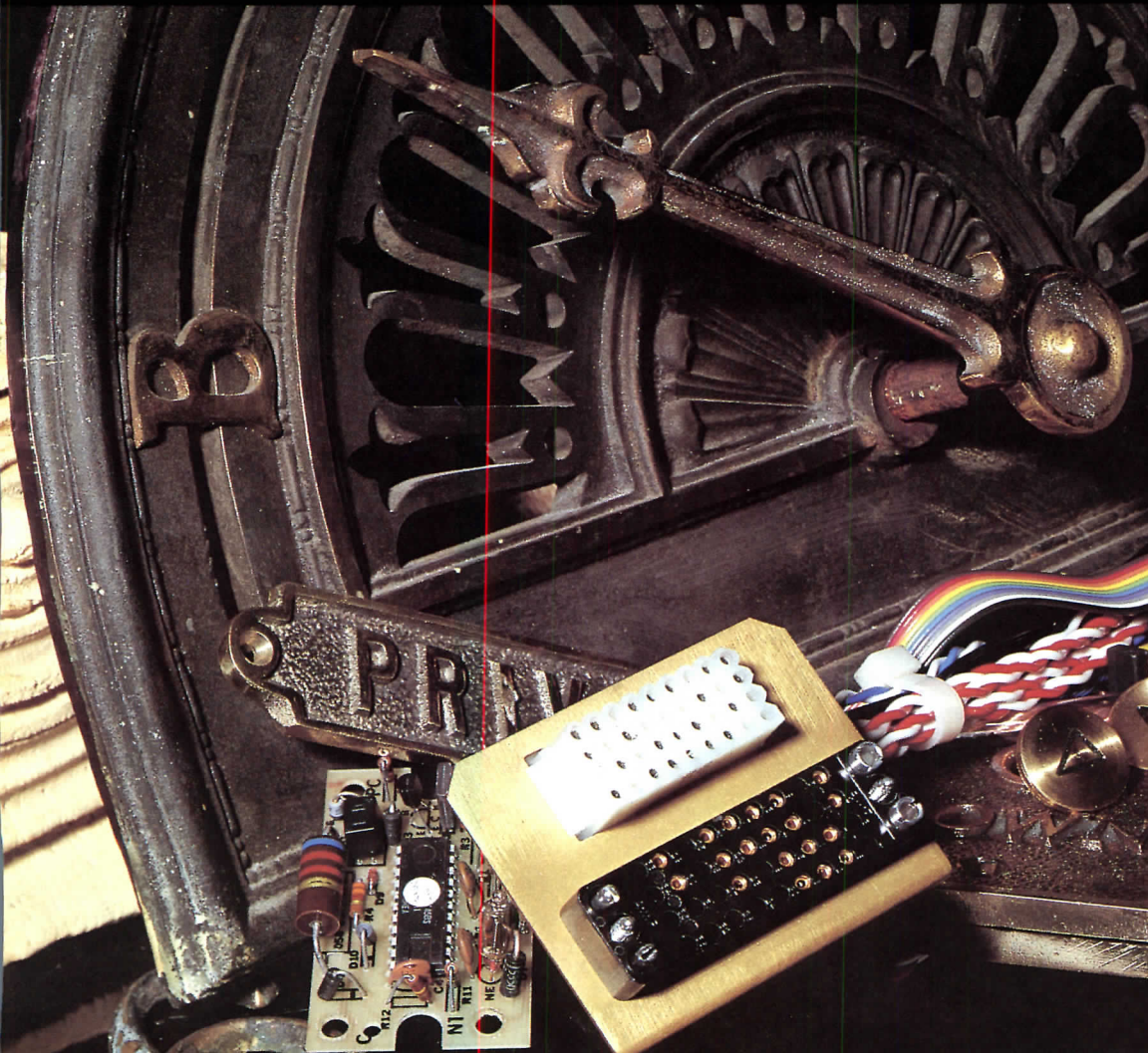
Space programming and interior design packages are two examples of where Davis started from scratch. "In the beginning of my practice," he says, "I wouldn't hire anyone who knew how to use computers because, there would be no way of determining if the computer programs were simple to use and conceptually clear without testing them on novices. If there had been confusion and the user was an experienced computer user, they probably could have figured out the problem. But with novices I heard all the questions and complaints."

A future with computers may not be problem-free

While Davis is certainly a strong advocate of computer use in the process of design, he does see some problems coming. For one, he doesn't think the same type of people will go into architecture when thinking is so precisely defined. "With all the emphasis on technical competence, something only meant to serve design, there may be a lot of potentially talented architects who will simply be turned off," he explained.

Possibly an even more serious problem that Davis has witnessed firsthand is that people who don't sit down with a pencil and paper to draw don't see things. "They're not as perceptive," he says. And he uses the example of his teaching a design course in which he dropped formal drawing training only to discover that his students could leave a room and not be able to even describe it afterwards. "They didn't know where the windows or doors were or how many there were. In some cases, they weren't even sure there were any." Clearly he believes that architectural training is going to have to preserve some of its traditional aspects if it is to continue to produce the level of competence that it does today.

Despite these cautions, it is fair to say that Davis is "sold" on computers—perhaps more so than most designers currently practicing may ever want to be. He only half jokingly says that his first employee was a computer. Still, he feels that if designers will take it slowly, step by step, and not be intimidated, there are great new horizons out there for those willing to take the plunge.



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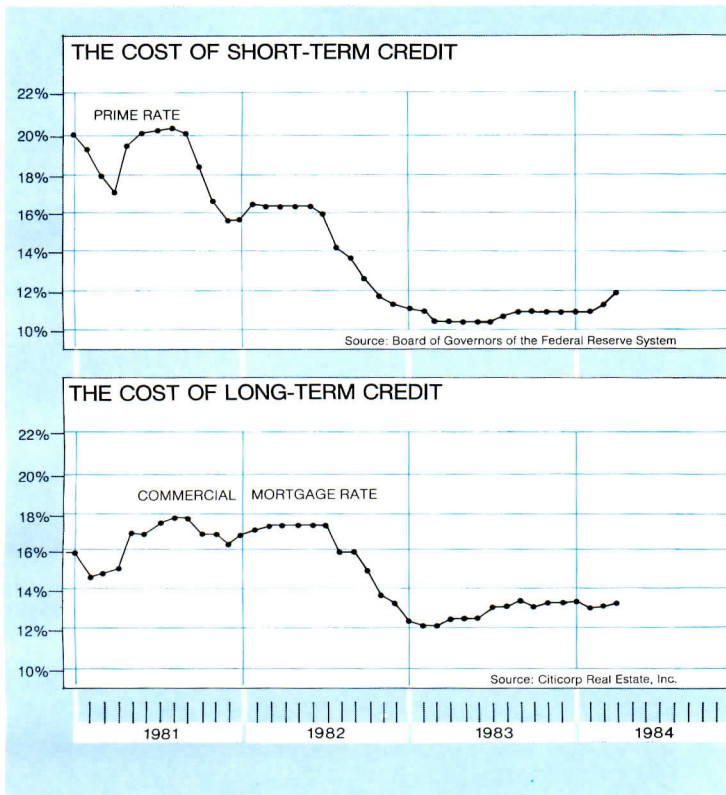
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Finance: "With inflows of foreign savings slowing, U.S. savings must grow to keep the recovery going"

By Philip Kidd



In late February, interest rates began moving higher. Everything from outsized deficits, growing private credit demands, the re-emergence of inflation, and inadequate monetary policy was blamed for that rise. Without a doubt, the combination of those factors contributed to the increase in interest rates. However, there is another element—foreign savings—whose role in both the present growth of the U.S. economy and the trend in interest rates is frequently overlooked.

To understand the role of foreign investment, we have to understand what it did Two years ago during the summer of 1982, short-term rates abruptly started falling after Federal Reserve policy had become aggressively expansionary. During that fall, long-term rates began their descent. Quickly, interest-sensitive housing and automobile sales shot upward and the momentum for our current economic recovery was born. Viewed from overseas, the U.S. in late 1982 and early 1983 increasingly looked like an investor's haven. Our political stability had long been admired by others. Now our inflation rate

had been cleaved nearly in half and our economy was coming alive with enormous energy and confidence. Foreign money poured into the country. And we happily put it to work.

On the domestic front, as employment improved and incomes rose, consumers, who had drastically curtailed their purchases throughout the early 1980s, eagerly returned to the marketplace. They bought houses, cars, refrigerators, rugs, clothing, and you-name-it in growing quantities. To make those purchases, consumers boosted their use of credit and spent more and more of their current income, pushing the domestic savings rates lower and lower.

Despite this vigorous activity, interest rates just lulled around during the first half of 1983. In the second half, however, that changed as interest rates started creeping higher. Immediately, the alarm was sounded that monetary policy was becoming too tight and outrageous government borrowings were sure to collide with expanding private credit demands, forcing rates still higher. But little was said about the slowing of the inflow of foreign savings and our own poor savings performance.

We are at a low point on the savings pendulum

For 40 years, a U.S. economic recovery has always done wonders for the rest of the world, especially the developed nations. This time, the demand for our dollar shoved its value so high that it made imported goods seem extremely cheap. As the consumer splurge embraced a wider array of foreign goods, overseas economic activity re-awakened. Gradually, foreign investors found good investment prospects closer to home. By late 1983 and early 1984, the rush of foreign savings into the U.S. was over. In fact, many foreigners began liquidating short-term holdings and selling off marketable securities and redeploying those funds abroad.

Interestingly, those actions weakened the value of the dollar, which makes our goods appear less expensive to foreigners. Eventually, that will have a positive impact on the U.S. economy, as exporters hire more workers to expand production to satisfy the growing foreign demand for our goods.

But that takes time. Meanwhile, our financial markets have lost the cushion that foreign savings provided. Now interest

rates are at the not-so-tender mercies of those three giants—monetary policy, Federal deficits and rising private credit demands—which are all alone at center ring. Well, not exactly all alone! There is a fourth contestant in the ring—the consumer.

It's time for the consumer to stop spending and push the pendulum back

Until now, consumers have been asked to lead the economic recovery by expanding their expenditures. Now the economy needs them to switch emphasis somewhat and to put a little more of their earnings into savings each week than the week before. Through growing domestic savings, the cushion can be replaced. Then business and government (public works) can have the funds needed for greater investment that will create new jobs and more income/savings opportunities, while extending the Federal government more time to trim the deficit. All segments of the construction industry—housing, commercial, and public works—have a vested interest in the consumers' decision, since most business/government investments will involve sizable outlays for some form of construction. Because personal savings statistics are notoriously poor, evidence that consumers are setting aside more will become most readily apparent in the financial markets. Slowly, as additional funds become available, interest rates will ease off their spring peaks. That still means mortgage rates hovering in the 13 per cent neighborhood. However, an economy with strong employment and good income growth can withstand that level and continue building.

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



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Legal perspectives: You can lose a court case without expert testimony

One architect lost a trial of his liability on shop drawings because a definition of professional standards was not established at the outset

By Arthur Kornblut, Esq.

Liability to third parties—individuals other than the client with whom an architect has a contract—continues to be a fertile source of litigation involving design professionals. When such liability is imposed on the architect in these cases, it often gets a great deal of attention because of a dramatic situation (death or serious bodily injury) or an unusual judicial view of why an architect should be liable for services customarily rendered by members of the profession. A recent South Dakota case illustrates how reasonable services can lead to unreasonable liability when legal logic becomes just too logical.

While architects customarily review and approve shop drawings...

The reason for the architect's review and approval is to let the contractor know whether the precise piece of equipment, material or system being purchased for installation by the contractor is, in fact, in accordance with the requirements of the contract documents and the design intent. The architect's approval is, both by contract and in fact, not a guarantee of the contractor's submission and does not excuse the contractor from proper performance in preparing the shop drawings or performing the work required by the contract documents.

There is a common misconception that an architect's approval of shop drawings places all responsibility on the architect and excuses the contractor from liability if he performs the work in accordance with the shop drawings. This is simply wrong (if proper contract documents have been used).

Standard AIA contracts clearly delineate the architect's responsibility

They define the limited nature of the architect's approval. Document B141 (the owner-architect agreement) requires the architect to "review and approve or take other appropriate action on the Contractor's submittals such as Shop Drawings... but only for conformance with the design concept of the work and the information given in the Contract Document." The AIA General Conditions (Document A201) contains a similar provision, as well as a specific requirement for the contractor to check and approve the shop drawings before submitting them to the architect. The contractor is not excused from deviations in

the shop drawings unless he specifically and in writing calls the deviations to the architect's attention, and the architect gives specific written approval for the deviation. Clearly, the primary responsibility for shop drawings remains with the contractor.

There are almost no reported cases involving liability related to shop drawings, but a recent Federal appeals court decision indicates that this aspect of a construction project can be a source of liability if it is not carefully presented during litigation.

In the South Dakota case of Jaeger v. Henningson, Durham & Richardson...

The U.S. Court of Appeals for the Eighth Circuit affirmed the judgment of a Federal district court which held an architectural firm liable for negligently failing to supervise the shop drawings.

The facts of the case were relatively straightforward. Two workmen were seriously injured when they fell 16 feet, because a steel stair-landing pan collapsed. The specifications required the landing pan to be 10-gauge steel and the stair pans to be 14-gauge steel. However, one shop drawing erroneously called for 14-gauge steel for the landing pan. The project architect failed to notice this mistake when he reviewed and approved the shop drawing. The fabricator, who had not notified the architect about the change in the gauge of the landing pan steel, then proceeded to fabricate the stairs in accordance with the approved shop drawing.

After the steel was erected at the site, the two workmen walked onto the landing pan, it collapsed, and they sustained their injuries. The workmen sued the architect, alleging that the architect negligently failed to detect and correct the erroneous shop drawing that called for a 14-gauge steel stair pan. The jury returned verdicts for the two plaintiffs totaling \$185,000.

In the appeal, the architect contended that the trial court had erred

He claimed they erred by, among other things, not requiring the plaintiffs to present expert testimony on the issue of the architect's negligence in processing the shop drawings. Under general principles of law, there can be no finding of liability against an architect for professional negligence unless expert testimony exists to support the finding of liability. This rule is based on an

assumption that laypersons on a jury are unable to understand highly technical architectural requirements without hearing what other architects have to say about those requirements under the circumstances of the case. The courts, however, permit an exception to this rule when the issue does not require a knowledge of professional skills—a so-called "common knowledge" exception.

The appeals court in the *Jaeger* case did not believe the facts of the case were so complex as to require expert testimony. It noted that the specifications required the stair pans to be 10-gauge steel and the shop drawing called for 14-gauge steel. There was testimony that the collapse would not have occurred if 10-gauge steel had been used. In rejecting the argument that expert testimony was required to prove negligence in this case, the court stated that there is a "distinction between actions against architects for negligence-in-preparing plans and actions for negligence-in-supervising plans. (Both the notion that architects "supervise plans" and the thought that professional negligence is somehow different depending on when it occurs are highly questionable.) In this latter category, the court ruled there typically are "common knowledge" exceptions to the expert testimony rule.

Once made, the error was not found such on appeal, and the conviction held

The court said the "gravamen of the complaint here is that HDR negligently failed to supervise the shop drawings pursuant to the contract and that this negligence was the proximate cause of the injuries..." Thus, it ruled this is a negligence-in-supervision action that does not require expert testimony on the appropriate standard of care.

In essence, the court said measuring the architect's conduct against the appropriate standard of care in performing professional services would be irrelevant. The mere fact that an error on the shop drawings was not detected by the architect was sufficient for the jury to hold the architect liable for negligence.

This case should not be interpreted as a warning that architects should not "approve" shop drawings. Liability would not have been avoided even if some other words such as "reviewed" or "no exceptions taken" had been used on the shop drawings to give the contractor the go-ahead for fabrication and

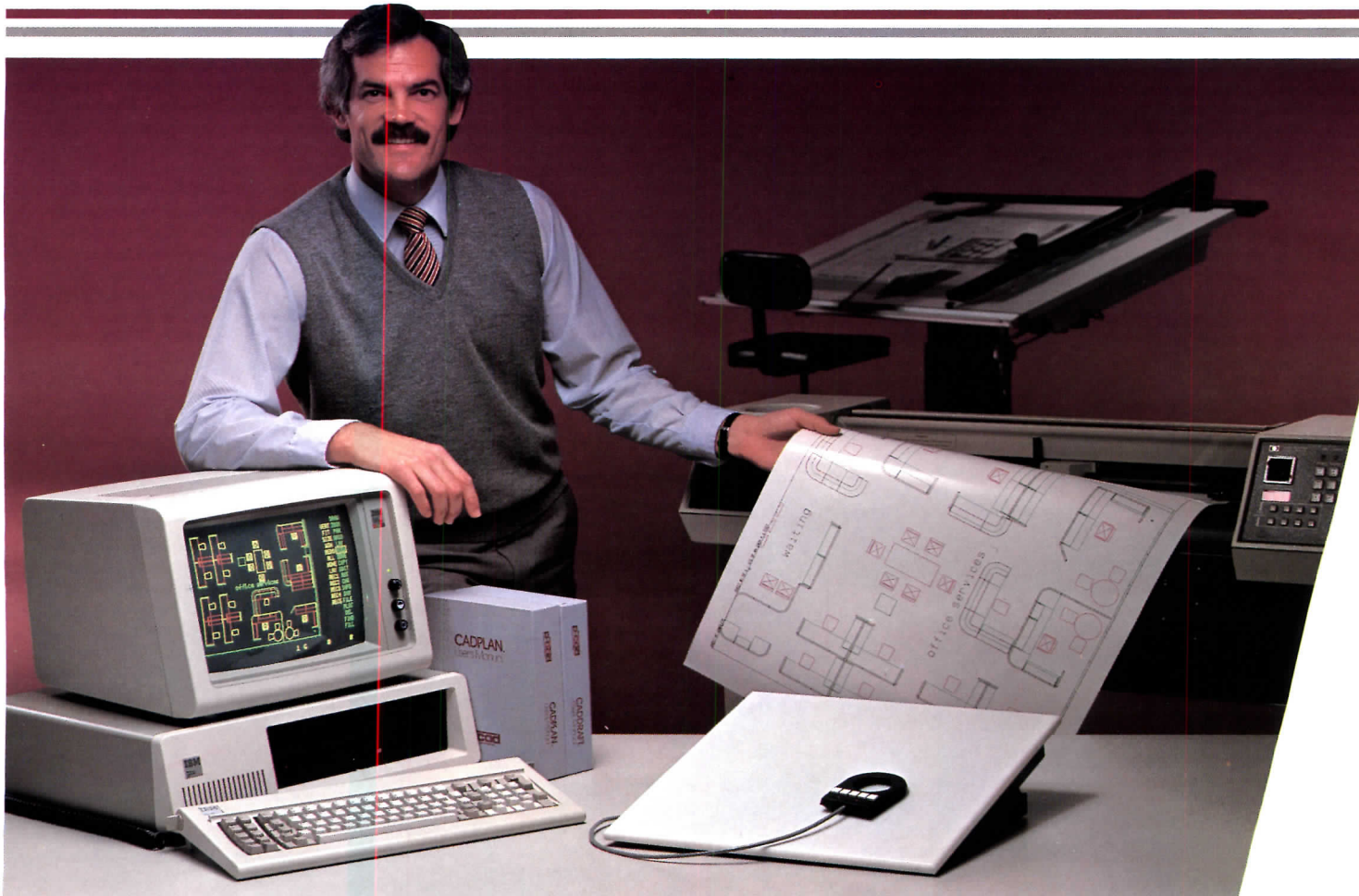
installation. Here, the court said it was proper for a jury to find liability simply because a shop drawing was in error and the architect failed to catch the error, without the need for expert testimony to prove whether the architect's failure to detect the error fell beneath the standard of care.

The fallacy of this holding is that it makes the architect, in effect, a guarantor of the accuracy of shop drawings. It is inconceivable that a lay jury would ever understand the distinction between a contractor's careful checking of shop drawings and an architect's review for conformance with design intent, unless the jury were clearly instructed on the contractual duties of both the architect and the contractor, and unless the architect's performance of his duties were measured against what an architect ordinarily and customarily does when processing and approving shop drawings. Anything less lets "common knowledge" impose liability on an architect for failing to meet a standard of infallibility.

Mr Kornblut is a registered architect and practicing attorney in Washington, D.C.

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Marketing: How big corporations choose design firms

A survey reports, in this first of a series on corporate-selection procedures, on who gives out what work and "The File."

By Martin C.P. McElroy with research by Donna M. McCourt

Not very long ago, the managing partner of a prominent architectural firm expressed his firm's ambition to secure commissions from large corporations: "Big corporate work means you've arrived. We want to validate who we are in the profession."

While an increasing number of investment builders along with the established institutional and government bodies award projects that confer no small amount of stature upon their architects, several considerations mark the Fortune 500 client as an important benchmark for the developing professional firm:

- Major corporations own and lease a huge volume of space, and the demand for new space is constant. While a sluggish economy will slow the pace, there is inherent momentum, derived from sheer scale and the requirements of new product developments and market strategies, which maintains a substantial flow of work in even the severest downturn. A successful relationship with one client can yield multiple projects.

- The diversity of corporate activity necessitates a broad spectrum of building types. Offices, warehouses and manufacturing plants represent the bulk of corporate work. Computer centers, training centers, conference facilities, show rooms, even fitness centers are undertaken by corporate owners. Every specialized discipline may be engaged, from kitchen consultants to mechanical engineers.

- The corporate client brings an array of his own specialists to a project. In addition to staff technical specialists in a facilities department, there may also be building specialists and operating personnel. Other corporate staff, most notably finance, legal, accounting and purchasing, may at some level participate in the project. Consequently, the corporate client has the capability and resources to demand accountability to an extent found in no other market for professional services.

- As professional firms acquire marketing skills, the corporate sector has become a prime target for the simple reason that it is visible and accessible. Traditional approaches based on "who you know" are now escalated by "whom you can meet" at many levels in the corporate structure.
- Finally, a significant incentive for pursuing corporate clients will always be the fact that one's mother, wife or husband (not to

mention other prospective clients) can recognize the client's name. At least, if Humongous Motors or Worldwide Widgets is willing to commission you, things must be all right.

Is there such a creature as a generic "big corporation?"

Are there discernible patterns in the way they screen, select and negotiate for professional design services, particularly architectural services? Are the standard marketing and selling approaches employed by professional firms consistent with the procedures and selection criteria used by these titans of commerce and industry? To learn the answer to these ponderables a "man from Mars" must go to the source.

To compile a survey, we began by analyzing my own firm's experience in selling design services to major corporations, dissecting the accepted routines of our pursuit to identify significant stages and milestones in the process. We converted our experience, assumptions and understandings into questions. For the first time, we could approach these companies when they were not on defense from our seeking commissions, and we were going to make it count. Our final questionnaire explored 34 events and considerations in the selection process. We were not seeking a statistical profile, but an empirical analysis.

We then developed a list of 24 corporations with annual sales in excess of \$1 billion. The list is a cross-section of the American economy: automobiles, pharmaceuticals, consumer products, computers, diversified financial services, retailing, food processing, broadcasting and heavy industry. For our convenience, most of the companies were located in the northeast. Sample interviews were conducted in other parts of the country to expose the chance of regional variation. Not surprisingly, there is little regional variation among major corporations.

The quotations will make it obvious why the interviews were granted to us on the condition that there would be no attribution to either the individual or his company. Only one company on the list declined to participate. About a third of the interviews were conducted in person and the balance by telephone. The participants seemed eager to at last get what has always seemed veiled out in full light.

Our first observation is that these are cooperative and enthusiastic clients

The respondents were cordial, candid and helpful, spending from half an hour to two hours with us, often inviting knowledgeable staff members to assist the discussion and providing a quantity of material including qualification forms and standard contracts.

Who are they? By title, they included: corporate director, real estate and facilities management; vice-president, building and corporate services; director of facilities construction; senior consulting architect; chief architect, worldwide plant engineering and construction; and vice-president real estate and construction. With only a few exceptions, they hold professional degrees and registration. They are senior staff managers and, as such, may be equated with the principal of a large professional organization.

Their in-house staffs may number many hundred, and the divisional and plant staffs they influence many times that. The capital programs for which they are responsible range from several million dollars to a hundred times several million. For the most part, they have long-standing tenure with their companies, although several have had significant experience in private professional practice and showed great sensitivity to that perspective.

What kind of work is handed out by whom in the corporate structure?

Almost all of the companies interviewed centralized the responsibility for major new construction. Major was defined as low as \$500,000 to a more typical \$5 million. Ten million dollars was the highest cutoff we encountered for a project to be counted as major.

There are exceptions, of course. As one director put it: "The issue is our effectiveness in serving the needs of the company. If an operating unit needs us, it doesn't matter how small the project is." Others cited the desirability of having divisional or plant technical staffs handle the work, to the extent that "their workload and experience enable them." For domestic work, technical complexity, project visibility and influence on the corporate image, and the size of the project are all variables weighed in determining the locus of project responsibility, with size governing most decisions.

Typically, an operating group

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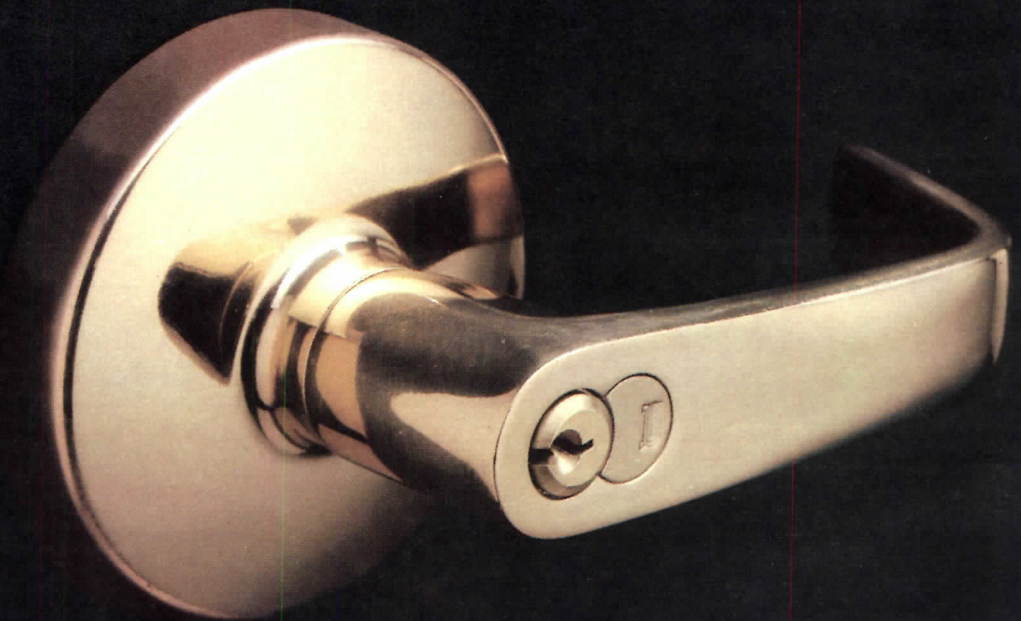
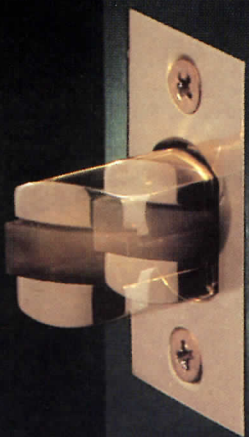
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The first step in getting corporate commissions is "Bursting through the door"

will initiate a request for a project as required for the development of a new product, or demand for production and distribution capacity. The facilities group will always work with the user group to establish the scope. At this point, the relations between the facilities and operating groups will follow one of three distinct patterns (see charts, following page).

Of the three ways that the facilities group works, being "facilitators" is most usual

First, the facilities group may adopt a "provider" role, with little involvement from the user dealing with consultant selection or design. "Users are responsible for operating profits," says one facilities head, "and it is our job to free them from the distraction

both the operating unit and the facilities staff and the architect. In this instance, the slate of professional firms to be considered most often will be determined by the facilities staff. While the list may reflect some opinions from the user group, this is limited. "We know what qualifications are required for any given project," says a third facilities man. "Our intent is to gauge the firms' ability beforehand and create situations in which any firm we pick will be acceptable."

The origins of the list of firms to be considered are, for the most part, imprecise First, "The File." Yes, there is "The File" with names in it, and most companies do refer to it in their selection process. No, it is not the only source of candidates for a given project. In addition to searching The File for candidates, no fewer than ten techniques for identifying qualified firms were described, some of them quite ingenious.

The File, however, is the one resource consistently used by all companies, with only one exception in the group interviewed. Most refer to it, several have systematically organized it and a very few computerize the data for routine access. The File contains all the brochures, newsletters, announcements and reprints that firms mail routinely to their clients and prospects. There is a good probability that such material will be read before it is filed, provided that it is informative. "Literature is effective if it is well done, has information of solid interest, and doesn't just say 'we did it,'" is one response we received. "It will help a firm get out of the drawer."

In our interview group, The File may contain as few as 30 to as many 2,300 firms, with 400-500 a working norm. Many create a one-page profile, completed by either the professional firm or the facilities staff. Invariably, the file is indexed geographically by state, and in one instance by telephone area code. The firm's size, disciplines and services, principals, and the address and telephone number are the most common data kept at fingertip. One director has a file of small cards with much of this information on the corner of his desk, reasoning: "When we go into a new market, I may want to pick someone's brain."

Sometimes, more detailed information about specialized experience is recorded; only two

companies regularly request an SF-254. A few of these companies rate the performance of design firms they have used. In two instances, these ratings take place at several intervals during the course of the project, and these ratings are at the front of the firm's file. As always, there is no client like a satisfied client.

Getting in The File in the first place is a simple process

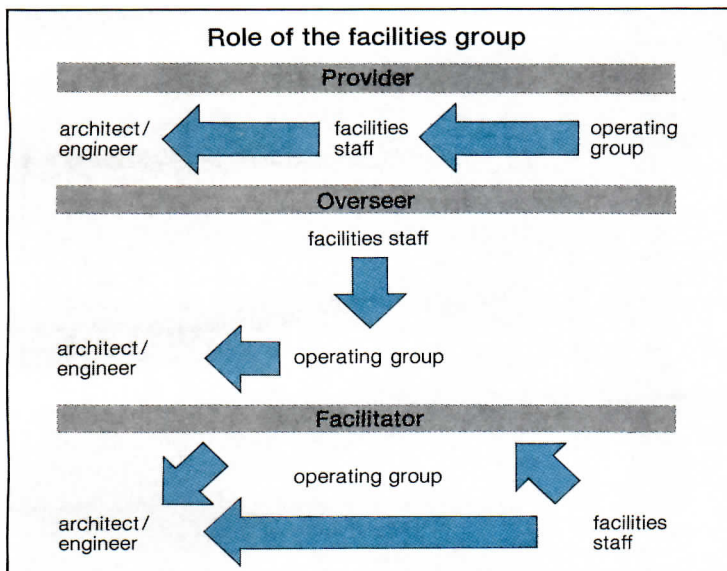
Our discussions revealed it is often made more difficult by the aspirants themselves. Some of the comments from our interviews:

- "We will talk to anybody who seems reasonably credible. We sell our products door-to-door and expect that anybody who wants to do business with us is going to sell themselves."
- "Initial contact is almost all through the mail. I don't want to waste time if someone hasn't got a prayer or we haven't got any work."
- "We say, 'keep in touch,' and people should do just that. We lose interest when a firm shows its anxiety. The good firms have a sense of professional, low-key P.R."
- "A salesman is just going to tell me about the firm, do his pitch. I want to meet the principal and get down to business. That is how you spot whether they've got the real stuff."
- "I won't tolerate dropping in without an appointment. Make a date, let's spend 20 minutes every few months to get current and be done with it."
- "We are a big public company, so it shouldn't take much to figure out what will interest us. Don't say 'we can do anything.' I know better."

In the next part of "Breaking through the door," Mr. McElroy discusses the more ingenious selection procedures large corporations use.

Mr. McElroy is the head of management consultants Sixty-Eight/52 Associates in New York. He is trained in architecture and communications psychology and has headed the marketing departments for several large design firms.

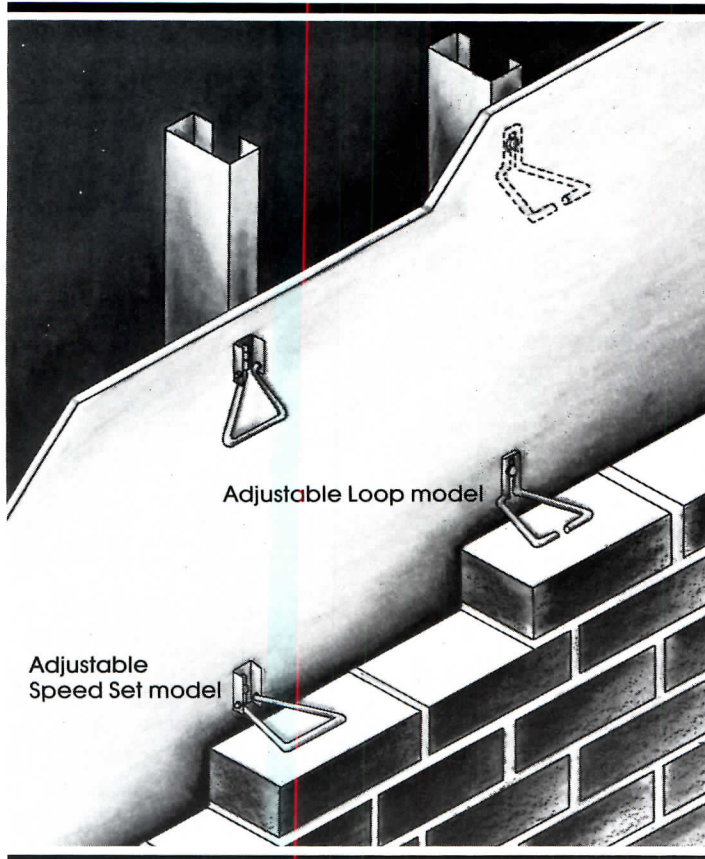
Role of the facilities group



of the building program. We keep them informed during its development."

Alternatively: "Each division does its own thing, and we review it," says another facilities manager. This is the "overseer" role, wherein the facilities staff may be concerned with standards and asset management, but relies on the operating unit's own facilities staff to execute the project. These two approaches are not always constant. In the current "lean and mean" corporate style, one divisional facilities staff dropped from 100 plus to six members.

The most common approach is the "facilitator," with the user participating in the selection of professional firms and playing a significant role in the design process. This approach implies an important chemistry between



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Round Table: Architectural Education

Where it is today, where it's going, and what it means for the future of the profession

When ARCHITECTURAL RECORD invited a group of educators, architects, recent graduates and one third-year student to New York to discuss the subject of architectural education, the discussion covered such basic questions as how students find the right schools and how schools find the right students, the effect of the new accrediting criteria and the alternate routes into the profession.

But there was also an undercurrent of concern: Are the schools neglecting design for pragmatic considerations? Or vice versa? Are the schools fulfilling their obligations to their students? To the profession? To society? What, in fact, is the proper role of the architecture school?

Obviously these were not questions with easy answers—or even correct answers. Robert Geddes, professor of design and former dean of the School of Architecture at Princeton University and principal of Geddes, Brecher, Qualls, Cunningham, of Princeton and Philadelphia, explained why: “The profession and the universities and colleges have lots of different jobs to do, and they have to do them with both wide vision of what’s happening to society in general and also a very narrow vision of what they are doing specifically.”

This was not a Round Table designed to come up with neat and tidy conclusions. But the participants, who represented institutions as diverse as Harvard and Hampton Institute, the Boston Architectural Center and Mississippi State, brought varied perspectives to the discussion. The ideas they generated will be debated and refined for a long time to come.

The first question posed by moderator Walter Wagner sparked the most disagreement:

What are the strengths and weaknesses of the recent architectural graduates?

“Have they learned enough to be effective?” he asked.

The Round Table divided into two groups: those who felt that the schools should prepare students to practice and those who preferred a more theoretical education. John Hartray, adjunct professor of architectural practice at the Illinois Institute of Technology and partner in the firm of Nagle Hartray & Associates Ltd., Chicago, was firmly in favor of the former:

“We hire people because they come in showing us beautiful work and are articulate, bright

and things of that sort, but we don’t see them emerge as solid designers until they have had about four years of experience,” he said. “This frustrates me a little, because I think there are some things that could be taught in school that are not being taught. I also think that perhaps some of the time spent in school on design is being spent in a context that’s very unrealistic, in that the richness of the real design process grows out of the constraints of the site, the budget, the program, the fact that the owner is changing his mind all of the time.”

Paul Rosenblatt, a third-year architecture student at Yale who has also been a summer intern at SOM, disagreed: “It’s very



*John Hartray
Adjunct Professor of
Architectural Practice
Illinois Institute of Technology*

dangerous to soften the distinction between practice and school,” he said. “School is a great luxury. It gives a student a chance to reflect on all the buildings ever built, all of the architectural thinking ever thought. That’s important, because once you get into practice all kinds of other pressures begin to affect the making of architecture.”

“The country is not a monolith; there are different kinds of regions, different kinds of cities, localities, different ways in which to enter this profession,” Bob Geddes pointed out. “So I think that there are schools that rightfully do one kind of task and others that do another.”

Thomas Beeby, director of the School of Architecture at the University of Illinois and a partner in the firm of Hammond Beeby & Babka, Chicago, agreed:

“I believe it’s true that there are different kinds of make-up in the profession and the schools. If you are in a large urban area, you have different requirements than if you are in a rural area. Having gone to Cornell, which then really had no relationship to



*Paul Rosenblatt
Student, Yale University*

practice per se because of the sub-rural location of the school, I can say it’s quite different than our school at the University of Illinois in Chicago, which is in the middle of a large urban architectural center, so that the students can be immediately involved in actual work.”

Beeby felt the tendency at the University of Illinois was to become overly pragmatic and at Cornell it was to become overly esoteric. “Actually it should be the other way around,” he said. “You should probably teach practical matters at Cornell and more esoteric things in a place where the students work. I don’t think that most schools have figured out where they fit in with the profession in the particular area where they are located.”

The Round Table addressed this subject in greater detail later in the day. But for the moment, it tackled another thorny topic...

Matching the students and the schools—it’s a problem for both sides

“It takes a long time to find out the differences among schools, and that’s not good for prospective students,” said

Bernard Spring, president of the Boston Architectural Center. “Even though we now have a book that lists all the schools and has self-created text about each school, they all do look alike in ASCA’s *Architecture Schools in North America*. They are not. If you visit the schools, you really sense a major difference among them. I think that kind of documentation is really a bad break for future students.”

Spring went on to repeat the advice he offers potential students who ask him how to choose a school:

“I use a concept from economics: they should go to the school that is marginally the most difficult school, because that way they will work with the students who are at their own

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“How do we give students the education that will help them to remain open-minded, interested, creative for the next 20, 30, 40 years that they are going to be in practice?”

Michael Seelig

level or higher. I find that the other students make the really big difference among the schools.”

Hugh Newell Jacobsen, who practices in Washington, D.C. and lectures in schools all over the country, was equally concerned about faculty. “I look at the schools the same way you look at a machine: I judge them by the quality of their product,” he said. “Some schools haven’t produced a serious architect ever. At the same time, the very good architects, the guys who contribute to our profession, all went to certain schools. It’s because of the quality of the faculty, because of who was there at the time teaching the good stuff. I wonder why the other schools don’t try and figure out how to get a better faculty.”



*Hugh Newell Jacobsen
Architect and Visiting Lecturer*

James Polshek, who is dean of the Graduate School of Architecture and Planning at Columbia University, and who also practices in New York City, wasn’t worried.

“Students are much smarter than we ever think they are,” he said. “There is a grapevine, and they know what’s going on. They go for those schools they think will give them the best credentials and prepare them for positions in whatever part of the country they choose to return to. That may be a narrow and even an intellectually venal way of looking at it, but I think it’s a fact of life.”

For some schools, finding the best potential students was a subject of concern. “It’s one of the things that’s most troublesome to me,” said Ballard Kirk, current president of the National Council of Architectural Registration Boards (NCARB) and also of Ballard H. T. Kirk & Associates, architects of Columbus, Ohio.

“Back in the mentorship days when a gifted young person would literally become

indentured in a great architect’s office, he was quickly screened by that architect to determine if he possessed the basic talents to become an architect,” he continued. “With our mass production architectural education today, I don’t know if that’s possible. But it seems to me that looking only at SATs or whether or not a person’s grades were high enough to make him the valedictorian of his high school class is a very poor way of determining whether he has the talents necessary to be a leader in the profession.”

Stanley Salzman, who is professor of design at the School of Architecture at Pratt Institute and also chairman of the board of the National Institute for Architectural Education (NIAE), argued that the question was not “Are they going to be good?” but “Are they going to find themselves fulfilled in their profession?” He was also concerned about finding the people who *might* have been fulfilled and contributing architects, but who knew nothing about the profession and therefore didn’t apply to architecture schools.

“We have to educate them, their parents, and, the most guilty of them all, the guidance counselors,” Salzman said. “The counselors need counseling. Informed ones are not available because they work 9 to 3, five days a week, and if you try to hold a conference with them on Saturday you get zero participation. Yet they are important in terms of decisions that young people make.”



*Stanley Salzman
Professor of Design
Pratt Institute*

The high school counselor plays a larger role in guiding the student in the South than in other parts of the country, said William McMinn, current president of the National Architectural Accrediting Board (NAAB) and dean of the School



*Thomas Beeby
Director, School of Architecture
University of Illinois*

of Architecture at Mississippi State University (who has since been named dean of the College of Architecture, Art and Planning at Cornell University). And McMinn brought up another problem with guidance counselors: if a student’s math scores are not high enough for engineering, many counselors steer him or her into architecture. “I have heard that so many times,” he said. “If you are really good in math, try engineering; if not, then maybe you ought to try architecture.” The students have had no real contact with architecture, and yet they make this incredibly important decision on a very thin veneer of information.”

Tom Beeby questioned whether it was really necessary to search out more students. “How many architects do we need in this country?” he asked. “Isn’t it more a question of trying to figure out how to make the best architects rather than to increase the numbers?”

And that led to a discussion of what architectural education should be all about.

The schools should prepare students for their varied professional roles

Bob Geddes was the first to speak of it: “One aspect of architectural education is to prepare a student to be useful immediately, but also to be useful a decade later when he or she begins to emerge in a leadership position,” he said.

“How do we give students the education that will help them to remain open-minded, interested, creative for the next 20, 30, 40 years that they are going to be in practice?” asked Michael Seelig, associate professor at the School of Community and Regional Planning at the University of British Columbia, and president of the Vancouver firm of Seelig Associates.

One approach to long-term education would be for young people to enter the profession

and educate themselves while they worked, said Jack Hartray: “Any implication that education ends with a degree is a destructive one for a profession. I have a feeling that programs like the Boston Architectural Center, Drexel in Philadelphia—things of that sort that are attuned to serve the working population within the profession—are essential. We should look at alternate routes into the profession in order to have real diversity; otherwise we’re going to wind up with a very intellectual, elite kind of thing.”

And Herman Spiegel, professor of architectural engineering and the former dean of the Yale University School of Architecture, said: “I think you can’t *just* teach technical areas because you wouldn’t be touching on the reality of what architecture is or can be.” Spiegel, who is also a partner in the New Haven engineering firm of Spiegel & Zamecnik Inc., continued: “Every school has a certain amount of technical input; even places like Yale, which surprises some people—but not the students who come there. They want it and take as much of it as they can get.”

“Every school has to choose for itself the factors it wants to address, but every one of them must address the major aspect of architecture—the visual and the intellectual aspects, the history, everything that goes along with that—to some degree, or I am not sure they are really teaching architecture.”

Tom Beeby was uncomfortable with the direction the discussion was taking. “The polarity between practical, technical programs and schools with graduate programs for students who have had education beyond the technical courses seems like a strange sort of comparison to make,” he said. “At Illinois, we have all these programs in one school. When I took over the School of Architecture at the University of Illinois, Chicago, four years ago, they had just started a graduate program.

They have a three-year program, a two-year program, a two-year program and a five-year program—no four-year program.

“It’s very interesting, because the five-year program essentially deals with the people in the urban area. It serves the urban population, the kids who can’t afford to go to school at all, much less go to graduate school. I find it bothersome to decide that one system is better than another.”

Bill McMinn commented that



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“Students at the graduate level are interested in having a good portfolio so they can get a good job. That means they’re not going to try things and be experimental.”

Jorge Silvetti

the discussion concerned two different groups of students and that those who elect the graduate programs in architecture are completely different from those who study architecture right out of high school: “It’s really difficult to make common statements for the whole group.”

McMinn pointed out that there are 91 accredited programs in architecture and 35,000 or 36,000 students in architectural schools in this country at the present time, and that the bulk of those students are in large programs in large state universities.



*William McMinn
President, NAAAB and Dean of
the School of Architecture
Mississippi State University*

“If you went around the country and asked those students why they elected to go to those particular schools,” he continued, “you’d find it wasn’t because of the knowledge of the architectural program as much as it was the geographical location of the school—proximity to home. It was a career choice determined by the cost of going to that school, the cost of tuition, the cost of living and probably also the length of time the program required.”

These factors do not, however, account for the high percentage of drop-outs that a number of the Round Table panelists reported. “In our school, we take in 60 freshmen and we end up with about 30 students who go into the sophomore year,” said Bill McMinn. “But the drop-outs are not failures. We have populated our university with former architectural students, and, amazingly, they still look back on that architectural experience in a positive way.”

John Spencer, chairman of the department of architecture at Hampton Institute, in Hampton, Virginia, reported a similar pattern.

“We had 65 incoming first-year students,” he said. At the end of the first semester, we had lost

about 33 per cent of those students, and at the end of the second semester it was up to about 50 per cent. We, too, send about 30 to 35 students to the sophomore year. Most of the others go to the School of Business or to the Art Department. They don’t leave the university.”

“If you lose 30 to 50 per cent of your students in the first year, how do you stay in business?” asked Stanley Salzman. “Transfer students,” was Spencer’s answer. “The transfer student is probably the interesting phenomenon of the last 10 or 15 years,” said Salzman. “When I was young, if you chose a career and then changed your mind, your family was socially ostracized. It’s a different game now. People shop. And there is nothing wrong with starting in one discipline and transferring to another.” Salzman reported that at Pratt, too, which is a five-year undergraduate school, as many as 60 per cent of the entering students are transfer students.

A shift in student type is changing the climate of the schools

Partly this shift reflects the different programs now available, and partly it reflects the diminishing pool of people in the undergraduate age bracket—the post-baby boom generation.



*John H. Spencer
Chairman, Department of
Architecture
Hampton Institute*

“The schools used to rely on people out of high school,” said Tom Beeby. “But by switching over to five-year programs, they are now encouraging people to come into architecture as a second career. Whereas the old five-year program used to discourage people because it would take a middle-aged beginner in architecture, put him in a school with 18-year-old kids and make no attempt to deal with his problems, now there is a

conscious effort to encourage these people, to make life easy for them in school.”

A trend toward older students is also evident on the graduate level, according to Jim Polshek. In fact, most of the applicants to the Columbia Graduate School are between 26 and 28. Says Polshek: “All of them have worked at different kinds of things. They are old enough and experienced enough to have made the considerable sacrifice it takes to go to the school.”

Another difference is that 70 or 80 per cent have come from a pre-architectural or a fine-arts program where they were exposed to architecture, unlike ten years ago when 70 per cent came from pre-law, pre-med, and other disciplines. “That in itself is a profound change in the intellectual environment, in the climate of the schools,” said Polshek.

A good number of the Round Table participants saw advantages in the trend toward older students, who were not coming to architecture school directly from high school. For example, Bob Fox, a 1983 graduate of Temple University and the outgoing president of the Association of Student Chapters of the AIA, felt that the older students contributed more and were more valuable in offering feedback and criticism. “Younger students come in right out of high school where they were taught how to memorize things,” he explained. “Older students have much more open thought patterns and deal with constructive criticism better.”

The student on the panel, Paul Rosenblatt, added: “In my experience, the most interesting, the most successful, the most provocative architecture students are the ones who had an education before they got into architecture school—or at least the ones who had developed a way of thinking, of finding where architecture comes from. It’s too complicated to have to learn how to think while you are studying the discipline of architecture.”

The advantages extend beyond school, according to Jim Polshek. “Speaking not as an educator, but as a practitioner,” he said, “I have observed significant differences after the students entered the office. There is a two-tier system operating, and those people who were older when they went to school move much faster within the office into the management structure.”

Not everyone agreed. Jorge Silvetti, professor of design theory in the Department



*Jorge Silvetti
Professor of Design
Harvard University*

of Architecture at Harvard University, and partner in the Boston firm of Machado, Silvetti Architects, saw some negative aspects to these older students. “Students at the graduate level in schools like Harvard are very much interested in having a good portfolio so they can get a good job. This means they are not going to try things and be experimental. The undergraduates are the reverse. They take school more seriously, in a way, by being more enlightened in their responsibilities. They tend to be more experimental, more critical.

“Of course,” Silvetti continued, “we don’t have undergraduates at Harvard. I am comparing with schools I know, such as the Rhode Island School of Design, because my partner is there. That’s like an entirely different world. Sometimes there is more pressure when I go there to review projects than there is at Harvard. On the other hand, the intellectual level of the graduate student at Harvard is great in dealing with issues of theory, in depth of discussion, and in doing other things I like that you never find in an undergraduate school. There are definitely two different kinds of people.”

Bob Geddes was another one who had some good things to say about the undergraduates. “I find them to be much broader, more socially activated, more politically activated than the graduate students,” he said. “They are more questioning and critical, less interested in style.”

Jim Polshek brought up the subject of curriculum. The question of the emphasis of an undergraduate major—does it lean more towards the humanities or towards pre-professional school?—is a vexing one, he said. “The Columbia College committee on instruction feels increasingly strongly about not educating people to become professionals—less drawing, fewer studios, more history, more theory, more social science, etc.

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"I see no sense in getting down to earth ever. That's what's wrong with most of our profession. I would like to see all of us get back to the ivory tower where we belong."

Hugh Newell Jacobsen

But there are members of my faculty who don't feel that way. They see the college as a small crucible where you are going to train these young minds much as one would do in a five-year school."

Moderator Wagner threw out another question about curriculum. "Today is the heyday of a businesslike approach to professional activities of all sorts," he said. . .

Do we need more emphasis on business, at the expense of time spent on design?

"The real problem with any curriculum is balance and how you use those very precious few years of a student's life on that college campus," said Bill McMinn. "Do you take advantage of the wealth that the university has to offer, or do you try to provide the depth in one particular profession?"

What's happening, according to McMinn, is that students in programs that allow electives are electing business and finance courses. "I think that's happening more now than five or ten years ago," he said, "because architects are telling students that that was a weakness in their own education."

"The management of an architectural office is totally and inextricably connected with what you are able to do in terms of design and what you are able to get executed in terms of construction," Jack Hartray said. But Jorge Silvetti took a more philosophical stance:

"The only way of taking this issue responsibly from a cultural point of view is to be critical about how the business aspect is affecting the quality of architecture," he said. "And that again is the school's role: to teach not only the techniques on how to manage an office, deal with money, know cash flows, etc., but also to understand that in fact this is a structural problem that affects the quality of thinking about architecture. I think that if we teach just the techniques of management, we will be repeating the same mistake of just taking something new and teaching it because there is a demand in the market."

Silvetti gave an example of what he meant by telling of his visits to the offices of Fumihiko Maki and Kenzo Tange in Japan. "The size of the offices is what strikes you the most when you go there," he said. "They are small compared to here. They don't have computers and ten secretaries. Whereas these people are doing much larger-scale

design work than some of us do, they're doing it with very different, smaller organizations. And that is because business here has created needs that are absolutely, in my view, ridiculous."

Let me ask another question, said John Spencer. . .

How do we keep from turning the students off when they leave school?

"I think the discrepancy between what happens in school and what happens in practice is fairly crippling," said Tom Beeby. "In many places the idealism of the school is sort of beat out by the time a person has a chance to practice. That's not exactly the case in large urban areas because there is a more diverse group of clients you can draw on, but most of the architectural students in this country are centered over this country, in the large state schools. I do a lot of juries out there, and the pressures to conform to the expected norms are so crippling that any ideals an architect might have had in school are beaten out of them by the time he has his own practice."



*James Stewart Polshek
Dean, Graduate School of
Architecture and Planning
Columbia University*

"One of the things that many of my students come back and tell me is their surprise in finding that the entire process of designing a building, going through all of the governmental regulatory structures and building a building is fundamentally asymptomatic," said Jim Polshek. "They have been led to believe, somehow, by reading magazines or maybe from school, that architecture is more like other professions. And in fact even today, at the end of this century, the design process, the construction process, the governmental process and the education process are inherently anarchic."

"Do you think that's any

different than it has ever been?" asked Tom Beeby. "No," said Jim Polshek, "that's exactly my point."

Who should teach? Practitioners, full-time teachers, or both?

"You really need both," said Bob Fox, "because you want to have the idealism of people who don't practice on a regular basis, but you also try to give it a very down-to-earth, realistic setting."

Hugh Jacobsen disagreed: "I see no sense in getting down to earth ever. That's what's wrong with most of our profession. I would like to see all of us get back up to the ivory tower where we belong."

"Design always begins with the very best way to do something, not the practical way. The down-to-earth man says 'listen to the client.' What does the client know about architecture? It's a very rare, specialized, beautiful art that we work in, and it certainly isn't wallowing in the furrow of practicality."

Bernie Spring added another perspective: "I have noticed that practitioners very often are not down to earth but just the opposite. When they go to a school, they are very idealistic and they have extremely theoretical propositions to make to the students. That's the kind of combination I like—not half practitioner and half full-time teacher, but the two halves of the same person."

Paul Rosenblatt brought up another problem: "In America, generally, society really doesn't value teachers and teaching, and so people don't devote themselves to teaching."

John Spencer felt that perhaps the problem was that too many teachers get into teaching architecture by happenstance and don't really know how to teach.

"The schools tend to have a kind of specialist attitude, so that people who teach design don't teach other things," said Bob Geddes. "And people who teach other things don't teach design. In fact, the two cultures and the multiple culture schools are split apart internally, and that's a weakness."

Geddes also pointed out that there is a real problem in developing young faculty. "If the schools and the states were to agree that there could be design laboratory firms sponsored by the school—like urban extensions or agricultural extensions, or teaching laboratories—the possibility of the young faculty growing into mature, experienced



*Robert Geddes
Professor of Design
Princeton University*

design and professional faculty would be much enhanced," he said. "In addition, the students could take a year off and experience actual work as part of what they were doing in the school."

"Other disciplines do a good job of developing teaching, but we have treated it as kind of a way station," said Bill McMinn. "I really object to that, because it doesn't bring out what's best about teaching."

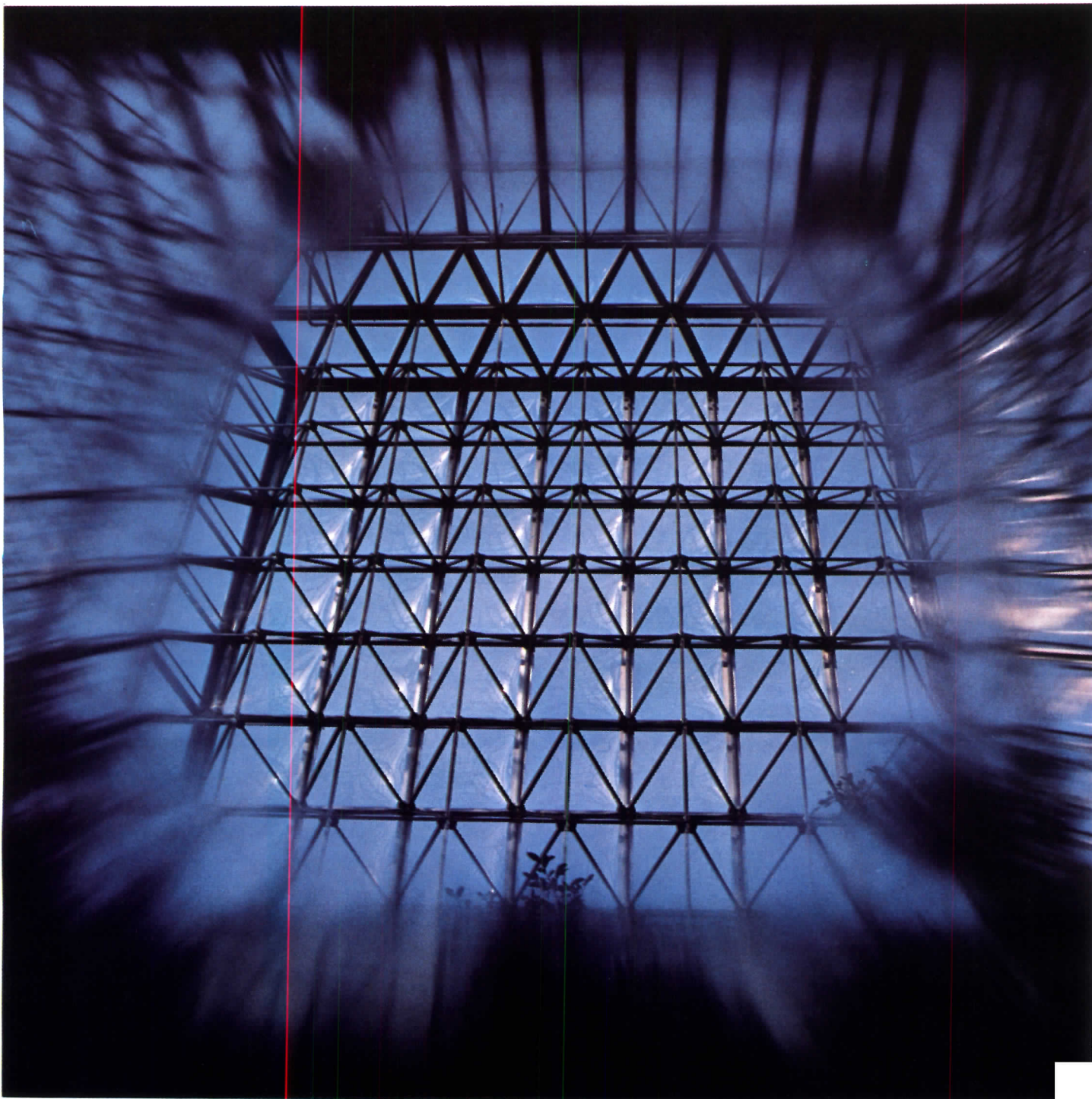
Michael Seelig raised the problem of how universities are structured: "It's very difficult to bring in those extraordinary professionals who can't devote their entire life to teaching or even the next five years or so, but who wouldn't mind coming in for an entire semester or for a year," he said. "Universities are very rigid institutions, and so we find ourselves with a lot of full-time faculty members."

Seelig noted that the University of California is getting around this problem by offering short, intensive courses where all the students do is work on one project with one specific person. "The university brings these people from all over the world and the students really benefit," he said.

"I am going out and practice some day, and I also intend to teach," said student Paul Rosenblatt. "It seems very important to teach because the contact with students is what pushes a practitioner to keep thinking and questioning."

Tom Beeby had an original focus on the question:

"What would happen if you took architectural training out of the university, moved it back into an atelier system, and let people take their general education requirements in the university?" he asked. For example, four architects could be set up in a *loft building next to the University of Chicago*, and the students could work there and take their classes next door. "Why isn't that a more viable way to educate people than the



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"Schools can be divided into the leaders, the followers, those that follow the followers and those that are lost."

Stanley Salzman



*Michael Seelig
Associate Professor in the School
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Planning, University of British
Columbia*

kind of strange, tortured situation we have apparently gotten into?"

"The universities' perception of what architecture is and what architects do is a very real problem," said Jorge Silveti. "I think it is critical now because of lack of resources. In the '60s one solved problems with money. And at that time pretty much everybody who was teaching was also practicing. Now this is becoming impossible because the university is checking up more and more, not understanding the idea of practice *and* teaching, and not accepting the fact that part-time and full-time concepts cannot be transferred from the humanities into architecture."

Bill McMinn gave an example: "NAAB was called in to help a school because the president of the university was withholding all the contracts from the architectural faculty until they would sign a statement that they would not practice architecture outside the school. I have talked to a number of university presidents," he said. "It's always interesting to see how they perceive their own programs in architecture, and their lack of understanding of them. There has never been a good fit between the professional requirements and the academic community. One vice president told me, 'You are an invisible institution within our university. Your faculty practices and teaches a course and disappears. They don't participate in the intellectual discussion on the campuses.'"

Jack Hartray sounded a more cheerful note: "Increasingly, when young people come into our firm, more and more of them expect to have a certain amount of release time in which they can teach," he said. "I think there are days when I have as many people working for Beeby at the University as I have working for me. We have missed a lot of

talent simply because of the way offices were structured—rigid lines in which the hours and the work was defined—and then I think about people like Myron Goldsmith, who really did most of SOM's research for 25 years down at IIT. The school benefitted enormously from that—it was a marvelous interaction between students and an office."

On the subject of teachers, the Round Table explored the role of architectural "stars" in teaching design. One conclusion...

The benefit of the "star" system is that it provides strong, clear leadership

It was Pratt's Stanley Salzman who brought up the subject.

"When it comes to design, there seem to be about four kinds of schools of architecture in this country," he said. "There are the leaders, the followers, and those that follow the followers, and those that are lost."

"The leaders seem to be schools that employ the star system: they have, as members of the faculty or as visiting faculty, the most influential architects in the world."

"For a certain period, this one is the star. Then someone else takes his place. And someone else. And so on. We have certainly seen this from Kahn to Sterling to Graves and so forth—not only in the way they think but even in the way they communicate and draw. Let's be honest about it: The leaders in teaching design are the Ivy League schools, and I would include Cooper Union. They're very strong, with a clear understanding of what they're about, with thorough, consistent design, and a kind of system of communication that's common to all. Design is essentially linear and isometric or is meticulously drawn and in most cases very thoroughly thought out."

The followers, in Salzman's hierarchy, are generally land-grant schools: "The way you can tell the difference between the leader and the follower is time lag, quality of thinking and quality of communication."

The third group is a few years behind the second, and the fourth group is still growing out of the old Beaux-Arts system—thinking that way, drawing that way, communicating that way. "Forgive me," Salzman said, "but they are generally schools in the mid and southeastern part of this country—again, primarily state-subsidized," he said. In fact, a person who serves on a jury can tell which cluster of schools a drawing comes from without

uncovering the name of the contestant.

Bob Geddes found a problem with Stanley Salzman's classification: "There are schools that produce students and faculty who then become stars," he said. "That is quite different from schools that go out and borrow stars from other places."

"Let's change this by saying that there are schools that have strong, clear leadership—let's change 'star system' to 'strong, clear leadership,'" said Salzman.

"It seems to me from my experience that the studio is the vehicle you use for teaching design," said Tom Beeby. "There is some kind of magic that happens in the studio between the teacher and the student, and there is a tendency for people to gravitate towards architects who are thought to be better. So you have a system working where you have someone with proven ability, and the best, or at least the most ambitious, people compete to study under him. I think historically that's generally produced the better people."

"There is an innate part of our education that has to do with direct translation of idealism," Beeby continued. "Ours is a way of life. You get a sense of what the person is, and this is transferred in the studio. I think that's the most important thing that happens in architectural school."

Paul Rosenblatt put it another way: "It has to do with the fact that you can't really teach architecture, and there is a great deal of non-verbal information that has to be communicated somehow. So students naturally associate themselves with the architectural thinkers, the architects who are making something that is important to them, that touches them in some way—even if they can't articulate what it is."

Bill McMinn got a laugh when he wondered if Mississippi State was a follower or a follower of a follower. "Typical Manhattan attitude about the South," he quipped. But he continued on a more serious note:

"I can play the counter-argument to almost everything about the star system, because I think that at the undergraduate, five-year program, as opposed to the graduate program, quite often it's better to help a student grow and develop year after year through a series of juries. You see that student as a person who's developing in all aspects, and not just having contact with a person who flies in and stays for a couple of days before he flies out

again, just so the student can put on the resume that he worked with so and so in the studio. The star system may be important as a kind of stimulus, but I think real education comes about in the continual process of the school."

The teaching of architecture involves both role modeling and the transfer of substantive knowledge, and the "stars" are people who are all role, said Bernie Spring. "In the event someone like that becomes popular and famous, that has to do with show business and the market, not necessarily with teaching," he added.

"These 'stars' are just incredibly capable, talented people who for various reasons have been elevated to the role of stars," said Herman Spiegel. "They are not hollow like Hollywood stars that have gotten there through hype. They have gotten there by the work they produce, so they don't have to be ashamed of their position. It's others who are calling them stars, not they themselves."

"And if you have more than one of these very talented people at a school," Spiegel continued, "you have eliminated the star system because there's no one god to follow. This is what we have been attempting to do at Yale, and it's a very good way to teach."

And Bob Geddes offered a different perspective: "When Kahn came to Penn he was not a star. He became a star at Penn. When Michael Graves started teaching at Princeton he was not a star. I think the model of star and followers is a very damaging way to think about students. To my mind, the most important 'students' in a school are the faculty, and when they continue to grow, that school is going to become an important place."

Interwoven with all of these specific discussions of teachers and students and curriculums was a more philosophical one...

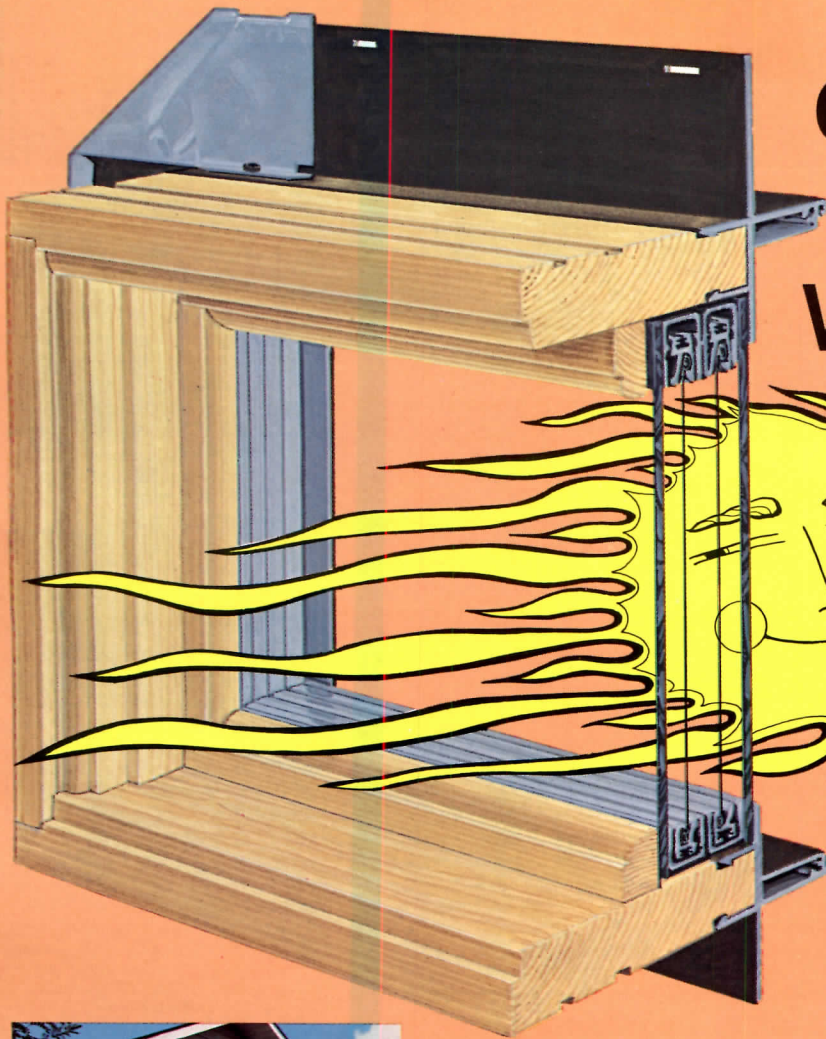
Schools of architecture should also serve as critics of the profession

Bob Geddes had raised the subject early in the day in discussing the varied roles of the schools. "These roles are determined by the society and the culture as a whole," he said, "which expresses them in many different ways—through the market, and also through ideas, criticisms and philosophies."

"You could make a very good argument that one of the purposes of the schools is to be critical of the profession rather than just to serve it," he

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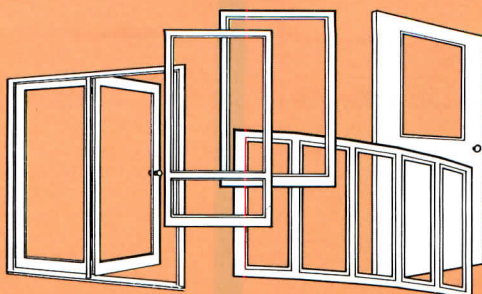
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"To my mind, the most important 'students' in a school are the faculty, and when they continue to grow, that school is going to become an important place."

Robert Geddes

continued. "In fact, over the last 10 or 15 years, the basic shifts in design in this country have emanated from the schools—with all due respect to my colleagues and myself and the profession. The impetus to what really happened in architectural thought came from the schools, and it came as criticism of the general direction in which architectural design was headed."

John Hejduk, dean of the School of Architecture at Cooper Union, complained that there was too little criticism in the profession—both inside and outside of the schools. He described visiting an architect's office in Milan:



*John Hejduk
Dean, School of Architecture
The Cooper Union*

"It was bubbling, not only with making buildings, but bubbling with argument, with thought. I felt that I had come from one world to another. My friend was not only writing a little article here, he was building a building down there, knocking out three or four magazines somewhere else—and I was jealous.

"The first reaction is anger and jealousy. And then you say, 'Hey, man, there is something in their structure that allows for this.' I would like to find a few places like that around our own vast country—not institutes, but architectural offices.

"I was left," said Hejduk, "with the impression that there simply is no critique going on in America. We're a country of 220 million people, and I can't find critical architectural thought. The journals in this country are fundamentally trade journals, not architectural critiques. I find that appalling. I have my suspicions about the inability to accept criticism or delve into argumentation in the public realm. There seems to be a gentlemen's agreement (laughter) that we don't deal with that."

And with that, Hejduk

proceeded to offer some criticism of his own.

"The idea of space is rarely discussed in a really profound way, understanding what our 20th-century space may in fact be. We are sort of like dinosaurs, operating under integrated considerations, not ones of discovery. So over the years I began to fill the school with the most creative people other than architects who deal in space, and the discovery is remarkable. I think the necessity of creating pockets of resistance today, or pockets of exploration—a negative and a positive way of looking at it—has to be carefully protected. It's a process that's under attack.

"We simply do not have serious research going on in architecture," Hejduk concluded. "I mean the really probing, exploring kind, and the necessary critique that goes along with it, that could fundamentally change the character of the practice.

"The practice isn't serious about education. I think it's in serious trouble. We're in a state of metamorphosis, and we'd better get the best creative minds operating in our benefit."

Jim Polshek disagreed: "The practice has always been in serious trouble. I think that one can't look at the question of lack of critique in this country and the excess of critique in the countries you mentioned (Germany and Italy) and take it quite as seriously as you do, because there is a lot more going on here than there."

"We're not in a discipline that has had a sense of continuity in what have been the major theoretical directions," said Bob Geddes, "so I am very touched by what John said. The notion that we could have studies of architecture in a disinterested way is brilliant. I don't know if anyone has ever said that, because obviously it connects architecture to the notion of art and esthetics itself.

"I think a large part of the critique must be grounded in the politics of the society, in the culture itself. What's happening in the schools is that they are really separate from the politics of our times. And that means that we're disinterested. A notion of truly autonomous architecture is to me impossible by definition," Geddes continued. "Yet it is still true that we have learned a great deal in the past decade by looking around, learning from architecture itself—something that in previous decades would have been considered impossible."

After all the discussion of the varied—and subtle—roles of architectural education, the Round Table turned to the subject of how the profession is regulating and monitoring that education. To a certain extent, the new accrediting criteria and the national exam are attempts to measure the unmeasurable. The educators active in NCARB and the NAAB tried to explain the process that had led to their adoption and to answer the many questions the Round Table participants had about their mechanics, their validity, and their implications for the future.

Can the new accrediting criteria gauge the quality of architectural education?

Ballard Kirk, who is current president of NCARB, which with NAAB and the other organizations helped develop them, gave a brief history of the new criteria. A number of state registration boards had found the old criteria for accrediting schools—the "four perspectives and seven criteria"—to be so nebulous, so loosely defined and so difficult to work with, that they took over the accrediting function. The NCARB was



*Ballard Kirk
President, NCARB*

worried that each individual state might try to set its own standards as to which schools are acceptable and not acceptable and what constitutes acceptable curriculum.

"As a result of the new criteria which do have 'content' as an element of accreditation," said Kirk, "a lot of the fears that had been building up in the individual states are now being dispelled. They see the new criteria as something that's not restrictive of educational freedom but that still assures some kind of minimum course content.

"So individual states and NCARB are very, very pleased with what NAAB has done,"

Kirk continued, "and I think the relationship between the regulatory bodies and the schools and the accrediting boards themselves is going to be much more helpful."

"Has there been any reaction from any of the schools, or is it too soon?" asked RECORD's Herbert Smith, co-moderator of the Round Table.

NAAB President Bill McMinn described a meeting held in December attended by 70 of the 90 heads of schools. "Two rather strong spokesmen of two schools that are test cases spoke very favorably of the criteria and their responses," he said.

"So I think I can say that those schools that are familiar with the criteria are in favor. They have become involved in measuring their own program against the criteria, they feel very comfortable with them, and they feel they're a good deal for them in their own work with their faculty and their university administration.

"But I think a school should be doing a lot more than just what's involved in accreditation," McMinn continued. "It's a minimum standard, if you will. We are about to go into a whole other set of issues that have to do with the fit of the school to its institution or its geographical location, how the school responds to that particular place, how it defines its location in relation to the university, the college or the physical site. We're talking about maintenance of accreditation, whether a school has a whole series of two- or three-year marginal accreditation periods, what should be the result of that—a whole group of issues. The board is showing a much more aggressive concern for the quality of architectural education."

McMinn pointed out that no matter how precisely the criteria are written down, NAAB basically rests upon the peer judgment, on the quality of the teams that visit the schools. "The team members themselves really determine the success of accreditation," he said.

Is the licensing exam intended to limit the number of architects?

Here again, it was Ballard Kirk who gave the background. The exam is not really new, he pointed out. At one time individual states wrote their examinations in conformance with a syllabus produced by NCARB. That didn't solve all of the problems of reciprocity because there were still some

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"The architect is a person who does art, and if the art element is removed—if you haven't the spiritual aspects—it's no longer architecture."

Thomas Beeby



*Bernard Spring
President
Boston Architectural Center*

states that didn't conform precisely to the syllabus. The next step was the seven-part exam, which included academic subjects that had been tested sufficiently in the schools. So the exam was split into two parts, the qualifying and the professional exam. Graduates of professionally accredited schools were exempted from taking the qualifying exam, which was intended only for those who had come up through the office route or who were graduates of non-accredited schools.

"Unfortunately, not every state agreed with that," said Kirk. "So there has been a lot of criticism about splitting the exam. There has also been criticism that nobody had ever defined what an architect does; therefore, you really couldn't test adequately what a person needs to know to be an architect.

"The 1983 Architect Registration Exam, the ARE, was very successful, but it also showed us that we still had some problems," Kirk continued. "I think the 1984 exam is better. The exam writers now have a little more experience in adapting to a practice mode of examining."

"Would you feel the new exam puts a little more emphasis on what a young person learns in the Intern Development Program (IDP) rather than the general academic background?" asked Herb Smith.

"It attempts to amalgamate both," said Kirk. "There are those sections on practice, office-related questions, which can only come through the internship period, and the exam recognizes those 14 areas of IDP, so the exam writers wrote their questions to reflect them."

"What percentage of the people who take the exam pass it the first time?" Salzman asked. "Probably no more than 7 or 9 per cent—10 per cent at the most," was the response.

John Spencer reported a higher pass rate—over 20 per cent—mostly people who had had between 30 and 36 months of experience in the office.

The pass rate for architects is far lower than it is for other professions—more than 90 per cent of the doctors passed the national boards the first time around, according to Stanley Salzman. "What do you make of that," asked Walter Wagner. "That we're an excluding profession," Salzman responded.

"I think the exam is fine," said Bernie Spring. "The point I want to make is that the examination and schooling have very little to

do with each other."

"What bothers me is that I see architectural education within the context of the universities as a totally open-ended thing with limitless possibilities," said Jack Hartray. "I also see public safety, seismic design, lateral forces—and all of that—as involving a limited group of things we ought to teach everybody. Somebody told me that four of the multiple-choice questions on the exam concerned seismic design. You could fail all four and still be an architect in any state in the union, providing you were good on gravity loads. I should think if I were a citizen in California I'd be a little nervous about that."

Hartray was particularly concerned that the only people allowed to take the exam are people who are graduates of schools with accredited programs and that the alternate routes into the profession are going to get more and more circuitous and eventually dry up.

Another of Hartray's concerns: if the states give over to the universities the responsibility for the public safety, which is really a state responsibility, there is going to be a kind of natural tendency for the state to get involved in curriculum and things of that sort.

"Let me back up," said Ballard Kirk. "I think people perceive NCARB as trying to foist something off on the public, trying to control entry into the architectural profession and to dictate educational standards. Almost the opposite is true.

"The state of Florida passed a degree requirement, and in Florida that was to be the only way. It went hand in hand with Florida also setting up its own accrediting process. They were followed by Indiana with a degree requirement. Illinois will have a four-year degree requirement in another two years or so. Minnesota has a degree requirement that becomes effective in 1986 or 1987.

"I think NCARB is in the middle of one group of member

states that are moving pell-mell towards the accrediting degree and another group of states that take the position that under no circumstances will they have an accrediting degree requirement. We're sort of arbitrating a situation that greatly threatens reciprocity," Kirk concluded.

John Spencer, who was a member of the committee involved with the development of the criteria, explained that the idea was to establish an alternate route that does require some education. "The committee has stated that although people will come up through the offices and gain experience that way, the work in the office is not a substitute for a formal education," he said. "As far as the technical subjects are concerned," Spencer continued, "there are many ways you can get them. We have 91 schools of architecture, 20 more that are in the hopper, plus all of the two-year programs, correspondence courses, etc. You can put that package together in many ways."

"I keep hearing professional degree," said Herb Smith. "Would that also include urban planning, architectural engineering, the various routes one can take?" The NAAB first professional degree is only in architecture, said Kirk.

"I find it rather disturbing, having agreed this morning that different schools do different things and prepare people differently, have different missions, etc., to be talking about the exam this way," said Michael Seelig. "It seems to me that one of the problems with professional exams like this is that the only thing they can test is how well you do on your internship and what you actually accomplished in terms of the minimum standards that the profession would require. If we had something like the British system and let every school that is recognized administer its own exams at an earlier stage and then have this professional practice exam, it would seem much more logical. I can't understand how we can talk about an exam when we have this kind of amalgam of schools sitting around this table."

"What bothers me most," said Jack Hartray, "is that individually the NCARB and NAAB people I have worked with have been marvelous, humane, delightful—good people. But there is something about the way the whole thing is organized that is going to make us a dull profession."

Tom Beeby was uncomfortable

with the whole discussion. He pointed out that there is an architectural culture in Chicago and that the new system will undermine and eventually destroy it. "It's entirely localized, in Chicago, and the more you drain the responsibility from the local area and ignore the uniqueness of the situation, it's only a matter of time until it becomes Kansas City," he said.

"I am not so sure architecture is such a declining profession. I'm not sure we're like lawyers and doctors. I'm not so sure the essence of architecture has to do with management or set up of corporations that practice," said Beeby. "Architecture has to do with how you see the role of the architect. I think the architect actually is a man who does art, and if the art element is removed—if you haven't the spiritual aspects—it's no longer architecture. A lot of the things we have talked about have nothing to do with that."

"I'd like to support that argument," said John Hejduk. "The minute we start trying to set up systems of definition, we lose what I think it's about—the art of approximation. That's one of the beautiful things about architecture. It's not so precise. "I have a real dread and a sense of Big Brother. That's my paranoiac state, which says it's okay, it's sweet and it's all for the good of everybody—and all of a sudden I put my hand in my pocket and my wallet isn't there.



*Herman Spiegel
Professor of Architectural
Engineering
Yale University*

If not my life. . ." he added, as the group laughed somewhat uneasily. Hejduk described an experience that Cooper Union had in going through its registration process. "All of a sudden I got a document. We filled out the document, did the best we could, but they sent it back to us again saying, 'You have to rewrite this. You have to be more definite in what your

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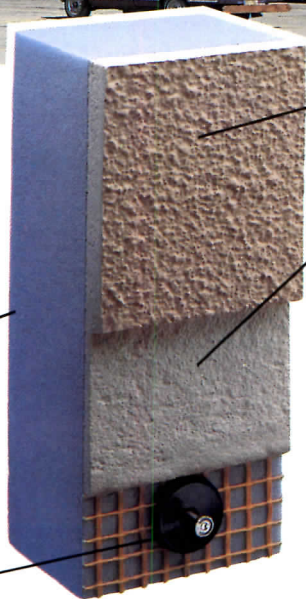
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“Neither NCARB nor NAAB has any right to interfere in the art of design because judgments of quality of art cannot be made.”

Bernard Spring

philosophy is.’ I said ‘No, I don’t like the tone, I don’t like the feel of it, and I don’t like exchanging so much correspondence between Washington and our place. Never had that before.’ What I’m getting at is somehow it’s elaborations that worry me. And documentation. So much documentation also determines a tonality.”

“There has been a discussion about the art of architecture,” said Bernie Spring. “Now, as far as I can see, neither NCARB nor NAAB has any right to interfere in the art because judgments of quality of art cannot be made. Public health and safety is a different subject. We do need public health and safety, but please stay out of design and stay out of school.”

Ballard Kirk tried to come to NCARB’s defense: “I always hear NCARB referred to as though it were some kind of living, breathing entity out there—a super-government, a big daddy or whatever. It really isn’t. It’s just a forum of states, that’s all it’s intended to be. It’s a processor, a paper-shuffler. It doesn’t in itself create anything. It responds to its member boards. If a majority of member boards want a degree requirement or don’t want one, that’s simply how the forum operates.”

“How did the architectural exam start?” asked Herman Spiegel. “Which state decided that things were unsafe and that an exam would make them safer? That’s what’s puzzling me.”

Jack Hartray: “Illinois was one of the first. I don’t think there is any argument concerning safety, and I would have very little argument concerning construction technology. But design is another thing.”

Moderator Walter Wagner asked for a show of hands: “Should the national exam test design?” Two were in favor; twelve were against. And John Spencer argued that this was misleading because the design exam is not pure design, but covers public health, safety, welfare and other things.

Is the IDP program the best way to bridge the gap between graduation and licensing?

One of the Round Table participants, Michele Eaton, is on the coordinating committee of the IDP and also with the firm of Oldknow/Young Architects in San Francisco after coming up through the alternate route, so she was able to talk from first-hand experience.

“Often a student entering the profession feels a little bit lost.

Maybe he or she didn’t get a good background in school as to what’s involved in the practice of architecture. The IDP program bridges that gap and gives a real range of experience in the practice of architecture, starting out with client contact and going all the way through construction of the project.”

Eaton listed the three basic aspects of the program: supplementary education, a record-keeping process, and the advisor-sponsor aspect, which she described as a sort of organized mentorship.

“The record-keeping aspect is a great way to understand how you are building up your experience, to see how it is stacking up,” she said. And through supplementary education the IDP tries to encourage the continuation of your professional development, remind you that this is a profession where you always must learn something new, and help you find different avenues for accomplishing that.”



Robert Fox
*Association of Student Chapters/
AIA*

“How many people are involved in the IDP program?” asked Herb Smith. “Roughly 350, according to NCARB records,” said Ballard Kirk, “although Texas, which has just come on, is still keeping its own records.” Michele Eaton felt there were considerably more people participating in IDP because the records do not count the many people who elect to keep the time sheet but do not file it in Washington.

Kirk explained that because the program had gotten started in the South, it was viewed as a “nice regional thing for Mississippi, Louisiana and a few of those other states.” With new leadership, however, it is now becoming more of a national program.

“My concern about IDP—and I have been on AIA-IDP committees and NCARB-IDP committees—is that it has



Michele Eaton
Coordinating Committee, IDP

always seemed to me to be too structured, both from the point of view of the student and that of the practitioners,” said Walter Wagner.

Bob Fox agreed: “ASC withheld its support for a good number of years until the program became more flexible. It supports it now only as a voluntary program. I really have to underline that word ‘voluntary,’” he said, “because as soon as it becomes a mandatory program it has the potential to become a burden.”

Michele Eaton said that the program has already become more flexible. “When it first started, she explained, “every hour of your first three years of internship had to be in a certain category. Now over half of your internship period can be spread out over any of the 14 training areas.”

Bernie Spring reminded the group that about 17 years ago he and Bob Geddes had recommended that there be a structured internship, and so he has followed the IDP very closely. “We tried the IDP method,” said Spring, “and found it was excessively overspecified. Of course it’s a good idea, but the bureaucrats killed it.”

Jack Hartray felt that as long as it’s voluntary, it’s a great idea. “As soon as it becomes mandatory, it is the most massive interference of state bureaucracy in the realm of small business that I can imagine,” he said, adding:

“What scares me about NCARB, is that the only thing that needs to happen is for 25 states to get together and decide that that ought to be mandatory, too, and then suddenly I have an extra partner helping me manage my office. Education has to be a voluntary thing in the ultimate sense. It’s fine to provide a structure, but the IDP is going to be a disaster if it’s made a mandatory prerequisite for licensing.”

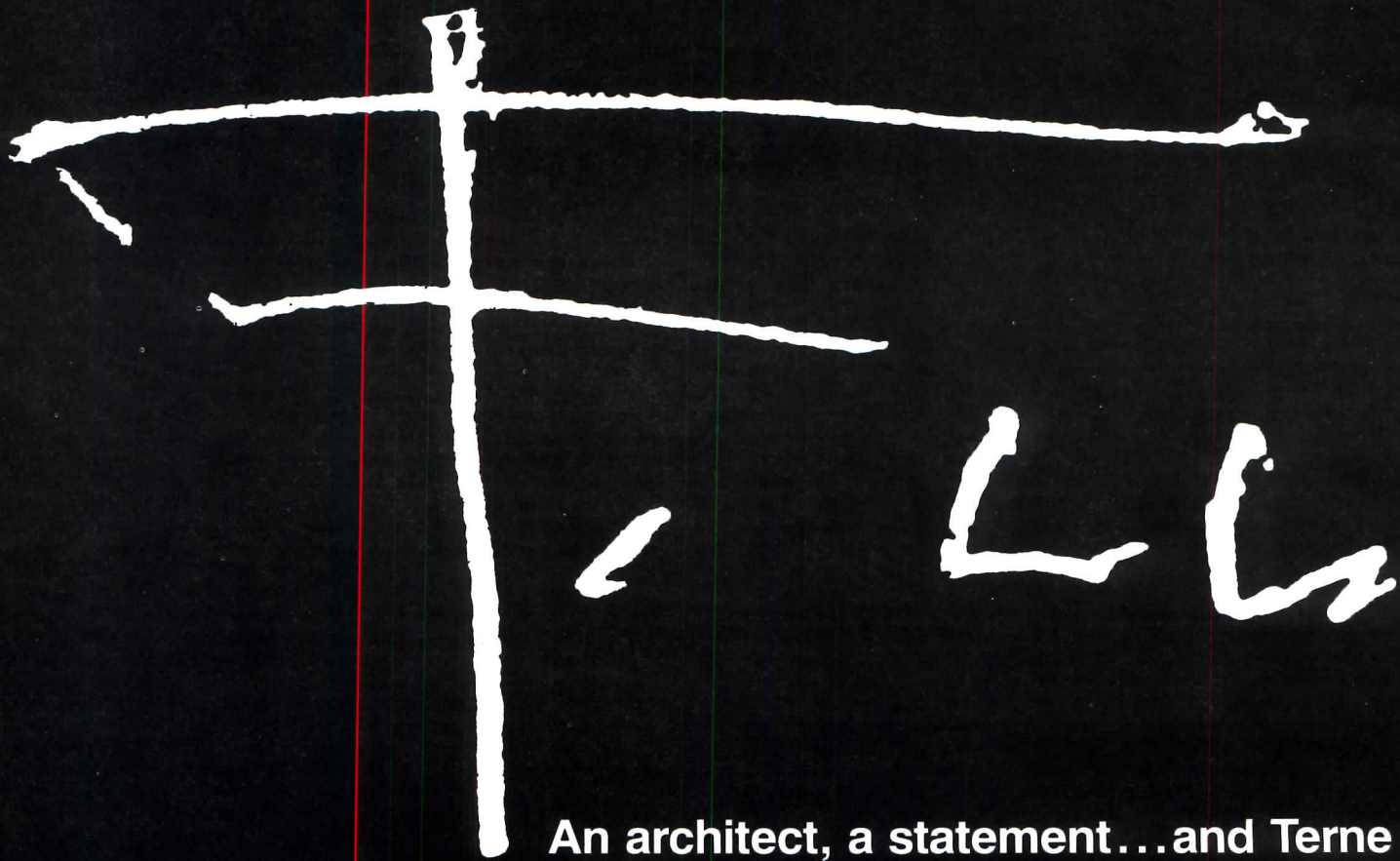
“In how many states is IDP mandated?” asked Walter Wagner.

“Eight,” said Michele Eaton, adding: “I have always been a proponent of it being a totally voluntary program, but available. If it’s not mandatory, you can use what works, modify what doesn’t and forget what you don’t need. If it’s mandatory, you have to do it by the letter instead of having this flexibility.”

The Round Table ended with John Hejduk going back to the topic of criticism

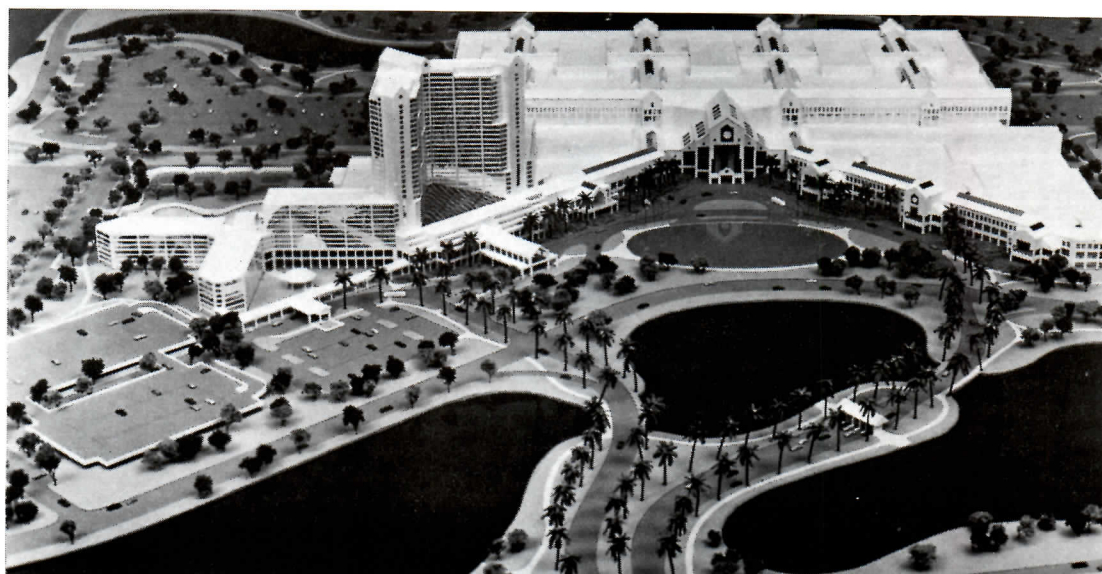
“Somehow or other this discussion has a tinge of nostalgia, of looking back,” he said. “That’s also a description of what is happening in architecture, which is sad, to say the least. The so-called understanding of the traditional methodologic condition of architectural training is about to go through an immense transformation. There are fields of discipline now in which creative people, such as Jay Fellows, who wrote *The Failing Distance*, will fundamentally change our vision of architecture. I am not talking as a mystic. But I think practice and theory and everything else is wrapped together, and that we’re melting at the feet and still think our heads are turning to salt. I make a plea only in the sense that I suspect the star system and this system and that system: The issues are more profound and more exciting—at least for me they are. When Jay Fellows walks into the school, he’s out there spatially, and I want to know what I can get from his spatial views. And I want to know the psychology or the physiological vision or chemistry of the woman’s mind relative to architecture, because there is a difference. So rather than rehash and look at books and nostalgia, and rather than taking parts of historical buildings and pastiching them into future buildings, it occurred to me that we’re in a germination period and that the best thing to do would be to reconnect with the university. We have to know about the spatial explorations in other disciplines so that we can make an analogical and also a physical connection—and that will change the way architecture looks.”

The discussion could have gone on for many more hours, but time had run out. And so the Round Table concluded. *N.G.G.*

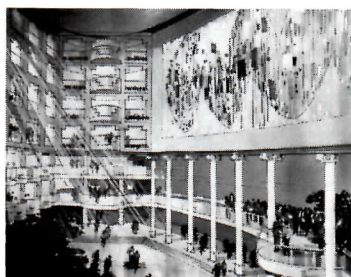


An architect, a statement...and Terne

Gold Coast gargantuan: A new medical center in Florida



Even Henry Flagler, the visionary financier whose railroad to Miami opened up south Florida to a flood of large-scale development, would be impressed: a \$2 billion, 5-million-square-foot health-care exhibition and learning center to be built on 293 acres midway between the resort cities of Ft. Lauderdale and Hollywood. Dubbed EcuMed and scheduled to be developed in two phases, the enormous project is being touted as the second largest building, after the Pentagon, in the country. The center's design by RTKL Associates is a veritable ocean of masonry and glass that incorporates three general types of facilities. Medical education activities will take place in a 350,000-square-foot conference and resource center that will house meeting rooms,



auditoriums, a research library, and communication services. A seven-story rotunda (photo left), adorned with a mural-size map that continuously updates the world's population, will connect the conference area to 2.3 million square feet of exhibition galleries (photo bottom) for some 800 manufacturers of health-care products and for a permanent museum of medical technology. Adjoining all this will be a 1,500-room hotel, shops, and restaurants. Phase II of the project, planned to begin after 1987, will increase the exhibition space to 4 million square feet.

Who says Texas has a monopoly on architectural behemoths?

Competition calendar

- The Preservation League of Evanston has issued a call for entries to an open competition entitled "Romance with the Rails" that seeks conceptual designs for the adaptive re-use of the city's Davis Street train station (Frost & Granger, 1908) and its adjacent plaza. Cash prizes totaling \$3,000 will be given to the top three submissions. Entry deadline is September 15. For registration forms write the Preservation League of Evanston, P.O. Box 731, Evanston, Ill. 60204.
- International Contract Furnishings has announced its first annual awards program for kitchen designs that incorporate ICF cabinets. The program is open to all architects and designers practicing in the United States. The winning entrant will receive an all-expenses paid, two-week trip for two to Italy; the premiated and runner-up projects will be published in ICF's kitchen design book. Deadline for submission is December 31. For entry forms and additional information write ICF, 305 East 63rd Street, New York, N.Y. 10021.
- The City of Escondido, California has issued a call for entries to a competition for a \$52 million Civic Center. The winning entrant will be given the opportunity to negotiate a contract to provide services for the first element of the center, an \$8 million City Hall. Deadline for registration is July 25. For information write William H. Liskamm, Competition Advisor, Escondido City Hall, 100 Valley Boulevard, Escondido, Calif. 92055.
- The American Wood Council is seeking entries to its nonresidential renovation and reconstruction design awards program. Projects may involve renovation of a building or major additions to existing structures. Entry deadline is October 1. For information and entry forms write the American Wood Council, 1619 Massachusetts Avenue N.W., Suite 500, Washington, D.C. 20036.

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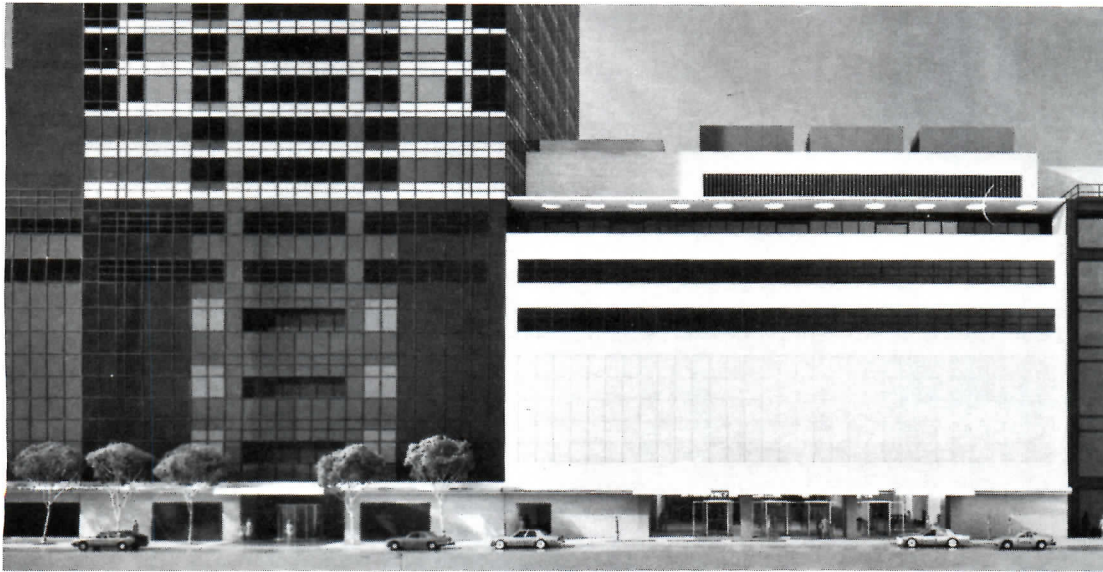
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Those who had any doubts that the new 44-story tower adjoining the Museum of Modern Art would open up a Pandora's box of high-rise construction on low-rise, mid-block sites in Manhattan need only look across West 53rd Street, where CBS and Gerald S. Hines have joined forces to propose a 660,000-square-foot, 30-story headquarters building for E.F. Hutton. Designed by Kevin Roche John Dinkeloo and Associates, the structure will be clad in light gray granite and glass that contrasts with the black facade of Eero Saarinen's CBS Building next door. A 68-foot-high carved stone colonnade and an articulated roofline represent a dramatic departure from the decidedly Modernist quality that has characterized Roche's previous work.

After four years of planning and construction, the Museum of Modern Art recently unveiled its expanded facilities in midtown Manhattan. Designed by Cesar Pelli & Associates, the project is noteworthy from an architectural point of view for several reasons. For one thing, it represents a prototypical (and complicated) urban development plan that incorporates the renovation of the museum's existing facilities—including the refurbishing of the original 1939 building—along with the new construction of a four-story steel and glass escalator hall overlooking the much-loved sculpture garden, and a 168,000-square-foot west wing located on the first six floors of a 44-story condominium tower. Although there was never any objection to the idea of MOMA's doubling the



square footage of its cramped quarters, early fears that the tower might overwhelm its midblock site on West 53rd Street appear to have been well-founded. A happier result of the renovation, however, is the greatly expanded exhibition space given over to the Department of Architecture and Design, which now occupies the entire fourth floor of the new

west wing. The core of the space is a 2,500-square-foot, atriumlike gallery, recently dedicated in honor of Philip Johnson, that houses the museum's collection of architectural drawings and models. For the first time, moreover, the permanent design collection is displayed chronologically in a series of galleries, beginning with 19th-century precursors of modern design and ending with the computer technology of the present. Unlike the less-than-impressive entrance to the old architecture and design quarters, which were tucked away in the back of the museum, the new gallery boasts a dramatic two-story lobby that features a full-size Bell helicopter suspended from the ceiling.

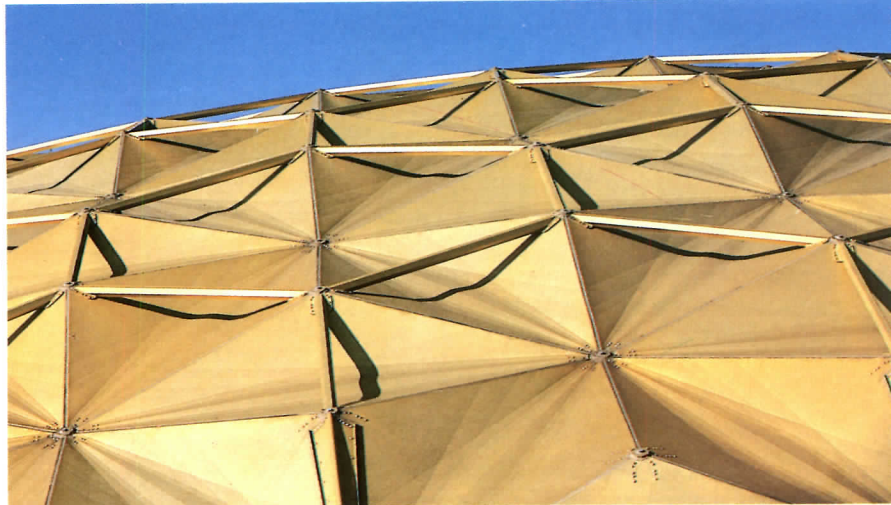


Infill housing, Brooklyn style



Building sites in Brooklyn Heights, one of New York's finest enclaves of 19th-century row houses, are rare indeed. When they do crop up, they offer an architect the opportunity—and the challenge—of creating contemporary housing within a significant historic context. Alfredo De Vido has worked in the neighborhood in the past (see RECORD, July 1982, pages 82-85), and he has now come up with a sympathetic scheme for a five-story cooperative project on a vacant, double-width lot. The eight-unit structure will exhibit a red brick facade, precast concrete lintels and door surrounds, a rusticated stucco basement, double-height parlor-floor windows, and a wood cornice—features that at least echo the spirit, if not the precise detailing, of adjacent dwellings.

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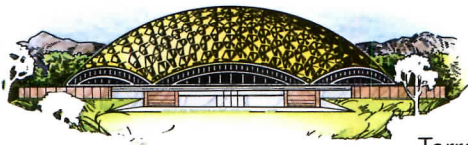
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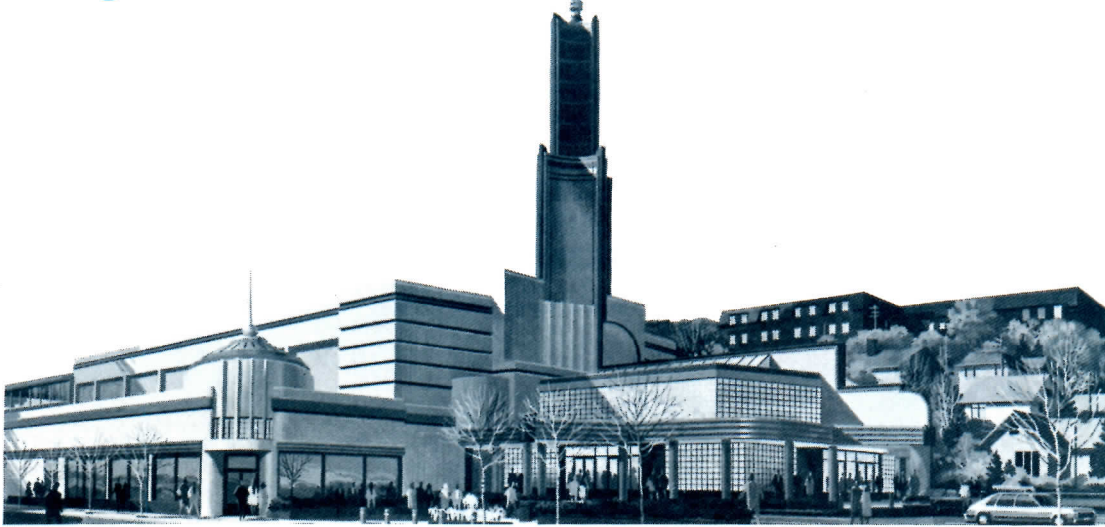
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Saving a streamlined cinema



Although the conversion of early 20th-century movie theaters into facilities for live performances has become fairly commonplace in large cities, smaller communities often have had difficulty finding the financial wherewithal to restore and operate these architecturally significant structures. Happily, the enlightened city of Klamath Falls in southern Oregon is

collaborating with a local cultural group to transform the Esquire Theater, an unused Moderne movie house that dates from the late 1930s, into a 650-seat performing arts center. Plans call for the addition of a proscenium stage to the auditorium and an expansion of the theater lobby into a new glass-block wing that harmonizes the building's streamlined

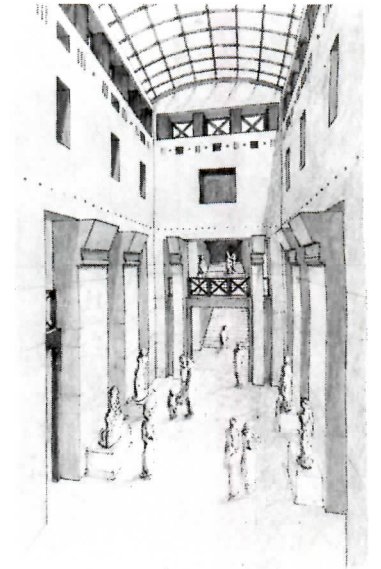
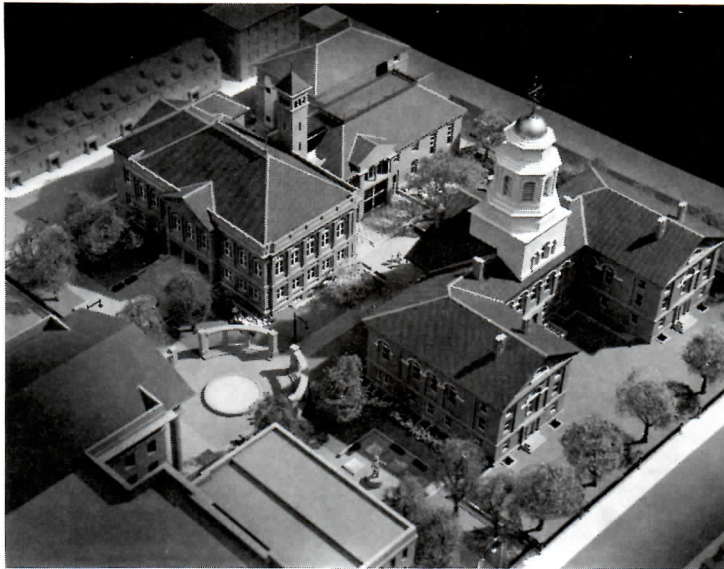
concrete exterior. A pavilionlike corner unit, once given over to commercial use, will house the offices of a women's service organization. Architects for the project are Pedersen & Pedersen, in association with Gordon, Beard, Grimes, Bahls and Domreis. Theater designer Jules Fisher and acoustician Christopher Jaffe are consultants.

Postmodernism on the Passaic

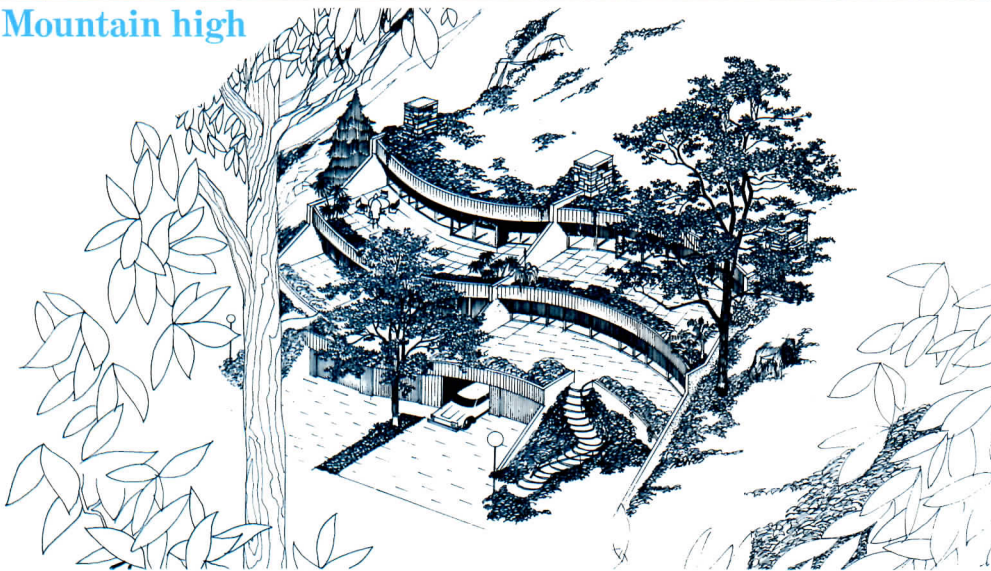
Culture, it seems, is a hardy specimen that can flourish in the midst of urban devastation. Although most people still see Newark as an unhappy symbol of the social ills that afflict many American cities, the Newark Museum recently unveiled an ambitious renovation and expansion plan by Michael Graves that includes the unification of the institution's current four-building complex, the adaptive reuse of an adjacent five-story building into administrative and educational offices, and the new construction of a four-story wing to house 30,000 square feet of exhibition space for the permanent collection. The most prominent feature of the proposal is a three-story skylit atrium (below) that will serve as the museum's sculpture court.

A Federal revival

Bulfinch Square is an urban renewal project that involves the conversion of the old Middlesex County Courthouse buildings in East Cambridge, Massachusetts into an office and retail complex. The development is named for noted Federal architect Charles Bulfinch, designer of the earliest of the 19th-century structures. Restoration architects are Graham Gund Associates.



Rocky Mountain high



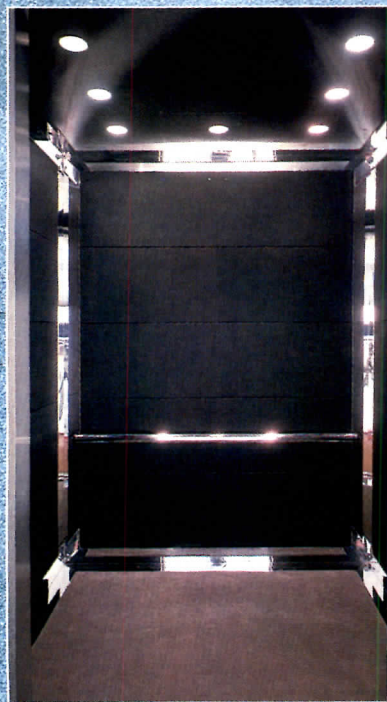
Architect Dennis Blair trained under Frank Lloyd Wright at Taliesin, and associated designer Charles Woods apprenticed under Blair. Not surprisingly, then, they have characterized their latest project—a group of solar-heated, earth-sheltered condominiums near Vail, Colorado—as “organic.” Dubbed Architerra, the striking development consists of 2,500-square-foot living units terraced into the side of 30 to 45-degree slopes and reinforced by 12-inch-thick concrete blocks. Deep overhangs shield sinuous south-facing glass walls from the strong Colorado sun. In true Wrightian fashion Blair and Woods contend that the project shows that earth-sheltered architecture “can be artistic and need not be reminiscent of bomb shelters.”

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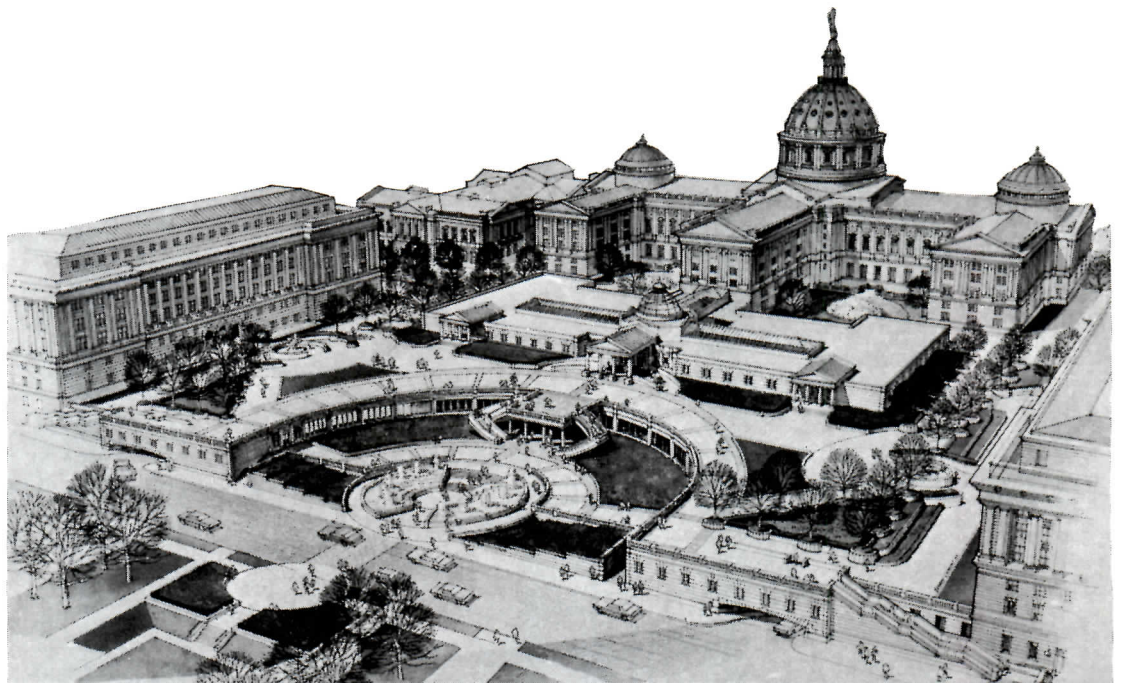
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At last, new life for a grand dowager

When the old New York City Police Headquarters on the edge of Little Italy opened its doors in 1909, *Harper's Weekly* praised the building as "a handsome edifice that puts to shame the dingy tenements surrounding it." Seventy-five years later, most of the tenements remain, but it is the neo-Baroque headquarters—majestic, but a sad victim of vandalism after lying vacant for the past decade—that stands as the neighborhood eyesore. That situation will soon change with the conversion of the structure by the Jeffersonian Corporation into 60 residential lofts, a community cultural center, a restaurant, and other commercial space. Architects for the restoration are The Ehrenkrantz Group in association with DePolo/Dunbar, an interior design firm.

The grandeur that was Harrisburg



The Pennsylvania State Capitol in Harrisburg was designed in 1904 by architect Joseph Huston with a dome that is a small-scale replica of the cupola at St. Peter's. In a plan that reflects both Baroque precedents and the current preoccupation with architectural historicism, Celli-Flynn & Associates have devised an elaborate expansion scheme for the legislative complex that

includes 230,000 square feet of office space, an 840-car underground garage, and a plaza that links four existing buildings and completes the axis of a 30-year-old master plan for Capitol Park. Sheathed in rusticated Woodbury granite to match the material of the original buildings, the intricately terraced new construction features a major fountain ringed by a

semicircular office block—a contemporary, and secular, adaptation of Bernini's colonnade in Rome. The architects have placed a new Senate office building between the Capitol and the colonnade that is organized around a two-story, glass-roofed conservatory. Associated engineers on the project are H.F. Lenz Company. Scheduled completion date is late-1986.

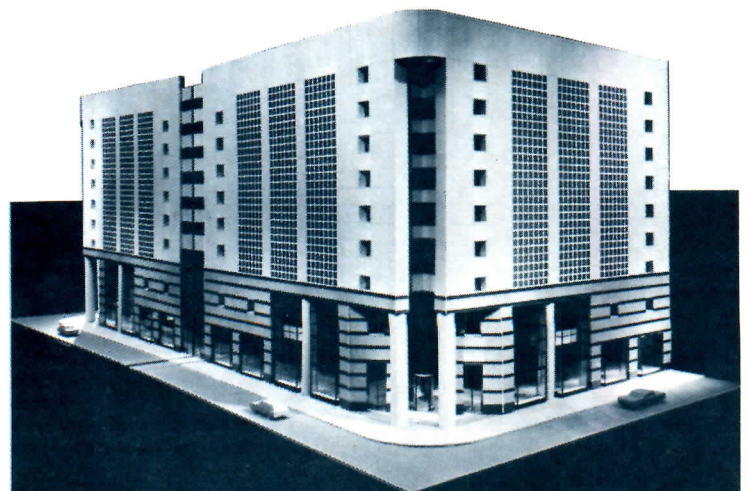
IDC update



Once merely a gleam in the eye of the New York interior furnishings industry, the proposed International Design Center recently moved a major step toward reality as construction started on the first phase of the \$117 million project. The center will be housed in four renovated industrial buildings on 10 acres in Long Island City, Queens, and represents the most

significant move to date by some of the city's 500 design-related companies to consolidate their show rooms under one roof. Initial work on the elaborate project was made possible by a \$23 million UDAG grant from the U.S. Department of Housing and Urban Development. Architects are I.M. Pei & Partners, in joint venture with Gwathmey Siegel & Associates.

Reconsidering the parking garage



Except for the fact that they are clearly preferable to open lots, above-ground parking garages have never been esteemed for their contribution to the urban landscape. That situation seems to be changing as more municipalities are planning multi-use downtown facilities which cater to people even after they leave their automobiles. In Des Moines, for example,

architects Perkins & Will have designed a 600-car garage that features eight parking levels above two floors of commercial and retail space with provisions for a future office building of up to 20 stories. The lower floors of the building will be clad in bands of rough-textured and polished gray granite; upper stories, by contrast, are to be sheathed in a screen of precast concrete.



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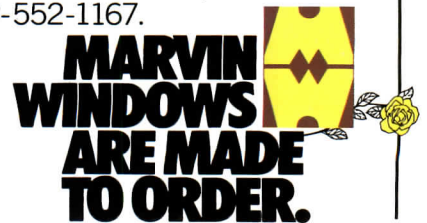
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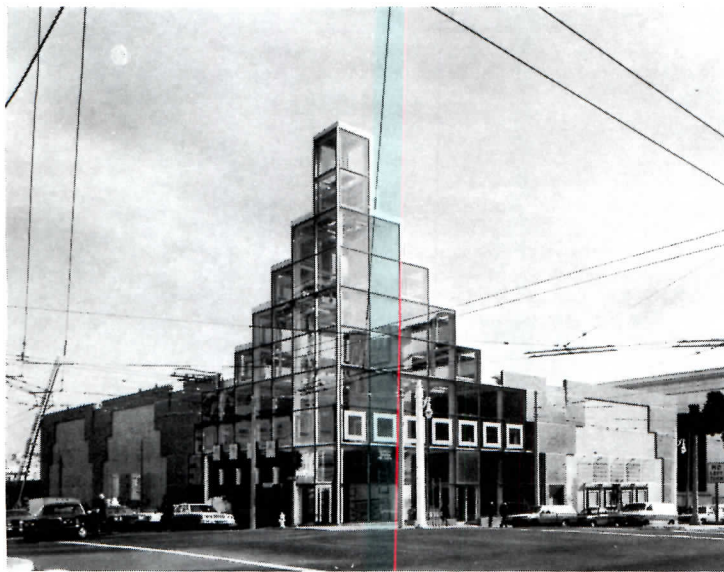
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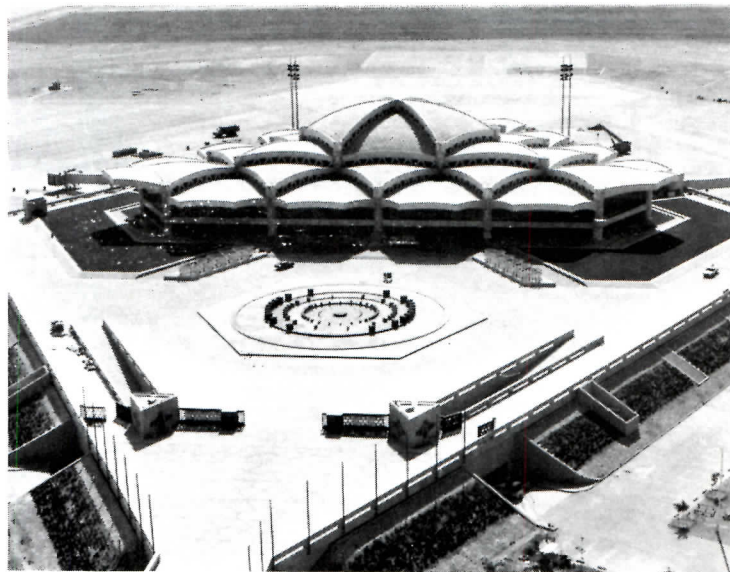
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**Design awards/competitions:
California Council/AIA
1984 Awards for Excellence
in Architectural Design**



1



2



3

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4

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1. Galaxy Theater, San Francisco, California; Kaplan/McLaughlin/Diaz, Architects (see pages 154-157). A four-screen movie theater complex consists of two 700-seat and two 300-seat auditoriums connected by a 75-foot-high lobby that evokes images of early 20th-century motion picture palaces. The open, transparent quality of adjacent automobile show rooms on Van Ness Avenue influenced the theater's design, which is highlighted by a colorful gridded matrix of cascading glass panels. The jury called the building "a sparkling, brilliant invitation. The interior spatial quality and the colors are delightful—it says entertainment."

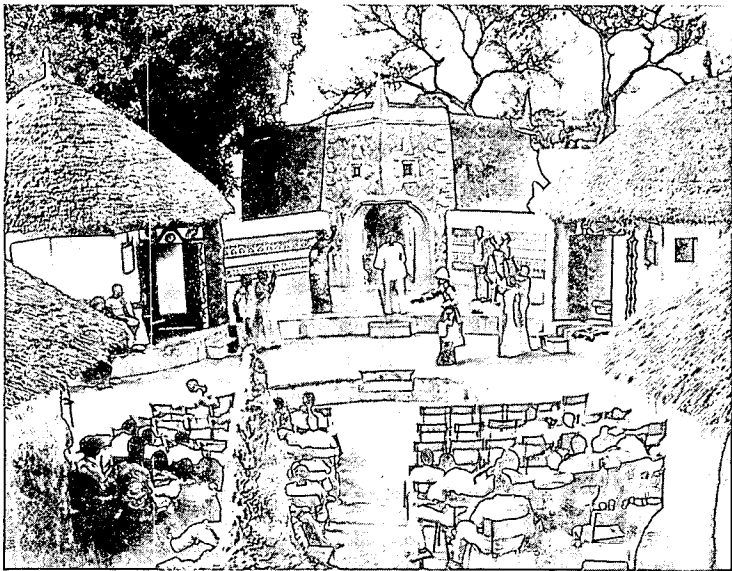
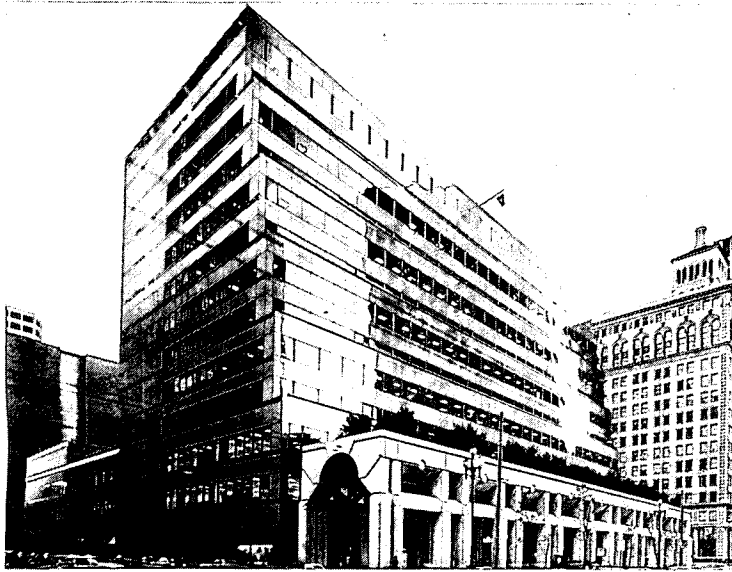
2. King Khaled International Airport, Riyadh, Saudi Arabia; Hellmuth, Obata & Kassabaum, Architects (RECORD, March 1984, pages 112-125). A \$3.2-billion airport complex on 70,000 acres of flat desert terrain consists of four passenger terminals; a two-level garage for 11,600 cars; a mosque for 5,000 worshippers and an adjoining courtyard for 5,000 more; a control tower; and a royal terminal. A triangular form was selected for all five terminals to minimize walking distances. The mosque exhibits elaborate Islamic artwork by craftsmen from Europe and the Middle East. The jurors found the project "an elegant, astonishing series of spaces. It's a faceted jewel that combines strength and opulence."

3. Crocker Center and Galleria, San Francisco, California; Skidmore, Owings & Merrill, Architects. The master plan for a major California bank located between San Francisco's retail and financial districts called for the construction of a new 38-story granite and reflective glass headquarters tower and the renovation of an existing banking hall. A block-long retail galleria glazed with a large barrel vault connects the old and new structures. Although the jurors admired all elements of the project, they reserved their highest praise for the tower's ornamental skin. "It enriches the cityscape," they noted. The jury also praised the way that the galleria entrance defers to the landmark iron and glass Halladie Building across the street.

4. George R. Moscone Convention Center, San Francisco, California; Hellmuth, Obata & Kassabaum, Architects. A public referendum mandated that this convention and exhibition center, the initial phase of the downtown Yerba Buena redevelopment project, be built underground and be able to support future rooftop development. The jury praised the building for its humane scale, meticulous detailing, and all-white interiors.

The California Council/AIA granted citations to 26 entries in its second annual awards program for work completed since January 1, 1977. The ten honor award winners shown here and 16 merit recipients were selected from over 200 submissions by jurors David H. Wright, AIA, principal with The Bumgardner Architects in Seattle; William C. Muchow, FAIA, senior partner of W.C. Muchow & Partners in Denver; and Dan Kiley, an architect and landscape architect with Kiley Walker in Charlotte, Vermont.

Awards news continues on page 33 with a report on architectural projects honored by the Building Stone Institute.

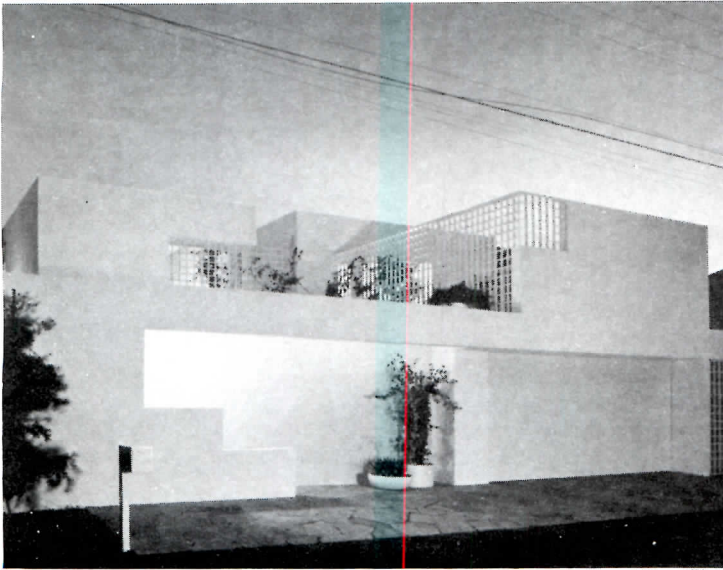


5. The Federal Reserve Bank of San Francisco, San Francisco, California; Skidmore, Owings & Merrill, Architects. The program called for nearly 700,000 square feet of space for traditional office services, public exhibition and educational facilities, and accommodations for the movement and storage of large amounts of currency—all to be located within a context of older commercial structures on busy Market Street. The architects' solution is a granite-sheathed midrise building that steps back in two-story stages to permit views of its handsome prewar neighbors. A double-height pedestrian loggia along Market Street is a separate structure that will be adorned with large shrubs and full-size trees. The

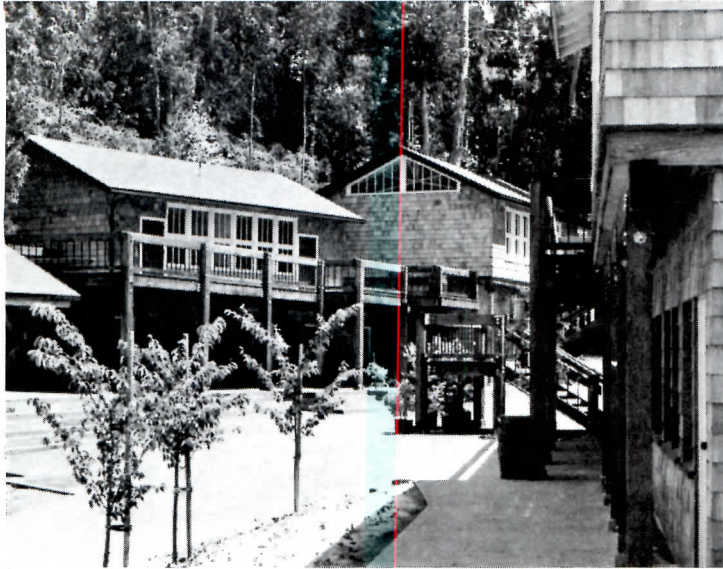
jurors observed that because of the setbacks, the building does not overpower the street. "The loggia," they added, "is very powerful. It conveys the strength of the Federal Reserve Bank."
6. Ahmadu Bello University Theater and Workshop, Zaria, Nigeria; Steven D. Ehrlich, Architect. The mud-walled compound houses of northern Nigeria's ancient Hausa cities served as the inspiration for a university theater complex. The design, which incorporates a circular central performance area and four thatched huts, permits a variety of stage configurations to accommodate a

form of drama that is a blend of Western and traditional African styles. "This is the only project we looked at that hasn't been influenced by postmodernism," noted the jury. "Even though you know the building was designed by an architect, the colors, materials, and construction techniques appear to be truly indigenous. The mystery of symbolism is integrated into the whole design. This building is more than a stage: it presents a real background for a theater."
7. The Cleveland Arcade Restoration, Cleveland, Ohio; Kaplan/McLaughlin/Diaz, Architects. This 300,000-square-foot, late 19th-century arcade spans a full city block in downtown Cleveland and was the first building in the city to be listed on the National Register. The five-story structure houses

112 shops and offices opening onto balconies and a vast interior atrium. The building was in a state of disrepair in 1978 when the architects were called in. Restoration work included replacing 1,300 glass panes in the skylights, refinishing all metal work, and remodeling shop and office spaces. Staircases at either end of the mall were redesigned to facilitate pedestrian access. Local artists designed the 16 banners hung along the skylights. Calling the building "eloquent," the jury noted that "the honor should go first to the original architect, next to the people who decided they weren't going to destroy it, and then to the architects who showed a delicate restraint in the restoration."



8 ©Glen Allison



9

8. Malibu Cove Residence, Malibu, California; Ron Goldman, Architect. Although a 50-foot-wide beachfront lot offered striking views of the Pacific Ocean and the surrounding Santa Monica Mountains, it was hemmed in by adjacent houses just five feet away and by a sewage drainfield below. The challenge for the architects, then, was to design a house that was both private and open to the California sun. The dwelling was conceived as two plaster boxes joined by a two-story center-hall atrium that separates the living and sleeping quarters. Grid screening, high white walls, and skylights

provide seclusion from neighbors while allowing light to penetrate the interior. "A very successful Mediterranean building," observed the jury. "It's an elegant expression of a beach house: it has the quality of the sea."
9. The College Preparatory School, Oakland, California; Dutcher & Hanf, Architects. A small private high school that had outgrown its facilities purchased a six-acre, tree-studded site on a ravine in north Oakland. To save money the school acquired 16, 1940-vintage portable classrooms from a local board of education for \$1 apiece. The challenge for the architects was to come up with a campus design that would incorporate the surplus buildings and retain the old California feeling of the



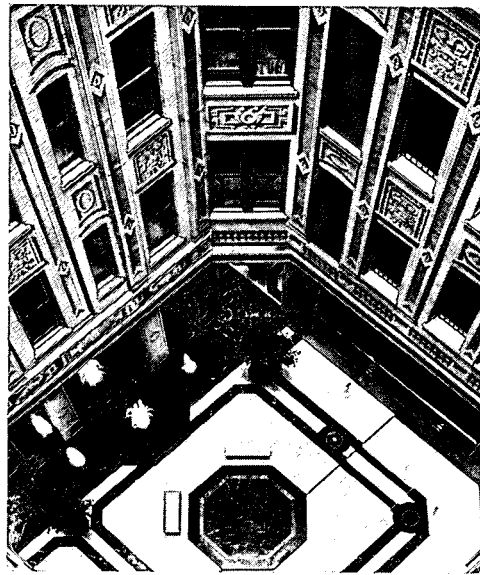
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wooded setting. The solution was to sheath the classrooms in shingles and relocate them on the steep hillside in a way that allowed offices, bathrooms, and seminar rooms to be placed below. A two-level circulation system is partly on raised decks. "It's vernacular architecture at its best," observed the jury. "The architects made a warmhearted environment for the children and created a good sense of campus and community in a small space."
10. Washington/Battery Building, San Francisco, California; Fee + Munson, Architects; Sidney Hoover, Associated Architect. A seven-story office building on a 25-foot-

wide downtown lot was built on spec for multi-tenant occupancy. Zoning requirements and the low scale of the block dictated a midrise configuration, while the elaborate Beaux-Arts Custom House across the street helped determine the architects' use of both masonry and mirrored glass on the facade. Three-sided angled bays rising the full height of the building reflect the Custom House; the end walls, by contrast, consist of a rusticated precast concrete base with stucco above. A large clock serves commuters entering the city from a nearby expressway. The jury praised the building's "light touch, lively scale, and appropriate use of reflective glass. The architects have made the most of a very small site."

Design awards/competitions: Building Stone Institute 1984 Tucker Awards for Architectural Excellence

The Tucker Architectural Awards program is a project of the Building Stone Institute, an international trade association founded in 1919 whose membership consists of quarriers, fabricators, dealers, and installers of natural stone. Jurors for the eighth annual event included Alan Ritchie of Johnson/Burgee Architects, Frank Marcellino of Clarke & Rapuano, and Herbert L. Smith, Jr., senior editor of ARCHITECTURAL RECORD. Awards were given in residential, nonresidential, landscape, and renovation/restoration categories.



1. Private Residence, West Vancouver, British Columbia; Garth Ramsey, Architect. This shingle and rock-cut stone house is situated on a steeply sloping, 50-foot-wide lot overlooking English Bay. The architects took advantage of the rustic site by including such design elements as a forested front garden, a partially enclosed entry courtyard, and expansive south-facing windows along the water. The jury praised the use of stone for its appropriateness in the rugged setting.

2. Renovation of the Alwyn Court Apartments, New York City; Beyer Blinder Belle, Architects. The renovation of a 1907 luxury apartment house included the restoration of the building's ornate glazed terracotta and cut limestone facade, and the conversion of an air shaft into a 13-story enclosed atrium. The brick walls of the atrium were painted by trompe l'oeil artist Richard Haas to simulate the terra-cotta exterior. "A spectacular project," proclaimed the jury.
3. Japanese Garden, Maymont Park, Richmond, Virginia; Earth Design Associates, Landscape Architects. Both uncut and machined stone was utilized in the restoration of a Japanese garden located in a 105-acre city park. The jury

commended the use of stone in particular and noted that "the material is expressed with great honesty."
4. Computer Science Building, Columbia University, New York City; R.M. Kliment & Frances Halsband, Architects (RECORD, March 1984, pages 128-133). Located at the northeast corner of the densely built-up Columbia campus, this 20,000-square-foot computer facility was clad in limestone, granite, and brick to harmonize with adjacent buildings erected over the last 100 years. The jurors called the structure "a good piece of urban architecture" and praised the building's contextual qualities.

5. Federal Mogul Corporation Headquarters, Southfield, Michigan; Rossetti Associates, Architects and Planners. A 150,000-square-foot addition to the company's existing building comprises general office space, a computer facility, and a corporate training center. The jury praised the architects for the "high-tech" way they integrated textured black slate with aluminum—"a clear and precise usage of two totally different materials."

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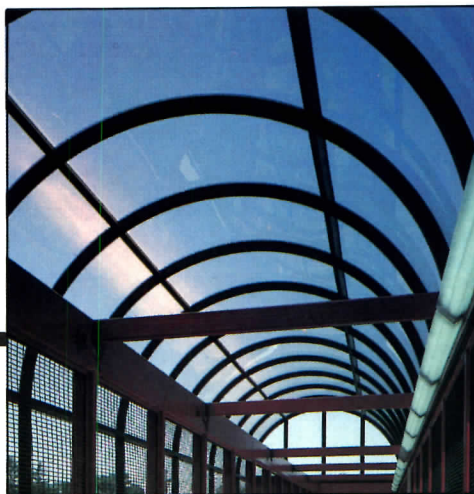
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Putting the fun back into functionalism and restoring humanity to design for the performing arts

By Iain Mackintosh

Until about 70 years ago there was a consensus over what a theater auditorium was: a festively decorated room with a gilded proscenium arch and curtain at one end, beyond which lay the magic of the actor's world. These theaters were designed by specialist architects commissioned by commercial managers with the brief simply to attract as many theatergoers as possible into the most economically planned space on the smallest possible site.

Between the world wars, theater architecture in the United States developed in two very different ways: on the one hand, with a massive though short-lived boom in movie palaces (often erroneously thought of as live theaters because of their even shorter-lived use as vaudeville houses until the live performers gave up, lost in those cavernous auditoriums), and on the other hand, with more inward-looking Ideal Theaters from such designers and architects as Bel Geddes and Gropius. The latter were never realized but glowed from the pages of the more influential art magazines to inspire succeeding generations.

In the 1950s the day dawned for that new generation of architects who had books enough to turn to but who had no experienced theater-builders to emulate and guide. The new clients were neither commercial managers nor performers but rather committees anxious to serve the arts of theater and of architecture while conscientiously seeking to balance the books, both on current and capital account, of the communities they served.

Considering so much good intent, it is ironic that few of the modern theaters thus created in the last 30 years are much loved today by either performer or audience. Vast fan-shaped wedges of stadium-like seating stretch into the distance. At the back sit those more equal than others, who have to view the performer on a grazing sightline over the thousands of heads of richer members of the audience, all of them situated in a so-called "democratic" single tier or, at the most, two tiers of seating. Such plans pushed the center of the audience away from the stage and from the performer, in contrast to the previous warmer and more focused multi-tier houses. The comparative failure of this generation of theaters is shown by the fact that the same committees now appear to prefer to restore the disused local movie

palace than to commission a new building. Meanwhile, the performers seem happier converting a variety of found spaces to theater purposes. A crisis of confidence therefore exists between theater client and theater architect.

What were the forces that led good architects, who had a clarity of vision as to what constituted good design, to produce so many bland, lifeless, and unsuccessful theaters—if success is rated not by gala openings but by the number of occasions each year when they are full of enthusiastic theatergoers?

The forces or arguments, which at the time seemed so logical, were put forward by the proponents of theatrical functionalism and of the dollar equation.

The functionalist fallacy
The theater functionalists had been courteously received by the architect. They arrived with convincing qualifications in stage engineering, acoustics, or scenic technology (never acting, singing or dancing, be it noted) and offered to fix the nuts and bolts of seeing and hearing. One could contend that they would provide a technological armature for the

couturier architect. Or one could say that the tail began to wag the dog.

Finite angles in both planes were proposed as limits for acceptable sightlines. Side walls, which in earlier ages had been lined with humanity, could now be modeled only as directed by the stern science of acoustics. Ceilings, originally called "the heavens" and for centuries the expression of the soaring of the human spirit, were dug up by the stage lighting expert. One widely read consultant, a self-expressed exponent of "theater design as an embodiment of rational seating geometry," went so far as to suggest that "the magic can be left to the artists and the poets—once the lights are off, the audience doesn't have to see where it is sitting." Today this is recognized as nonsense, but 15 years ago the functionalist fallacy passed unnoticed, the fallacy of non-involvement of the audience which assumes preprogrammed passivity on the part of the spectator.

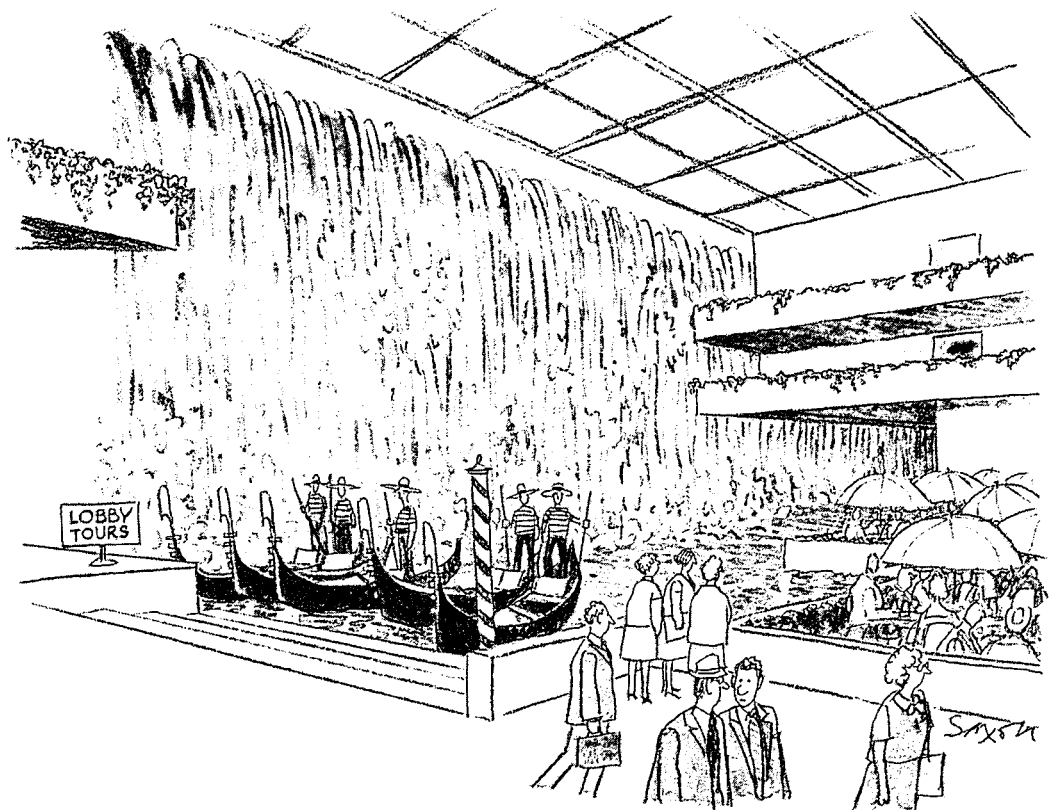
As a direct result the architect failed to distinguish between the spatial requirements of a live theater and those of a cinema, partly because of their superficial similarities. The actor was soon to realize the

magnitude of the problem thereby created, for it is his or her business to connect with an audience. This is an infinitely more central element to theater than the angle of sight to a perfectly lit stage picture and hence should be the primary concern of any theater architect.

At a small scale, say of up to 400 or even 500 seats, the over-regimented single tier is not nearly as much a liability for the performer, since at this size he has little difficulty connecting with the whole house. But the other force, the apparently inexorable dollar equation, had determined that theaters were generally to be larger than they ought to be. Producers of road shows or national tours set their gross requirements ever higher, and the result became the insulting one that the citizens of Middletown U.S.A. often have no choice other than their 4,000-seat Memorial Auditorium in which to experience Broadway musicals that had been originally created for, and had been successful in, New York theaters one-third the size.

Enter hi-fi video

One suspects that this situation will not long continue, although at the moment the enthusiasm of

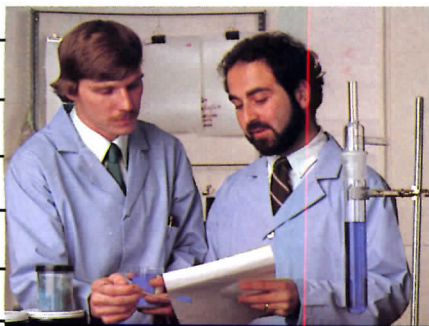




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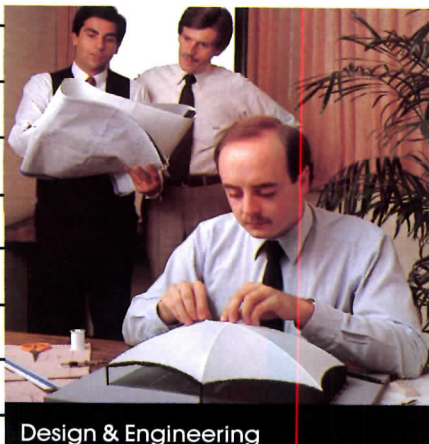
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newly awakened audiences throughout the United States (the envy of the rest of the world) plus the technical miracles of sound reinforcement (allowing performances to be heard way beyond the range over which the expressions of the performers register) conspire to give further life to the monster auditorium. Nevertheless, the question must be whether the audience will continue to put up with long-distance theatergoing.

The handwriting, and shortly the entertainment itself, is on the wall. "Why sit in a crowded theater when you can enjoy first-rate entertainment at home?" trumpets the video merchant who will shortly put Liza Minnelli, Laurence Olivier, the New York City Ballet, or La Scala on large, high-fidelity flat screens on the wall of every potential theatergoer's home. Why indeed? How is the architect going to re-establish theater-going as a stimulating life-size experience.

The dollar equation can hopefully be disposed of quickly if not conclusively. Contrary to the belief that art is a variable but money a constant, the reverse is true. The audible range of a voice singing Mozart is measurable, as is the range over which the actor's or dancer's facial expression can be perceived by an audience. But what an economical size is for any sort of musical theater is by no means a constant. For example, not only is it different in Germany, where public and private patronage is a tradition, from what it is in America, where subsidy is a new, though growing phenomenon, but also it differs in the same country in succeeding generations within the life span of a single building. Economic size was different in the low-labor-cost '20s or in the highly laissez-faire '50s from what it is today. It is not unreasonable that it may change again in the future.

It is also likely that the video-makers will choose to record the essentially "handmade" theatrical product in a small-scale house conducive to creativity rather than in houses where the performer is straining to reach a far distant audience. And may not the video buyer of the future prefer the immediacy of such a "handmade" production brought to his own living room rather than leaving that room and sitting in the wide open spaces of what developers and architects thought was an economically sized theater in the early '80s?

Form and color

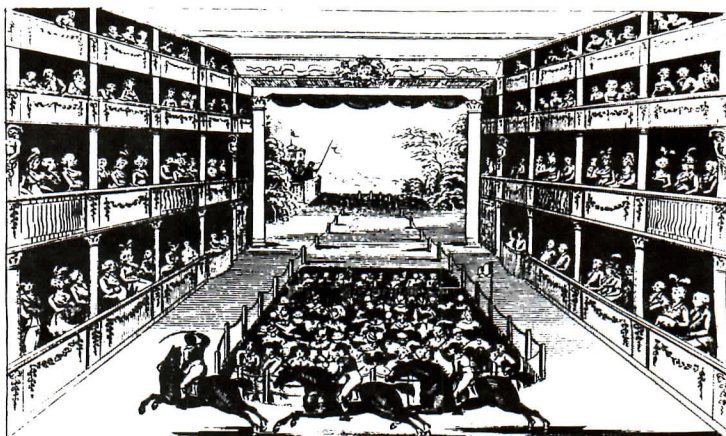
Besides size there are two other determining elements in auditorium design: form and color or decoration. The modern architect from the '20s onwards eschewed anything but the smoothest of decorative schemes for his honestly expressed materials. Meanwhile, many modern scenic artists still appear to advocate black or a very dark color for the audience because black sets off his work, the scenery, to best advantage. The actor, on the other hand, has always instinctively hated black or anything negative. (It was not until the mid-'70s that a Swedish behavioral scientist was able to prove, under laboratory conditions, that a subject responds to stimuli, i.e. laughs quicker and cries easier, after 15 minutes in a red or gilded room than a colleague who has been sitting for the same time in a black, gray, or concrete room. Even decorative plasterwork has been shown by today's acousticians to have had a function previously only guessed at.)

Simply to introduce color and decoration, however, will not solve the problem. This fact has been demonstrated by the overwhelming nature of some of the restored movie palaces adapted for live theater use, especially those carried out by the mauve and pastel school. Rather, form is the key.

Form, too, is a subtle matter: a reshuffling of the familiar two-dimensional plan diagrams of "Roman," "Greek," "proscenium," or "arena" does not succeed either. If life is to be restored to the live theater and the audience encouraged to participate with their presence (*assister à* as the French say), a fresh three-dimensional approach is needed. The courtyard offers just this.

The courtyard theater

The courtyard is simply a space for actors and audiences surrounded by galleries on three or even four sides. Of this genus of form were Shakespeare's Globe, the theaters of 16th- and 17th-century Europe, as well as the classical theaters of Mexico, the Middle East, China, and Japan. Where the courtyard theater evolved, the art of drama flourished as it never has before or since. The intimacy of the multilevel "cockpit," where the actor retained his humanity for audiences of hundreds, and occasionally thousands (the density of seating and standing being three times greater than



Two 19th-century English engravings entitled *The Laughing Audience* (top) and *Pit Boxes and Galleries* (bottom) illustrate how all social classes were concentrated in the encircling tiers of the Georgian playhouse. The middle engraving depicts pony racing around the stage and perimeter of orchestra seating—a familiar secondary function of the 18th-century theater.

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than today), stimulated performers and writers. In such theaters the audience and its response were central to the whole process. There was nothing preprogrammed or passive about this thronging of humanity.

The rediscovered courtyard offers flexibility as well as immediacy. Flexibility or adaptability is a virtue claimed for several modern mechanical theaters that have found ways to combine in one room the various theater forms of end stage, proscenium, arena, or thrust. But generally such engineering-generated adaptability requires complex equipment and, after all the expensive fuss, manages merely to rearrange in different form the same shallow wedges of seating. The technical problems in the courtyard, on the other hand, are much reduced. Half the audience inhabits all or part of surrounding galleries that enfold a central flexible space. Differences in character are achieved simply by deciding how a comparatively small central space is to be arranged as well as which spaces and galleries are to be available to the audience and which to the performer. (Air cushion techniques even allow triple-stacked, audience-bearing galleries to be moved easily while being finished architecturally in a way that makes it difficult to distinguish the moving from the fixed parts.)

The simple courtyard evolved into many forms: the Georgian playhouse, the horseshoe opera house, the Victorian theaters of England, the shoebox-shaped concert halls of Europe, the great ballet houses of Russia and Central Europe, and the best of Broadway. All at their peak are/were exemplary places for performances. The walls were lined with faces eagerly reacting to fine music, dance, or drama. Certainly, a minority had poor lines of sight to the depths of the proscenium stage, but significantly, such side positions were the most sought-after when the actor played out on the Elizabethan thrust or Georgian forestage and are today again the better seats whenever the action in the courtyard theater is pulled towards the center of the architectural volume.

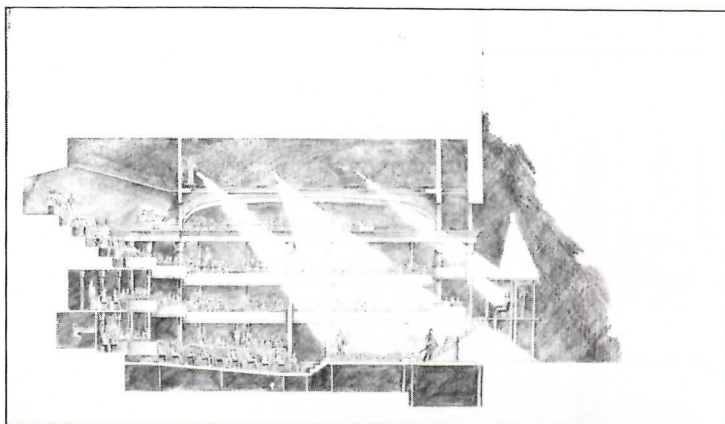
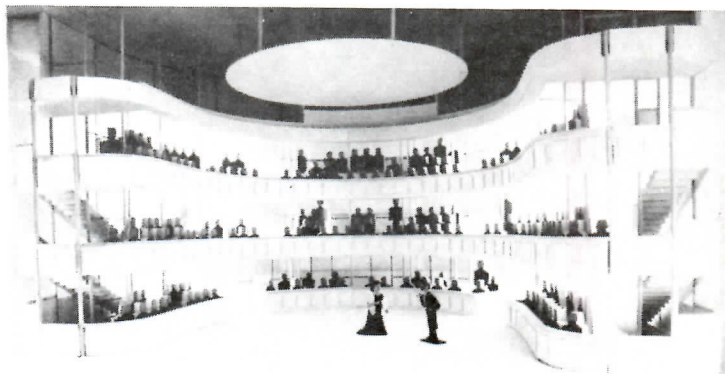
An opportunity and a challenge

The courtyard is one of the newer as well as one of the older forms that the theater architect can explore if he or she is to create live performance spaces. Examples can be found throughout the world—in

America they have included the Performing Arts Garage series of experiments in New York during the late '60s and the Library Theater in Pittsburgh during the mid-'70s. In Britain there are the highly successful Cottesloe Theatre at the National and the recently opened Wilde Theatre in Bracknell. In these theaters the designer, whether architect or consultant, is recovering a dynamic design role not available to the preceding generation that had been allowed merely to fix the nuts and bolts of seeing and hearing. Today, if the theater architect takes the trouble to strike up a dialogue with the performers themselves, or if this is difficult, with consultants who are philosophers of theaters first and engineers second, then he or she will be able to play a central role in combating preprogrammed passivity and in restoring that live interaction of audience with actor which is at the center of the theater.

In 1958 Peter Brook, the high priest of avant-garde in Paris, London, and New York, and yet a most practical man of the theater, stated the challenge to which the architect must still respond. "It is not a question of good buildings and bad: a beautiful place may never bring about an explosion of life, while a haphazard hall may be a tremendous meeting place. This is the mystery of theater, but in the understanding of this mystery lies the only science... It is not a matter of saying analytically what are the requirements, how best they could be organized—this will usually bring into existence a tame, conventional, often cold hall. The science of theater-building must come from studying what it is that brings about the most vivid relationships between people."

Iain Mackintosh is design director of Theatre Projects, which has offices in New York, Toronto, and London. Projects for which he conceived the auditorium and stage design include the Cottesloe at Britain's National Theatre (1977), the remodeling of the St. Lawrence Theatre, Toronto (1983), the Martha Cohen Theatre, Calgary (1985), and the Aspen Center for the Performing Arts (1988). He has also advised on the restoration of historic theaters on both sides of the Atlantic and has devised major exhibitions on theater architecture and theatrical painting in London at the Hayward Gallery and the Royal Academy.



A model view of the Martha Cohen Theatre in Calgary (top), scheduled to open in 1985, shows the flexible 450-seat auditorium in a flat-floor mode for promenade theater or community events. Architects for the project are Finlayson, Raines & Barrett, in joint venture with design consultants Theatre Projects. The principal auditorium space of the Aspen Center for the Performing

Arts will be a 750/900-seat courtyard, shown here in the thrust mode (section, middle and model, bottom). The project is scheduled to open in 1988 and is a collaboration between architects Kallman McKinnell & Wood and Theatre Projects.



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That certain something: The first 25 years at Cranbrook

By Carol Willis

Design in America: The Cranbrook Vision 1925-1950, elegantly installed at The Metropolitan Museum of Art through June 17, celebrates the 50th anniversary of the Cranbrook Academy of Art and its contribution to American design. It is a very good show with a bad title that seems to have trapped its organizers into conclusions not supported by the contents of the exhibition.

The principal problem lies in defining the elusive "Cranbrook vision." Confounded by the heterogeneous nature of the work by Cranbrook artists over the decades, the organizers tried to identify a common condition. They stressed the ideals of "unity of design from the largest to the smallest detail," and "the integration of art and everyday life."

Yet while the show's texts emphasize the continuity of the Cranbrook vision, the clear impression one receives from the work in the galleries is of two distinct phases in the school's history: the first, an Arts and Crafts phase with its love of rich materials and fine craftsmanship, and a second, modern phase, with an emphasis on industrial production and spare, International Style esthetics. The first approach was practiced by the original faculty and the second, which began in the 1940s, seemed to be precipitated by a newer generation of Cranbrook students.

The work of these two generations often mirrored and sometimes influenced the significant changes in style that took place during these middle decades of American design. The quintessence of the Cranbrook experience, however, seems to be the refuge it offered from the vagaries of style and theoretical debate.

Cranbrook evokes a monastic quality that is less a result of its physical plan—a sequence of quadrangles, medieval in scale and massing, if not in ornament—than it is a function of its inward focus and emphasis on eternal values. The school's isolation in Bloomfield Hills, some 20 miles north of Detroit, meant a cloistered existence for students and faculty. The conception of Cranbrook as a closed community of working artists, more like a medieval guild system than a formal academy, originated with its founder and patron George G. Booth, an ardent admirer of the Arts and Crafts movement and especially the theories of William Morris. In 1924 Booth

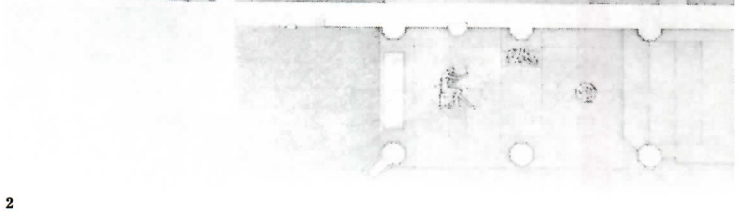
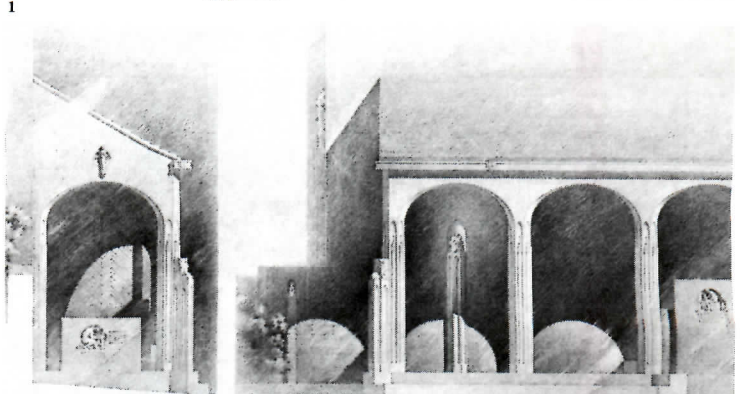
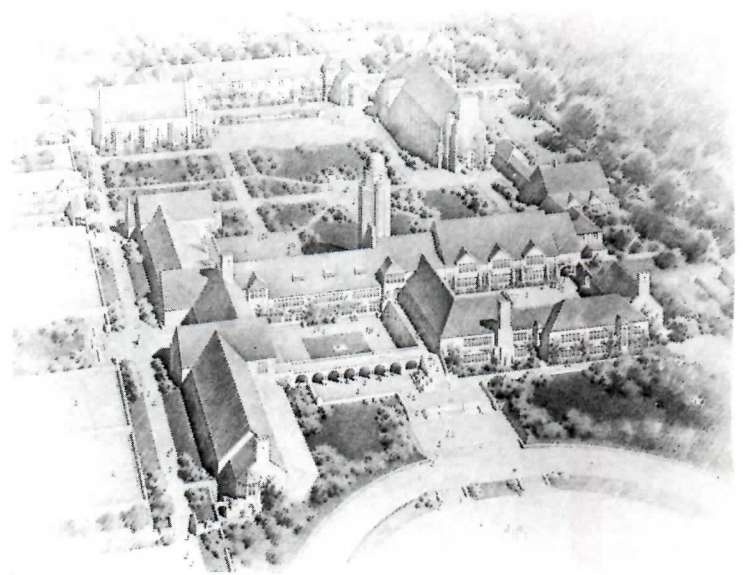
commissioned the Finnish architect Eliel Saarinen, whose principles paralleled his own, to design the Cranbrook buildings and develop its curriculum. With the official opening of the academy in 1932, Saarinen was appointed its president.

The exhibition has been installed with exceptional clarity by R. Craig Miller, an associate curator at the Met, and sensitively designed by George Sexton Associates. The viewer is routed through a series of rooms, each of which reflects the scale, colors, and spatial quality of its particular period.

After an introductory section on the founding of the school that includes two handsome wood models of the complex, the visitor enters the area devoted to the architecture and interior design of Eliel Saarinen. Among other fine individual pieces is the ensemble of the table, chairs, light fixture, and carpet from the dining room of the architect's home, displayed in a mock-up of the original room. In its linear and geometric patterns and delicate wood inlays, Saarinen's furniture recalls the Vienna Secession perhaps more than contemporary Art Deco. Carpets and textile hangings for other rooms, designed by Saarinen's wife Loja and daughter Pipsan, complete the turn-of-the-century *gesamtkunstwerk* effect. These pieces must be valued for their elegance and craftsmanship, not originality, since as products of the late 1920s, they represent a mainstream style.


Similarly, Saarinen's drawings for the Cranbrook buildings, the Chicago Lakefront proposal (1924), the League of Nations competition entry (1927), and others suggest that he was a much more conservative designer than most historians have allowed. Like his contemporaries Ralph Walker and Raymond Hood, Saarinen was a modeler of masses, not a manipulator of International Style volumes. He was one of the finest draftsmen of his generation as these renderings evidence, yet as with the furniture, the drawings are most beautiful in detail, where one can savor his masterful technique of shading in a myriad of delicate, diagonal strokes. Seeing Saarinen's design in these multiple dimensions of architecture and interior design leads one to question his historical reputation as a pioneering modernist.

True to his Arts and Crafts philosophy, Saarinen hired many émigré craftsmen for his faculty, and the next section displays



1. Eliel Saarinen, aerial perspective of Cranbrook, 1926, pencil on paper.
2. Eliel Saarinen, plan and

elevation of proposed Art Club at Cranbrook, 1927, pencil on paper.
3. Wrought iron shop at Cranbrook, 1930.



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their work in various media. One of the most striking items is a wall hanging of an abstract composition of skyscrapers entitled "First Sight of New York" by Lillian Holt. Other outstanding pieces include the ceramics of Maija Grotell and the richly toned carpets of Maja Andersson Wirde. It is more difficult to admire the figurative sculpture on mythological themes by Carl Milles and others, even with the current vogue for Deco.

The change from the individualistic, Arts and Crafts approach to a concern for designing for mass production in a modernist esthetic evolved quickly in the early 1940s, principally through the ideas of the second generation of Cranbrook students. The last sections of the exhibition survey the work of these former students during the 1940s to '60s. The co-stars of this section are Saarinen's son Eero and Charles Eames. They collaborated on a number of projects, of which the best known are the Case Study Houses of 1945 and the first molded plywood chair for a Museum of Modern Art competition in 1940-41. Other classic pieces of furniture by Charles and Ray Eames are displayed in a setting that evokes the Japanese sensibility of the Eames house. A final area surveys design of the 1950s and '60s by other Cranbrook students, though most of these pieces were created years after they left the school. Their presence raises questions about the criteria for inclusion in the show. Jack Lenor Larsen, for example, spent only one year in Cranbrook. Florence Knoll spent about seven, including the prep school, but her design strongly reflects her later professional experience with Gropius, Breuer, and others. What then was the Cranbrook component in the work of these designers? Was it simply their physical presence in Bloomfield Hills?

We return to the ineluctable "Cranbrook Vision." Like "The Right Stuff," the term is an invention that tries to describe something that cannot be quantified precisely. Perhaps "experience" would have been a better concept to pursue in order to understand what made Cranbrook the unique institution that it surely was.

Carol Willis is an architectural historian from New York City who teaches at the Parsons School of Design. She was the curator of an exhibition on the work of architect Raymond Hood, held at the Whitney Museum.



4



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4. Maija Grotell, Stoneware Vase, 1939.

5. Charles and Ray Eames, Armchair, 1949.

6. Florence Knoll, Lounge Furniture, 1950s.

7. Lillian Holt, "First Sight of New York" tapestry, 1930s.

8. Eliel Saarinen, Dining Room of the Saarinen House, 1928-30.

Organized by the Metropolitan Museum of Art and the Detroit Institute of Arts, where it was shown last winter, the Cranbrook exhibition will be in New York through June 17, after which it will travel to Helsinki (August 14-September 19) and London (spring 1985). The show is accompanied by a lavishly illustrated, 352-page catalog, *Design in America: The Cranbrook Vision 1925-1950* (New York: Abrams, 1983).

TOP THIS.



Special hotels for special places

Once upon a time, there were a lot of hotels scattered throughout the world, including the United States, that were so imbued with the essence of their localities that the mere mention of a place conjured up their names. Singapore: Raffles. Paris: the Ritz. Venice: the Danieli. Denver: the Brown Palace. Cairo: (the original) Shepheard's. One could go on at length. And all these hotels were conceived as special destinations in themselves. Fortunately, a significant number of them still exist—some being recently revived after periods of tenuous and fading glories. One regrets now, that the changing attitudes that one senses toward the value of such pleasurable evocative places did not prevail in time to save those that were lost.

But new hotels that have been built during the last quarter century, by and large, tell another story. Somehow, since the advent of the jet age, and the subsequent quick transport of masses of people, the big boom in hotel construction has spawned a brood of astonishing similarity. Many are, indeed, near-marvels of planning efficiency, personnel utilization, of sophisticated economics, administration, structure, mechanical systems—and often of great, if impersonal, comfort. Yet within their walls (there are exceptions, of course, but not enough), one could be almost anywhere, even with the occasional wall decoration meant to provide “local color.” To people who travel much, staying at a succession of them can often become an intense, unsettling bore. And to those who go to stay a while in hosteleries with resort connotations, even more so.

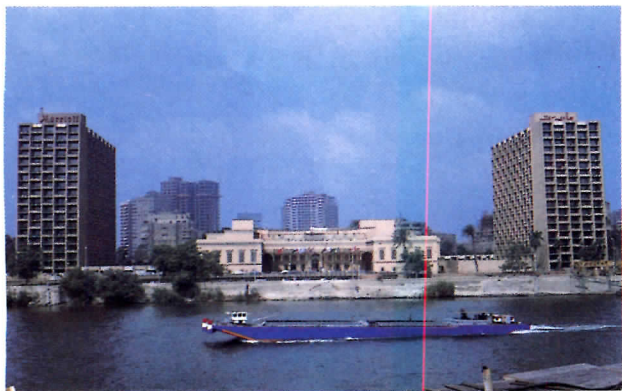
Skilled restorations are wonderful—but can't new hotels have that same evocative allure? What creates it? Does it really cost more—or just require more concern? A lot of architects who do a lot of hotels seem to be asking those and similar questions. And there are some interesting results.

The hotels singled out for this study are all put together—in many fashions—with skilled, contemporary know-how, and are designed to function very well. Most of the architects concerned have planned and built many hotels, in many places, and are thoroughly familiar with all those good, standard solutions to all those standard problems.

But above all, and in addition, each of these hotels seems to have that added quality of a sense of place, of something that makes them especially appropriate for where they are, of contributing something extra—of being an intriguing destination in themselves. *Herbert L. Smith, Jr.*

Cairo Marriott Hotel
Cairo, Egypt
Frizzell Hill Moorhouse Beaubois,
Design Architects

Opulence on the Nile

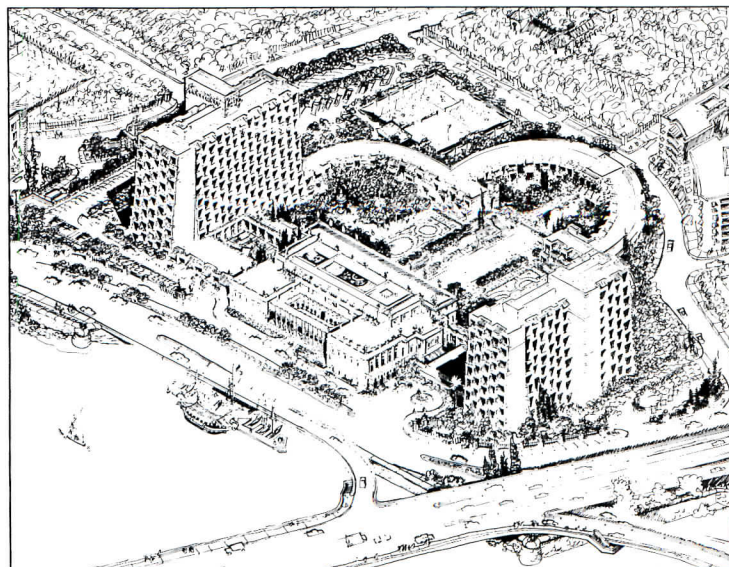


The Nile front of the palace (top photo) and the garden front (above) were pretty much restored to their original forms, but with the entrance level on the river side raised four meters to match the ramp levels of a new bridge across the Nile. At the foot of a riverfront stairway (see drawing below right), a floating landing was planned to moor a "pleasure barge" restaurant, yachts, sailboats, feluccas and sculls—the pyramids and Sphinx are only 20 minutes away by boat.

In 1869, Khedive Ismail staged a sumptuous "party of the century" for the opening of the Suez Canal. And to entertain Napoleon III and Empress Eugénie, and other notable guests, he ordained this fantasy palace on oasislike Gezira Island in the middle of the Nile. It was filled with luxurious furnishings and artifacts, and the first dinner was for about 1,000, served by "1,000 valets in scarlet livery with powdered wigs and 500 cooks in the kitchens," according to one source. The palace was divided into three wings: one for the Imperial couple was done in Second Empire style, complete with throne room; the garden wing was for the Khedive in an exotic mixture of France and Islam; and the third one was Louis XV. In the center, around a court, was a warren of little rooms for all the servants and services.

By 1974, when Marriott Corporation sent architect Ken Frizzell to design new hotel facilities for the site, he found the palace had become a derelict, third-class hotel near collapse, with the furnishings in shreds and the Nile entrance used as a truck dock and garbage dump. But the remains of these echos of Egypt's past opulence offered a unique chance to make them the heart of a new hotel very special to Cairo. So, over the course of a decade, skilled craftsmen were employed to restore all the items possible in the great rooms and on the facades. The crumbling central warren was demolished and replaced by what is, in effect, a new, hidden building containing all the necessary "workings" of a modern hotel. The once-again glittering, grand salons have been reassigned functions as lounges, meeting rooms, restaurants, ballrooms, reception halls and a casino. And an old Cairo tradition of a roof-garden restaurant and nightclub was added so that guests could enjoy the desert nights.

Some 1,250 guest rooms were added in two flanking, 20-story towers, and in a low-rise trefoil wing enclosing the gardens at the back. The towers are connected with each other but kept well apart from the palace to preserve its integrity. In the garden itself, with a swimming pool forming a reflective main axis that terminates in a reassembled Islamic iron porch, Frizzell notes that "flower beds on the 'parterres' were shaped like Valentine decorations to match old drawings we found. Hundreds of pieces of sculpture were repaired and repositioned. Our intent was to make the restoration match the original appearance." And he adds that "the towers will be very good looking when the Nile-front balconies are dripping bougainvilleas." Pasha Ismail's palace has once again come into its own.



The "grand entrance" to the hotel, through the restored palace, has been made even grander by a new "golden porch," which architect Ken Frizzell had reassembled from bits and pieces of ornamental iron porches found on the site. Though not in the original scheme of the building (the bits were probably from lots of little porches around the building), they do give a foretaste of the Islamic overtones to

be found within, and—above all—help in visually adapting the entrance level change needed to match that of the new Nile bridge. The elegant gardens (see drawing bottom left) also serve as commodious areas for sunning and swimming (bottom photo).



Interior designer Edward Dann was faced with a near-daunting job of recreating the original rooms of the palace—but, as can be seen, he brought it all off with dash and aplomb. Starting with remarkable Aubusson and Persian carpets in shreds, and somewhat fantastic furniture “falling to splinters, rags and dust,” careful restoration and a good adaptive design sense have created rooms that both reflect the

heritage of the original palace, and work very well as 20th-century hotel spaces. The rehab efforts extended all the way to paintings, sculpture, sconces and chandeliers. Though mid-19th-century French taste pervades most of the interior design, Islamic touches are in the valances and ceiling of the room shown top right, and the loggia shown below.



Cairo Marriott Hotel
Cairo, Egypt

Owner:
Egyptian Government Organization
for Tourism and Hotels (EGOTH)

Client:
Marriott Corporation

Architects:
Frizzell Hill Moorhouse Beaubois—
W. Kenneth Frizzell, design
partner

Egyptian architect:
Sayed Madbouli
Marriott project director:
J. Arthur Ferrante, AIA
Interior designer:
Edward Dann Design International
Construction manager:
Charles Allison, KBA International



Waterwalks to the Alamo

San Antonio Hyatt Hotel
 San Antonio, Texas
 Thompson, Ventulett,
 Stainback & Associates, Inc.,
 Architects

© R. Greg Hursley, Inc., photos



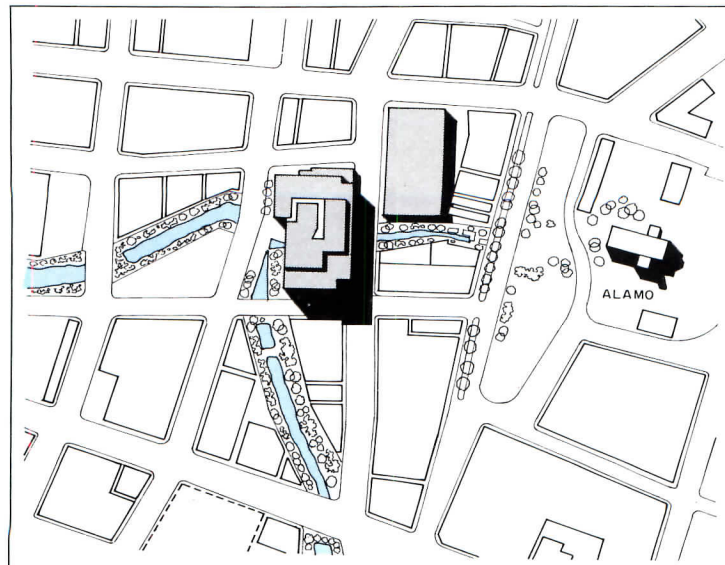
Since the 1968 HemisFair redevelopment of the Alamo City's popular and charming "Paseo del Rio," which winds along the central San Antonio River, the area has slowly but steadily boomed. Tourism, business, population and new construction have followed suit.

The lushly landscaped walks and terraces forming the riverwalk—generally through a fairly low-scaled environment—have generated considerable pedestrian use by both residents and some 12 million visitors a year. And, of course, shops, apartments and hotels flocked to serve this amenable traffic. Inevitably, constricted sites—and unconstricted real estate values—have led to a punctuation of higher-rise building.

But, faced with all those density pressures, the architects of this new San Antonio Hyatt have sought to make it a very special and suitable amenity with features to "distinguish it from standardized, could-be-anyplace designs." And, in spite of its size, to make it fit in. Built primarily as a convention and tourist facility, the 450,000 square-foot, 16-story hotel packs a lot of restaurant, entertainment and shopping facilities for the general public, as well as for the visitors, into its small site at a sharp bend of the river. Designed as a fairly scaleless mass of setbacks and facets, tempered by slatted, angled sunscreens and subtle patterning of the hotel's facades, the basic forms do a good bit to reduce its apparent bulk (see top photo, left).

From the pedestrians' point of view, however, external size is quickly forgotten as one approaches the great, glazed wall of the atrium: the small scale of the riverwalk (and the hotel's sidewalk café and umbrellas) suddenly opens to a soaring interplay of "hanging gardens"—a veritable cascade of planted balconies and terraces, as can be seen in the photo at right. Though the concept certainly owes a bow to John Portman (including exposed "bubble" elevators), and more than a nod to Frank Lloyd Wright, it has its own tropical lushness and is open to views back out along the riverwalk.

Its *very* special feature is the creation of a new pedestrian waterwalk—the "Paseo del Alamo." Water runs from the river under a little bridge into a lobby "lagoon," then through the hotel (photo bottom left) into multilevel paths with flowers and fountains (center left), which lead to the famed Alamo itself (see plot plan, below). It is a grand gesture, beautifully executed, and one that makes the hotel an important part of the daily life of a lovely city.



San Antonio Hyatt Hotel
 San Antonio, Texas
Owners:
 San Antonio 2000 Limited
Architects:
 Thompson, Ventulett, Stainback &
 Associates as consultants to
 Raymond F. Stainback, Jr.
Associated architects:
 Ford, Powell & Carson
Developers:
 Hardin Associates, Inc.
Engineers:
 Harold Nielsen/Tamer Uzun
 (structural); Lazenby & Associates
 (mechanical); Nathan Altermam
 Electric Co. (electrical)
Interiors:
 Hirsch Bedner & Associates
Contractors:
 Hardin International, Inc.



Tanjon Jara Beach Hotel and
Rantau Abang Visitors' Center
Kuala Trenggnau, Malaysia
Wimberly Whisenand Allison
Tong & Goo Architects, Ltd.

Malaysia in microcosm

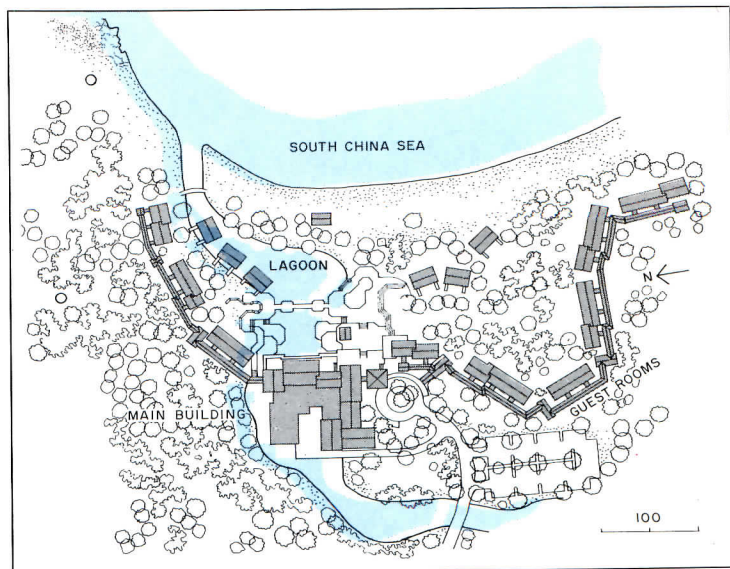


The Malay peninsula is just possibly one of the most naturally beautiful, "unspoiled" tropical areas of the world, with quiet and enchanting villages, beautiful crafts, and charming, friendly people with an ancient cultural heritage. But—with the possible exception of Johore across the bridge from Singapore, and the capital, Kuala Lumpur, on the west coast—it has been an area little known or visited by even the more peripatetic tourists.

To help correct this and, not incidentally, to broaden its economic base, the Malaysian government had its Tourist Development Corporation commission a design team in 1971 to develop a tourism study. Architects Wimberly Whisenand Allison Tong & Goo were a part of that team, no doubt because of the many sympathetic and successful resort hotels Wimberly and his partners had designed throughout the Pacific islands and countries. As one result of the study, WWAT&G received the design commission in 1976 to research and plan a new resort in Kuala Trenggnau on the east coast of the Malaysian peninsula—an area that offers the best weather and beaches for tourism. The enormously appealing Tanjong Jara Beach Hotel (shown this spread) and its nearby Rantau Abang Visitors' Center (following pages) are the result of that long effort.

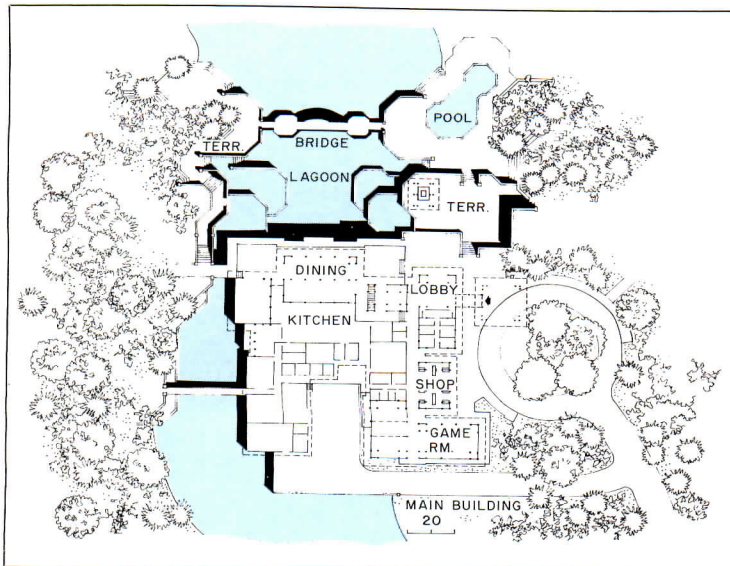
Extensive research revealed some beautiful and practical local materials, construction techniques and crafts: surprisingly inexpensive flat roof tiles; cabinetwork panels with slotted rails and stiles with minimal metal fastening; multiple-pitch roofs, with double and triple peaks; and tall, stilted buildings with long sloping sheds. Local craftsmen were found to be highly skilled in finely detailed ornament—in wood, tiles, fabrics, batiks and woven mats. Teak and other fine timbers were available. And it was discovered that all of these had been synthesized in the indigenous, century-old palaces known as Istanas.

Using all this as a rich and varied palette, WWAT&G have created a remarkable new resort that has all the expected 20th-century comforts, services and efficiencies, plus serving as a stunning showcase of the country's unique talents and heritage. But it never stoops to quaintness, "allusion" or mere copying—it is a sincere updating and continuance of some fine traditions. Visitors and sojourners cannot help but realize that they have, indeed, "seen" Malaysia. For all this, and for the project's help in reviving a number of industries and crafts, it received a 1983 Aga Khan Award. The Malaysian government and the architects deserve the kudos.



The Tanjong Jara Beach Hotel, the heart of the new resort complex, stretches parallel to the ocean along a freshwater stream and through lush tropical foliage. The hotel is a villagelike cluster of varying-sized little cottages of one to eight guest rooms, with public rooms in a central main building. All have views toward the ocean. A lagoon was created by placing a weir at the mouth of the stream. Bridges

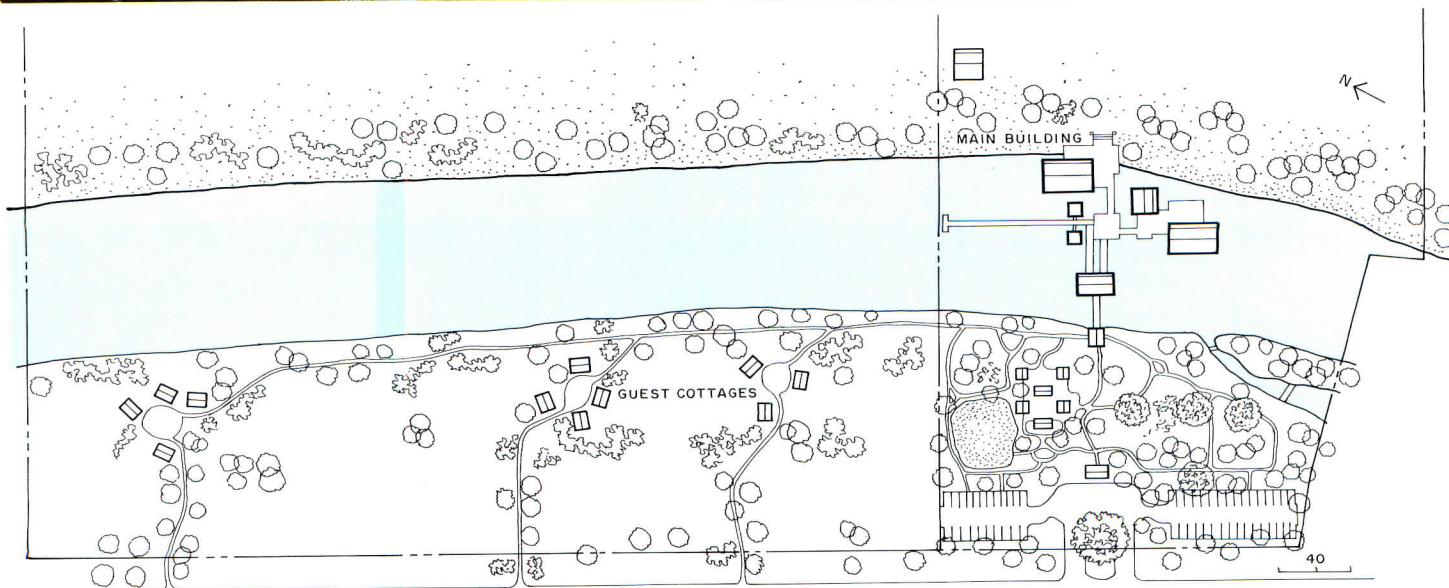
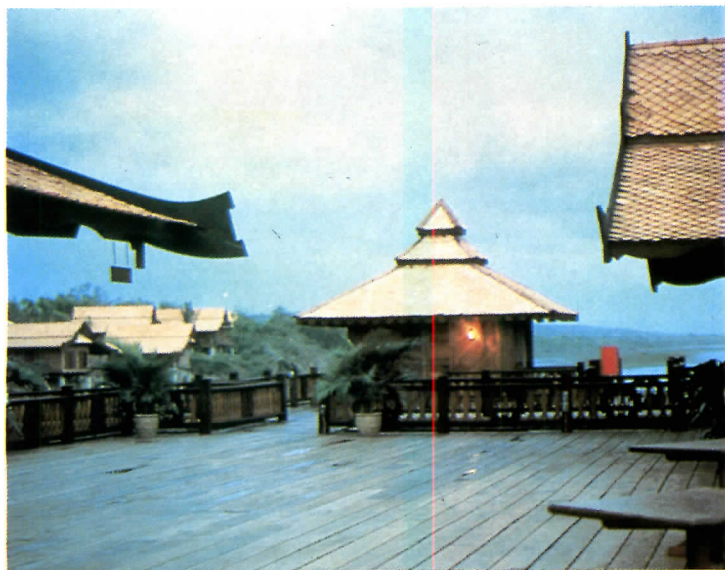
and covered walkways link most of the buildings. Though air conditioning is provided, some indigenous tricks abet natural cooling and ventilation to give guests a choice. The dining rooms have folding exterior panels to convert to porches when conditions are right.



The Rantau Abang Visitors' Center is five miles from the hotel, at another beach, and provides a special tourist "destination." This beach is famed for the annual migration of giant leatherback sea turtles to lay their eggs. Thus the center was positioned a short distance from the beach to avoid any disturbance. A sealife museum provides observation points to view the turtles and the fishing boats,

which also center here. There is a bazaar featuring craftsmen and their wares, a restaurant serving Malaysian food, and a botanical garden of special native plants. Bungalows are provided for overnight guests. The site straddles the Kabang River, which runs between a coastal road and the ocean. The structures of the complex are raised on piers above the river and sand dunes to avoid

disruption of the site's natural characteristics. The elevation also affords better panoramic views of the turtles' hatching grounds. An information center and the bazaar are on the highway side of the river, and are connected to the museum buildings by a wooden bridge. The buildings themselves are conceived as part of the total experience, and are built in the native "Kampong" style.



Tanjong Jara Beach Hotel and
Rantau Abang Visitors' Center
Kuala Trengganu, Malaysia

Owners:

Tourist Development Corporation
Malaysia and The Ministry of
Tourism

Design architects and engineers:

Wimberly Whisenand Allison Tong
& Goo Architects, Ltd.—George
Wimberly, George Whisenand,

Gerald Allison, George Berean,
design team

Associate architects:

Akitek Bersekutu Malaysia

Landscape architects:

Belt, Collins & Associates

Interior designers:

Juru Hiasan Consultants Sdn. Bhd.

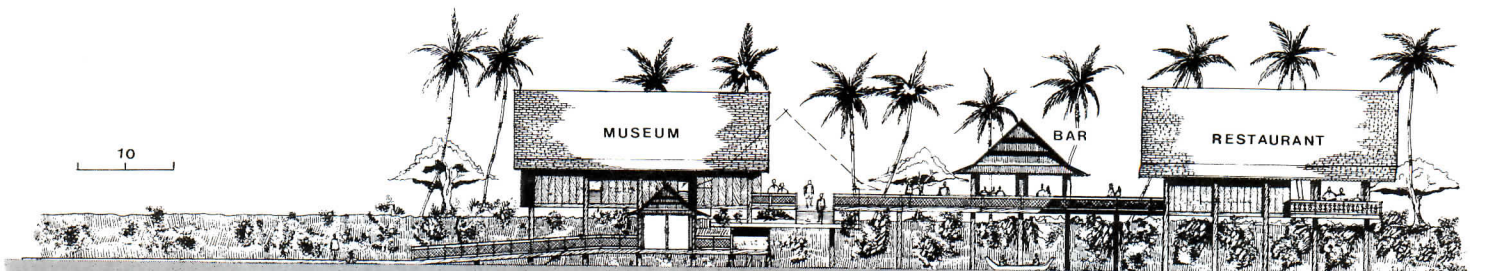
Technical consultant:

Penpena Consultants, Sdn. Bhd.

Rantau Abang Museum exhibit

designer:

Gerald Ober



Subtlety for Big Sur



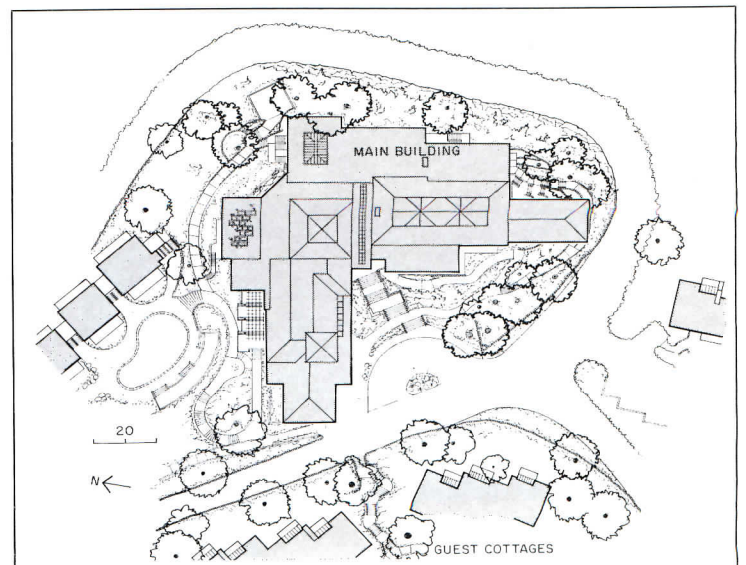
Russell Abraham photos

California's spectacular coast along the Monterey peninsula has long been famed for its natural beauty, and for its inns offering the views plus low-keyed, sometimes costly, comforts. The Highland Inn was one of these, built in 1916 with a central lodge and surrounding cottages. The design was a simple one of some warmth and charm, with golden granite walls and interiors open so that guests may thoroughly enjoy the views. Over the years, the original building was significantly altered, especially by excessive partitioning and somewhat heavy-handed "Scottish Tartan" interiors.

Architects Shaw Associates undertook their major reconstruction and renovation with great respect for the original design. The existing buildings were mainly simplified, restored, and "re-opened" to the views. Some 44 existing suites were remodeled, and 100 new ones with balconies, fireplaces, and garden entrances have been built. New meeting facilities, a delicatessen, tavern, and shop were also added, along with a new pool and three spas. The interiors of the lodge were brightened considerably by the addition of dormer skylights, and the restaurant was redesigned in two tiers to assure each diner a maximum view. A special inside "vista point" was created at a glass angle terminating the entrance corridor to encourage guests to stop and contemplate the famous coast.

Graphic designer Marget-Aagot Larsen created a simple logo for the restored Highlands Inn, which combines the "H" and the "T" into a sort of abstracted series of gridlike squares within squares, which has a slight recall of something Mackintosh might have done. The logo has been used as a leitmotif for everything from matchbooks to menus to door identification signs.

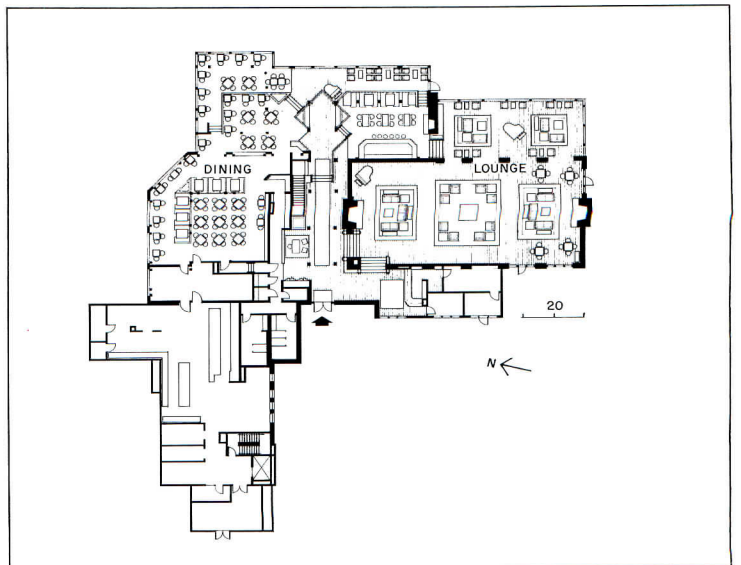
And that same turn-of-the-century, craft-movement "look" has been adapted in subtle and sophisticated ways throughout the new interiors by Marquis Associates—in the specially woven carpets and in quiet details throughout. All is in an unusual, extraordinarily pleasant, palette of very soft colors: earth tones, greens, and lavenders. Furnishings are simple, uncrowded, and luxuriously comfortable. The "lodge" feeling has been suggested by natural woods, granite, and exposed beams—but the over-all design impression is one of substantial, restrained elegance. The entrance gallery (photo right) immediately establishes the ambience of the entire complex—and culminates in the *raison d'être* of the Inn's location: the interior vista point to survey the surroundings.





A sumptuously big lounge has been created by removing some of the old partitions (see photo below and plan), and by leaving the ceiling trusses exposed. Deep-cushioned seating has been arranged in several carpeted islands through the L-shaped space. The exposed beams and two huge granite fireplaces made of the same stone as the exterior do much to relax the

used, and the subtlety of the color scheme. The dining areas are arranged on two levels in front of the wide glass walls so that each diner can enjoy the full panorama. A barroom is beyond the dining areas (photo below) and separated from them by the "vista point" that terminates the entrance gallery (bottom photo).



Highlands Inn
Carmel Highlands, California

Owners:

Highlands Inn Investors

Resort management:

Ronald Matthews

Architects:

Shaw Associates—Will Shaw,
FAIA, principal-in-charge

Interior designers:

Marquis Associates, Architects—
Phyllis Martin-Vegue, Lamberto

Moris, Stephen McDonald,
Elizabeth Taylor, Joan Diengott,
Olle Lundberg, design team

Graphic design:

Marget-Aagot Larsen, Intrinsic

Contractor:

Daniels & House



Fantasy and convenience: every hotel needs both

By David W. Beer, AIA

When asked to be a visiting critic for a class of architectural students a few years ago, I suggested that we center on hotels as a problem to be explored. The dean was not enthusiastic. On the contrary, he stated that hotels as a building type were not suitable for critical exploration.

The dean's attitude, coupled with my own reflective look at the profession, led me to conclude that too few architects give serious consideration to the design of hotels, despite the building type's economic significance to cities and resort areas. Few commercial structures contribute as much to the activity of a downtown area, to the safety of the surrounding streets and to the viability of office and retail space. Hotels also provide an economic base for the survival and revival of many city centers.

Meant for the transient individual, hotels are expected to combine fantasy with convenience, to cater to the traveler's needs and to provide amenities that exceed those found at home or in the office. Given these parameters, architects should consider the design of a hotel a unique challenge, for no other structure is expected to provide as much diversity and comfort concurrently.

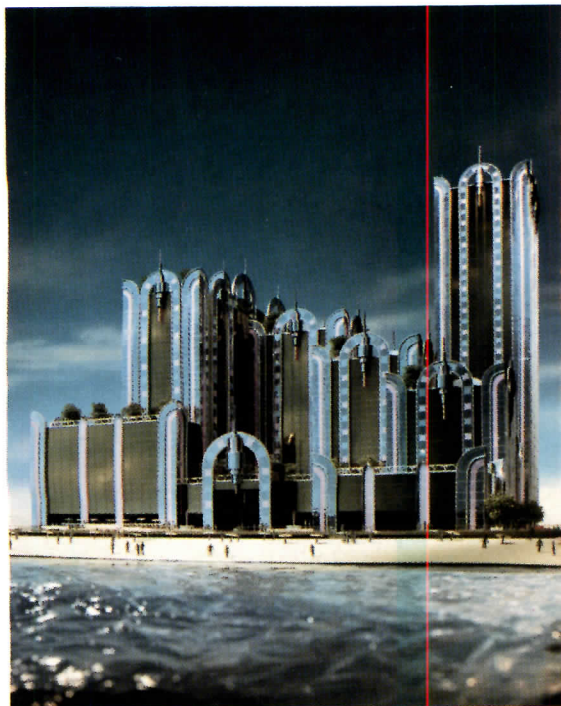
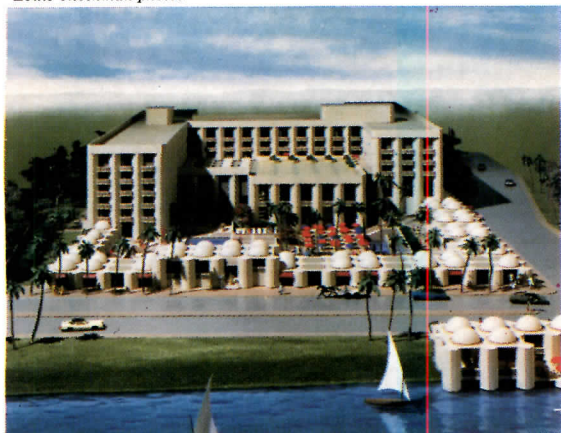
A hotel's atmosphere, size, function and character vary as much as the individuals it serves. Even the traditional center-city hotel presents enormous variety. For example, the *convention* hotel must accommodate large groups but at the same time be equally comfortable for business people and for families with children. Different circulation circuits must be created to prevent groups who travel to the ballrooms from disturbing quiet conversation between people in the lobby. Likewise, an atrium scaled for the lively activities of conventioners may be an uncomfortable place in which to read the newspaper or enjoy a cup of coffee in solitude. The atrium of the Contemporary Hotel for Disney World in Orlando, scaled to the monorail that runs through it, was designed by Becket as the symbolic center of the entire resort complex.

Hotels designed primarily for *business* people should function differently from convention hotels. They should emphasize comfort, service, convenience and quiet elegance. This does not imply dull design. Rather it demands different provisions, such as a variety of dining and entertainment options. More than mere amenities, these options become imperative, particularly in locales where business appointments may take days to materialize and where business people are thus bound to the hotel facilities. Business hotels must offer a choice between informal and elegant dining, between places to have a drink in a bustling public space or a quiet secluded bar.

Increasingly, architects and hotel operators are turning to the *grand hotels* in Europe and elsewhere in the world to analyze the successful succession of spaces and the variety of entertainment and dining experiences that those deluxe hotels offer. The moderately proportioned public rooms of the Vier Jahreszeiten in Hamburg, the Breneners Park in Baden-Baden, the Beverly Wilshire in Los Angeles epitomize that perfect blend of variety in their restaurants, grills, bars, discreet lobbies and shops. Everything is scaled to create an atmosphere of comfort. The patron can spend days living in any one of these hotels without feeling oppressed or bored.

Resort hotels—depending on their location, size, views, climate and accessibility—present so many different possibilities that it is difficult to categorize their specific design problems. The common denominator for resort hotels is that guests spend much more time in their rooms than people do in business hotels. To accommodate this style of hotel living, bedrooms should be large and should have such amenities as much closet space, big bathrooms, generous sitting areas and a place for dining. Because

©Louis Checkman photos



The location of the Sheraton Luxor is enough to make the romantic heart skip a beat: the Nile in front, the temples of Luxor and Karnak not far away, on either side (at top). Becket, designing a combination of grand and tourist hotels, used a system of closely spaced columns to reflect the Pharaonic forebears, but then gave each column eight sides to avoid parody of the Egyptian monuments with their bulging columnar structures. For the Ritz in Atlantic City (directly above), Becket attacked a special building type: the casino hotel. The fantastic medley of gold and silver and pink and blue glass towers and arches was never built.

In Philadelphia's Society Hill, a new 360-room hotel will wear a brick face only four stories tall in order to harmonize in scale and material with a row of historical buildings directly across the street. Designed to combine the attributes of both a business and a tourist hotel, it will incorporate nine separate pavilions as well as two skylighted atriums—one the entrance lobby, the other a ballroom

opening onto a sunken garden—but these spaces will be identifiable only from above so as not to destroy scale at pedestrian level. Becket is designing the Society Hill Sheraton for Rouse & Associates and Sheraton Corporation.

© Louis Checkman photo





vacation guests, on the average, stay for relatively long periods of time, variety in the hotel's public spaces is essential. Room service is important, and because resort hotels tend to be more spread out than business hotels, servicing guestrooms and restaurants is more complex. Casino hotels, perhaps, represent the greatest need for boldness and imagination—for a marriage of fantasy and convenience. To be successful, they must merge exuberance and glitter with diversity and comfort.

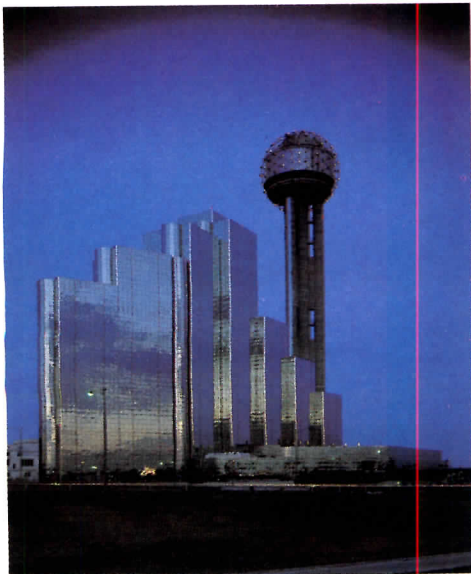
In truth, efficient service is critical in all hotel types, whether convention, business, grand or resort. Financing and maintaining a hotel is a precarious business at best. Room rates are determined in large part by the number of people needed to service the hotel. And that number is in turn dictated by the efficiency of the plan. At the Great Wall Hotel in Peking, seven restaurants are served by one kitchen, which also handles room service. Efficiency is just as important in China as it is elsewhere.

"If it's Tuesday, this must be Belgium" reflected the pace of a typical tour in the 1960s, but the title was also a comment on the kinds of hotels that were designed all over the world after World War II. Those hotels were well planned and convenient, but except for an occasional restaurant with local food and decor, their appearance was similar from Cairo to Kalamazoo. Perhaps that was why the dean of architecture could not take their design seriously. But the hotel designer has an absolute responsibility to understand the traveler's expectations and to reflect the corner of the world in which the hotel is built, not only in interior and exterior expression but in every aspect of programming and planning.

Of course, there are exceptions. In our experience at Becket in both Moscow and Peking, the client asked specifically for "American style" hotels—in appearance as well as in function. In Dallas, the striking mirror glass facades of the Hyatt Reunion cannot be said to reflect the traditional aspects of the surrounding city because the area around the hotel, the Plaza del Oro, was entirely new, and the hotel has therefore become a symbol of what is new and progressive in Dallas.

But more often, clients—in Egypt, Iran, Saudi Arabia, Korea and the smaller cities of China, like Xian and Hanchow—have asked for a serious reflection of their cultures and traditions. On the Nile River at Luxor, halfway between the temples of Karnak and Luxor, we designed a grand resort hotel whose proportions reflect the Pharaonic tradition of its neighbors. The columns were designed with eight sides so that the new structure will not appear to be simply a pastiche of the great temples with their cylindrical columns, and this angular motif was used throughout the interior to establish a unity between inside and outside.

The flexibility that we have gained in designing hotels abroad has been applied to projects in this country as well. In Philadelphia, we are designing the Sheraton Society Hill, which lines one side of Walnut Street and faces a row of traditional buildings on the other side, among them Bookbinders restaurant. The new four-story brick structure is contemporary in appearance, but it embraces nine pavilions with iron balconies, courts, sunken gardens and patterned paving to reflect the historic setting. Designed to serve both business people and tourists, including families, it will maintain an identity, a sense of place, without copying or mocking the surrounding buildings. These are, we feel, the most important goals in responsible hotel design.



The Contemporary Hotel at Orlando, Florida, is functionally a convention hotel in a natural tourist attraction: Disney World. It must therefore receive with equal comfort two sets of guests—on the one hand, conventioners with assorted temperaments; on the other hand, families with children, also with assorted temperaments. The large atrium also serves as a monorail station. In Dallas, the glittery Hyatt Reunion with its spherical revolving tower-top restaurant (directly above) is the center of the Plaza de Oro. It has also become a logo that represents the whole city.

Becket has observed that many of its hotel clients abroad want their own distinctive local culture reflected in design. Others emphatically do not. In Russia, the Moscow World Trade Center specifically asked for an "American style" hotel. Design included flat concrete facades, ascending balconies and landscaped atrium. American? Yeah! OK! You bet!



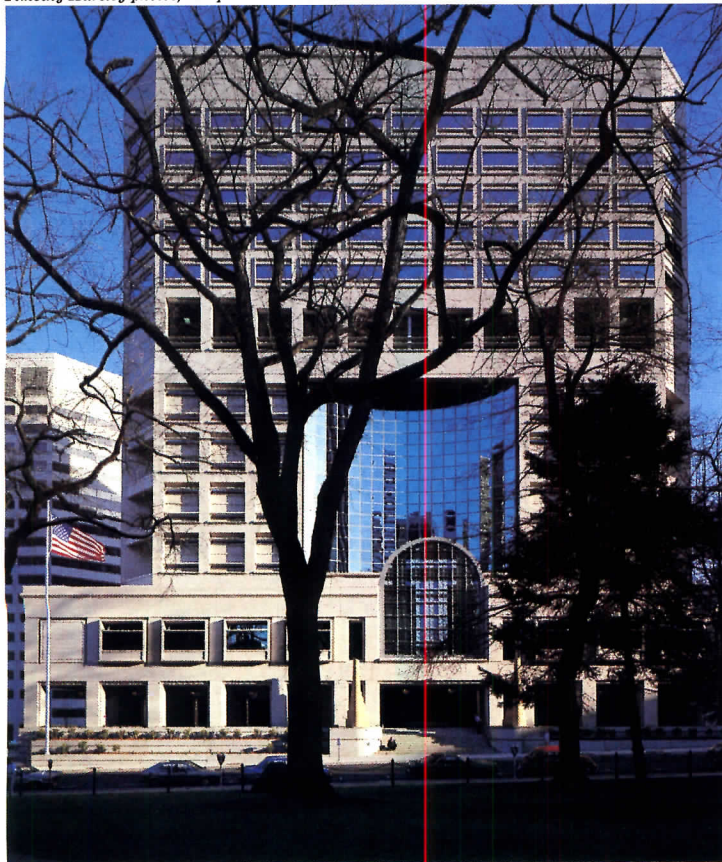
Justice Center
Portland, Oregon
Zimmer Gunsul Frasca Partnership, Architects



Balancing the scales of justice



Timothy Hursley photos, except as noted



Because the downtown Justice Center includes a 430-bed jail, the project was deemed too controversial for the most obvious vacant lot available, the publicly owned block between City Hall and the County Courthouse where Michael Graves's Portland Building now stands (see RECORD, November 1983, pages 90-99). The final site of the Justice Center is a marginally less conspicuous location on the opposite, eastern, side of the park that forms the spine of the city's government complex (upper photo opposite). Since the Portland Building competition was held four months after Zimmer Gunsul Frasca completed its design for the Justice Center, the latter building could not respond directly to

Graves's winning project. Indeed, Graves included ZGF's scheme in a model of his own proposal for the Portland Building (which, owing to design/build construction and a simpler program, actually opened its doors a year earlier than the Justice Center. The complexity and expense of correctional facilities, courtrooms, and other secure areas accounted for much of the difference in cost between the two projects: \$51 per square foot for the Portland Building, \$80 for the Justice Center). In the end, neither firm could ask for a more effective pendant to its own building: axially aligned as a symmetrical pair, both structures hold their own in a remarkably harmonious dialogue.

Like many well-worn emblems of civic life, the scales of justice reduce a complex process to one graspable, memorable image. Though less iconic (or trite) a symbol of law and order, the recently completed Justice Center in Portland, Oregon, performs a similar role. Outwardly the building embodies the consistent social edifice of legal authority, while only implying the tangle of individual destinies that must be sorted and weighed in the balance within. The ingenious functional planning of the \$45-million structure designed by the Zimmer Gunsul Frasca Partnership attests to an extraordinarily difficult brief submitted by the client—in fact, three clients, the Oregon Department of Transportation, Multnomah County, and the City of Portland, who jointly commissioned a mixed-used “public condominium.” On one hand, the architect was presented with the technical and programmatic challenge of housing municipal police offices, a county detention center and courtrooms, state-owned shops and restaurants, and parking in a 15-story, 560,000-square-foot high-rise (section overleaf, plans pages 132-133); on the other hand, ZGF was obliged to reassure alarmed citizens that the building planned for one of Portland's most visible downtown sites would be more than a glorified jail.

It was inevitable that popular reaction to the proposed Justice Center should focus on the thorny issue of urban incarceration. The impetus for the entire project arose from the need to replace the county jail in rural Rocky Butte, an outworn facility that blocked the path of a new interstate highway. Under the stated terms for condemnation of property, Federal funds were guaranteed to cover 92 per cent of the cost of rebuilding the jail elsewhere, with the balance to be disbursed by Oregon's Department of Transportation. Multnomah County welcomed the opportunity to move its primary detention center into Portland, the county seat, and at the same time upgrade housing conditions for well over 400 inmates, thereby diminishing the expense, delay, and security risk of driving presentenced offenders to court.

Unusually farsighted civil servants also recognized that, given the participation of various government agencies as co-owners (and the addition of \$15 million from city and county coffers), the same construction package could efficiently relieve overcrowding throughout the justice system. This ambitious strategy eventually encompassed the provision of four circuit and district courtrooms (to free the existing county courthouse for civil trials), and offices for the entire staff of Portland's Central Police Precinct and city-wide police administration, whose 70-year-old headquarters had long been obsolete. Other designated occupants of the new building were the District Attorney, the state parole and probation board, and a state crime laboratory. Esthetic embellishments mandated by one-per-cent-for-art legislation, and the extra amenity of 12,000 square feet of street-level retail space, rounded out a scheme that, as architect Robert Frasca explains it, “helped remove the stigma of a slammer.”

Though quieter in hue than Michael Graves's Portland Building, its polychromed neighbor across Chapman Park (photo opposite above), the Justice Center is far more plastically modeled. This variegated massing bespeaks an earnest attempt at reconciling stringent functional demands with hierarchical clarity, as well as deference to contrasts in scale among a mixed group of neighbors. A skeleton of cast-in-place, ductile-reinforced concrete is clad with precast concrete, similar in color and finish to the granite of older landmarks nearby. The triple-story, foursquare base, whose polished walls are slightly darker than those of the chamfered tower, engages passersby with a pedestrian arcade fronting the park, shops along Main Street, and display windows on the other sides. Prominent arches

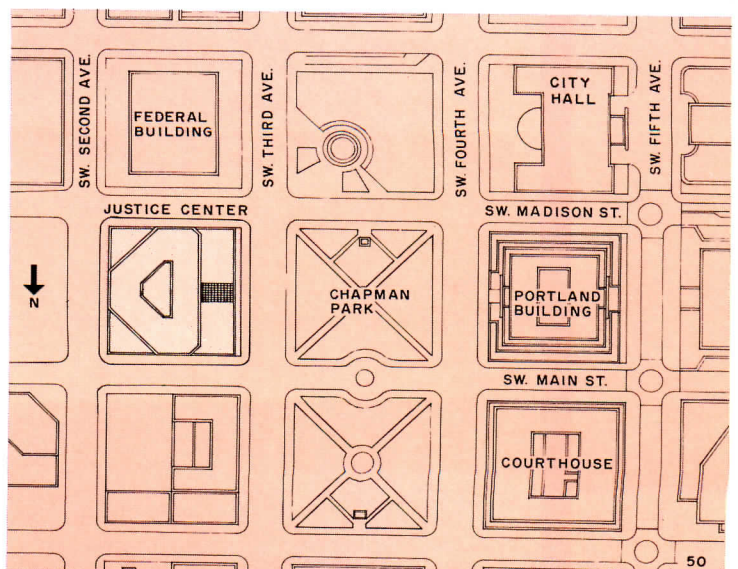
distinguish portals to the separate realms of adjudication and law enforcement: a glazed, barrel-vaulted lobby to the west gives onto the courtrooms and visitors' reception area (see page 134); a low Diocletian surround carved out of the east facade leads to police offices (photos page 134). Offenders in custody enter less ceremoniously through a garage door, descending to basement sally ports via a ramp off Second Avenue.

A deep setback on the west facade lessens the apparent mass of the tower on Chapman Square. More emphatically vertical when seen from the east (lower photo right), the Justice Center joins the rank of high-rises that increasingly dominate Portland's skyline. The diagonal facets of the tower result from the roughly triangular layout of 32-cell detention housing modules, which are clustered three to a floor (a configuration that combines optimum sight lines for control staff with sufficient exposure to natural light). If there is an inherent disjunction between the patently classical lines of the entrance-level podium and the idiosyncratic envelope of the upper stories, the abruptness of the shift is offset in part by regular fenestration that adroitly accommodates a range of very different requirements.

Communal rooms for jail inmates are grouped behind multistory reflective niches set into the east and west facades. Flanking tiers of recessed, slitlike cell windows are fitted with horizontal ledges for visual privacy. A tall band around the tenth story expresses the loftier spaces of recreation areas. Generous glazing on the five uppermost stories opens police administration offices to a panorama of city, mountains, and water, and a keystone-level view of the more introverted Portland Building. ZGF's original plans sandwiched police offices between the strata of courts and detention housing. However, the pressing timetable for demolition of the Rocky Butte jail, and the consequent priority for replacement cell blocks, dictated the present inverted layout—further complicating the already formidable logistics of secure vertical circulation and the Chinese puzzle of multilevel functional zones. Consider, for example, the ascent from labyrinthine intake, booking, and holding areas in the basement to detention housing five or more levels above, or the elevator link between the Second Avenue lobby and the first tier of police headquarters on floor 11.

The courtrooms are relatively modest in scale (photo page 133), as befits their intended use for preliminary hearings and first arraignments. It is the building's entries and lobbies that convey the majesty of the law more overtly through the marshaled forces of architecture and art. Concrete walls as fine as ashlar masonry, terrazzo floors, coffered ceilings, marble trim, stainless-steel balustrades, and copper lamps furnish a discreetly monumental setting for the progeny of one-per-cent-for-art. Selected by an eight-member committee that included Robert Frasca, many of the artworks in the Justice Center were specially commissioned as integral parts of the building. In several cases the artist's style unfortunately conflicts with that of the architects (e.g., the busy harlequin mosaics applied to the arcade ceiling, and a stridently colored lobby mural, that jar with the measured reserve of their surroundings). But there are also models of sympathetic enrichment, notably the golden travertine pylons sculpted by Walter Dusenbery that stand as sentinels flanking the entrance on Chapman Park (detail overleaf), and the arched window overhead, by stained-glass designer Ed Carpenter (detail page 135). Alternately clear, translucent, and reflective on both sides, the faceted and overlapping panes of the iridescent window form a brilliant analogue to the building they adorn, and to the densely layered structure of the legal system it serves.

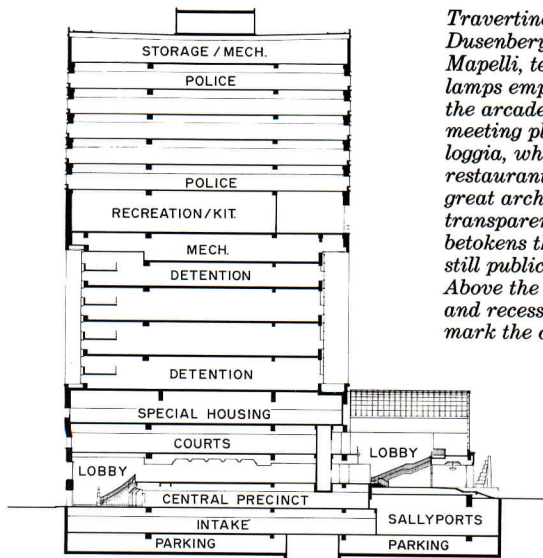
Douglas Brenner



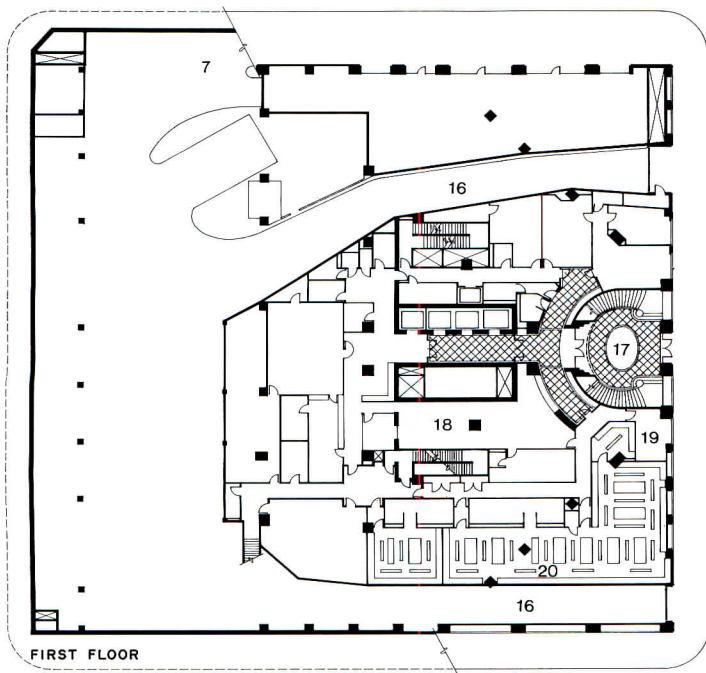


JUSTICE CENTER

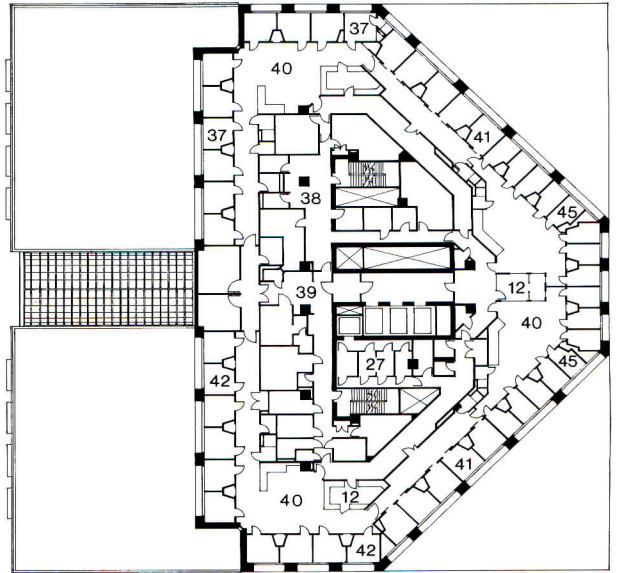
NO PARKING
IN THIS
BLOCK



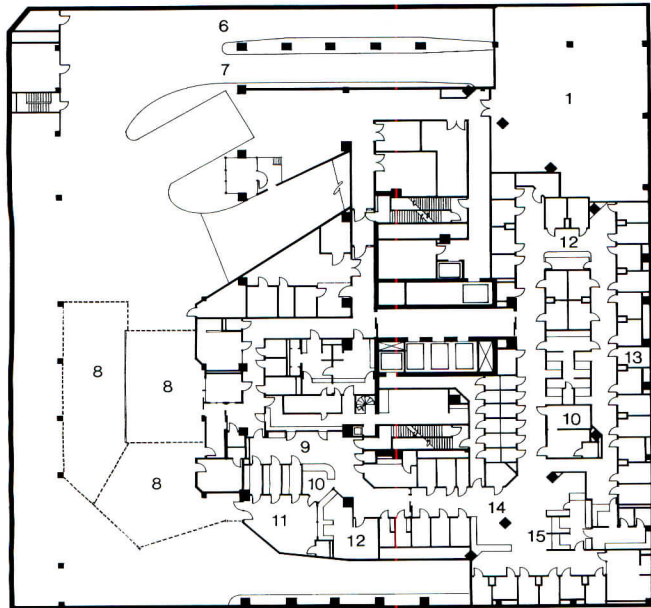
Travertine megaliths by Walter Dusenbery, ceiling mosaics by Liz Mapelli, terrazzo floors, and copper lamps emphasize the importance of the arcade as a splendid civic meeting place. It is also a festive loggia, where patrons of adjoining restaurants can dine alfresco. A great arched window of transparent and translucent glass betokens the more sequestered, but still public, domain of the courts. Above the arch, a reflective exedra and recessed slits to either side mark the confines of the jail.



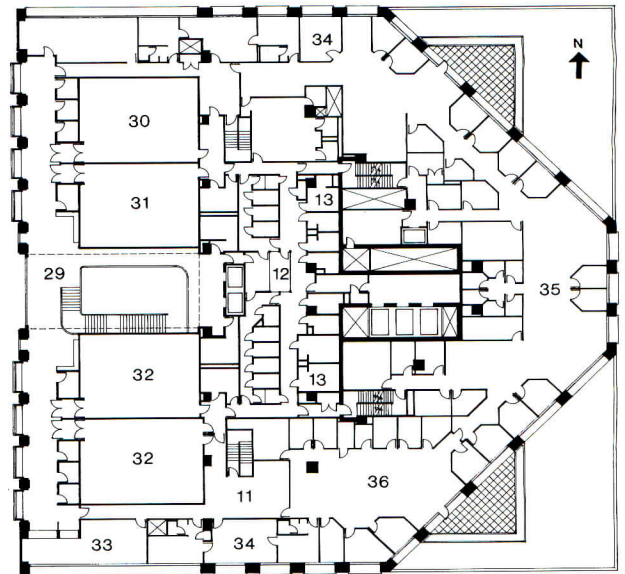
FIRST FLOOR



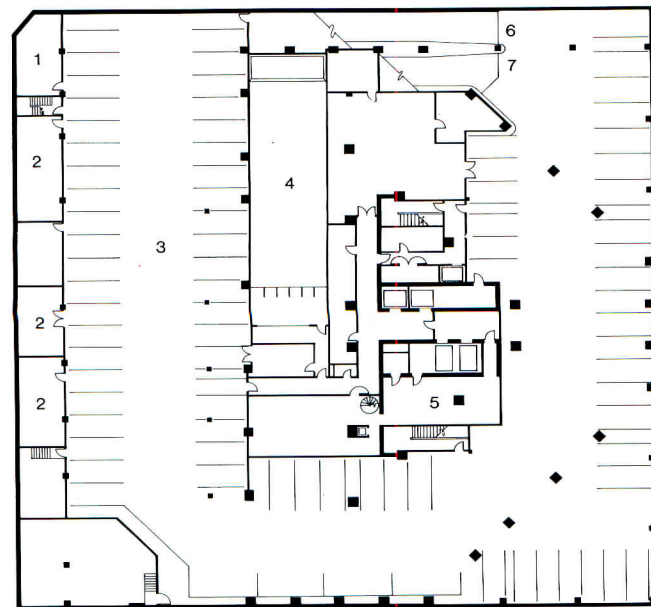
FOURTH FLOOR



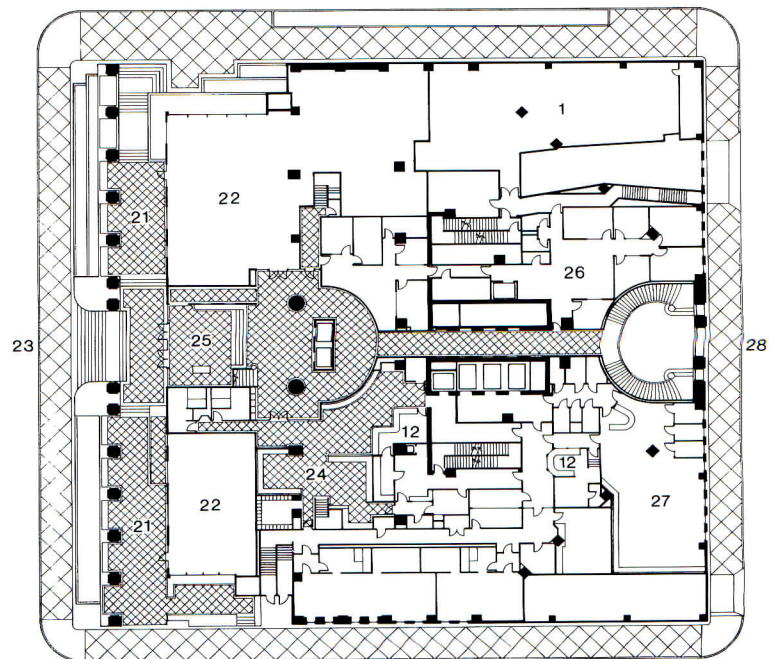
LOWER LEVEL - 1



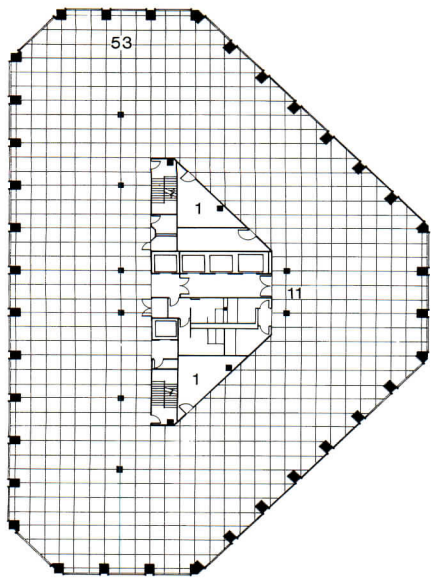
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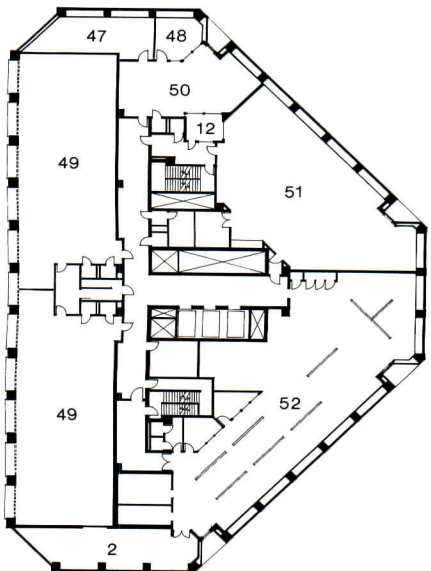
LOWER LEVEL - 2



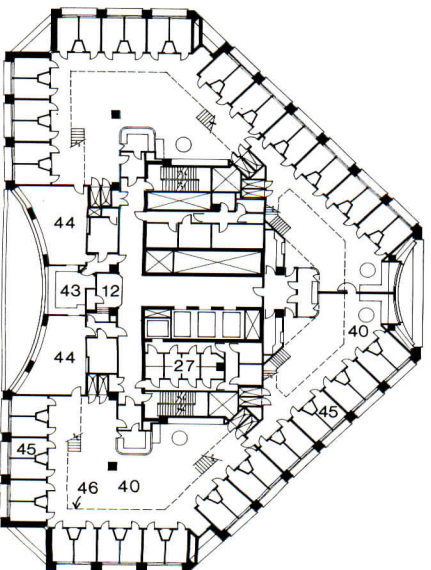
SECOND FLOOR



ELEVENTH - FIFTEENTH FLOORS



TENTH FLOOR



FIFTH - EIGHTH FLOORS

1. Mechanical
2. Storage
3. Parking
4. Pistol range
5. Laundry
6. Ramp up
7. Ramp down
8. Sally port
9. Search
10. Nurse
11. Reception
12. Control
13. Holding
14. Waiting
15. Booking
16. Ramp
17. East lobby
18. Business administration
19. Captain
20. Lockers
21. Arcade
22. Retail
23. S.W. Third Avenue
24. Detention center lobby
25. West lobby
26. District attorney/court offices
27. Visiting
28. S. W. Second Avenue
29. Public lobby
30. Jury courtroom
31. Circuit courtroom
32. District courtroom
33. Court offices
34. Judge
35. Court services
36. Community services
37. Medical cells
38. Medical offices
39. Clinic
40. Dayroom
41. Isolation cells
42. Psychiatric cells
43. Servery
44. Multipurpose/dining
45. Typical cells
46. Mezzanine cells above
47. Library
48. Law library
49. Outdoor recreation
50. Learning center
51. Indoor recreation
52. Kitchen
53. Offices and laboratories

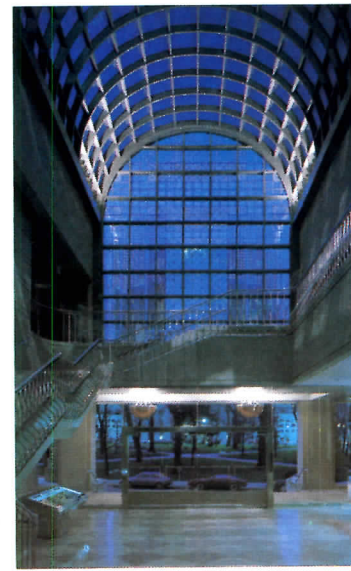
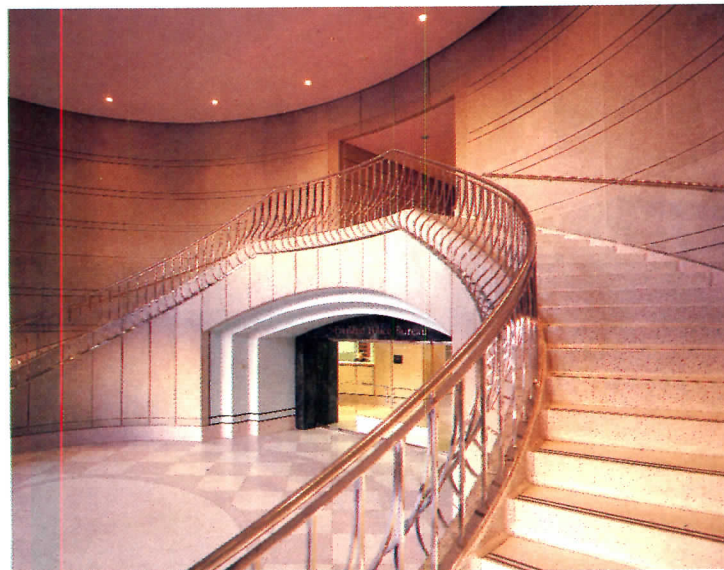


Rob Reynolds

In public areas, such as the lobbies outside courtrooms (top photo), ZGF deployed axial symmetry to clarify circulation. The simple, compact layout of the four courtrooms (middle photo) facilitates direct communication at hearings and arraignments. One of the courtrooms can also be converted for jury trial use. Since the corridors outside the courts are also waiting areas, ZGF installed ample window seats overlooking the park (upper photo). Detention housing displays equal concern for human dignity and adaptable use. County correctional authorities sought a less stressful environment—for inmates and staff alike—than the one they left behind at Rocky Butte. The bottom photo shows one of the three 32-room modules that compose a typical story in the jail. Standard living areas follow the model established by California's Contra Costa County Detention Center (see RECORD, March 1983, pages 82-85), with a single unarmed guard stationed at the core of each module. The exact arrangement of

the polygonal tower floors was based on maximum visibility from the open control desks. Constructed of single-story precast wall units, each cell has a cement poured-in-place bunk, terrazzo desk, and stainless-steel lavatory unit. Food is precooked and blast-chilled in the tenth-floor kitchen and reheated in a servery on every general housing floor. Video monitors and two-way audio communications ensure security throughout the jail. Visitors ascend to the housing areas using special keys coded to stop the elevator at an assigned level. The architects initially plotted separate systems of corridors for detainees and courtroom personnel, but the cost of entirely dual circulation proved to be too high. Following the altered plan, judges and staff must occasionally cross the vestibule where inmates await trial, a junction that caused several unexpected and awkward encounters during the Justice Center's shutdown. Increased attention to scheduling and traffic control have since alleviated the problem.

A two-story arch encases the east lobby entrance (upper photo). Directly beyond the street-level portal at the rear of the rotunda are the offices of the Central Precinct and the elevator lobby for general police headquarters on floors 11 to 15. Visitors arriving from Second Avenue, and patrons of the underground public garage, mount the horseshoe staircase and traverse a central passageway (lined with showcases for police memorabilia) to reach the west lobby and the park (bottom photos). ZGF specified particular locations for artwork acquired with the \$450,000 budget mandated by government building ordinances. The lobby window by Ed Carpenter (below right, detail opposite) marks an uncommonly happy union of art and architecture. Fabricated from five kinds of glass—including hand-blown varieties from France, Germany, and Seattle—the composition was designed to be equally effective from inside and out. Carpenter borrowed geometric patterns from the building's tectonic order and enriched them through his own medium, alternating mirrored, transparent, and translucent panes, iridescent and milky tones, single panes and fused layers of beveled and diagonal fragments, to create a scintillating abstraction that constantly changes color and intensity. A deliberate metaphor for the multivalence and openness of the legal system, the window is also a symbol for the building's elaborate interaction with, and insulation from, its context. The entire physical envelope of the Justice Center was calculated for maximum energy efficiency, in conjunction with computerized mechanical equipment attuned to diverse functions and changing loads. Variable air-volume systems service the lower floors, police office, and core, while the jail has a constant-volume multizone fan system. Energy usage of 54,000 Btu per square foot per year falls well within both city and state guidelines.



Justice Center
Portland, Oregon

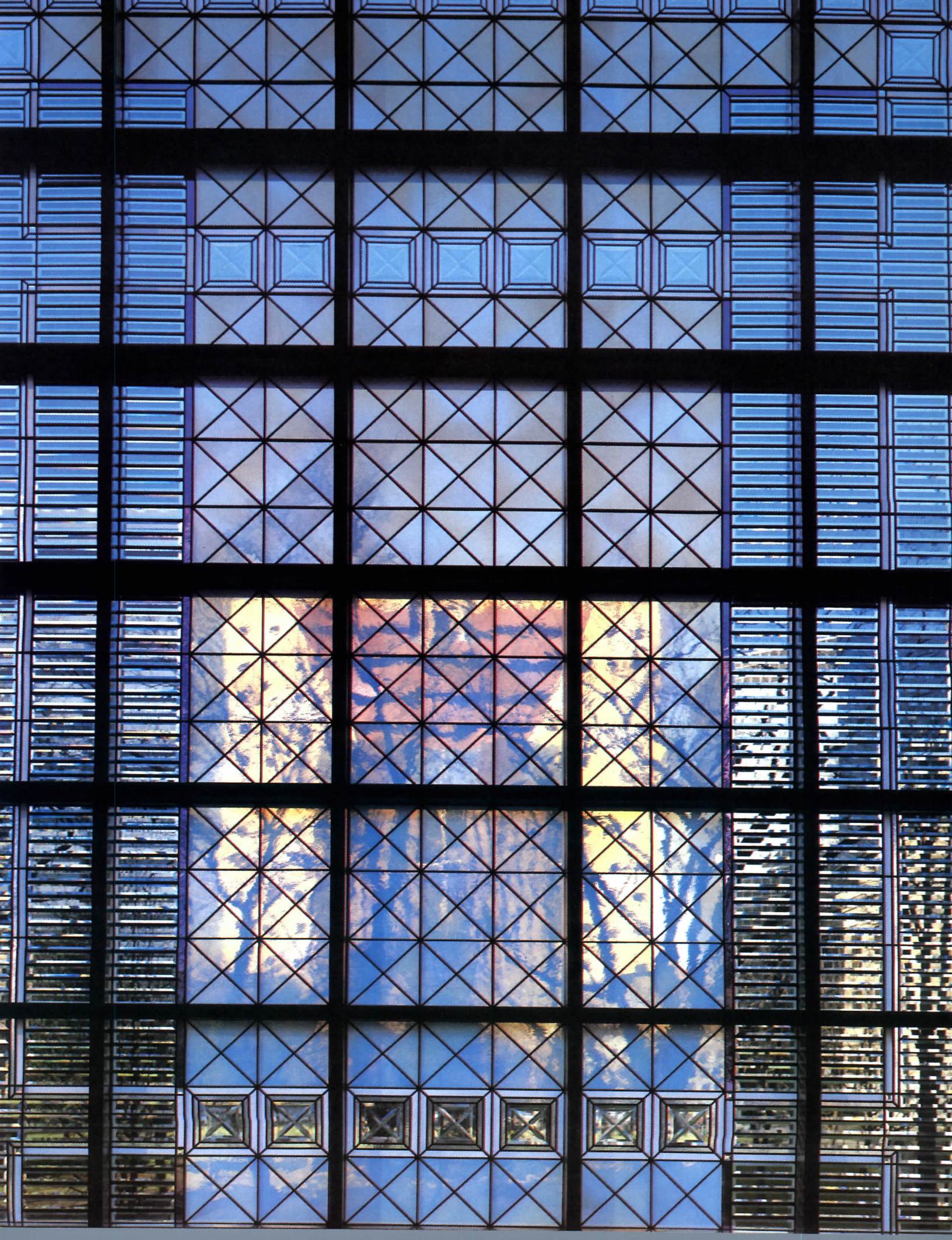
Owners:
Oregon Department of Transportation, Multnomah County, City of Portland—Bruce Boyd, Tuck Wilson, project coordinators

Architects:
Zimmer Gunsul Frasca Partnership—Brooks Gunsul, FAIA, partner-in-charge; Robert J. Frasca, FAIA, design principal; Jack Cornwall, AIA, project manager; Ernest L. Grigsby, project architect; Evett J. Ruffcorn, Margaret DeBolt, senior designers; Peter D. Alef, Dennis W. Destefano, Thomas S. Geiser, Dennis M. Harper, William R. Hutchinson, Kenneth J. Mouchka, Ronald R. Stewart, technical team; Evett J. Ruffcorn, John S. Walling, interior design/public spaces; Frances Lefever, Mari Lou Diamond, interior design team

Engineers:
kpff consulting engineers (structural); Peterson Associated Engineers (mechanical/electrical)

Consultants:
Walker McGough Foltz Lyerla, P.S. (justice facilities planning); Pietro Belluschi, FAIA (design); Lerch, Bates & Associates Inc. (vertical transportation); The Marshall Associates (food service); Hughes Design Concepts (electronics and communication); Walter H. Sobel, FAIA & Associates (courts planning); Mitchell & Nelson Associates Inc. (landscape); one-percent-for-public-art, administered by the Metropolitan Arts Commission and Oregon State Highway Department: Walter Dusenbery (travertine sculptures, west entrance); Liz Mapelli (glass mosaic ceiling, arcade); Ed Carpenter, designer, Tim O'Neill, fabricator (stained-glass window, west lobby); Bonnie Bronson (metal and enamel relief sculptures); Isaac Shamsud-Din (mural of pioneer history); unknown Kwakiutl artist (carved eagle, east lobby); Tim O'Neill (glass lamps, east lobby); Anne Griffin Johnson, Alden Mason (courtroom paintings); Louis Bunce (acrylic-on-canvas painting)

General contractor:
Hoffman Construction Company
Construction manager:
Turner Construction Company





Why is there a big blank panel set squarely into the center of the Hastings-Tapley Insurance Company Building in East Cambridge, Massachusetts? (Be careful. This is a test.) A) The contractor underestimated the brick, substituted with stucco, and hoped no one would notice. B) An angry gang of hot-blooded teenagers smashed the original plate-glass window and threatened to do so again if the owner tried to replace it. C) The sign painter is on his way. D) It's a "quote" from Charles-Edouard Jeanneret's 1916 Villa Schwob.

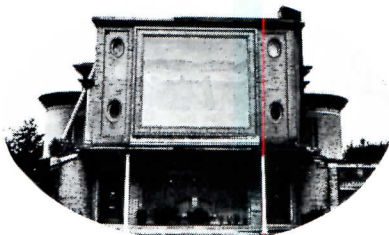
If you answered A, B, or C (and you know who you are) it's back to the history books. You might try Charles Jencks's *Le Corbusier and the Tragic View of Architecture* (Harvard, 1973), where, on page 43, you will find not only the big blank panel but the projected bay, the two front doors, the spindly steel columns, the arched window, the over-scaled cornice. . .where you will find, in other words, a facade remarkably similar to this one. Boston architects Fred Koetter and Susie Kim explain: "We don't mean to be arcane, but we do deal with certain ideas that are interesting to us. It is the prerogative of the architect." Obviously Koetter and Kim are interested in the idea (as well as the fact) of Le Corbusier. Though residents of East Cambridge may not necessarily share (or even appreciate) that interest, Koetter and Kim are undeterred: "We are not pure servants of society. We are not just putting up a building for the simple need of space. There are a lot of fine developers who can do that."

The "simple need of space," however, is what prompted Fred England, Jr., one of the partners of Hastings-Tapley, to seek architectural counsel in long-time friend Kim, when his company threatened to burst the red-brick seams of its one-story "Colonial" home office on Cambridge Street. England's program was straightforward: "add as much space as possible." After an archaeological tour of the then 14-year-old structure, Kim and colleague Koetter concluded that the 3,000-square-foot space could be tripled by stacking two floors onto the flat-roofed box. (Selective reinforcement of the existing steel column grid satisfied the engineers.) But with the additional floors, Hastings-Tapley moved substantially up in scale, and the company executives concurred with their architects—a nobler facade (to register a new, more prominent profile on Cambridge Street) was in order.

For Koetter and Kim, the problem was solved with a single bold move intended to bring the building figuratively up to speed with its grander neighbors—most notably the Byzantine Revival East Cambridge Savings Bank directly across the street (RECORD, April 1979, pages 97-102), and Bulfinch's 1814 Middlesex County Superior Courthouse diagonally across the street (now being transformed by Graham Gund Associates into speculative office space). Which is where Corb and the Villa Schwob come in. As a link between past and present, the Villa Schwob offered a compelling prototype—combining, as it does, reminiscences of Byzantium (notably the Hagia Sophia) in its cubic and apsidal massing; academic classicism, in the rigorous proportional scheme of its bilateral symmetry; forthright dependence on modern frame-and-infill construction (*concrete* and brick in Corb's case); and even the possibility of American influence, from Frank Lloyd Wright (second hand, via his Dutch admirers). Koetter and Kim back up their historical homage with a memorable esthetic and pragmatic rationale: the projected bay maintains the line of the street, the two front doors anticipate an additional future occupant, the arched window welcomes southern light into the lobby. . . . Yankee businessmen feel right at home here, and we know that somewhere in that Radiant City in the sky, Le Corbusier is smiling. *Charles K. Gandee*

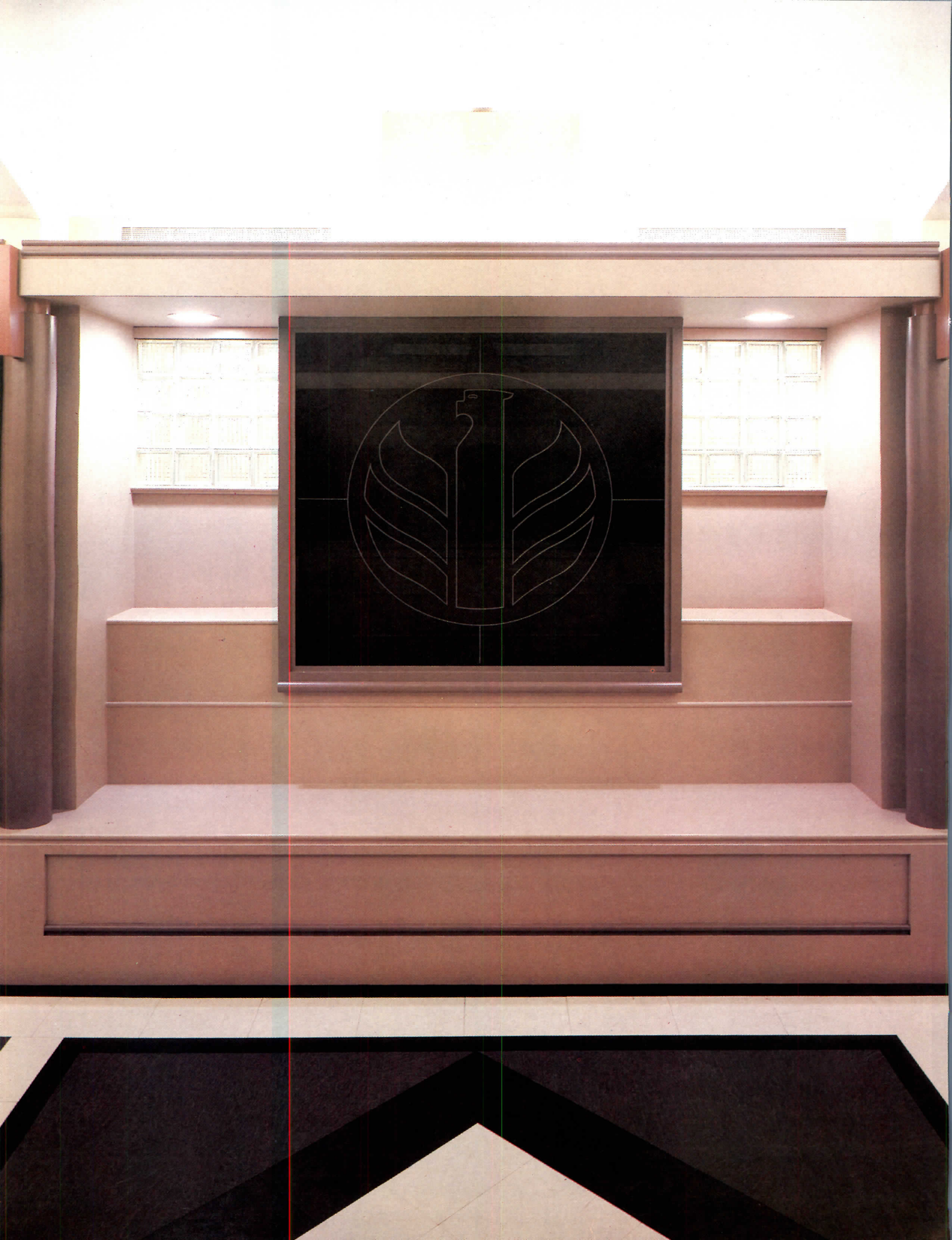


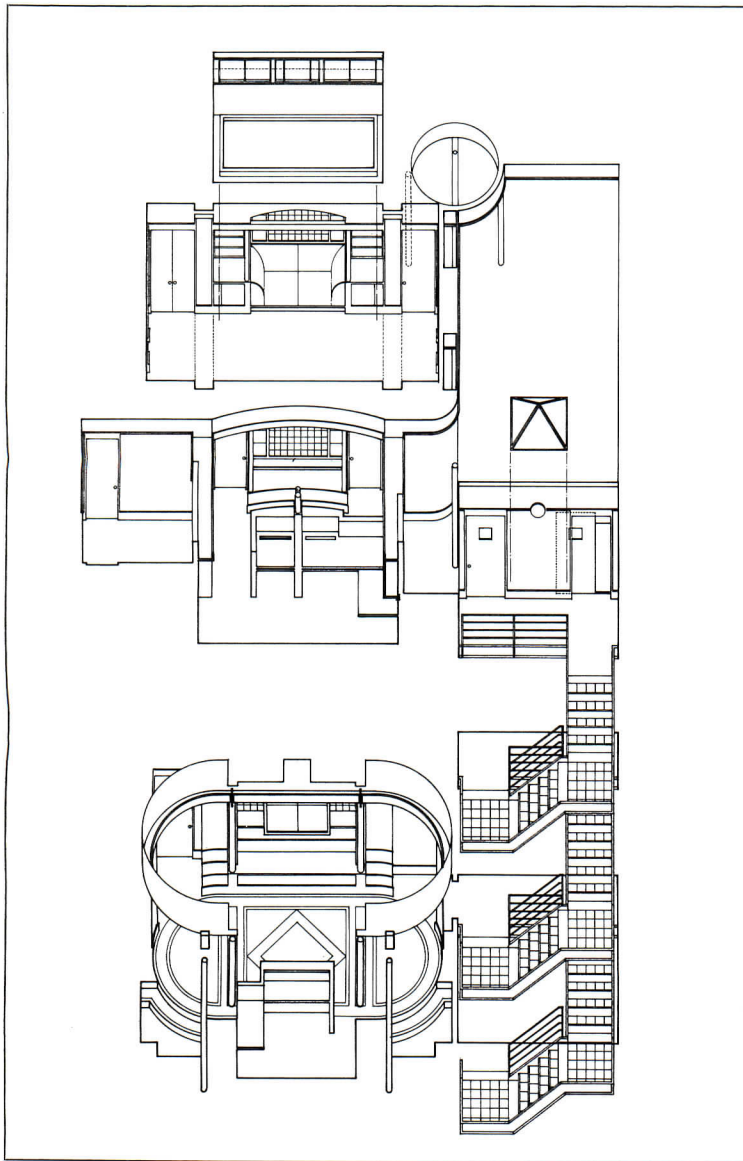
Paul Warchol photos



The Villa Schwob, 1916 La Chaux-de-Fonds, Switzerland







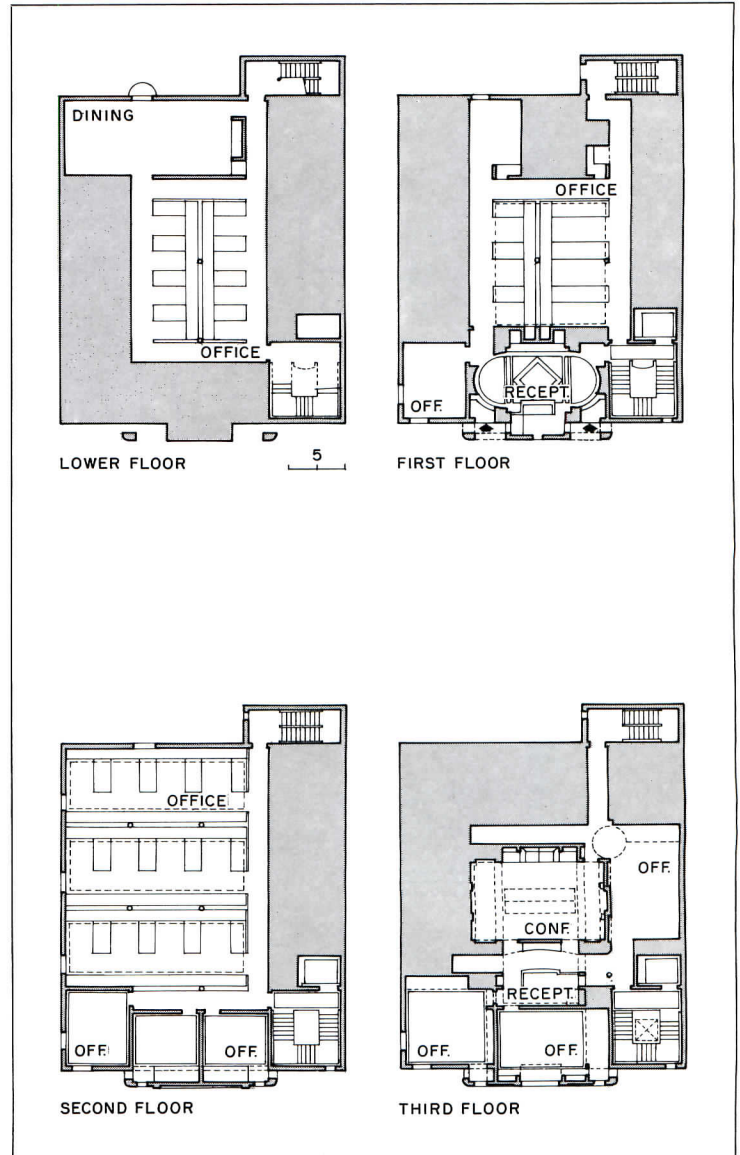
"It really should have been all stone," laments architect Susie Kim, referring to the lobby of the Hastings-Tapley Insurance Company Building. And though the budget dictated a more modest material palette—linoleum, gypboard, plywood—Kim and partner Koetter nonetheless attempted to recreate the "public character" of a grand hall in the classical tradition from which the



young Jeanneret drew much of his own esthetic discipline. A boldly geometric pattern on the floor, and a celestially luminous vaulted ceiling up above, define an apsidal space within the rectangular lobby. (The interstices between curves and rectangle recall Beaux-Arts "poché.") The banquette opposite the reception desk (left) is crowned with an etched-in-glass eagle appropriated from the company logo.



Though architect Fred Koetter felt the third-floor conference room should have the "feel" of a venerable men's club, he had "a problem with dark wood. . . it tends to become overbearing." The question then became, "If you want to have the look of wood panels, how much wood do you really need?" Not much, as it turned out. The desired effect was achieved through mahogany colonnettes and trim; add dark carpeting, built-in bookshelves, and flame-stitch fabric on the banquette cushions. . . and you have it. Susie Kim designed the mahogany conference table, which can be pulled apart for small conferences, with the freestanding end leaves placed against the walls as side tables. (Koetter and Kim did not assume design responsibility for any of the clerical staff work areas, which are on all three floors.)



Hastings-Tapley Insurance Building
Cambridge, Massachusetts

Owner:

Hastings-Tapley Insurance Company, Inc.

Architects:

Fred Koetter & Susie Kim—
Fred Koetter, Susie Kim, designers;
James Kent Knight, job captain;
George Lovely, Michael Hayes,
Mark Chen, team; James Kent
Knight, drawings

Engineers:

John Born & Associates
(structural); Progressive Consulting
Engineers (mechanical); Blair
Metcalf (electrical)

General contractor:

Richard Martin Development Co.



Mosque as monument



This mosque for 30,000 Iraqi Muslims is one of seven competition entries by as many architectural firms submitted to Iraq's Ministry of Endowments and Religious Affairs and the Municipality of the Capital in January 1983. The recommendation of the jury (never publicly disclosed) was presented to Iraq's President Saddam Hussein, who subsequently convened an international symposium of over 300 participants to discuss all seven competitors' submissions. So far no winner has been named. According to the competition's *professional advisor*, George Dudley: "A recommendation was finally made, based on the initial jury's recommendations as modified by the discussion at the international symposium. It has not been announced, no further action has been taken, and the final outcome is yet to be resolved, presumably pending further developments in the conflict with Iran."

Whether or not it is ever built, the Venturi, Rauch and Scott Brown mosque will have a long life in the world of architectural theory and criticism (beginning with an evaluation by art historian and Islamic specialist Oleg Grabar on pages 150-151). It is a remarkable cross-cultural phenomenon that one of the foremost design firms in the Western world has been engaged in

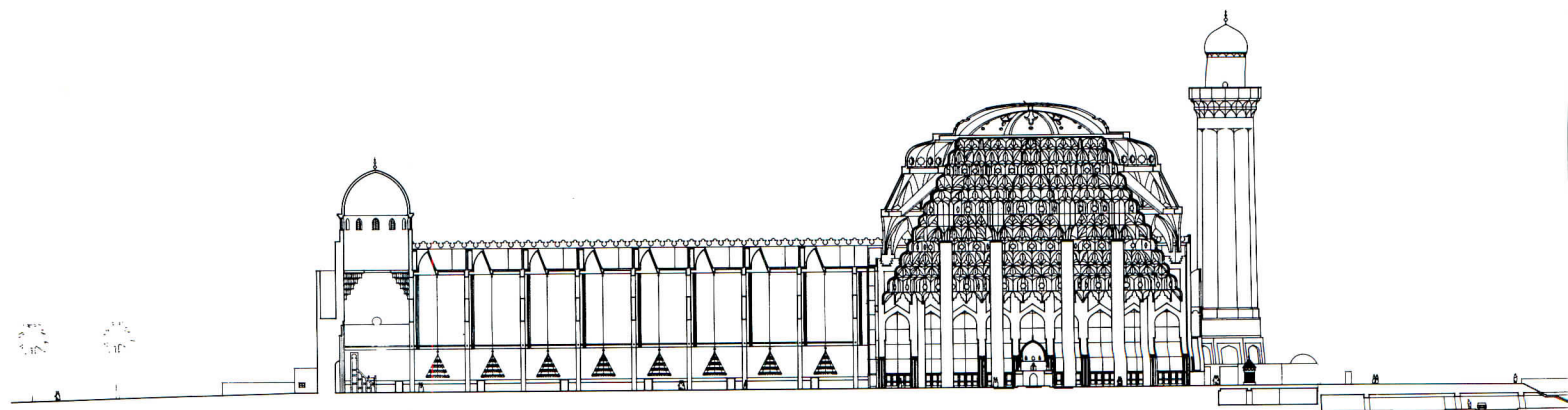
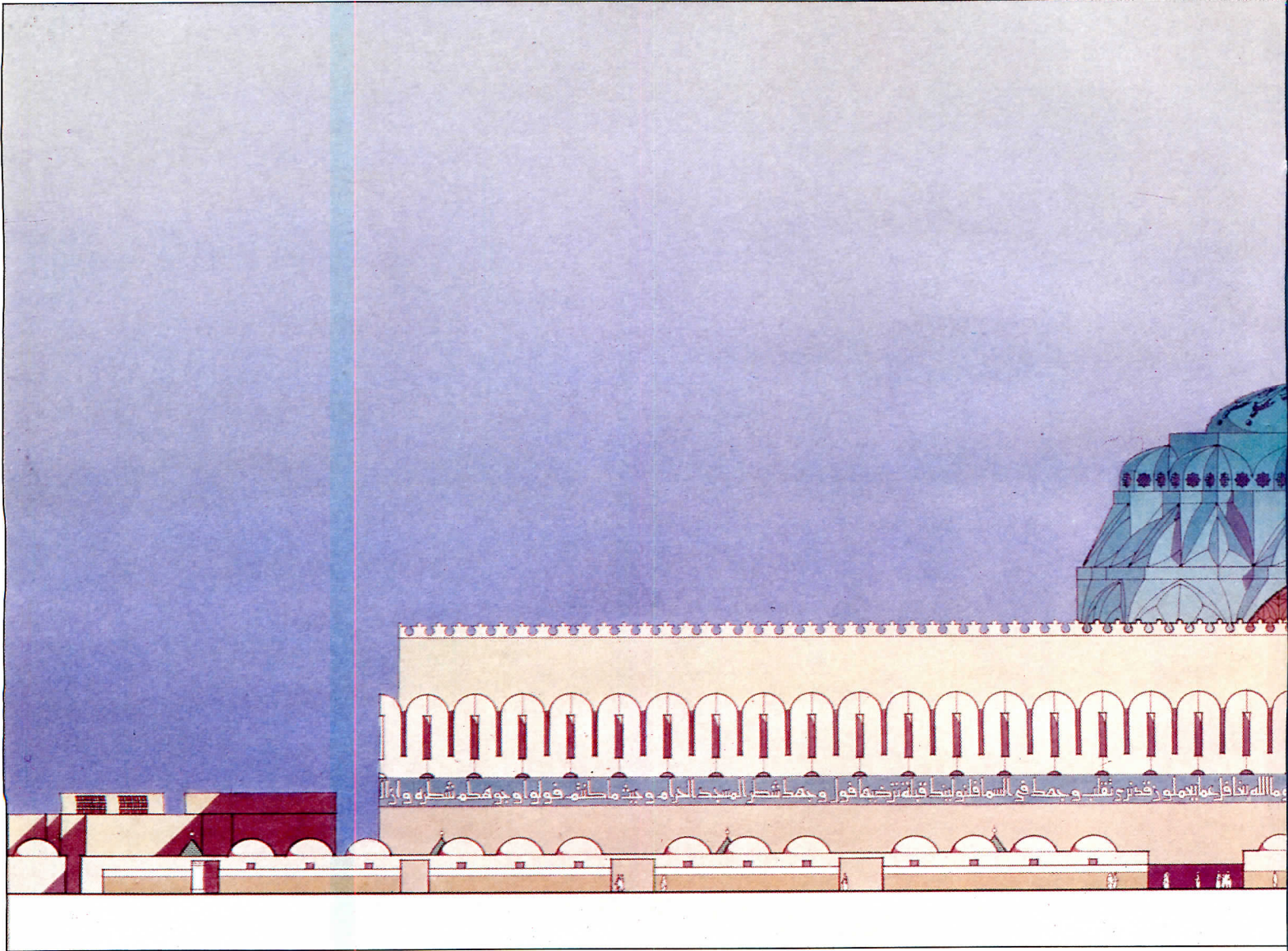
International design competition entry
for the State Mosque
Baghdad, Iraq
Venturi, Rauch and Scott Brown, Architects



the search for a contemporary Islamic religious architecture in the form of a state mosque to be the biggest ever built. VR&SB, having learned from Las Vegas, allowed themselves to be taught as well by Isfahan, Samarquand, Cordova, Damascus and Samarra, thereby bringing an appropriately enhanced architectural language to their task. Despite their intensive scholarship, however, VR&SB were clearly more interested in being creative than correct. The Baghdad mosque is derived from no single period, region or style, but instead consists of a mix of formal and ornamental parts, recombined in an original and brilliant manner. The firm's principal guiding ideas were to "develop a building in which the scale and elements express monumentality as well as human scale; in which the spatial layout is unequivocally egalitarian; and finally, where symbolic elements such as the arcades, ornament, dome, *muqarnas* (stalactite-work) crenellations and minaret have clear and acceptable referents. This approach should generate a majestic image from without and a series of profoundly moving spaces from within." Their goal was to design a mosque that would be "at once profound, to speak to future ages, and popular, to be loved by the people of Iraq today." *M.F.S.*

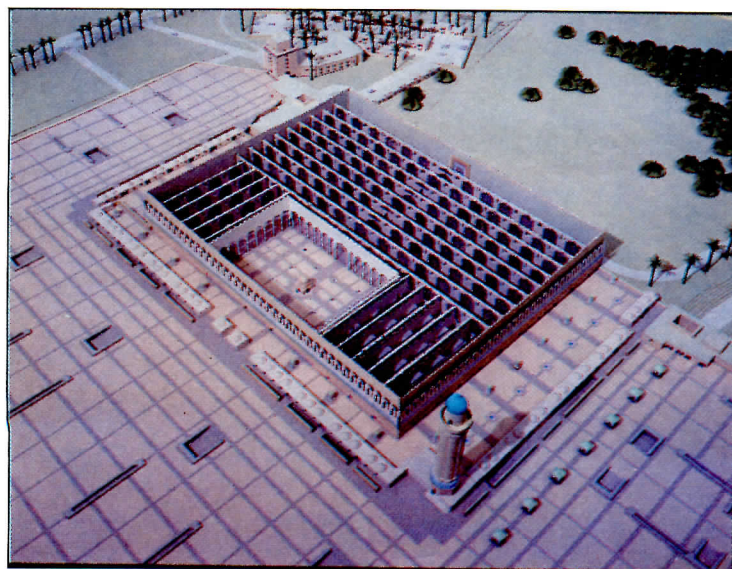
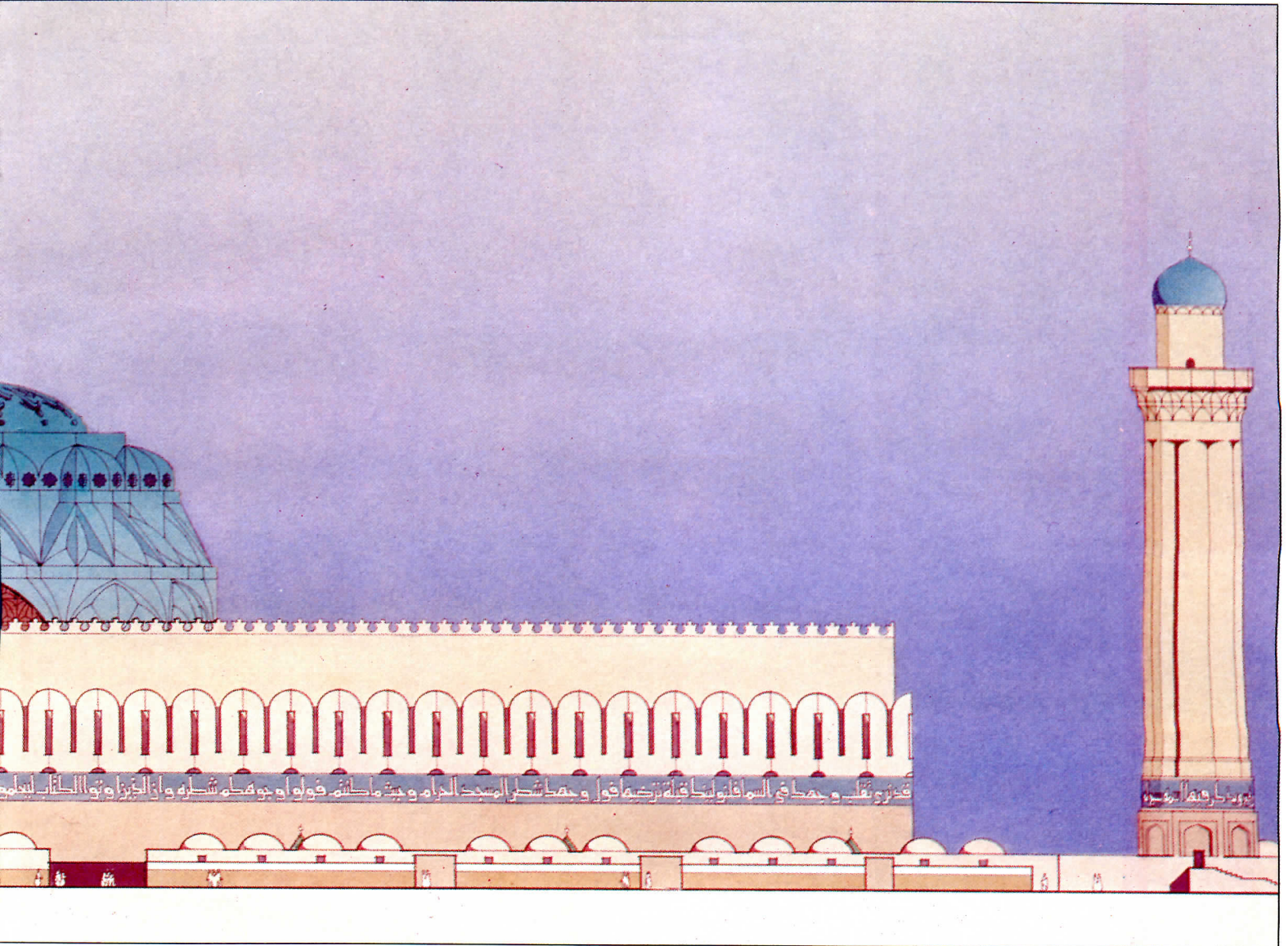
VR&SB chose a hypostyle plan for the mosque. As can be seen in the section and roofless model photo (below) and the plan (page 146), it consists of rows of closely spaced columns supporting a series of deep trusses that carry a flat clerestoried roof. VR&SB point out that the hypostyle configuration is the primordial mosque space throughout the Islamic world. Particularly important examples of

this type were native to Iraq and were the prototypes of mosques elsewhere. Its characteristically Islamic spatial quality, they note, has a particular ability to accommodate the great size and inherent monumentality of a mosque for 30,000. At the same time its nonhierarchical and repetitive architectural expression allows the individual worshipper to relate to the interior space without being



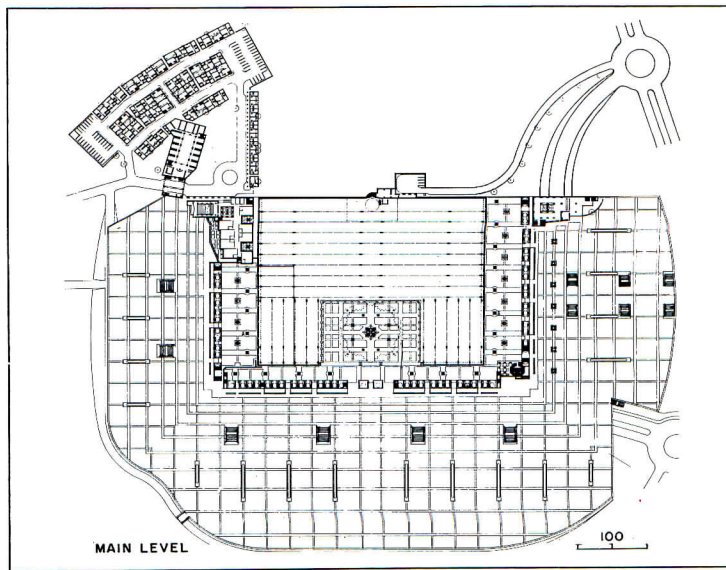
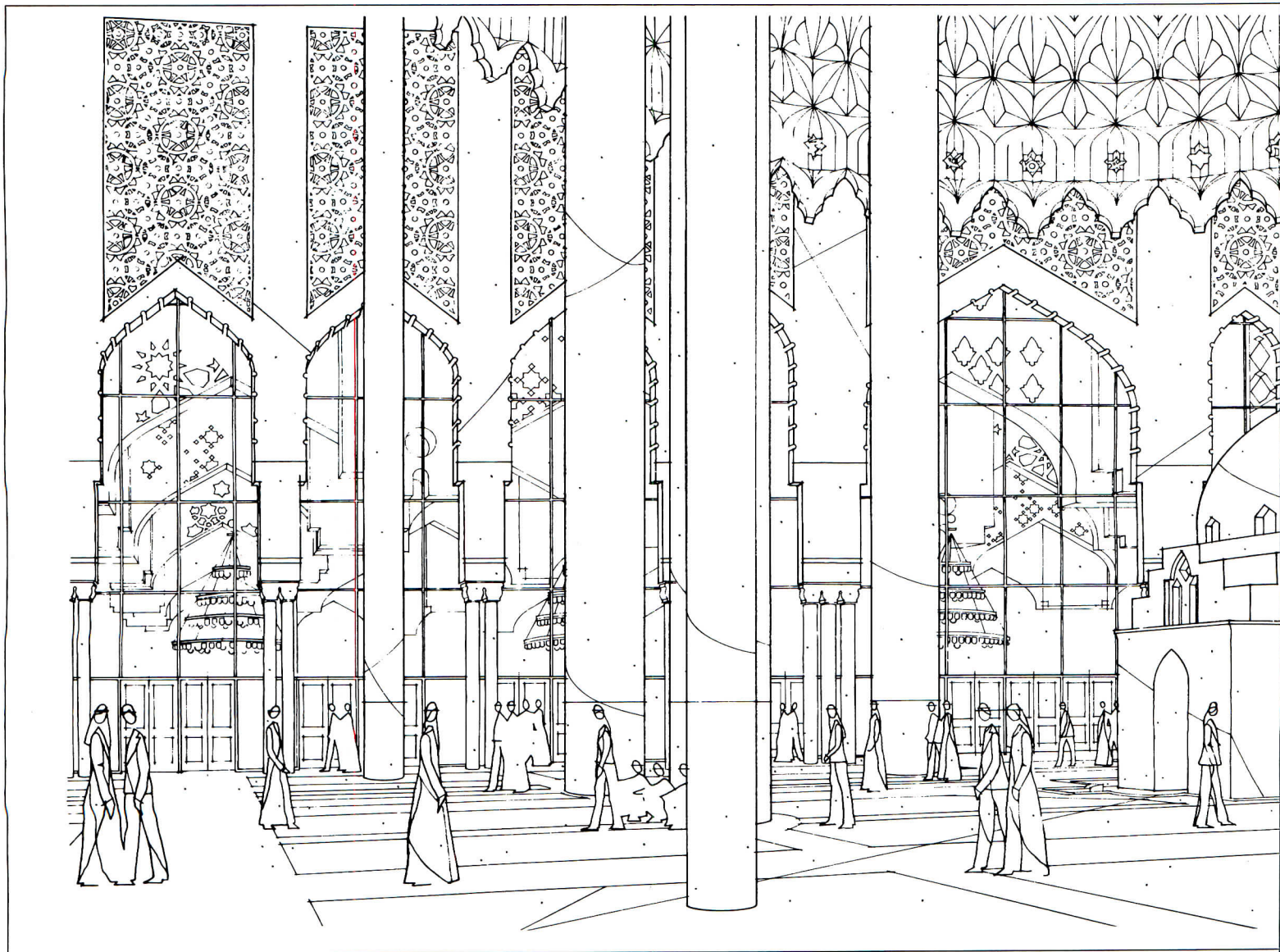
overwhelmed by the size of the building as a whole. The dome and minaret identify the mosque from across the city, a use of traditional forms understood by all. As the model photograph (pages 142-143) indicates, the architects have given the mosque an appropriate scale and symbolism in the middle distance by grouping the ancillary facilities—school, library and residential complex—in a cluster at

the base of the east wall. Visitors approaching from this direction see the great wall of the mosque rising above this “urban quarter” in the foreground. The walls are crested by a turquoise and white band of inscription and large-scale merlons. The vast dome appears to float above the masonry walls.



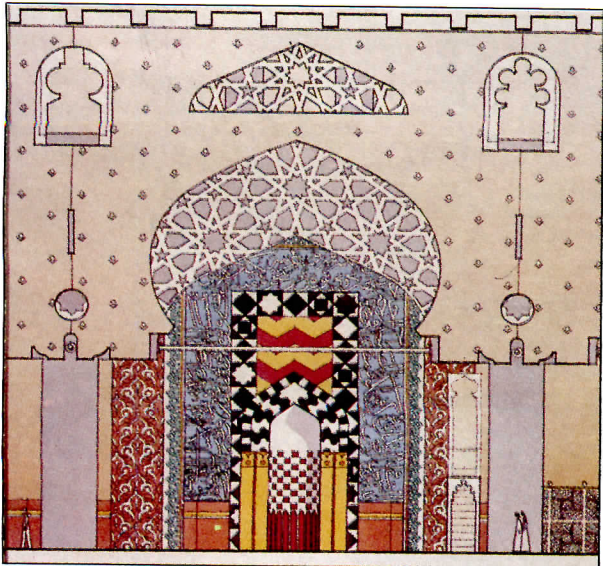
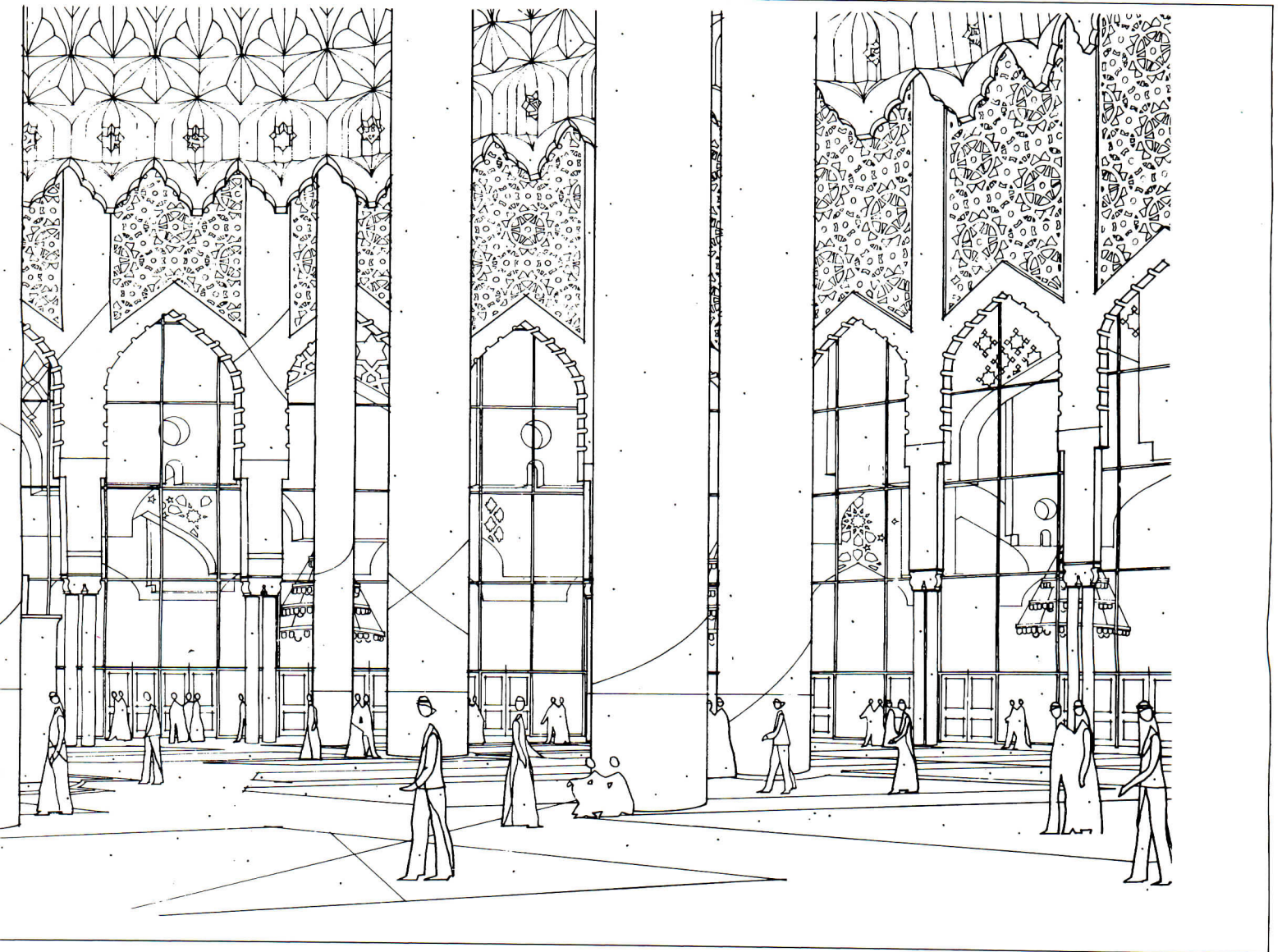
As the plan below indicates, the mosque is surrounded on three sides by an immense podium which is also the roof of a vast parking garage. Worshippers reach the podium by various flights of stairs from the parking and roadway level. VR&SB have placed the dome over the sahn (courtyard) rather than more traditionally above the mihrab (niche indicating direction of prayer toward Mecca). Thereby,

instead of creating a central focus within, they have emphasized the importance of the sahn as an outdoor worship space. As suggested in the perspective drawing below, they have designed the dome as "a huge tree, but light and airy, whose great uplifted canopy shades the sahn and the people assembled there. By not attempting to integrate the dome within the sanctuary, we are better able to



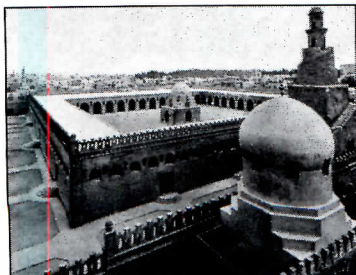
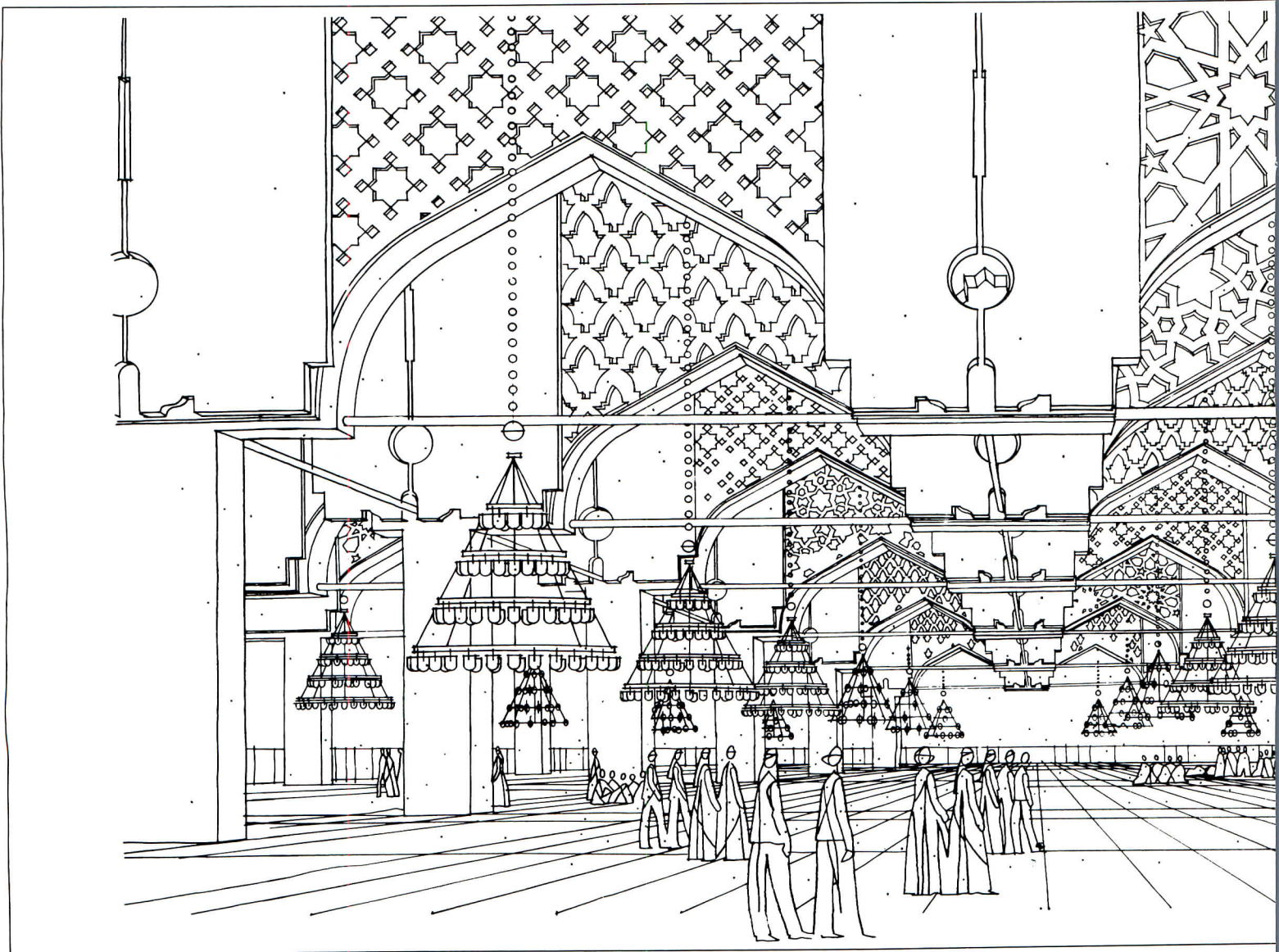
preserve the egalitarian quality of the hypostyle plan. The form of this dome is also not traditional but its faceting is inspired by the muqarnas (stalactite work), one of the most outstanding inventions of Islamic architecture." Essentially a dome within a dome, the muqarnas elements of each layer are of varying scales that admit light through the spaces between them. VR&SB point out that the choice of

muqarnas as the generating principle of the canopy dome "is also relevant in Baghdad, where theoretical and applied investigation into the nature of geometric figures and their rotation was developed during the middle Abbasid period." A smaller dome enhances the space in front of the mihrab, delineated with its adjacent minbar (pulpit) in the drawing below right.

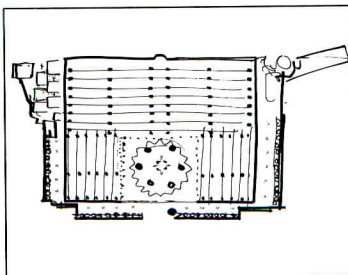


The interior is oriented toward the mihrab and minbar which are just visible as the focal point of the perspective below. This interior, unlike its traditional prototypes, most notably the Ibn Tulun mosque in Cairo, has far more arches than columns. The pruning of columns and their replacement by great spans makes it clear that the mosque is a product of advanced technology. These arches are an

integral part of a series of structural trusses supported at regular intervals by widely spaced columns. The arches form arcades which stress the orientation toward Mecca. The arches are further juxtaposed with decorative screens that in the variety of their patterns are intended to delight while giving a sense of scale. VR&SB's general approach to scale is another important element. As they explain:



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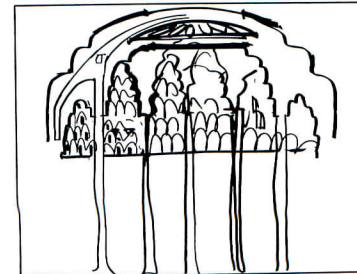
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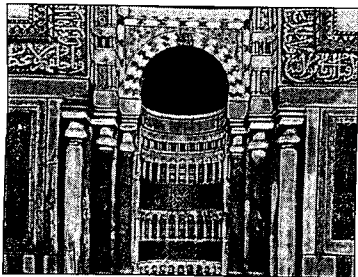
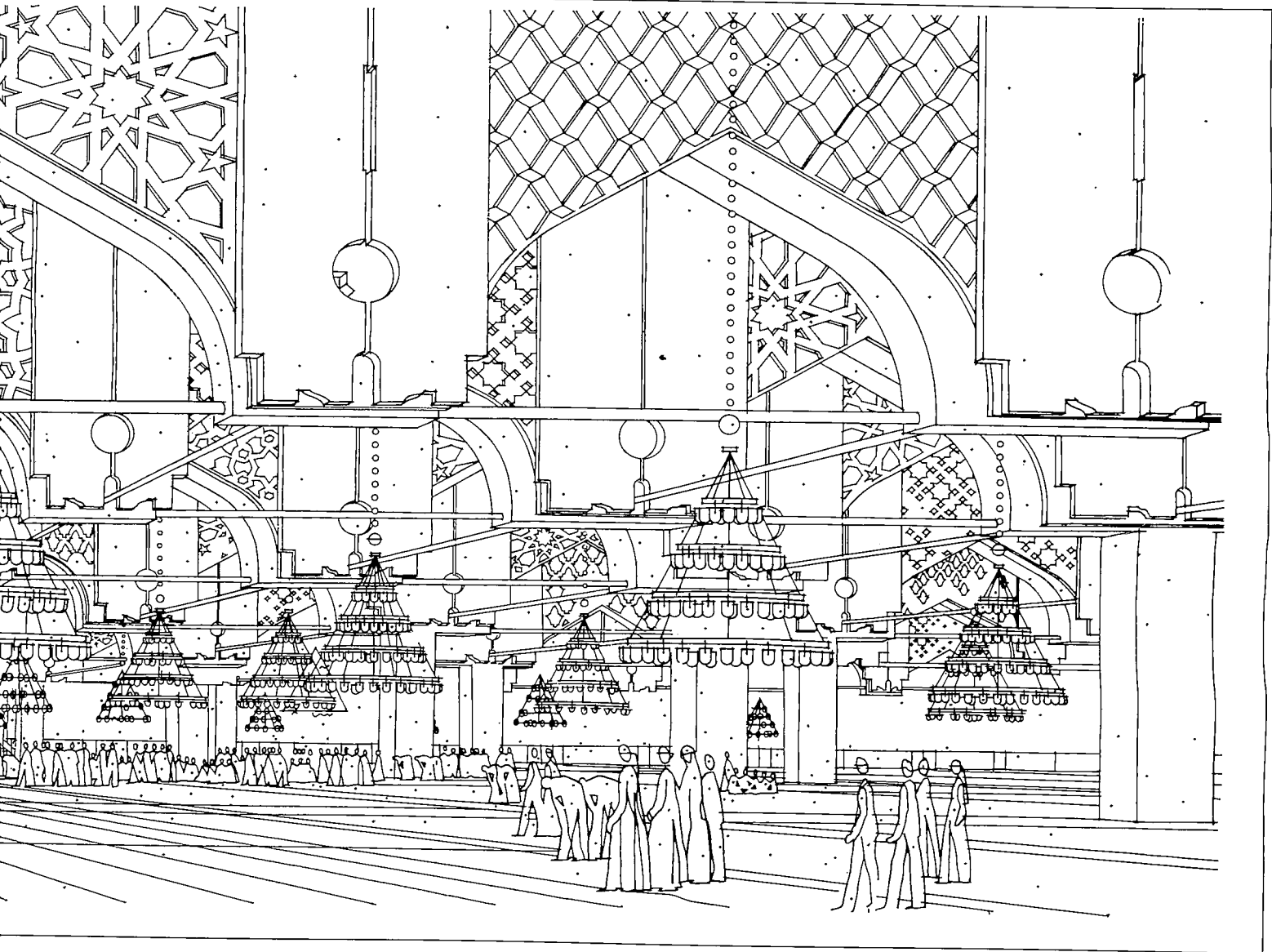
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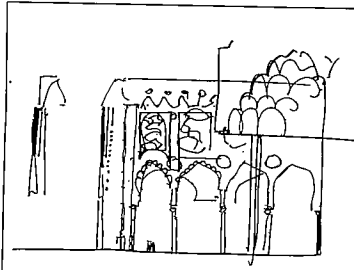
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"We have combined the traditional formal and symbolic elements of the hypostyle mosque, but we have increased their size while maintaining their proportions and relationships. In this way we have been able to project a mosque which, while very big, is very familiar. At the same time we have juxtaposed a second smaller order of scale to contrast with the monumental. It is identified with

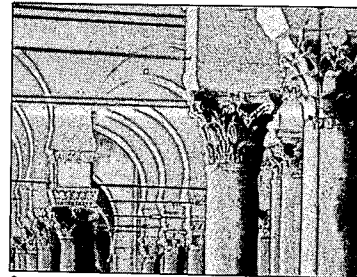
the individual and acts to make the mosque a human as well as a monumental expression." Shown below are several of Robert Venturi's early conceptual sketches (2, 5, 8, 9) and some of the sources that inspired him: Ibn Tulun Mosque, Cairo (1, 7, 10); Imam Dur, Samarra (3); Sultan Qala'un, Cairo (4); Great Mosque Kairouan (6).



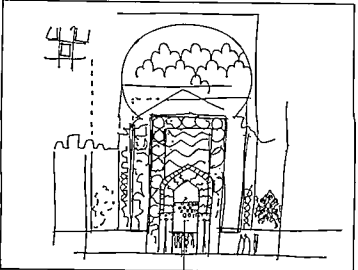
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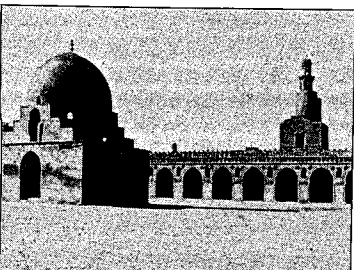
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From the past into the future: On two designs for state mosques

By Oleg Grabar

Statistical evidence may not be available to prove it, but it is a reasonable guess that, next to simple dwellings and housing ensembles, mosques form the largest group of functionally defined buildings to be constructed today. Every new Muslim community requires a mosque, many older ones remodel ancient places for gathering and prayer or replace them with contemporary creations, and new states, new capitals, or the active presence of Muslims in non-Muslim lands demand monuments restricted in their use to the Faithful but frequently also expressing power, wealth, piety, and a self-conscious and at times militant cultural identity.

The vast majority of these mosques belong to two types. Many are more or less faithful and more or less (usually less) successful but expensive marble and concrete imitations of the several historical and geographical traditions which had grown all over the Muslim world: the Mediterranean hypostyle with its Indian variant, the dome-centered Ottoman type, the Iranian *eyvan* and court type, and several variations on these classical themes. Others, most successful in West African Muslim cities like Djenné in Mali but found also in hundreds of villages and small settlements elsewhere, use local materials and traditional craftsmanship and belong to the intellectually vague but, in some circles, critically acclaimed manner known as vernacular architecture. Both of these types are easy to explain, as they reflect the intrinsic conservatism of any religious architecture, the expectation for long-established practices of comfortable and traditional settings, in some cases a continuous local tradition carried through generations of craftsmen, and in other cases (as in Jakarta, Ammann, Kuala Lumpur, Dakar, or several places in Saudi Arabia) a more learned, or at least bookish, commemoration of celebrated monuments built before 1700.

In recent years, however, a more interesting and more creative trend has made its appearance among designers and builders of mosques. Several impulses affect it. One is that, as extensive building programs acquire a style instead of being ready-made imports of soulless tool kits, the mosque needs to be fitted within an over-all system

of formal ideas. Another one is the effect of postmodernism and paramodernism; greater freedom of formal expression has affected most traditional and set ways and the mosques, it is felt, can be liberated from the constraints of the past. A third impulse affects primarily Muslim architects who seek to find new but acceptable forms for this most uniquely Muslim function. And, finally, however proud national or regional vanity can become of its hotels, airports, or commercial centers, mosques provide an indisputable statement of cultural identity. Those mosques that are also contemporary architectural statements would serve as truly genuine symbols of cultural revival for the Muslim world.

Two examples, of the Venturi, Rauch and Scott Brown project for the Great Mosque in Baghdad (pages 142-149) and the Halim Abdelhalim design for the Mosque of Osman Ibn Affan in Qatar (pages 152-153) are prime examples of many of these points and many other peculiarities of the new architecture in the Muslim world (with some variants, one could say, for the Third World in general). Both were proposed to international juries in answer to programs that required, formally or not, major monuments to be much more than places for the faith of Islam. In the case of Baghdad, the capital of the universal Abbasid Empire in the 8th century, the objective was to fill a very odd gap for a major and old Muslim city: the absence of a "historical" congregational mosque for the whole urban community.¹ The Iraqi government's specifications required an air-conditioned space for over 30,000 worshippers as well as a very elaborate program of services, cultural and educational institutions, and permanent or temporary living quarters. Although less ambitious in its size, the Qatar mosque also included educational and other services and, by giving it the name of one of the so-called Orthodox Caliphs of Islam (the name usually of the first four successors of the Prophet, whose memory is venerated as particularly holy by nearly all Muslims), the ruler of Qatar clearly wished to endow it with a greater importance than that of a place for community worship. Thus both projects had to provide a unique semantic charge above and beyond the practical or pious functions. Although I am only familiar with the details of the program for the Baghdad

mosque, I am reasonably certain that the other one also required the monument's justification in geographical and historical terms, so that it be interpreted as part of the historical evolution of an area and thereby assert cultural continuity.

In answer to these spoken or unspoken specifications, neither architectural team simply took some obvious model—the mosque of Ibn Tulun, the Selimiye, or Isfahan—and put it in some contemporary sauce. Both sought to do something else and both succeeded in raising fascinating issues about mosques and, more profoundly, about how contemporary art and technique can meet a nexus of emotional and cultural expectations for highly traditional purposes which have hardly changed except in minor details (with one exception to which I shall return) since the 9th century at the very latest. Both projects also succeeded in suggesting potentially exciting monuments. Neither one is likely to be built for reasons that have little to do with their own merits but a lot to do with the economics and politics of ambition.² But some at least of the lessons they propose and of the questions they raise may be discussed anyway.

Even though I shall be, constructively, I hope, critical of both projects, I want to reiterate my conviction that they are both brilliant attempts to deal head-on with the major issue of being contemporary and traditional at the same time.

The Baghdad mosque is replete with self-conscious and fully acknowledged historical references, from details of decoration like the powerful inscription on the outside, to the general composition as in the artful use of an open transitional space on three sides of the building, or to the internal rhythm of two domes on the axis of the mosque. The rather spectacular development of horizontal and vertical space in what was going to be, I think, the largest unified architectural space in existence owes its vocabulary of long arcades and of layers of visible arches to the experiments with the hypostyle plan carried out between 700 and 1000 in Iraq and around the Mediterranean. Later experiments with large hypostyle spaces were made in the different idioms of eastern Iranian (Mosque of Bibi Khanum in Samarqand) or Indian Islamic architecture. For reasons which may have had something to do with a political history, the

oldest possible models, traditionally explained as Arab Islamic, were chosen for the structure of space, while the ornamental patterns all derive from much more recent developments, including some 18th and 19th century ones, and without the same national or ethnic associations. Does it mean that the conception of space and the patterns of surface design have different ideological contents? Does it matter in a contemporary building that it is so easy to identify a formal eclecticism which chooses from the past according to contemporary visual interpretations of that past rather than from a vision of past monuments as closed and completed syntagmas of their own? Does this reshuffle of centuries of history mean that a new modern style of Islamic architecture in an Arab context is being proposed? So many specific questions which imply a single far more profound problem. If the monuments of a long-gone past are to be transformed into new combinations, it is either that they possess intrinsic values independent of the time they are used or that a contemporary cultural decision has been made to return to older values. Both arguments can be made for the Baghdad mosque, for its objective of being the congregational mosque of a city, almost of a state, does put it in a league with the very old mosques of Cordova, Kairouan, Ibn Tulan, Damascus, and Samarra, but it is also true that no other solution for a unified and undifferentiated space for 30,000 people has ever been devised (except for sport complexes).

Two more concrete features of the mosque make my point clearer. One of the visually most exciting features of this project is the tremendous, 166-foot-square, *muqarnas* (stalactite) double dome.³ It is a powerful exterior sign, a potential cultural landmark, and a stunning solution to the necessity imposed by the program of avoiding a space open to the sky. Its distributive function within the mosque is clear and necessary and, while I may worry a bit about some of the decoration proposed for it, its role as a separate unit, yet one tied to the whole, is brilliant. It is also a truly innovative feature to put the highest and most luxurious part of a mosque near its main entrance rather than near the *mihrab*. Yet this innovation is presented as nothing more than a

traditional court (which it is not in form, even if it is in function). Could it simply be because no term could be found for it other than *sahn*, court? Is this not a case when architectural novelty and imagination were hampered by the failure to give it a new name and the obligation felt to adapt to it an old and improper term? The same clash between architectural instinct and cultural obligation occurs with the minaret, set in an outside corner like an overgrown waif. This, of course, is exactly what minarets have become. With loudspeakers and magnetic tapes, their specific pious or liturgical purposes are gone. With television towers and 20-story office buildings, their actual meaning within the urban order has disappeared. They remain as forlorn leftovers from an older time and, however well designed, seem nothing more than copies, magnified to the scale of the rest of the building, of older minarets. These two examples illustrate to me the problem posed by this Baghdad project within the historical perspective I have outlined. It is that its architectural inventiveness, at times, as with the dome, a brilliant one, seems hampered, held back, almost squashed by the fear of offending the past. And in dealing with the past, it hovers uncertainly between direct quotation and free interpretation. In this sense, it reflects perhaps in a most profound way the issues of Islamic architecture and culture today.

The Qatar project is, at first glance, a very different one. Its task was simplified by a less grandiose size than Baghdad's. The mosque appears as a stunning geometric composition in three dimensions, based on a simple square that is subdivided, multiplied, rotated, and otherwise manipulated in a most spectacular way. Every surface, floors, walls, or ceilings, is organized according to this geometry, which is, however, most successful in the way in which the minaret, the roof, and the dome in front of the *mihrab* are all combined in a single, logical, construction of facets integrated into and derived from a single, relatively simple, modular system. Through this formal integration, the minaret, for instance, is no longer a lonely tower, but the necessary high point towards which the whole building aspires or to which its superstructure, like an enormous canvas, is attached.

In two key ways, the Qatar

project is a truly fascinating innovation. First of all, it picked up from the Muslim tradition not so much a system of forms, a morphemic structure, as a set of principles, a semantic structure. It asserts, powerfully, almost brutally, that complex geometry is the organizing force of a monument and thus rediscovers principles which had been worked out by the mathematicians of Baghdad and of Central Asia in the 10th and 11th centuries and which have been studied in some detail by a group of Soviet architects and architectural historians from Tashkent.⁴ It is a system which fully belongs within the Muslim tradition. But, and this is my second point, the Qatar project makes explicit and inescapably visible something that was subdued and implicit. I shall return shortly to one important aspect of this point. What matters, at this stage, is that the visibility of the organizing principles and the possibility of setting them in abstract and general terms make this mosque into a model for other buildings and create the potential for an architectural style.

Two difficulties, however, complicate matters somewhat. One may be only an inadequate impression provided by drawings which, in their very nature, distort architectural reality. It is that the building resolves itself too much into two-dimensional patterns, that its spaces are unclearly seen and overly dominated by designs, and that, as a result, architecture becomes the master rather than the servant of the activities of the monument. There is ultimately fussiness in a type of design that is perhaps more ornamental than structural. Is this appropriate for a mosque? Is it good architecture? The second and more serious difficulty is that the ideas and principles that led to the planning of this mosque derive from a traditional Islamic discourse on geometry which had been reserved until then to flat surfaces, with the one capital exception of the *muqarnas*. And it is indeed from a consideration of the *modus operandi* of this most uniquely Muslim form that Abdelhalim's design seems to have been derived. But one may question the appropriateness of extending to a whole building the characteristics of a form which had a consistent and important but limited (doorways, cupolas, moldings, capitals) function in traditional Islamic architecture.⁵ It is not from the completed, morphologically unified,

examples of the *muqarnas* that the search for a new esthetic and for new styles should derive, but from the principles and ideas which led to them and from the interpretations which were given to them in their time and later. Fascinating though it is in itself, the Qatar mosque is even more interesting in the questions it raises for further research and further design.

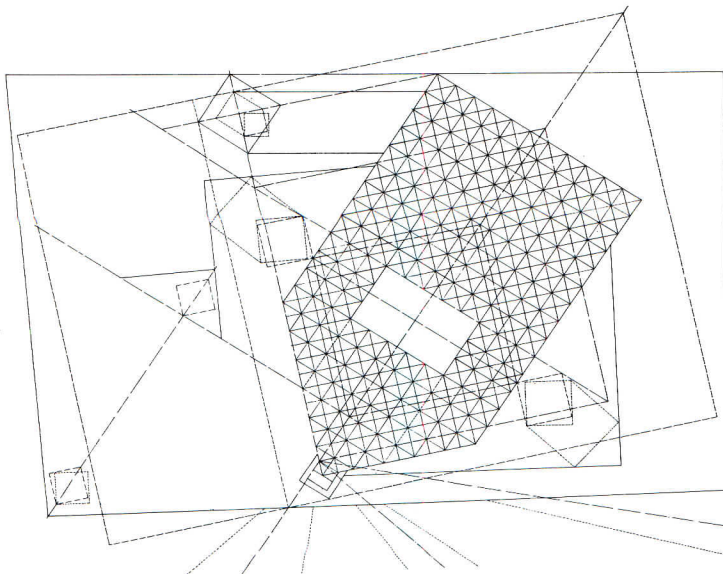
To sum up, these two mosques, developed for official as well as pious purposes, by representatives of the two most active classes of creators of a new Islamic architecture—the prestigious Western firms and the young, Western-trained, Muslim ones—point toward an architecture which will meet the three requirements of contemporaneity, of quality, and of relating to Muslim traditions of building. The first two requirements have been met more than adequately, but the third one seems still problematic to me. It is so precisely because the two buildings have been successful in presenting two ways of dealing with the memories of the past. In the Baghdad mosque, whatever criticism one may have of details, old mosques have inspired the designers in such a way that, while sources are quoted, the building is in reality something quite new and different; in less skillful hands, this approach can easily lead to pastiches, in ways well-known to students of neoclassical or neopalladian architecture. The Qatar mosque is formally more innovative, but its relationship to the tradition is not immediately visible and, as a model, it can easily lead to empty geometric exercises, as had happened more than once in contemporary architecture.

The way out of these difficulties and potential dangers requires that historians pick up the gauntlet thrown at them by practitioners and develop a critical vocabulary for judging and evaluating the buildings of the Muslim past. This vocabulary should be such that it does not betray the time-bound value of a monument and yet manages to be translatable into contemporary forms and techniques. Its elaboration demands a dialogue between historian and practitioner that is quite different from the discourses of Renaissance Italy, when a single classical culture permeated the whole world of art and thought, and somewhat (but less so) different from the discourses of the 19th century seeking to discover "national" architectures.

It is to be a dialogue between an almost limitless technology and imagination, a frequently esoteric and antiquarian knowledge, and a set of ideologies and ambitions—national, cultural, or simply conspicuous—which are themselves frequently ignorant of technology as well as of history. Whether such a dialogue between patron, maker, and philosopher can in fact be developed remains to be seen.

1. The two main sanctuaries of the metropolis, al-Qazimayn and Abu Hanifah, are sectarian foci and, in a manner well fitted to Islamic history, the planning of the new mosque had the constructive national objective of expressing the state's unity above sectarian differences. The same idea lies behind major buildings in Senegal, Mauritania, Malaysia, Indonesia, Jordan, and most of the Gulf states, and deserves further investigation.
2. As of the time of writing, the Baghdad project was shelved for economic reasons and the results of the competition were never officially announced. For Qatar, another project was eventually chosen, even though the jury was particularly fascinated by the one under discussion.
3. If one wanted to be historically difficult, one would point out that the double dome, which makes perfect sense in the instance of the project, is previously an Iranian and further Eastern phenomenon rare in the Arab or Mediterranean worlds.
4. The coincidence is all the more remarkable since these works published only in Russian were unknown to the architect who designed the Qatar mosque.
5. Most of the exceptions, like the ceiling of the Cappella Palatina in Palermo, were done for non-Muslim patrons.

A geometry for prayer

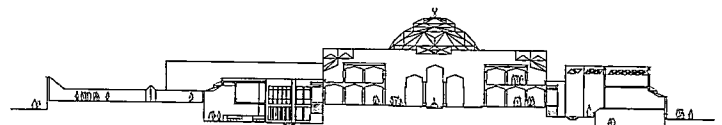
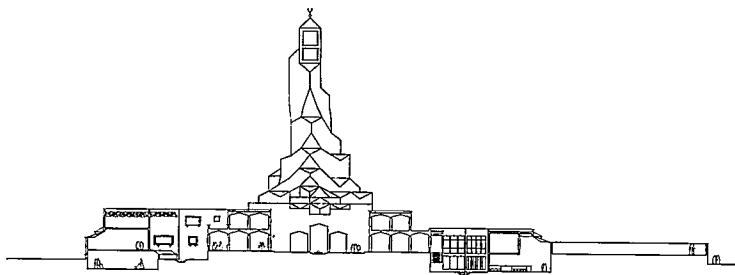
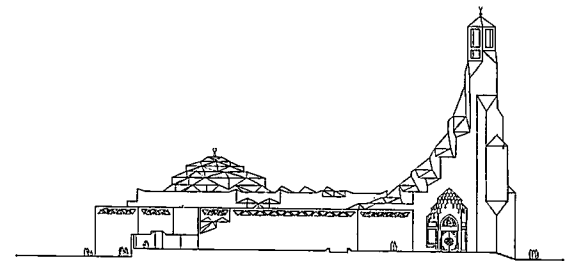
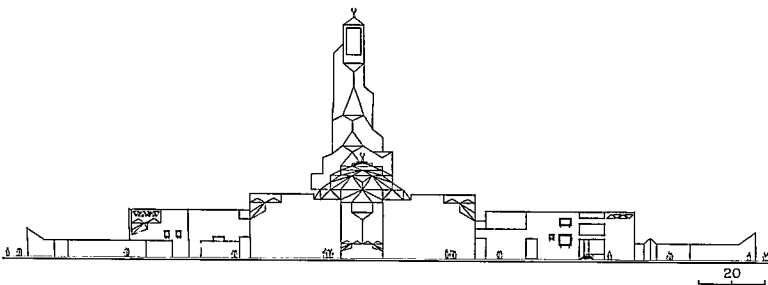
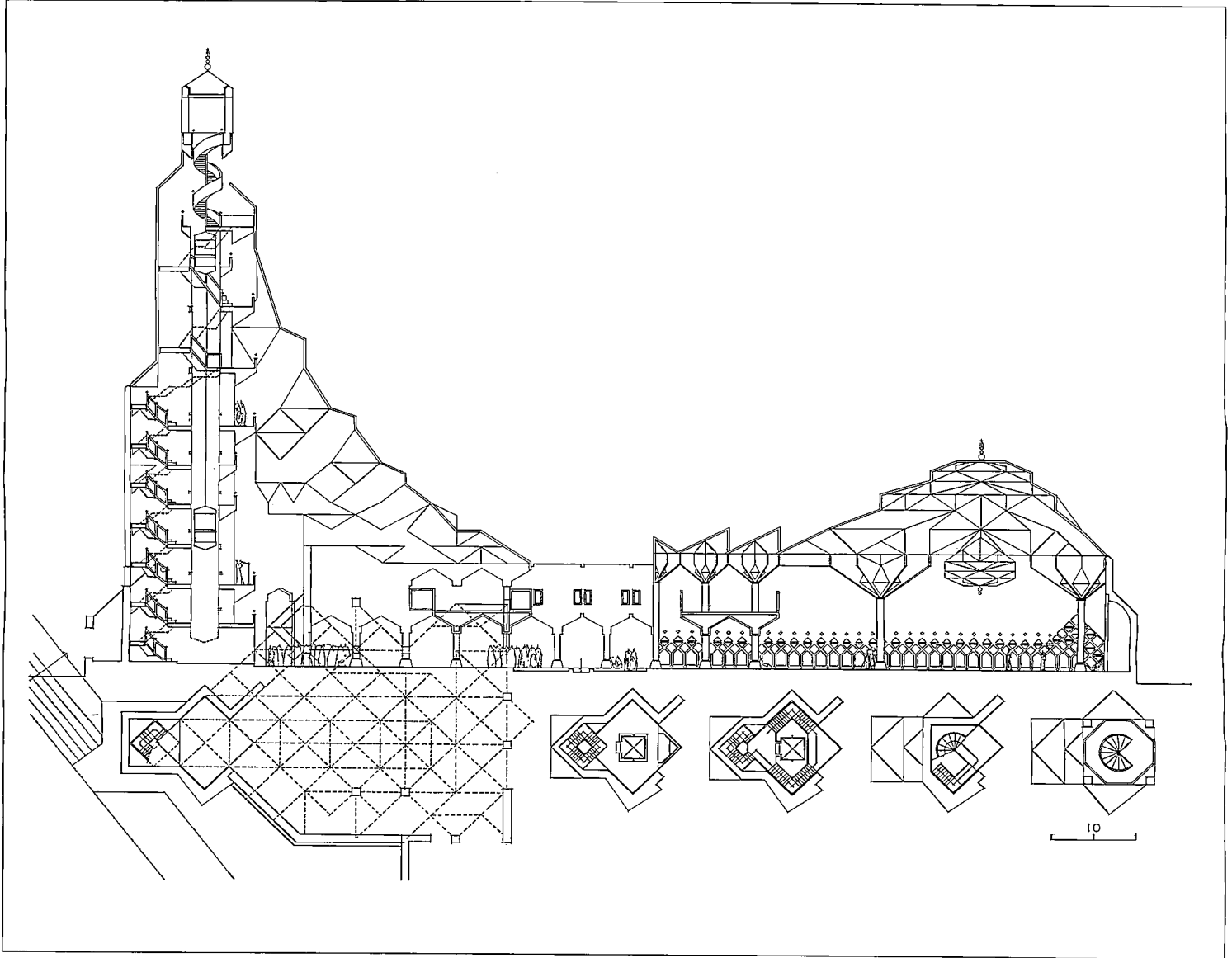


This mosque, unfortunately, will never be constructed, as it placed second in a competition to design one of the four grand mosques to be built in Qatar. A facility for 3,000 worshippers, it was to have a Koranic school, a residence for the Imam, an ablution fountain for men and women, a public plaza for ceremonial prayers and a parking space for approximately 100 cars. The significance of the mosque's extraordinary crystalline form is discussed by Oleg Grabar (pages 150-151). Architect Halim Abdelhalim himself, however, has his own metaphysical rationale. For him the dome has been invalidated as a symbol of the universe by the passage of man into outer space. Furthermore, the passage of the human mind into the inner nature of matter, to the atom, has made the geometry of the *muqarnas*, as traditionally used, a naive symbol. Abdelhalim's mosque, therefore, is domeless and his uses of geometry, although rooted in the *muqarnas*, seek to find a new symbolism in the structure of crystal. "The content of the crystal," says Halim, "its substance, is defined by its interaction with light, its ability to turn light into illumination. Thus the crystal stands as a significant symbol of the meaning and the structure of the mosque." M.F.S.

The plan is of the main floor and indicates (1) the terrace for outdoor prayer; (2) the entrance transition; (3) the courtyard; (4) the sanctuary; (5) the Koranic school; (6) the Imam's residence; (7) the women's fountain; (8) the men's fountain. The diagram (opposite page bottom) shows the rotation of the plan to match the orientation to Mecca. The mosque domain is expressed in a dotted line and the city domain by

a solid line. The point of rotation becomes the place for the minaret. The minaret (section and elevations below), which traditionally represents a vertical transformation from the earth to the sky or from the profane to the sacred, was formed by truncating a square into an octagon, then forming a circle and finally a point. Halim wished to transform the

minaret from being a looked-at object to a walked-and-climbed-through space, turning it from a landmark seen from the distance to an element of contemplation by the worshippers. The experience of climbing to the top would not be reserved for the muezzin but could be enjoyed by the whole community.





An up-to-date movie palace

Galaxy Theaters
San Francisco
Kaplan/McLaughlin/Diaz,
Architects

Splendor! Dreams! Passion! Pizzazz! Gorgeous people! Gorgeous clothes! A cast of thousands! To wrap it up, glamor—the more the better. These were the compelling ingredients of the movie palace. Fifty years ago, architecture and films marched hand in hand to lift audiences from, as the line goes, their little humdrum lives. But in the analytical late years of the 20th century, neither budget nor taste encouraged architects Kaplan/McLaughlin/Diaz to design an ersatz Spanish castle to house the Galaxy Theaters. At the same time, both they and their client flatly rejected the windowless boxes and tawdry decorations that have become all too familiar in the design of contemporary movie houses. What they did instead was to raise a 75-foot-tall beacon at a corner near downtown San Francisco, where it not only entices audiences but serves as an identifying landmark in an emerging mixed-use neighborhood.

On the exterior of the theaters, the chief instrument of glamor, beside the glowing beacon, consists of columns and capitals lighted from the inside out at the front edge of the entry porch. Applying the theory that delusion is a fair stratagem for theatrical effect, the architects played a little game with the colonnade. While the bases of the columns have fluted burgundy aluminum jackets, the jacketing directly below the capitals is clear tempered glass. When lights are turned on inside the glass, the white-painted steel columns within seem to disappear, suggesting that only effulgence supports the glass tower.

On the interior, glamor is born of lights, glistening brass and rosy colors. There, as on the exterior, the design vocabulary consists mainly of a 7½-foot cubical grid, double the dimension of the structural grid. An outside concession stand, surmounted by a brass cage that fills the glass atrium, dominates the entrance lobby, which is itself outside. (The city, which takes a strong interest in both urban planning and architectural design, wanted generous lobby space to forestall audiences spilling onto the sidewalks between showings.) The concession stand, apart from its sparkle, contributes its own measure of gustatory glamor: in addition to the requisite popcorn and Milk Duds, it offers fancy baked goods and imported chocolates, and it is open to workers and residents in the neighborhood through the day even when no film is scheduled.

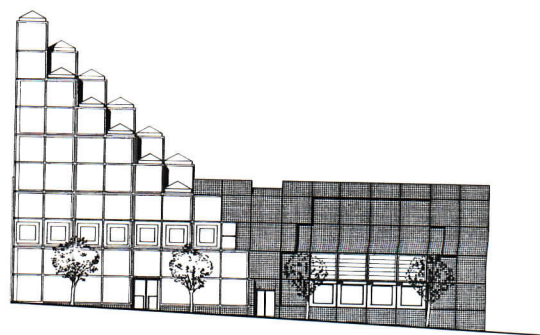
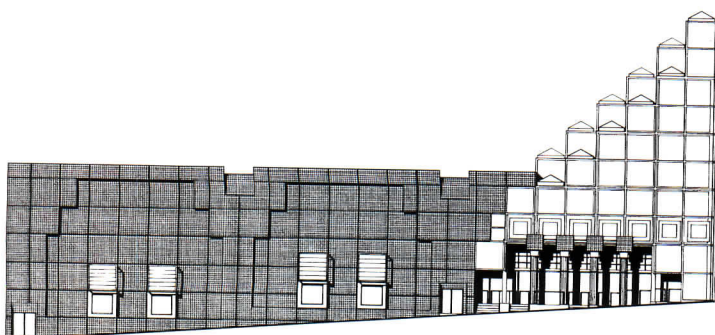
The facility incorporates four theaters, seating a total of 1,774 people. The 24,000-square-foot building cost approximately \$6.5 million. *Grace Anderson*

John Sutton photos



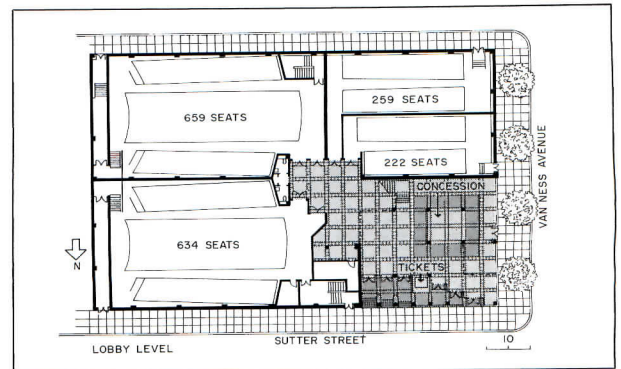
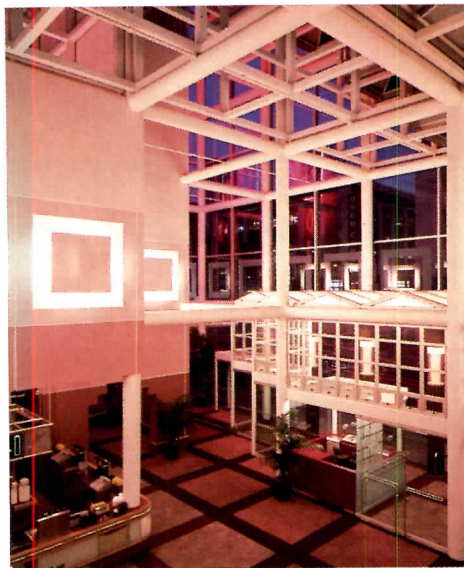
At the Galaxy Theaters, green-tinted glass rises in steps to the topmost cube 75 feet above the sidewalk. A pyramidal skylight sits on each of the ascending cubes. Etched square glass panels around the entrance cornice turn rose after

dark, when they refract the pink and burgundy interior. On each side, solid walls are finished with dark gray porcelain tiles and light gray medallions, which hold signs and posters for current attractions.





The entrance lobby that serves four cinemas at the Galaxy Theaters is decorated in shades of pink and burgundy, a latter-day version of the dark red traditional in theaters. An interlocking grid, which echoes the form of the surrounding laminated tempered glass atrium, comprises structural steel tubes wrapped in prefabricated gypsum jackets, as well as a brass cagelike concession stand (directly left and opposite). Because of San Francisco's mild weather, solar heat gain is inconsequential, allowing the omission of hvac in the atrium; operable windows above the ticket office (center left) obviate the need for fans. A wide stairway leads to offices and toilets upstairs and to a much-used glass-railed balcony for people-watching (bottom left).



Galaxy Theaters
San Francisco

Owner:
United Artists Communications, Inc.

Architects:
Kaplan/McLaughlin/Diaz—
Herbert McLaughlin, senior partner, and Jeffrey Heller, partner-in-charge of architecture, partners-in-charge; James Webb, project architect; Robert Karn, project designer; Tom Monahan, construction administrator

Associate architect:
Stan Stanovich

Engineers:
Robinson, Meier, Juilly & Associates (structural); Charles Braun (mechanical); Silverman & Light (electrical)

Consultants:
Peter Kaldveer & Associates, Inc. (soils); Charles Salter & Associates (acoustical); Lucasfilm Ltd. (sound system)

General contractor:
Perini Corporation



Hot Popcorn	12.70	2.00	1.00
Cold Drinks	1.70	1.20	1.00
Freshly	2.00	1.20	1.00
Assorted Snag	2.20		

Galaxy
U
A

Budget

Delicious
Tiramisu

A 400-ft clear-span: straightforward and elegant

The bright red doors of Delta Airline's new base-maintenance hangar at Tampa International Airport open to a 400-ft-wide clear-span space that accommodates two L-1011 airplanes—the largest in Delta's fleet—and permits the aircraft to be moved in or out independently for safety checks and maintenance. The 400-ft clear-span is the second longest in the United States but according to structural engineer Andy Gravino, who also helped design the largest (a 600-footer in Atlanta), site constraints that included a high water table and a strict limit on building height made this hangar at Tampa the more challenging.

Delta launched the project in 1980 when the Miami Airport Authority reclaimed, for airport expansion, land on which Delta had operated a maintenance hangar since 1972. Delta selected the Tampa airport from among others in Florida for its quality, receptive airport authority and status as a prime destination. The site itself, however, located between runway 32-right and parallel Westshore Boulevard, had a high water table and an FAA slope clearance line—an imaginary ceiling sloping up from the runway above which no structure could penetrate. The resultant shallow building envelope precluded the use of arches, or the Erwin-Newman cantilevers that were used for Delta's 600-ft clear-span hangar at Atlanta. Besides offering structural efficiency, either of these systems would have lent to the hangar an architectural character that Delta wanted: something other than a static box.

The structural system selected consists primarily of three parallel, 400-ft long Warren free-end trusses—each less than 31 ft deep with a 15-in. camber—that are connected flexibly to steel columns. Radialube bearings interposed between the trusses and the columns have curved surfaces to keep gravity loads from the trusses bearing concentrically on the columns. Massive hold-down plates in the bearing assemblies (see drawings bottom right) keep the trusses seated on the bearings when high winds cause uplift. The trusses resist horizontal loads through a series of sway braces, which run perpendicular to the main trusses at 30-ft intervals. These sway braces transfer the horizontal loads to columns and then to foundations. Columns are tied together with both vertical and horizontal cross-bracing systems so that they act compositely as a three-dimensional bracing system to resist horizontal loads.

The foundation is designed to resist 100-year, 110-mph winds and lesser, everyday gravity loads from the structure and two 10-ton overhead bridge cranes. Its layout, around the 10.4 million-cu ft column-free interior, is roughly C-shaped (see plan next spread). Because of the building's tremendous sail area, the moist sandy soil and high water table, 620 12- by 12-in. prestressed concrete piles were driven, some up to 40 ft deep. For increased horizontal load-bearing capacity, 90 per cent of the piles were battered.

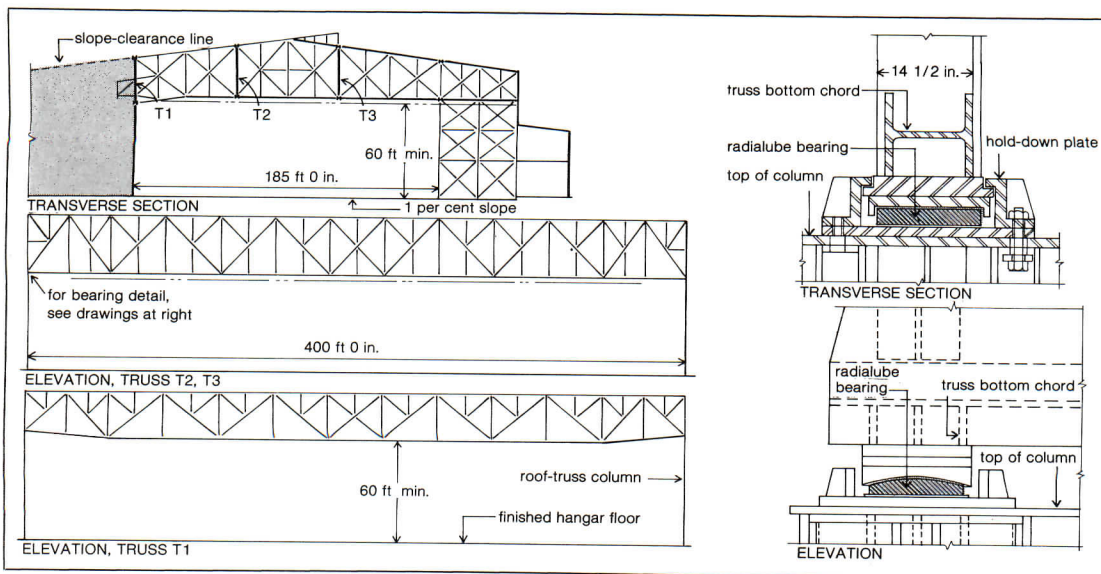
To permit the 60-ft headroom that Delta required, and stay within the slope clearance line but above the water table, the trusses had to be much shallower than the ideal, and this required the use of extra steel and higher-order computer analyses to detect, and, if necessary, correct for secondary stresses, such as moments in internal truss members.

Roofline parallels slope clearance line

In position, the trusses create a roofline that exactly parallels the runway's slope clearance line—fully utilizing the allowable building envelope. This given slope, as the design team saw it, was an opportunity to break up the large structure's mass into a collection of smaller but interrelated geometric shapes—something different than the simple box the client did not want.



E. Alan McGee photos



At the heart of this massive maintenance building at Tampa International Airport are three Warren free-end trusses. Each is fabricated from wide-flange steel sections that weigh up to 455 lb/ft. Truss sag is compensated with 15 in. of designed-in camber. For adequate headroom in the low building envelope, the trusses had to be much shallower than the 40-ft ideal for this design. Truss T1 for instance (see drawings), at each end, is only 24-ft, 4¹³/₁₆-in. deep. Radialube bearings, interposed between the trusses and the three-dimensional wind-braced frame on which they rest, permit the trusses to flex yet always bear concentrically on the columns—even in high winds (see transverse section and elevation).

A balsa-wood model expresses the complex but essentially straightforward solution. Three Warren free-end trusses create the span. Heavy cross bracing in the front, back and side walls links columns into a rigid three-dimensional frame on which the trusses bear. This frame is stiffened further by a system of braces lying parallel to the floor, just beneath the trusses' bottom chords. Fourteen

secondary roof trusses, which run perpendicular to the three main support trusses, keep the support trusses upright. The roof trusses are themselves cross braced. For low maintenance, all 3,300 tons of structural steel was wheel-abraded to white metal, coated with 3 mils of zinc-rich paint and, after erection, spray-painted with two finish coats. The foundation plan reflects the need to create a stable

Thus the roofline over the door was continued to create a clerestory and other shapes at the corners. Precast concrete panels break up the mass further, and lend a contrasting color and texture that set off the green of the palm trees and heighten the interest of the red doors. Further, the concrete panels express the heavy steel structure within this part of the building. The metal exterior wall is of 12-in. site-fabricated panels with 1/16-in. grooves on 1/4-in. centers to eliminate "oil-canning." The panels are treated with a fluorocarbon, long-warranty matte finish.

For low maintenance, the standing seam roof system comprises a metal deck welded to the structural frame and bar joists, 6-mil polyethylene vapor barrier, 2- by 4-in. pressure-treated nailers fastened to the deck with steel screws, stainless steel clips fastened to the nailers with no. 14 cadmium-plated screws, and 12-in.-wide zip-rib metal standing-seam panels. The panels measure a continuous 127 ft from eave to ridge. There are no penetrations or laps. Clerestories and vents where the two building halves meet let in daylight and contain several types of vents for exhausting air and, in case of fire, smoke.

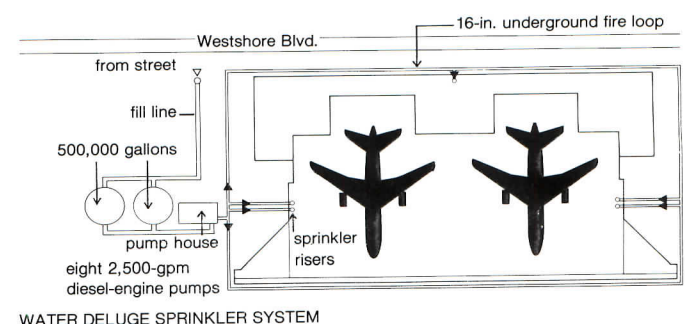
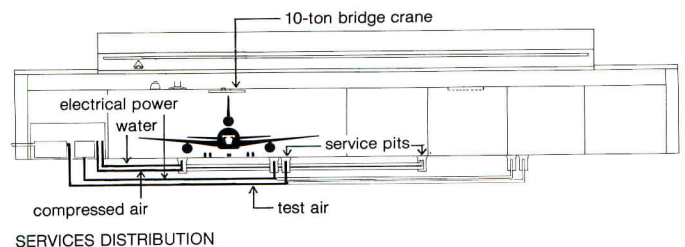
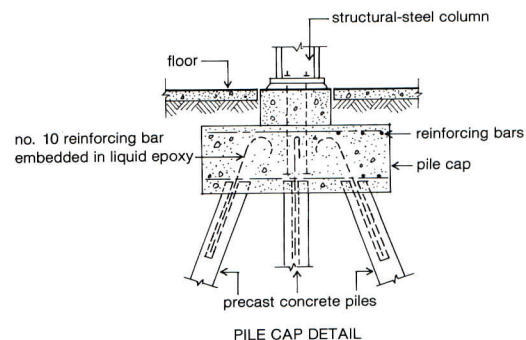
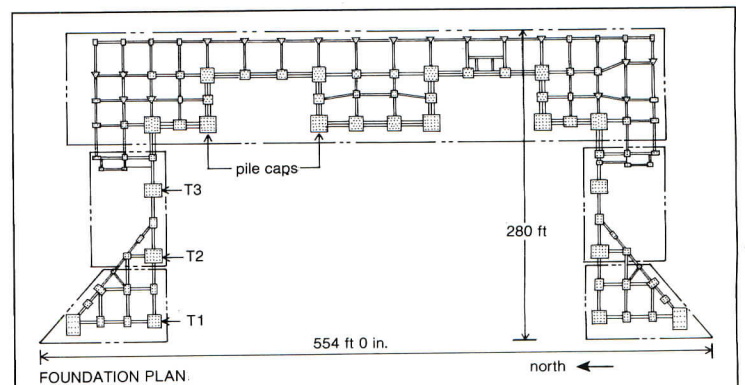
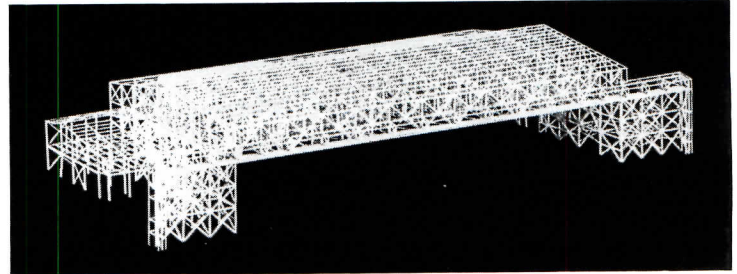
Service pits are placed in the concrete floor slab

Inside, services that usually hang from the ceiling in such facilities were installed beneath the floor, reaching 18 service pits organized about the two bays. Conduit within the slab feeds power, compressed air and water to the pits; pipes running from the bottom of each pit to a central sump provide drainage. These in-the-floor services, points out Marvin Wiley of Rosser White, the prime consultant, maintain an unobstructed interior permitting free movement for workers and planes.

Another service innovation is a water-deluge fire protection system that uses water instead of the more common foam-water system based on protein or alcohol. When the latter system is accidentally discharged (this does happen), it can create an expensive cleanup chore. Two on-site tanks together hold the million gallons of water that would be discharged were the system activated. A 1 per cent slope in both the hangar's floor slab and the 10-acre concrete apron in front of the hangar provides positive drainage to a trench drain, which discharges into a 3-acre pond created nearby. The pond handles runoff from the fire protection system or the first 1/2 in. of rain (as is required by local codes). The pond utilizes a spillway designed to skim off oil, grease or fuel should it ever be floating atop water leaving the pond.

Energy conservation and low-maintenance strategies are reflected in several aspects of the design. There is foam-cell insulation in the roof and polystyrene insulation in the walls to reduce heat gain. Heating, when required in Tampa's mild climate, is provided by gas-fired infrared radiant heaters placed in the ceiling. Lighting is high-pressure sodium. The roof finish is a light gray to minimize heat gain without creating a glare problem for pilots.

To meet the August 1, 1983 completion deadline that Delta set for this \$20 million two-position aircraft hangar, Rosser White employed a computer-based critical path method administered by a project management consultant. Design work commenced in February of 1982. Construction began that August. The most elusive milestone, recalls Marvin Wiley, was the completion of foundation work at the beginning of construction. Subsequent construction phases took less time than anticipated, and on the appointed day, after more than 70 trades had fulfilled their contracts, an occupancy certificate was issued; the project was complete—\$2 million under budget. *James B. Gardner*



footprint while providing enough frictional force to neutralize the structure's susceptibility to wind uplift—because of its tremendous soil area. Of the 620 precast concrete foundation piles, 90 per cent were driven on a batter. The reinforced concrete pile caps to which columns are bolted secure to the piles via hooked no. 10 reinforcing bars, which are embedded in the piles (see pile-cap

detail). Distribution of air, power and water to service pits and of water for fire protection is shown in the elevation and plan bottom opposite. The eight diesel-driven fire pumps, when activated, have a combined pumping capacity of 20,000 gpm.

Tampa Hangar and Maintenance Facility
Tampa, Florida
Owner:
Delta Air Lines—Louis A. Williams, facilities engineer
Prime Consultant:
Rosser White Hobbs Davidson McClellan Kelly, Inc.—Edward W. Davidson, Jr., P.E., principal-in-charge; Marvin W. Wiley, P.E., project director

Structural engineer:
Prybylowski and Gravino, Inc.—Andrew J. Gravino, P.E., principal-in-charge
Architects:
McElvy Jennewein Stefany & Howard, Inc.—George R. McElvy, AIA, principal-in-charge
Civil/site engineers:
Griner Engineering Sciences



Wrapping up the Portland Museum of Art

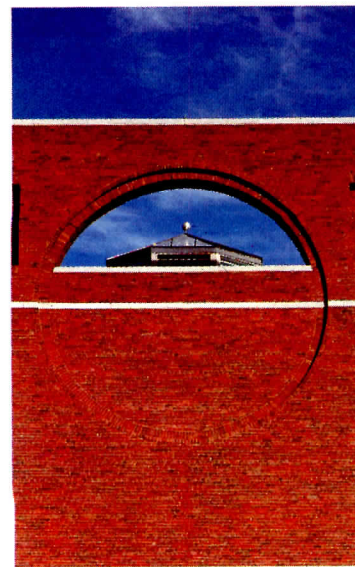
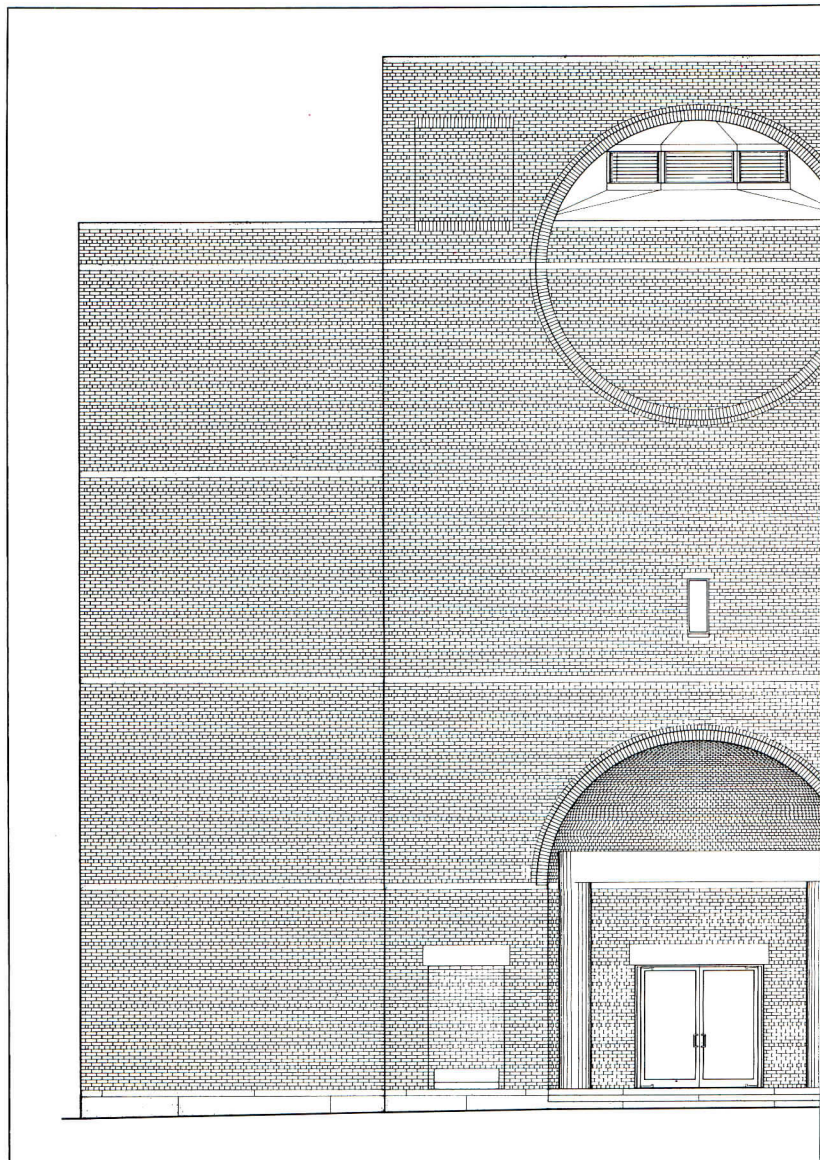
Almost without exception, buildings that are striking when seen from a distance continue to satisfy as each succeeding level of detail presents itself at closer range. Certainly this is the case with the Portland Museum of Art designed by the firm of I. M. Pei & Partners. Formally, the main facade is proportioned according to the two basic spatial modules used in the building: one for galleries and one for circulation (RECORD, November 1983, pages 109-119). In describing this facade, design partner Henry Cobb explains that "the scale and character of the elements composing the facade are graded in ascending order from ground to roof. The street-level arcade is intimate and repetitive, with a single exception made for the entry arch, which penetrates to the second floor as one of a series of large semicircular incisions. These in turn announce the major theme, which is then fully developed at the top of the wall, where alternating circles and squares refer to the double grid that orders the interior space of the building." The other facades are articulated volumetrically and, like the front, are wrapped with a handsome brick veneer animated with granite string courses, sills, lintels and copings.

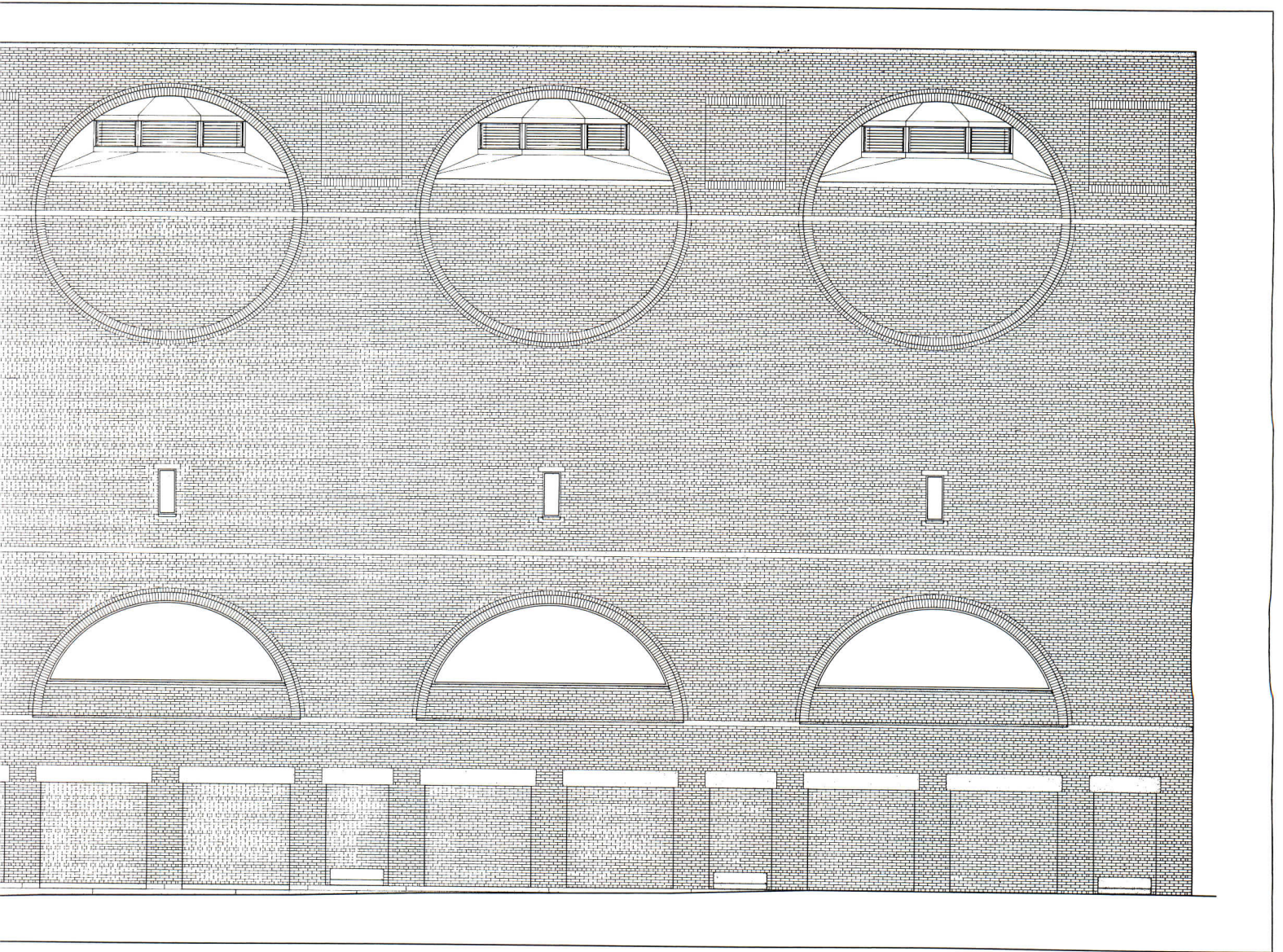
Having determined the overall configuration and figurative program of the enclosing walls, the I. M. Pei & Partners design team called together engineers and construction specialists to join them in an interdisciplinary team whose job would be to translate a design from paper into "bricks and mortar." For nine months team members worked in a close collaboration that resulted in the design of a sophisticated wall system combining a set of known technologies into a unique synthesis. It should be noted that although the esthetic aspects of the facades were designed without being guided by the requisites of a specific technological solution, design did not stray from the boundaries marked by conventional construction. As a result, no changes were made in the proposed building's appearance during construction detailing. The completed museum is an exact reflection of the drawings generated by the team.

In approaching the technical design team with their work, Cobb specified that the building should be brick and that the enclosing walls should provide the interior space with the stringent climate control designated by the museum's curators. The walls would also have to account for their own movement and be water resistant, thus assuring the stability and longevity of the construction. Based on the given determinants, an "elaborated" brick veneer cavity wall was developed. In this system, a vapor barrier surrounds the building as a continuous skin in the cavity space between the structure and the outer brick. Placing 2 in. of rigid insulation on the outside of the barrier and the block-infilled concrete frame assures that temperature variations in the structure would remain negligible. Holding the structure within the interior thermal zone is critical since the relatively high humidity maintained in the exhibition spaces penetrates to the moisture barrier. If the structure were cold, the moist air would condense upon contact, creating a hazardous water condition within the wall. The insulation's placement also confines all thermal movement in the wall to the brick skin.

With average monthly temperatures in Maine ranging from 11F to 67F, climate is a formidable factor in building design. The design team utilized an ingenious system for the veneer wall that accommodates the resultant movement and water penetration.

The basis for the material used in this article was presented in a colloquy held at the office of I. M. Pei & Partners and attended by the following members of the design team: Leonard Jacobsen, Richard Smith, Reginald Hough, Doug Gardner, Raymond W. Searby, Senen Vina de Leon, and Andrew West of the Pei office, and William J. Faschan of Robertson Fowler and Associates.





©Steve Rosenthal photos

Developed by the National Research Council of Canada, the system came to the attention of the team in a publication titled *Walls, Windows and Roofs for the Canadian Climate*. The cavity wall construction described in the report is pioneering in its approach to water penetration. Though brick veneer serves as a rain screen, any difference in air pressure between the outside and the inner wall creates a capillary action that draws water into the cavity. To eliminate this effect, the report recommends that veneer walls be divided into a network of independent pressure compartments. In the Portland building, horizontal partitions for the pressure compartments correspond to the flashing joints at each floor level. The primary vertical joints run from the coping of the parapet to the lintels of the circular wall openings. Secondary divisions occur in the parapet wall only. Each compartment is capable of maintaining an air pressure distinct from its neighbor and equal to the pressure at its outer surface, a significant feature since wind moving across and around the wall can create eccentric patterns of positive and negative pressure within a close range. The compartments are vertically partitioned in the cavity by open-cell urethane foam, and are tuned to the outside with pressure equalization holes at the top of compartments and with weep holes at the bottom. If water does enter the cavity by simple absorption or is driven in, the vapor barrier prevents further penetration, and the water is channeled out through a standard flashing and weep hole system at the base of each chamber and at the top and bottom of wall openings. A final precaution was taken by designing ties that drip any contacted water into the cavity space rather than transferring it across the wire and into the backup wall.

The Canadian system is equally innovative in its method of attaching the outer skin to the structure. The connection used for tying allows the veneer to move both vertically and horizontally as changes in temperature and moisture content cause materials to expand and contract. In the Portland building this kinetic joint is coupled with expansion joints that vertically run around and between wall openings and are placed horizontally along the granite bands. The designers did not want these joints to visually break the surface of the masonry wall. Consequently, a "zipper joint" was used that zigzags through the brick, following the natural line of the traditional bond pattern. In constructing this joint, rigid foam flat pads were used to hold the dimension until the entire wall was laid. At that point the foam was removed and replaced with a sealant colored to match the mortar. The sealant was then dusted with crushed mortar to simulate the texture of the cement mortar joints. The same attention was given to the sealant used against granite bands (manufactured gray, this sealant was overlaid with granite powder). The concern for detail given to expansion joints has yielded a remarkable effect. Both dry and wet, the homogeneity of the brick veneer's texture remains intact.

The esthetics of the wall and its ability to perform as engineered ultimately rested with the builders. A number of steps were taken by the architects to safeguard the quality of execution. First, scale drawings were prepared of all elevations indicating the precise dimension and placement of all details, including each of the 450,000 bricks to be used in the building. Added to these were drawings carefully documenting the internal composition of the wall and openings, with axonometrics that helped the architects explain to the builders how special conditions at corners were to be handled. It was made clear during the bidding process that the wall was to be built exactly as shown. A second safeguard came with the construction of a full-scale mock-up of a wall segment included as part of the

contract. By building the wall the contractor, Pizzagalli Construction Company, was able to solve many of the working problems during an early phase of the museum's construction. Through the contractor's initiative, building began at the administrative wing and terminated with the wall facing Congress Square. As they progressed through the construction sequence, the masons became increasingly familiar with the design and materials. As a result, when they laid the building's most significant facade, they demonstrated impeccable craftsmanship.

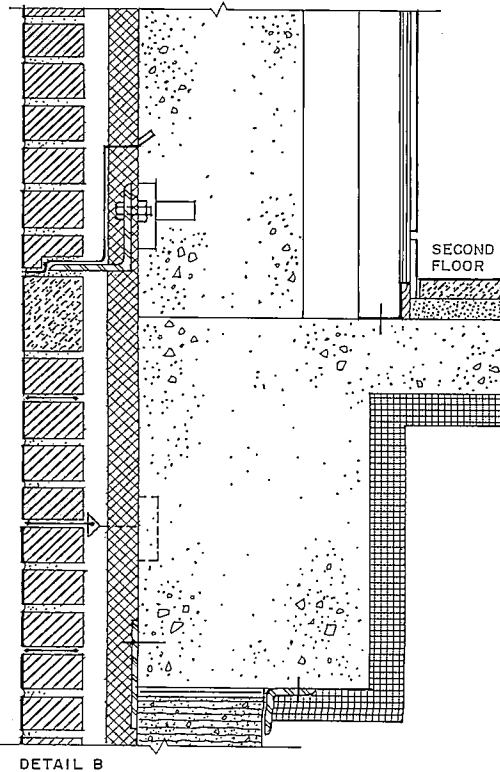
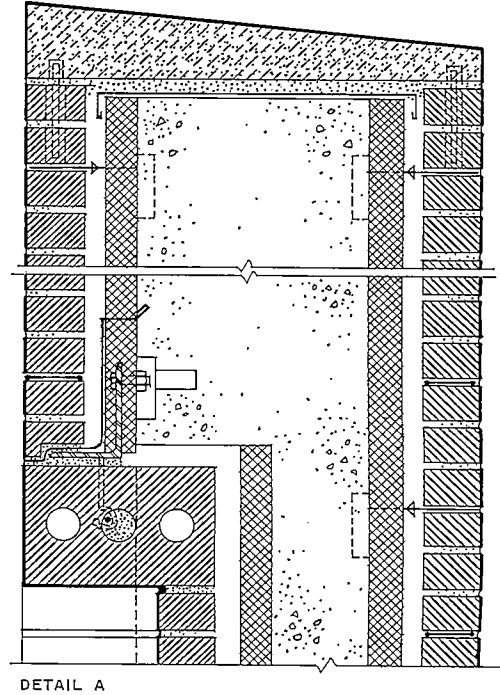
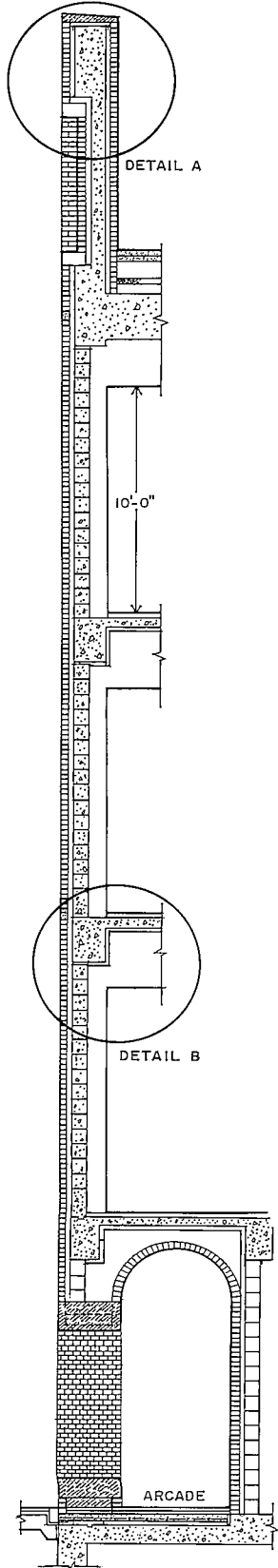
This is not to say, however, that the execution throughout is not of the highest caliber—it is. And it was an extremely difficult task both because of the cavity wall's technical complexity and because of the brick chosen for construction. A water-struck brick was used that is manufactured by the Royal River Brick Company in North Yarmouth, Maine. Made by hand and fired according to a process used by the first English settlers in America, each brick is unique. The bricks' handsome texture and slight variation in color were chosen by the architect for esthetic appeal; however, the nonconformity in size and shape of handmade brick posed problems. Handmade bricks are typically laid in a casual alignment of vertical joints that naturally results from their irregularities. Since the architects of the Portland Art Museum designated the number of bricks for each course based on an exact brick dimension, the masons found they had to juggle the irregular bricks, rejecting those that deviated too much from the drawn-on-paper module.

The tension between the desire for a masonry veneer realized in stringent mathematical terms and the desire to make the veneer with a crude brick illustrates an apparent conflict that runs throughout the wall: a conflict between a desired esthetic effect and the expression of technological means. For example, the brick veneer is laid in a pattern that simulates the surface appearance of American bond with its characteristic headers every sixth course. (In the museum, "headers" are standard brick broken in half and set end out.) Of course, *real* American bond is a construction technique used to build load-bearing walls of two widths separated and tied together by whole standard bricks laid on end. Such bonding patterns evolved over centuries under the hands of brick masons; their outward appearance is the simple result of a straightforward technology. Consequently, walls built this way present a kind of public document revealing a building process. The walls of the Portland Art Museum have taken the "text" of a traditional construction technique to use as the basis of a building wrapper that reveals very little about its own technology.

The apparent conflict between esthetic objectives and technological process might be seen as the result of a cogent and timely dialogue. Like other postmodern buildings this one has made reference to imagery found in architecture history books as well as elements from contemporary works and the vernacular of the region. With its brick veneer, it has also made reference to a technological image from the past. This not quite "builderly" facade seeks to synthesize two extreme formal tendencies. One tendency results in an architecture whose primary expression is derived from building techniques and materials. The other is a graphic architecture preoccupied with imagery invented on paper that demonstrates little interest, if indeed understanding, of the formal potential the act of building offers. In striking a balance between these approaches, the architects of the Portland Art Museum have presented a fascinating study between means and ends, skillfully resolved with a contemporary vision that respects the past. *Darl Rastorfer*

The facade on Congress Square is divided into a system of pressure compartments to control water intake due to capillary action. The section at left is drawn through a primary vertical joint in the compartment system. The brick skin is connected to the concrete frame and block infill with steel ties that adjust dimensionally according to the expansion and contraction of the veneer. The granite coping at

the parapet (upper right) is tied to the cavity wall with 6 in. steel bars. The brick that rests directly on connecting hardware (lower right) is one of several special brick profiles manufactured for the Portland Art Museum.



For more information, circle item numbers on Reader Service Card, pages 239-240

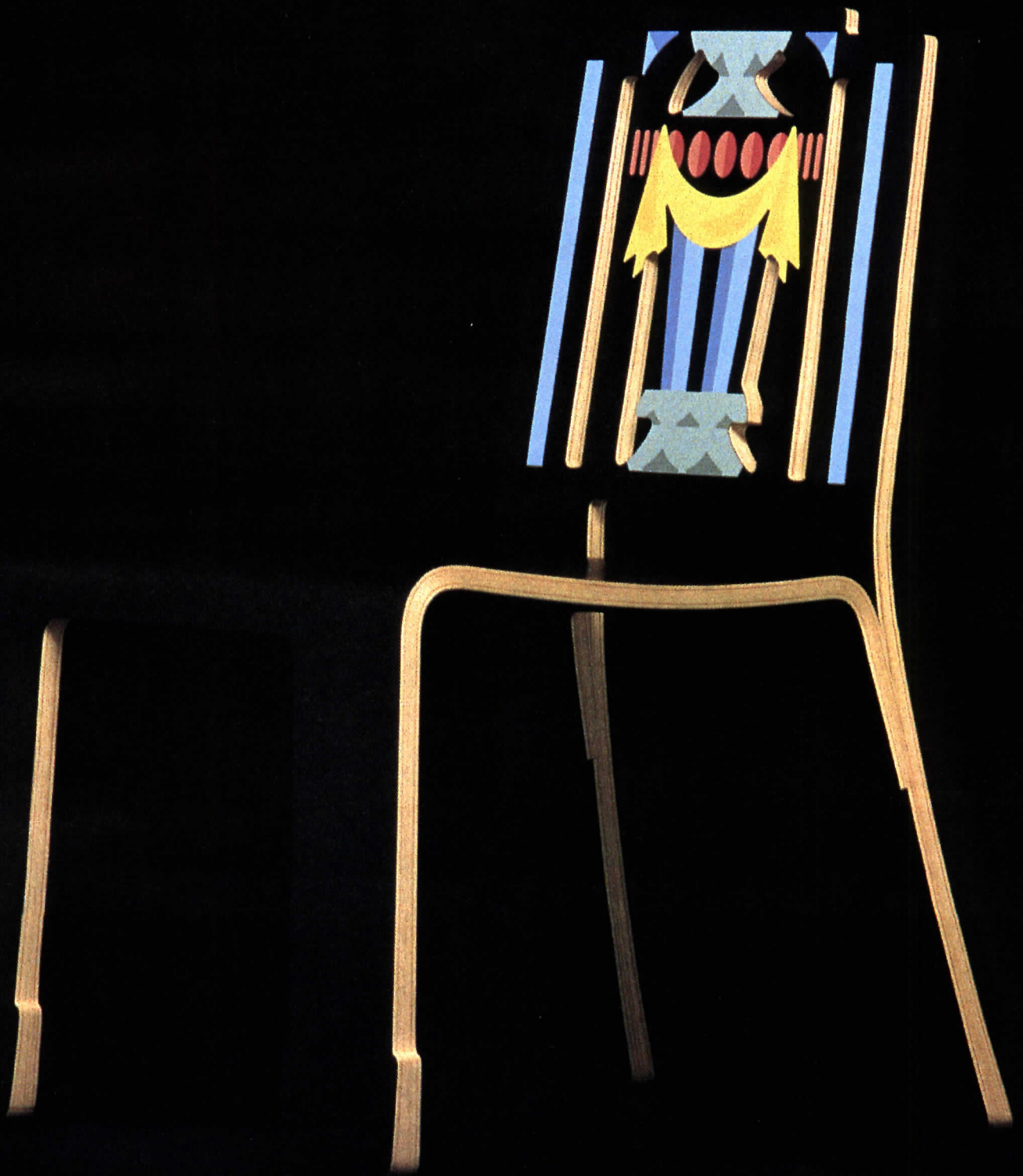


It seems to be Robert Venturi's lot to remain forever controversial. While many of his former colleagues in the architectural vanguard of the '60s and '70s have slipped silently into the mainstream, the 59-year-old "hooligan from Philadelphia," as he was once dubbed, has not. For better or for worse, Venturi's buildings and writings still spark the same intense debate that accompanied his seminal works: the Vanna Venturi House (1962), *Complexity and Contradiction in Architecture* (1966), and, with Denise Scott Brown and Steven Izenour, *Learning from Las Vegas* (1972). So it was no surprise when 2,500 New York architects and designers jammed into Knoll International's 10,000-square-foot SoHo showroom on May Day and responded to the "Venturi Collection" with either gushes of breathless praise or gales of malicious laughter. The two-hour opening was, in microcosm, the story of Robert Venturi's professional life: "It's beautiful." "It's ugly." "It's brilliant." "It's ludicrous." "It's riveting." "It's repulsive." "I love it." "I hate it."

What's inciting all the hyperbole this time is not a house for mother or a manifesto for MIT Press, but furniture for Knoll—nine chairs, three tables, and a sofa, to be precise. "This is probably the only collection we've done in years that comes even close to being avant-garde," opines Knoll's vice president of design Jeffrey Osborne, the man who greeted Venturi when he walked through the company door in the spring of '79, a roll of drawings in tow. Though a comparison of those drawings and the furniture now on display prompts the question, "Why did it take five years? They look the same," the protracted design development phase was necessary, according to all involved, to address the prickly issues of cost, construction, and comfort—as neither Venturi nor Knoll was interested in producing Memphis-type "art" furniture, i.e., furniture that costs the earth and dares you to sit down. What Venturi and Knoll were interested in producing was an eclectic collection that would counter the Modern notion of unity and clarity with the postmodern notion of diversity and ambiguity. What's more, supplies Venturi: "This furniture breaks the boundary between traditional and Modern design by adapting a series of historical styles to industrial processes." The industrial processes utilized include molding fiberglass to achieve the sculptural contours of the sofa (photo top left) and tea table (bottom left), and, of course, the classic modern technique of molding and laminating plywood for chairs; however, this time—as opposed to Aalto's time—the chairs take on a complex silhouette with a surface that is ornamentally perforated and contoured to recall a range of historical periods, from Queen Anne to Art Nouveau and beyond. The same technique—minus the molded curves—was used for the Cabriole leg and Urn tables (photos center left).

At first glance (though we've learned not to trust that impression), the Venturi Collection is startling: the chairs look as if they were inspired by Gumby (the 2-D cartoon personality); the tea table looks as if it was inspired by an ornate wedding cake; and the sofa...well, the sofa looks as if it was designed to Orson Welles's specifications. Which brings us to the second joint Venturi-Knoll aspiration: they hope the furniture will sell. The polemical part was, perhaps, easier. Because for a large number of today's specifying architects (and their clients)—who were trained to love the sleek steel and leather classics of Mies, Breuer, and Corb—the Venturi Collection could be a hard sell. The times may have changed, but the times may not have changed quite enough. At least not yet. But if we have learned only one thing from Robert Venturi, it is that they will. *C.K.G.* Knoll International, New York City.

Circle 300 on reader service card





In an early design statement circulated by Knoll, the Venturi Collection was likened to a "bouquet," as opposed to a "single flower." Though the simile is a little on the florid side, it nonetheless captures the spirit of the collection. For in contrast to the classic modernist pursuit of the ideal piece of furniture constructed of the ideal materials in the ideal way—Mies's

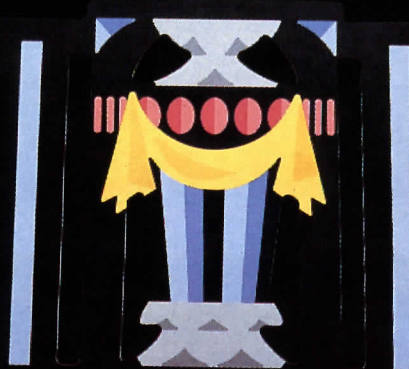
Barcelona Chair, for example—Venturi's furniture (especially the chairs) offers countless variations; not only in style, but in finish. Running clockwise from top left: Chippendale with gray bird's-eye maple; Gothic Revival with red plastic laminate; Empire with red plastic laminate; Biedermeier with white plastic laminate; Hepplewhite with black plastic laminate; Queen Anne





with natural maple; Art Deco with Art Deco silkscreen, and Art Nouveau with yellow plastic laminate. In addition to the aforementioned finishes, the Sheraton chair, like the Art Deco chair, is offered with its own silkscreen appliqué (photo page 167). (Venturi and Knoll found that they were stretching the current limits of technology a bit with the silkscreen appliques.)

Finally, we must extend our thanks to the grandmother of Venturi, Rauch and Scott Brown associate Frederic Schwartz, who, in the name of design, sacrificed her favorite tablecloth, only to see it overlaid with Jasper Johns-inspired diagonal stripes (photo below, far left). Venturi and Knoll expressed their gratitude by naming the plastic laminate pattern "Grandmother."





Though the double-urn-base table and six Chippendale chairs appear well-suited to the grand Southampton summer house they were photographed in (photo left), Knoll hopes that the table and chairs will be seen more frequently in grand corporate board rooms. The "formal" gray bird's-eye maple finish (as opposed to the "informal" natural maple finish) was specifically designed, according to Knoll's Jeffrey Osborne, to address that market. For those who are not yet tycoons, alas, Knoll and Venturi recommend a cabriole-leg table and four Queen Anne chairs (photo below). The "Grandmother" plastic laminate finish adds a dollop of insouciance to the already very festive arrangement. And for those few who contend that enough is never—repeat never—enough, Venturi has designed glasses and plates for the New York firm of Swid Powell; naturally, the glasses and plates are in the "Grandmother" pattern. (The silver tea service, looking very much at home on the table, was designed by, who else, Venturi, Rauch and Scott Brown.)



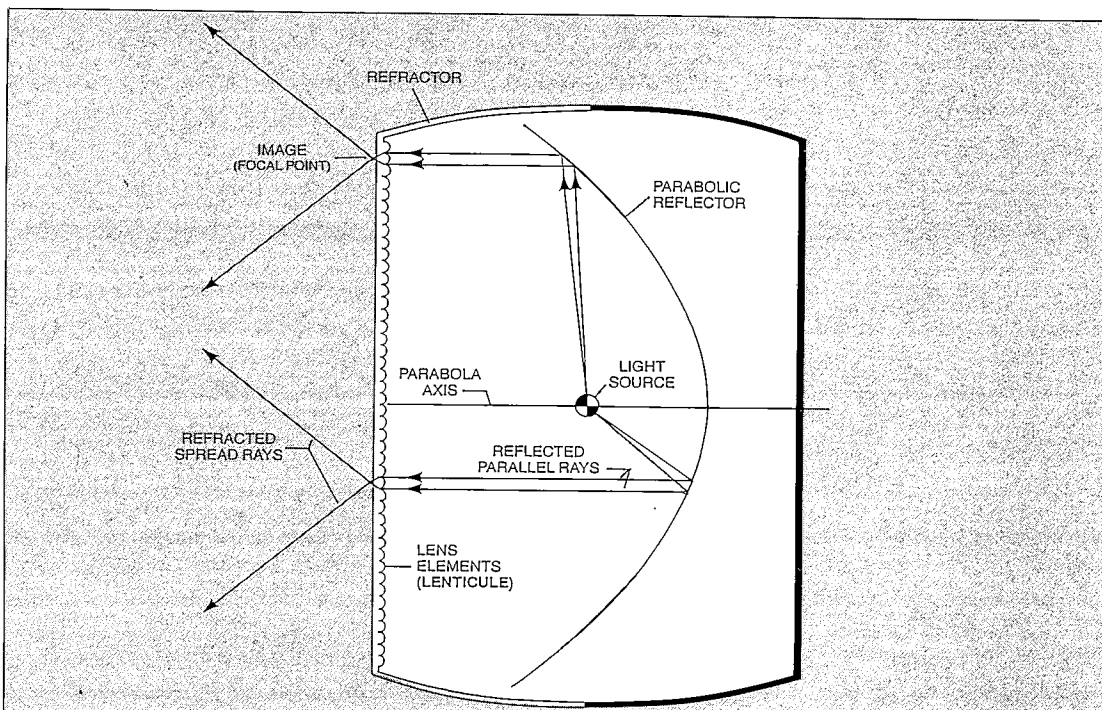
The Venturi Collection
(Though the Venturi Collection bears his name, chief designer Robert Venturi insists that the sofa, the three tables, and the nine chairs that comprise the collection are the products of many labors, not one; consequently, Mr. Venturi asks that credit be extended to all those without whom...)
From Venturi, Rauch and Scott Brown: Denise Scott Brown, design; Frederic Schwartz, Maurice Weintraub, Paul Muller, project directors; James Timberlake, Erica Gees, Miles Ritter, Robert Marker, assistants.
From Knoll International: Jeffrey Osborne, vice president design; Nan Swid, design manager; Mimi Taft, design manager; Hy Zellkowitz, design consultant; Christopher Murray, development manager; Karen Lawall, Angel Marrero, Lamar White, development team; Merle Lindby-Young, vice president textile division

Shedding new light on artificial illumination

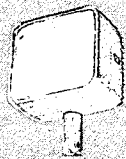
A major component of a program of products and specification literature recently introduced by Devine Lighting, a new lenticular lens system is said to achieve precise beam control and maximum efficiency with extremely low surface brightness. The optical design, illustrated in the top diagram, incorporates a specular, parabolic reflector that directs virtually parallel rays from the light source through the lens. The lens itself is a refractor containing, on the inside, a multitude of contiguous elements, or lenticules, each consisting of a polished, aspherical curved surface positioned to eliminate gaps. Significantly, the lens is designed to refract light through a focal point directly in front of each lenticule, with the result that the lens appears to have an array of tiny light images when viewed from any normal angle. The benefit of the system, according to the manufacturer, is a high level of illumination with a minimum of surface brightness.

Devine has installed the lenticular lens system in a new series of ceiling-mount fixtures and floods—part of a larger line of lighting products that includes wall, swivel, and yoke-mounted floods; ceiling fixtures; wallpacks; and a wall bracket. The units range from 35 to 150W and are designed with concealed hinges in a consistent style that harmonizes with the manufacturer's collection of bollards, landscape fixtures, steplights, and area lights. A selection of the new fixtures is shown at right.

In order to assist architects and engineers in the design of lighting systems, Devine is also offering a three-volume looseleaf set of literature that comprises a specification guide and template books for Type III and Type V distribution. The guide includes photographs, dimensions, technical data, and photometrics for 150 fixtures. The template books are sectionalized to simplify location by type of distribution, type of lamp, wattage, and mounting height. The templates, a sample of which is illustrated bottom right, show footcandle illumination at various distances from the light source. They are computer-drawn from photometric data and are individually certified by an independent laboratory. Devine Lighting, Kansas City, Mo.
Circle 301 on reader service card
More products on page 187

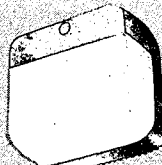


NEMA VI FLOOD



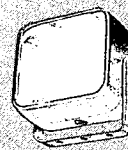
MFC30 SERIES

WALL PACK



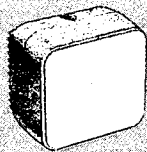
MWP20 SERIES

NEMA VI FLOOD



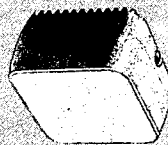
LFC70 SERIES

LENTICULAR LENS—FLOOD



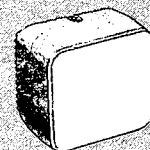
LFW50 SERIES

LENTICULAR LENS—CEILING

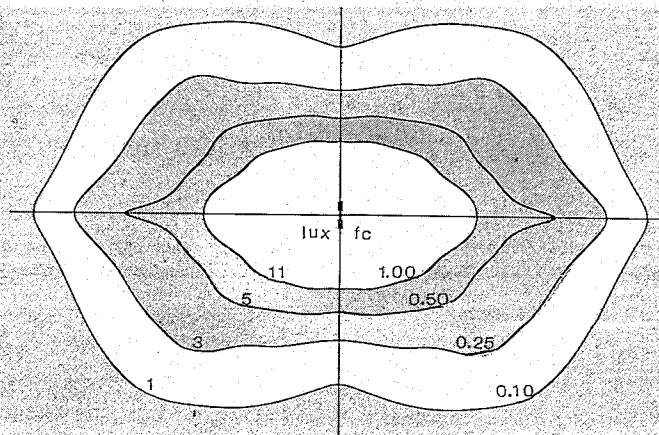


MCW40 & LCW80 SERIES

LENTICULAR LENS—FLOOD



MFW10 SERIES





T.M.

Sloan presents the no-hands restroom.

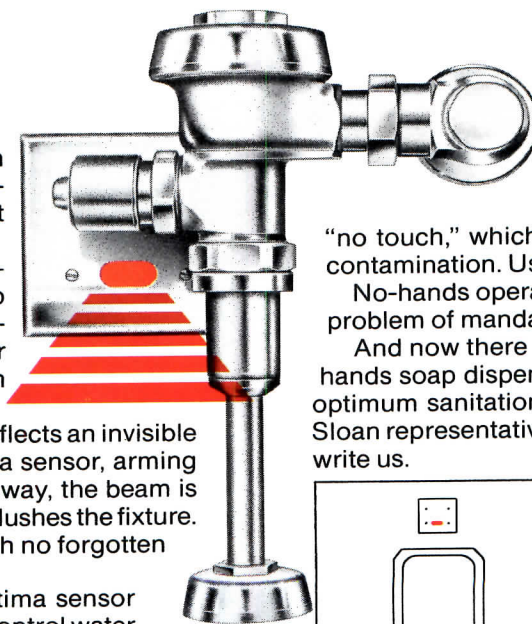
Take the operation of the restroom out of people's hands, and it becomes a cleaner, more cost-efficient place.

That's the big idea from Sloan—the no-hands restroom, with no handles, buttons, or levers. Everything operates *automatically*, under the command and control of Sloan Optima™ electronic sensors.

On toilets and urinals, the user reflects an invisible beam of light back into the Optima sensor, arming the system. When the user steps away, the beam is broken, and the Sloan flushometer flushes the fixture.

Results: improved sanitation, with no forgotten flushes. And less water waste.

On lavatories, breaking the Optima sensor beam opens and closes a valve to control water automatically. Since the water runs only when needed, water usage is significantly reduced. There are no handles

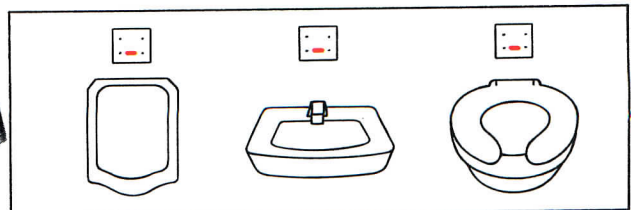


to get dirty and there's less sink-top cleaning.

Of course, "no-hands" means "no touch," which reduces the chance of bacterial contamination. Users will appreciate *that*.

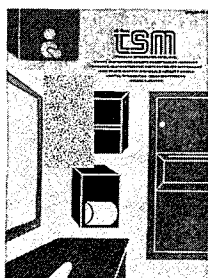
No-hands operation also automatically solves the problem of mandated access for the handicapped.

And now there are Sloan Optima systems for no-hands soap dispensers, hand dryers, and more. Get optimum sanitation and optimum savings. Ask your Sloan representative about Optima systems today. Or write us.

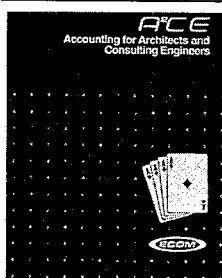


SLOAN VALVE COMPANY
10500 Seymour Avenue, Franklin Park, IL 60131

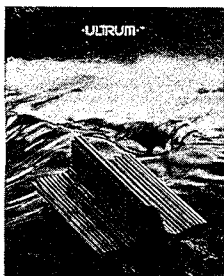
Circle 78 on inquiry card



Washroom accessories
A 16-page color catalog features a line of washroom accessories, including towel dispensers, waste receptacles, mirrors, toilet paper dispensers, hotel specialties, and brass railings. Photographs and specifications are included. Tubular Specialties Manufacturing, Inc., Los Angeles. Circle 400 on reader service card



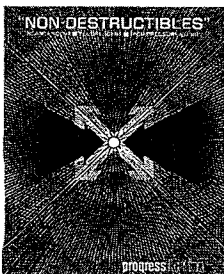
Accounting software
An accounting program integrating job costing, payroll, accounts payable, general ledger, and accounts receivable is described in an 8-page brochure. The program runs on the IBM PC/XT, Wang P.C., HP-150, and Digital Rainbow. The brochure shows typical printouts. ECOM Associates, Inc., Milwaukee. Circle 406 on reader service card



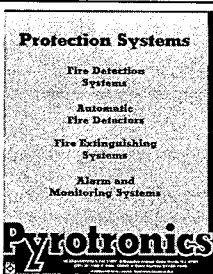
Site furnishings
Photos and diagrams with dimensions illustrate the Ultrum line of benches, receptacles, ash urns, and planters in an 8-page color brochure. Detail photos show the hardwoods and stone aggregates used in the designs. Ordering information is included. GameTime, Inc., Fort Payne, Ala. Circle 401 on reader service card



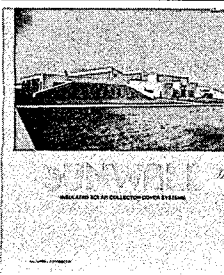
Fire protection glass
A 12-page color brochure includes section details of glazing systems and installation photos of Contraflam fire protection glass. Test criteria and results and glazing recommendations are described, and technical data are listed. Euroglass Corp., White Plains, N.Y. Circle 407 on reader service card



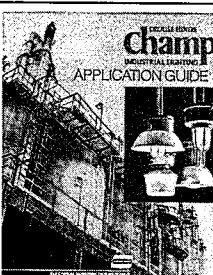
Lighting
Incandescent, fluorescent, and HPS light fixtures are featured in a 33-page catalog. Fixtures, claimed to be vandalproof, are individually shown in photos and described. Photometric data, diagrams with dimensions, and specifications are listed for each model shown. Progress Lighting, Philadelphia. Circle 402 on reader service card



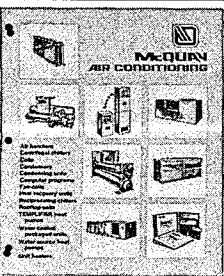
Fire alarm controls
Fire detection equipment and monitoring systems are featured in an 8-page brochure. Each detector and monitoring device is shown in a photo and described in detail. Fire extinguishing systems are also covered with descriptions and a diagram illustrating a typical installation. Pyrotronics, Cedar Knolls, N.J. Circle 408 on reader service card



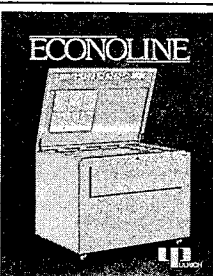
Solar windows
Suggested applications for Sunwall insulated solar collector cover systems are featured in a 4-page color brochure. Section details and photos illustrate applications while product construction and its use in conjunction with a thermal mass are described in detail. Kalwall Corp., Manchester, N.H. Circle 403 on reader service card



Industrial lighting
A 16-page HID fixture selection guide covers electrical system characteristics, classification of the area to be lighted, and photometric and compliance requirements. Several fixtures are shown in photos and diagrams. Crouse-Hinds Electrical Construction Materials, Syracuse, N.Y. Circle 409 on reader service card



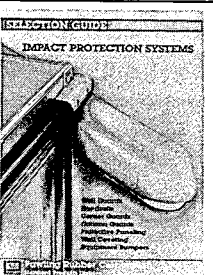
Air conditioning
Photos and charts of capacities are included for individual air-conditioning units in a 16-page brochure. The systems, designed for commercial and industrial applications, include centrifugal chillers, fan coils, air handlers, heat recovery units, and heat pumps. McQuay Air Conditioning, Minneapolis. Circle 404 on reader service card



Planfiling
Closeup photos highlight construction details of Econoline planfiling cabinets in a 4-page color brochure. Diagrams show the three types of cabinets in the line, and charts list the capacities for various materials as well as specifications. Ulrich Planfiling Equipment Corp., Lakewood, N.Y. Circle 410 on reader service card



Commercial vinyl flooring
Closeup photos of available colors and patterns in vinyl tiles are included in a 20-page color brochure. Installation photos show the larger patterns available by combining tiles. Technical data, dimensions, and specifications are included. Azrock Floor Products, San Antonio, Tex. Circle 405 on reader service card



Wall and corner guards
Handrails, wall coverings, wall and corner guards, and equipment bumpers are featured in a 20-page color brochure. Section details and photos illustrate typical installations. Specifications and a color chart are included. Pawling Rubber Corp., Pawling, N.Y. Circle 411 on reader service card. More literature on page 181



Franklin Roosevelt



Grover Cleveland



Calvin Coolidge

Who was President when this Bradley Washfountain was inaugurated?



Bradley's reputation for long-lasting, hard-working plumbing fixtures goes back *quite* a ways. So if you guessed Grover Cleveland, you've got the right idea — you just overshot the mark a bit. Calvin Coolidge had been in the White House barely a year when this appropriately "strong but silent" Washfountain was installed in the Milwaukee County Transit System's second story locker room in 1924. Many new hands have come and gone, but the Washfountain's stayed put. In fact, it's still cleaning up today.

Over the years, Bradley hasn't been resting on the laurels of our original design. We've kept making

the Washfountain more efficient and convenient. To cite just a few examples: sectional foot and hand controls, water-saving spray heads, simplified plumbing and easier access, stainless steel and Bradglas bowls, and several generations of soap dispensers (the one above is F.D.R.-vintage).

All across America, tens of thousands of Bradley Washfountains — from the Coolidge to the

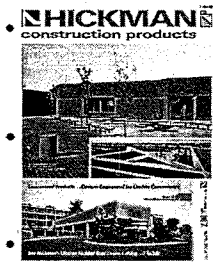
Reagan era — are still filling out their long and successful terms.

If you could see "old faithful" working in Milwaukee, we think you'd form the same opinion its owners have. Today the Milwaukee County Transit System's facilities include many Washfountains of less seniority — but with the same proud tradition of rugged performance.

For more information on Bradley Washfountains or our entire line of plumbing fixtures and wash-room accessories, please contact your Bradley representative. Or write: Bradley Corporation, 9101 Fountain Blvd., Menomonee Falls, WI 53051, 1 414 251-6000.

Bradley CORPORATION 
We get the job done better.

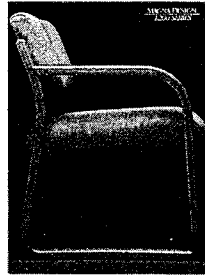
Circle 79 on inquiry card



Roof edge products

Gravel stop systems, reglets, coping, and fascia panels are among the roof edge products covered in a 12-page color brochure. Section details and photos illustrate the mechanics of each system. Specifications and selection charts are included. W.P. Hickman Co., Asheville, N.C.

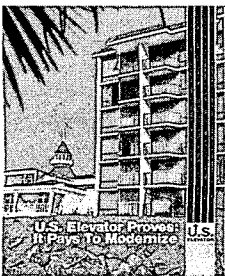
Circle 412 on reader service card



Chairs

A 6-page color brochure shows the 1200 series of chairs, which features fabric upholstery and laminated walnut or oak frames. The series includes armchairs on sled bases, and standard and high-backed executive swivel and tilt models on five-pronged bases with casters. Magna Design, Lynnwood, Wash.

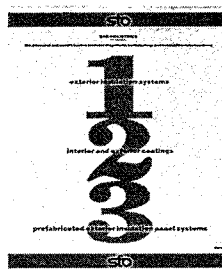
Circle 418 on reader service card



Elevators

An 8-page color brochure describes the steps, service, and equipment involved in modernizing an elevator system. The *Flite Command* module, a computerized diagnostic system that provides instant performance data checks, is highlighted. U.S. Elevator, Spring Valley, Calif.

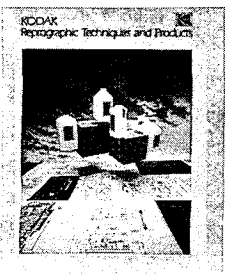
Circle 413 on reader service card



Coatings and insulation

Insulation systems, coatings, and prefabricated insulation panels for exterior and interior applications are featured in a 20-page color brochure. Photos of installations and detail shots of compositions are included. Test results, specifications, and code approvals are listed. STO Industries, Inc., Rutland, Vt.

Circle 419 on reader service card



Reprographics

Reprographic Techniques and Products is the title of a 28-page publication that explains and illustrates photographic shortcuts that eliminate repetitive drafting time. Films, papers, and chemicals used in the processes are also covered in detail. Eastman Kodak Co., Rochester, N.Y.

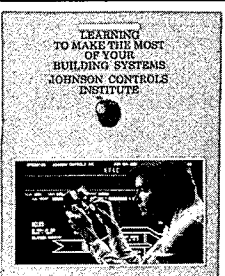
Circle 414 on reader service card



Acoustical ceilings

Specifications, performance ratings, dimensions, and finishes are included in a 24-page color brochure on acoustical ceilings. Photos and diagrams show typical installations while individual ceiling panel patterns are illustrated in detail. Gold Bond Building Products, Charlotte, N.C.

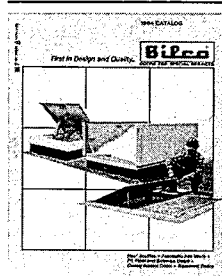
Circle 420 on reader service card



Building automation training

Courses offered to train users of this manufacturer's automatic temperature and digital controls and building automation systems are described in an 8-page color brochure. The curriculum, faculty, and teaching techniques are also covered. Johnson Controls, Inc., Milwaukee.

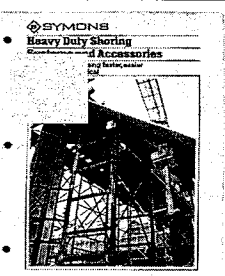
Circle 415 on reader service card



Vents and hatches

A 16-page color catalog covers details and specifications for a line of roof scuttles, automatic fire vents, floor and pit doors, ceiling access doors, and basement doors. Also included is information on the *LadderUP* safety post for fixed ladders under access hatches. The Bilco Co., New Haven, Conn.

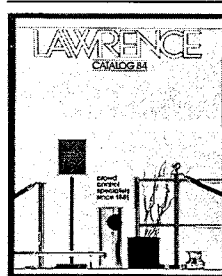
Circle 421 on reader service card



Shoring systems

Heavy-duty shoring systems and accessories for use in horizontal concrete forming applications are shown in diagrams and photos in a 12-page brochure. Dimensions and weights are listed for frames, adjustable posts and horizontal shores, and aluminum beams and joists. Symons Corp., Des Plaines, Ill.

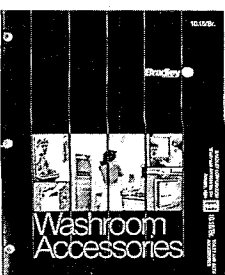
Circle 416 on reader service card



Crowd control

Portable post and ropes, sign stands, railings and fittings, and turnstiles are described and illustrated in a 44-page color brochure. Charts and diagrams list dimensions and weights where applicable. Available materials and finishes are also shown. Lawrence Metal Products, Bayshore, N.Y.

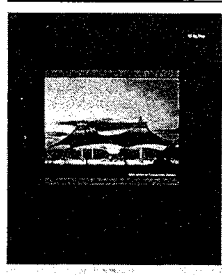
Circle 422 on reader service card



Washroom accessories

The *Accent Series* of accessories in 14 colors and the *Contemporary Series* in satin finish stainless steel are featured in a 44-page color catalog. Products shown in photos and diagrams include dispensers, waste receptacles, mirrors, grab bars, and dryers. Bradley Corp., Mt. Laurel, N.J.

Circle 417 on reader service card



Fabric structures

Tension membrane and air-supported fabric structures in many colors, shapes, and sizes are pictured in an 8-page color brochure. Photos show a variety of installations while diagrams illustrate support systems and dimensions. Helios Industries, Inc., Hayward, Calif.

Circle 423 on reader service card

**New
USG[®]
Acoustical-Plus
spray
texture
absorbs
sound,
resists fire.**

A black and white photograph showing a spray nozzle at the bottom, spraying a thick, textured material upwards onto a concrete ceiling. The ceiling is shown in a cross-section, revealing the rough, porous texture of the applied finish. The spray nozzle is a metal tool with a hose attached, and the spray is a dense, white, foamy substance.

Another U.S.G. first! A multi-function spray texture finish, specially-formulated to meet today's concrete ceiling needs . . . *old or new!* New USG[®] Acoustical-Plus Spray Texture is in a class by itself. Sound-rated .40 at 1/2" thickness. Class A Flame Spread rating. And an aesthetically pleasing difference in appearance. You'll find USG[®] Acoustical-Plus Texture elegantly suited for commercial, institutional, high rise apartments and retrofit construction.

■ *Call your U.S.G. Representative. Or write to us at 101 S. Wacker Dr., Chicago, IL 60606, Dept. AR684*

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Circle 81 on inquiry card



Metal ceilings

Prestige linear metal ceilings for residential applications are available in copper, brass, or polished aluminum finishes and are installed by attaching carrier channels to suspended or unfinished ceilings, or to existing plaster. Panels can be curved from ceilings to walls. Donn Corp., Westlake, Ohio.

Circle 302 on reader service card



Ceiling grid

Ultralite is a narrow face ceiling said to be the only 1/16-in. grid system that has a UL-approved fire rating. The ceiling is designed for use with either 5/8- or 3/4-in. acoustical reveal-edge panels. Chicago Metallic Corp., Chicago.

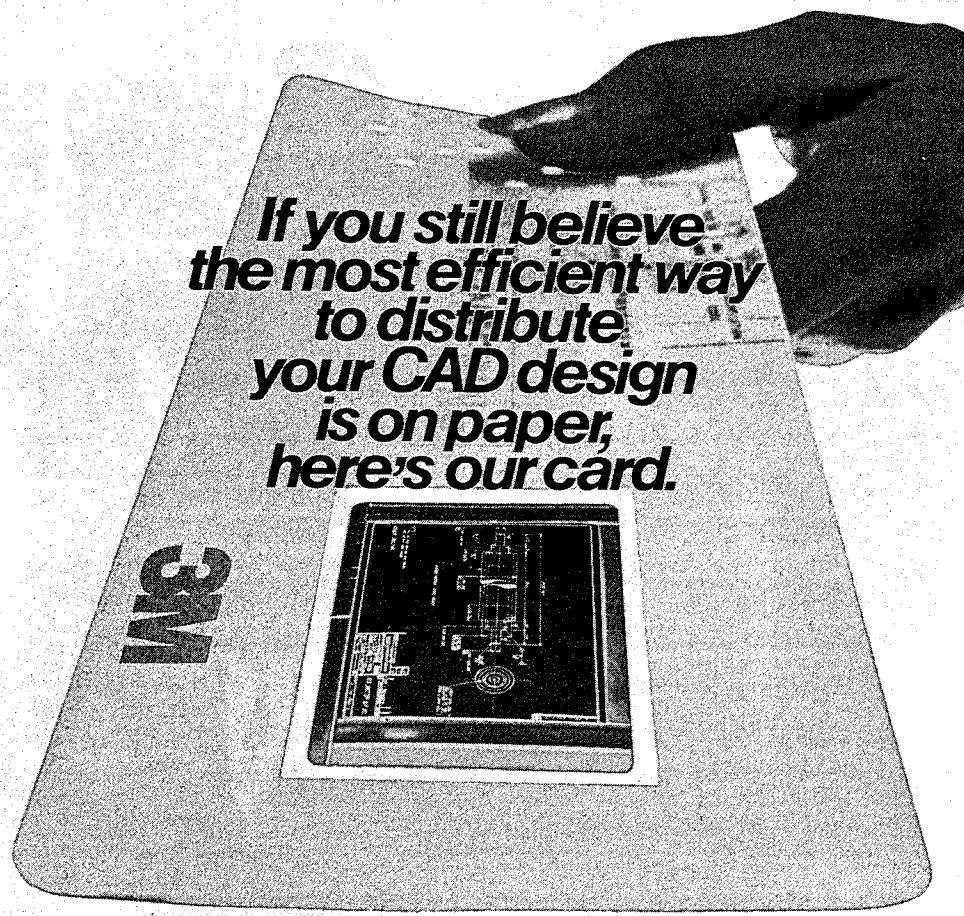
Circle 303 on reader service card



Flooring

Marmoleum is a commercial grade of linoleum flooring made in Holland and available in 17 marbled colors. The flooring is coated with a finish that is said to require the same maintenance as vinyl sheets. It is available in 79-in. widths and lengths up to 90 ft. Forbo North America, Lancaster, Pa.

Circle 304 on reader service card
More products on page 189



Now that your CAD design is finished, you've got some big plans.

Big, cumbersome, D-size prints. To try and distribute. To try and work from. And to try and store.

So why put up with all that paperwork when there's something better. The 3M Communication By Card System (CBC).

A system that allows you to control the distribution of your design drawings easily. And more efficiently. As efficiently, in fact, as your CAD system can design them. So you can put the right design information at your engineers' fingertips faster than ever before.

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We Are Committed!



A commitment is only as strong as the actions behind it. At Amarlite, we take pride in our new commitment and the programs supporting it.

**Commitment #1.
New Financial Support**

A financial vote of confidence from our corporate parent, ARCO Metals Company, resulting in the largest single capital expenditure in our history.

**Commitment #2.
New Facilities**

Acquisition and expansion of a 230,000 square foot plant in Meridian, Mississippi, plus enhanced Atlanta plant and regional facilities.

**Commitment #3.
New Organization**

Specialized Dealer Products and Engineered Systems groups to better serve the needs of our customers.

**Commitment #4.
New Products**

Emphasis on a major product development thrust based on innovation and market need.

**Commitment #5.
New People**

A higher degree of experience, profes-

sionalism and dedication at all levels within our organization.

Commitment #6.

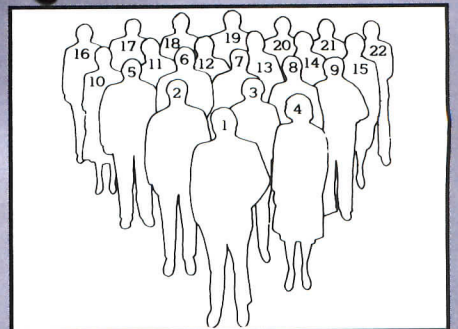
Leadership

Technically competent, industry qualified, focused on a single goal—The New Amarlite—THE BRIGHTEST OUTLOOK IN ARCHITECTURAL PRODUCTS.

For more specifics about our commitment, contact ARCO Metals Company, Amarlite Architectural Products, P.O. Box 1719, Atlanta, GA 30301.

AMARLITE Architectural Products

ARCO Metals Company ♦
Division of Atlantic Richfield Company



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- (20) Al Weber — E.S. Project Administration Manager
- (21) Harold Leckey — Western Area Manager
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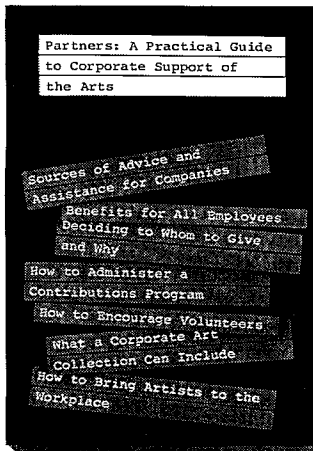
THE BRIGHTEST OUTLOOK IN ARCHITECTURAL PRODUCTS.

Do something selfish. Support the arts.

We are speaking here of business support of the arts, and what it can do for your clients, your employees and your company.

In a word, lots.

Because in addition to the rewards that the arts have to offer society, there are rewards that the arts can and will offer business. Very real, very tangible rewards. All very much in your company's self-interest.



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Partners is the first practical guide to corporate support of the arts. And for anyone who has anything at all to do with the arts—or would like to—it's indispensable.

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Partners is published by the Cultural Assistance Center, Inc., a nonprofit service organization established to promote and assist cultural institutions.

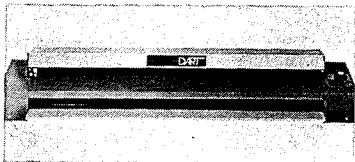
Write the Cultural Assistance Center, Inc., 330 West 42nd St., New York, N.Y. 10036.



Patio doors

A patio door system fashioned from Western hemlock is sized to fit a 6 ft 8 in. height and 5- to 9-ft widths. The system features ½-in. insulated clear, solar bronze, or solar gray glass, removable grill assemblies, and applied brick molding and gaskets. E.A. Nord Company, Inc. Everett, Wash.

Circle 305 on reader service card



Ammonia diazo developer

A powered ammonia developer for processing diazo reprographic products features automatic ammonia vapor flow and variable speed control for diazo polyester film, paper, rag sepia, and acetate film up to 45 in. wide by 10 ft in length. Model 6149 can be equipped with the manufacturer's ammonia arrestor system designed to eliminate ammonia odors in the reproduction area. Diazit Company, Inc., Youngsville, N.C.

Circle 306 on reader service card



Insulating glass

A low emissivity glass is offered as an option on the manufacturer's line of terrace doors, patio doors, and casement windows. Low-E is a metallic coating applied to glass and sealed within the insulating glass unit. Marvin Windows, Minneapolis.

Circle 307 on reader service card
More products on page 191

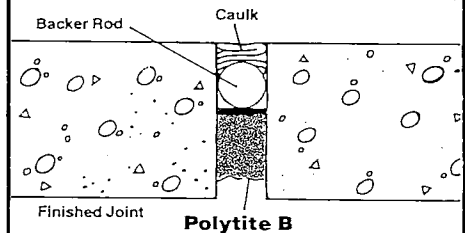
Don't let water make its mark!

Seal moisture out with Polytite® B

If caulking fails, Polytite® B's impenetrable barrier provides permanent watertight protection against the most severe weather extremes.

Polytite® B is a highly effective secondary sealant. Use standard Polytite® as a primary sealant.

Use Polytite® B on all your expansion joints—and don't let water make its mark!



Installation Instructions:

- 1) Apply tape to both sides of joint.
- 2) Compress Polytite® B and insert into joint.
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- 4) Install standard backer rod.
- 5) Caulk joint with specified caulking.

Polytite® B

For full technical details, call or write:

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COMPANY, INC.**

324 Rindge Ave., Cambridge, MA 02140
(617) 491-0540

Circle 90 on inquiry card

Not long ago, every house (and most of the outhouses) in Fair Haven, Vermont, had a slate roof

break down from the weight of the slate,' he was not to be paid and would be liable for all damages. Needless to say, the barn did not 'break down from the weight of the slate.' (Young architects, pay attention! Not only is a slate roof beautiful and virtually indestructible; standard 3/16- to 1/4-inch slate shingles, as installed with a proper lap, weigh about 850 pounds per square, well within the capacity of any conservative framing system.) That 1848 roof was in fine condition until a few years ago, when the state straightened the road south of town right through the barn. So much for history and tradition.

Speaking of history and tradition, our quarry is now 125 years old

"As near as I can figure from the original stock certificates, the Fair Haven Marble and Marbleized Slate Company came into being on September 6th, 1859. Marbleizing—a process in which slate was dipped in a water tank with floating oil paints, then baked and polished—went the way of Victorian taste; and in 1946 the company became the Vermont Structural Slate Company. About 60 of us work here—most down in the quarry. My name is Bill Markcrow and I own the quarry and do most of the selling. Our slate is excellent quality of unfading color, in mottled, purples, greens, and reds. That's me in the picture with the headstone of David Walter, who died at the age of 10 months but whose memorial is nearly as crisply chiseled as it was on August 5th, 1866. There's a moral there.



We're looking for architects who have a job we'll be proud of. Call us ...if only to wish us happy birthday

"We take special pride in custom jobs like the bishop's chair and reredos in Ed Barnes' Burlington Cathedral, and other fancy work we've featured in this little series of advertisements. But right now, business being business, I'm pushing slate roofs. The job doesn't have to be as big as the Pentagon, which took 94 freight cars; or as exciting as the Faneuil Hall Marketplace in Boston, which has 750 squares of carefully matched slate; or as well known as the White House, for which we supplied some replacement slates during the Carter Administration. (Being a rock-ribbed Vermonter, I thought of letting him stay wet for a while, but then I thought better of it.) If you're considering slate for a job (especially a roof) you're designing, don't worry about the budget until you've talked to me. Use our toll-free number, which is 800-343-1900. And if you can't write a spec for us, how about a 125th birthday card?—Bill Markcrow.

VERMONT STRUCTURAL SLATE COMPANY FAIR HAVEN, VT 05743

"The first slate roof in Vermont was for a barn. It was sold in 1848 by quarry owner Alanston Allen, who agreed to wait one year for payment, and 'if in the meantime the roof should



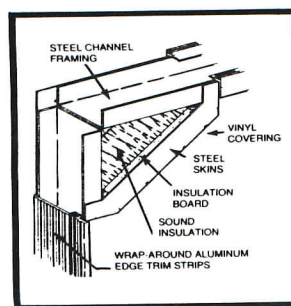
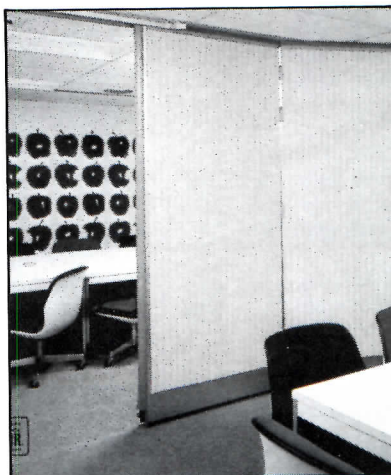
THE ENEMIES

Kids kicking, waiters whomping, balls bashing, conventioners converging. Those are the enemies of folding walls and partitions.

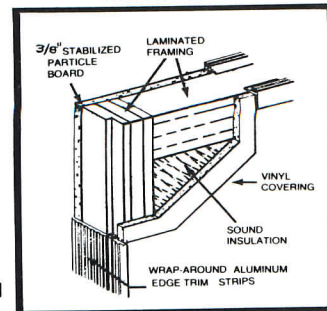
On the outside it's difficult to tell one partition from another. It's what's inside that counts! One year, two years, five years down the road the difference begins to show. Holcomb & Hoke doesn't cut corners to cut costs. We don't use drywall that a kid can kick a hole in, a conventioner can fall through or a maintenance man can gouge.

Our "Custom Line" panels feature 3 inch thick panels of "solid" steel construction. Our "Innovator" series is constructed of kiln-dried, four ply framing members and 3/8 inch particle board liberally utilizing steel and aluminum reinforcing. Partitions? Many exclusive features here, too! Additional frame support, positive stops, Airscape® ceiling guard, etc., etc., etc.

When you put **your** reputation on the line, back it up with **FoldDoor®**. We back **ours** with old-fashioned quality! It makes us **both** look good!



Custom Line



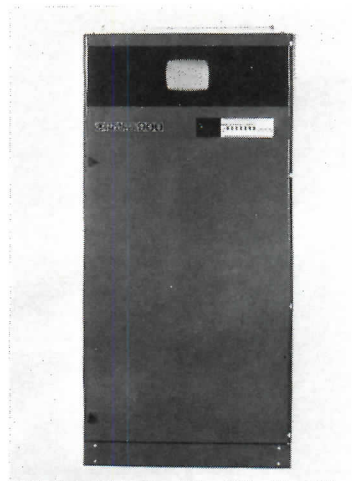
Innovator



SEND FOR YOUR FREE Architect's Handbook 106 pages of details and specifications!

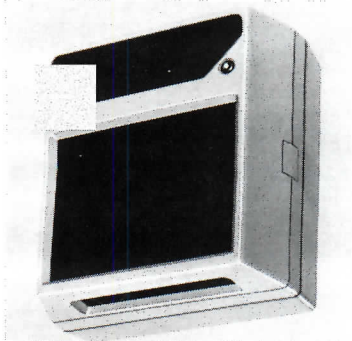
Holcomb & Hoke Manufacturing Co., Inc.
P.O. Box A-33900 • Indianapolis, Indiana 46203

Circle 91 on inquiry card



Elevator system

A microprocessor-based elevator system is designed for both building modernization and new construction. *Traffic Master* software capabilities allow one to see the operational status and performance history of all elevators, program special commands, run tests, check security, diagnose faults, and adjust the system to different operating parameters. Armor Elevator Co. Inc., Louisville. *Circle 308 on reader service card*



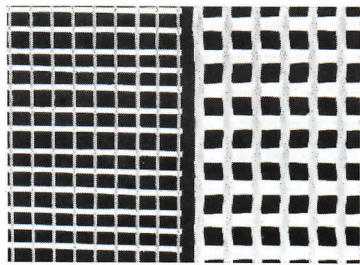
Alarm system

A combined ultrasonic and infrared motion detector is designed to reduce the probability of false alarms. The *6305 Infra-Sonic* unit requires the reaction of two sensors within a preset period of time before an alarm is signaled. A 24-hour tamper is provided to protect against wall removal and case opening. Sentrol, Inc., Portland, Ore. *Circle 309 on reader service card*



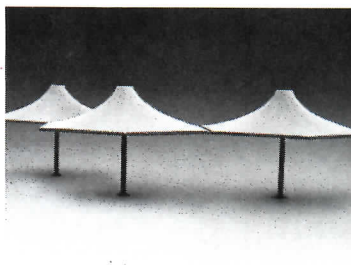
Direct modeling stone

Design-Cast 66 direct modeling stone is available for field or studio restoration of brick, stone, and terra-cotta ornamentation and sculpture. The material remains workable for two to four hours after mixing. Design-Cast Corp., Princeton, N.J. *Circle 310 on reader service card*



Reinforcing fabrics

Two fiberglass fabrics are available for the *R-wall* exterior insulation and finish system. The fabric reinforcement is laminated to the insulating layer with primer adhesive before the finish coating is applied. The fabrics are designed for increased impact resistance in the system. ISPO Inc., Mansfield, Mass. *Circle 311 on reader service card*



Shelter module

Steel and vinyl shade and shelter modules are offered in a square 22- by 22-ft shape or a hexagonal 22- by 25-ft 5-in. shape. Ground clearance for both styles is 10 ft. The washable, fire retardant, vinyl membrane is available in a range of colors. Shelters may stand alone or be nested. Helios Industries, Inc., Hayward Calif. *Circle 312 on reader service card*



Patio door interior

An optional bonded wood interior is available for *Concept* steel patio doors. The wood interior comes in oak, walnut, and ash. The steel door system includes a 1-in. deadbolt, 1-in. insulating glass, magnetic weatherstrip, and an adjustable sill. Pease Industries, Inc., Fairfield, Ohio. *Circle 313 on reader service card*
More products on page 193

WHAT'S TOUGH

...and thin?



Some companies in the curtainwall industry apply thick color coatings to metal wall panels under the misconception that extra thickness gives extra protection. Not so, unfortunately. Many thick coatings will crack, chip or peel and they cannot be field-formed to meet special conditions. Nor does thickness insure protection against color change. Certain corrosive industrial atmospheres do require special coatings, but it is poor judgement to use these coatings on every project. Smith has the background and experience to help you evaluate your project requirements and to recommend the most cost-effective coating to meet those requirements. Call us—we'll answer your questions with facts. E. G. Smith Construction Products, Inc., 100 Walls Street, Pittsburgh, PA 15202/(412) 761-7474; Kingswick House, Sunninghill, Berkshire, England SL5 7BJ/(990) 23491; Al-Howaish—Elwin G. Smith Co., Ltd., P.O. Box 11181, Jeddah, Saudi Arabia 21453/637-8000

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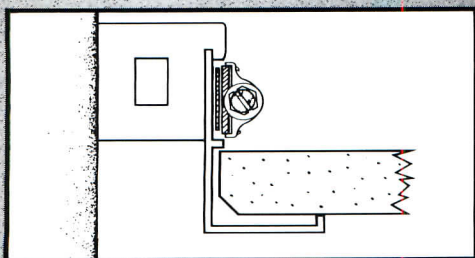


Smith answers the question with *Kynar!*

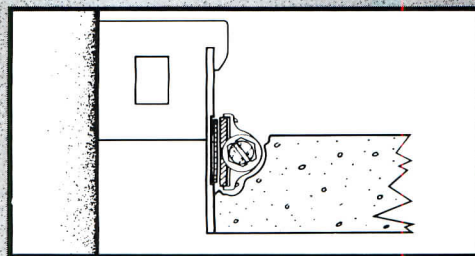
Circle 92 on inquiry card

Fry Reglet's New Column Collar: You'll Find Us In Tight Circles.

Introducing Fry Reglet's new Column Collar — finally a workable molding which fits around small radius columns!

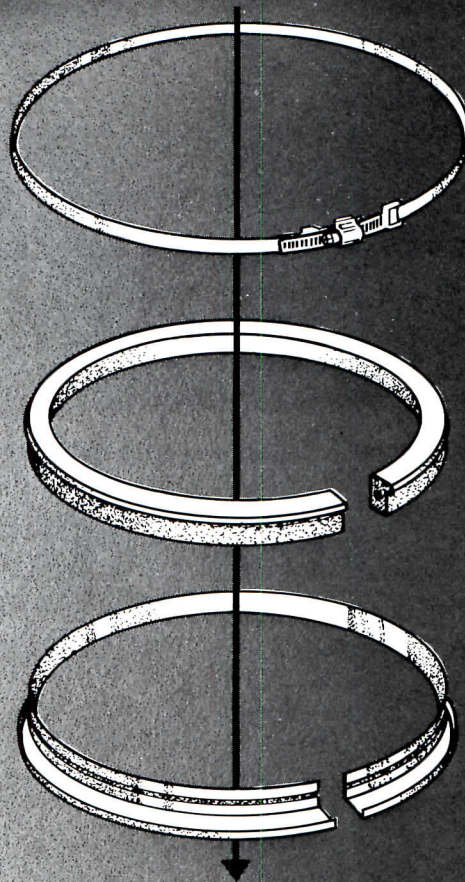


Acoustical tile rests in place on fitted aluminum angle.



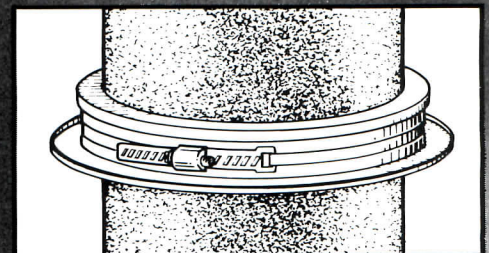
Plaster is screeded to aluminum reveal.

There exist today many well designed buildings with either crudely hand cut tiles fitted around a column or poorly joined plaster around a column. Accordingly, there is a demand by architects and builders for an economical molding which can be installed around columns to create a neat juncture for ceiling tile or plaster. Fry's new column collar does just that!



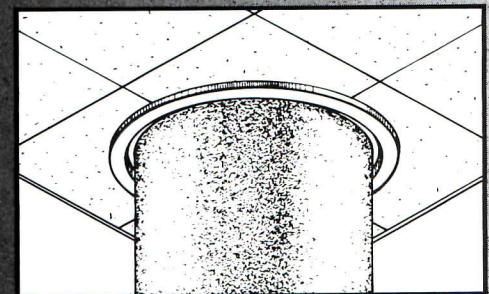
Two simple components secured by adjustable band.

Fry's new Column Collar is a simple and inexpensive reveal molding for use around a column with a small radius. One part comprises a plastic spacer easily wrapped around the column; the other part comprises an extruded aluminum molding (of simple configuration) that is flexed or roll formed to the curvature of the column. The two parts interfit and are secured to the column by a band clamp.



Fits on columns with a radius as small as six inches.

Collars can be manufactured to fit around columns with radii as low as 6". The aluminum molding is available painted (medium bronze, dark bronze, black and white) and clear or color anodized (medium and dark bronze). The PVC spacer is available in white or dark bronze.



Designed for easy installation.

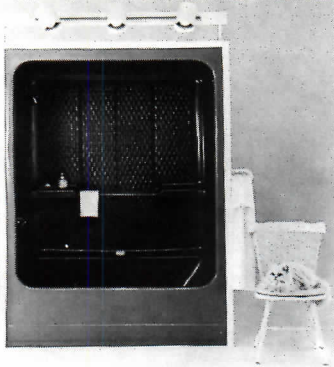
When your needs call for a column collar that is easy to install, adjustable, and attractive, ask for the column collar that is found in tight circles. **Call Fry today.**

625 S. Palm Avenue, Alhambra, California 91803
(818) 289-4744

2777 Peterson Place, Norcross, Georgia 30071
(404) 441-2337

Look for us in Sweets Catalog.
patent pending

 **FRY REGLET**



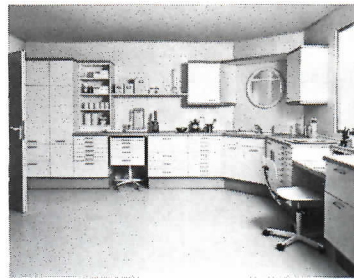
Bathing suite

A bathing suite is featured in the *Lasco Estate* line of acrylic and fiberglass bath fixtures. The tub/shower unit measures 60 in. long, 34 in. wide, and 7 ft tall and is available in blue, cream, Mexican sand, and various shades of white. A 24-in. grab bar, slip-resistant floor, molded soap dishes, and toiletry shelves are included. Lasco, Anaheim, Calif. Circle 314 on reader service card



Seating

The contoured *Sana* chair is upholstered with a polyurethane mold while the outside back, seat bottom, base, and armrests are made of textured polyresin and fiberglass. Work station chairs come with a spider base, casters, and optional armrests and pneumatic lift. The *Pace* Collection, Long Island City, N.Y. Circle 317 on reader service card



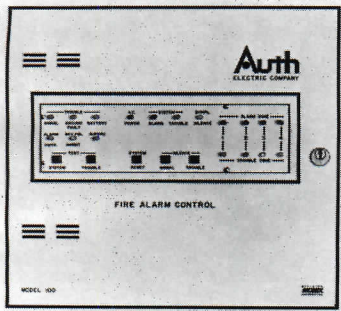
Laboratory furniture

A line of medical and laboratory furniture includes such features as drawer systems for implements, pull-out X-ray viewers, and built-in wash basins and laundry baskets. The laminate cabinetry comes in white with blue-gray trim and bow or grip handles. Poggenpohl USA Corp., Teaneck, N.J. Circle 318 on reader service card



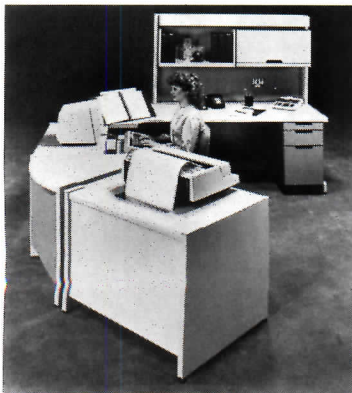
Lighting

Starfire is a ceramic ceiling fixture imported from Italy that comes in black or white. It measures 10 in. wide by 6½ in. high and is designed for contract or residential application. Koch + Lowy, Inc., Long Island City, N.Y. Circle 319 on reader service card More products on page 195



Fire detection panel

The *Model 100* fire detection panel enables system expansion from one to four zones with the use of an expander module. The panel includes individual alarm and trouble zone indicators and can accommodate 30 smoke detectors per zone. The Auth Company, Deer Park, N.Y. Circle 315 on reader service card



Office furniture

The *I/F* freestanding furniture series includes printer stands and adjustable VDT and microfiche reader stands. The system also features overhead storage furniture, privacy panels, and the *HarterWire* enclosed or wall-hung document management system and worksurface wire management system powered by *Powerwall III*. Harter Corp., Sturgis, Mich. Circle 316 on reader service card

WHAT'S TOUGH

...and flexible?



The tough, flexible Kynar* color coatings applied by Smith Construction Products to its Curtainwall Panel Systems give architects the freedom and flexibility to design for graceful, flowing curves and use sharp angles where they're needed. Thick coatings, used by some companies in the industry, limit this design freedom because they tend to crack, chip and peel under the stress of curves and angles. And thickness gives no added protection against color change. E. G. Smith Construction Products, Inc., 100 Walls Street, Pittsburgh, PA 15202 / (412) 761-7474; Kingswick House, Sunninghill, Berkshire, England SL5 7BJ / (990) 23491; Al-Howalish—Elwin G. Smith Co., Ltd., P.O. Box 11181, Jeddah, Saudi Arabia 21453 / 637-8000

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Smith answers the question with Kynar!

Circle 92 on inquiry card



No Other Reflective Coating Outperforms Real Gold

Polarpane® Gold Reflective Insulating Glass Units are made with real, 24-Karat gold. Aside from an obvious aesthetic quality, real gold gives Polarpane the highest solar energy rejection value and the greatest insulating value of any glass on the market . . . outperforming imitation gold, silver, and other reflective coatings.

Polarpane Gold combines high reflectance

of infra-red energy with high visible light transmittance. Total relative heat gain can be as low as 31 BTU/Hr.-sq. ft. And, as an added benefit, its heat retention in winter is at least equal to triple glazing and low emissivity coatings.

While Polarpane Gold provides timeless distinction to your design, its excellent environmental control properties will lower initial capital costs and daily operating costs by reducing heating and air conditioning equipment and indoor lighting requirements.

For more information on Polarpane Gold or Polarpane Silver, check your Sweet's Catalog Section 8.26a/Ho, or call or write Product Manager-Reflective Glass, Hordis Brothers, Inc., 825 Hylton Road, Pennsauken, N.J. 08110, (609) 662-0400.

HORDIS BROTHERS



Seating

The forward-slanting seat and backward-slanting knee cushion of the *Balans* chair distribute a user's weight to reduce pressure on the lower spine. Chair height, tilt, and the distance between the seat and knee cushion are all adjustable. HAG USA, Inc., Chicago.

Circle 320 on reader service card



Programmable switch

The *Home Sentry II Memory* switch, for use with permanent incandescent lighting fixtures, can be programmed to turn on or off up to eight times in a 24-hour cycle. With each cycle, the switch automatically varies its operating time to create the impression that someone is present. The device replaces a conventional wall switch. General Electric Co., Warwick, R.I.

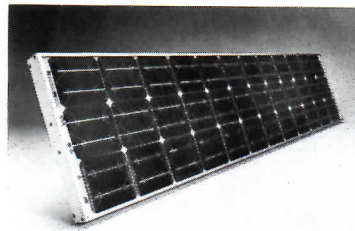
Circle 321 on reader service card



Industrial floodlight

The UL-listed *Predator* floodlight takes a variety of HID lamps and is said to provide a broad horizontal, narrow vertical beam of uniform brightness. Aside from a die-cast aluminum housing, all exposed metal parts of the fixture are stainless steel, making it suitable for wet locations. The Manville Corp., Denver.

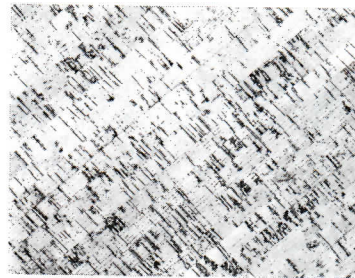
Circle 322 on reader service card



Photovoltaic module

The 43-W *M53* module features single-crystal silicon square cells laminated between a layered polymeric backsheet and non-glare tempered glass. The package is sealed by a neoprene edge gasket. It comes with a 1-by-4-ft clear or black anodized aluminum frame. ARCO Solar, Inc., Woodland Hills, Calif.

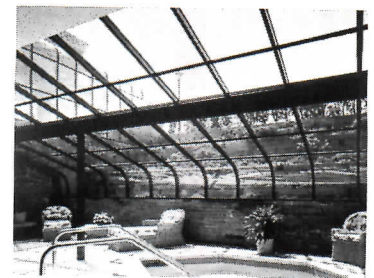
Circle 323 on reader service card



Cork flooring

A flooring pattern called *Oblique* sandwiches natural cork between a moisture-resistant backing and pure vinyl. The pattern comes in 12-in.-square tiles designed for residential and commercial application. PermaGrain Products, Inc., Media, Pa.

Circle 324 on reader service card



Solar greenhouses

Insulated solar greenhouses come in standard and custom sizes to fit any residential, commercial, or industrial application. For safety, tempered curved glass is combined with laminated safety glass for all overhead areas. Sun System Solar Greenhouses, Inc., Commack, N.Y.

Circle 325 on reader service card
More products on page 197

WHAT'S TOUGH

...and beautiful?



Thick metal coatings, offered by some companies in the curtainwall industry, have not met the high performance standards of Smith's tough, beautiful Kynar* color coatings. So these same companies have changed their coatings from time to time in an effort to satisfy the demands of architects, engineers, contractors and owners for better performance. Smith Construction Products applauds these changes for they tend to raise the standards of coatings performance throughout the industry. Smith, too, is prepared to change its coating system as soon as a better one comes along. Until then Smith will continue to supply its curtainwall systems with the tough, beautiful Kynar color coatings that have set such high standards of performance. E. G. Smith Construction Products, Inc., 100 Walls Street, Pittsburgh, PA 15202 / (412) 761-7474; Kingswick House, Sunninghill, Berkshire, England SL5 7BJ / (990) 23491; Al-Howaish—Elwin G. Smith Co., Ltd., P.O. Box 11181, Jeddah, Saudi Arabia 21453 / 637-8000

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Smith answers the question with Kynar!

Circle 92 on inquiry card

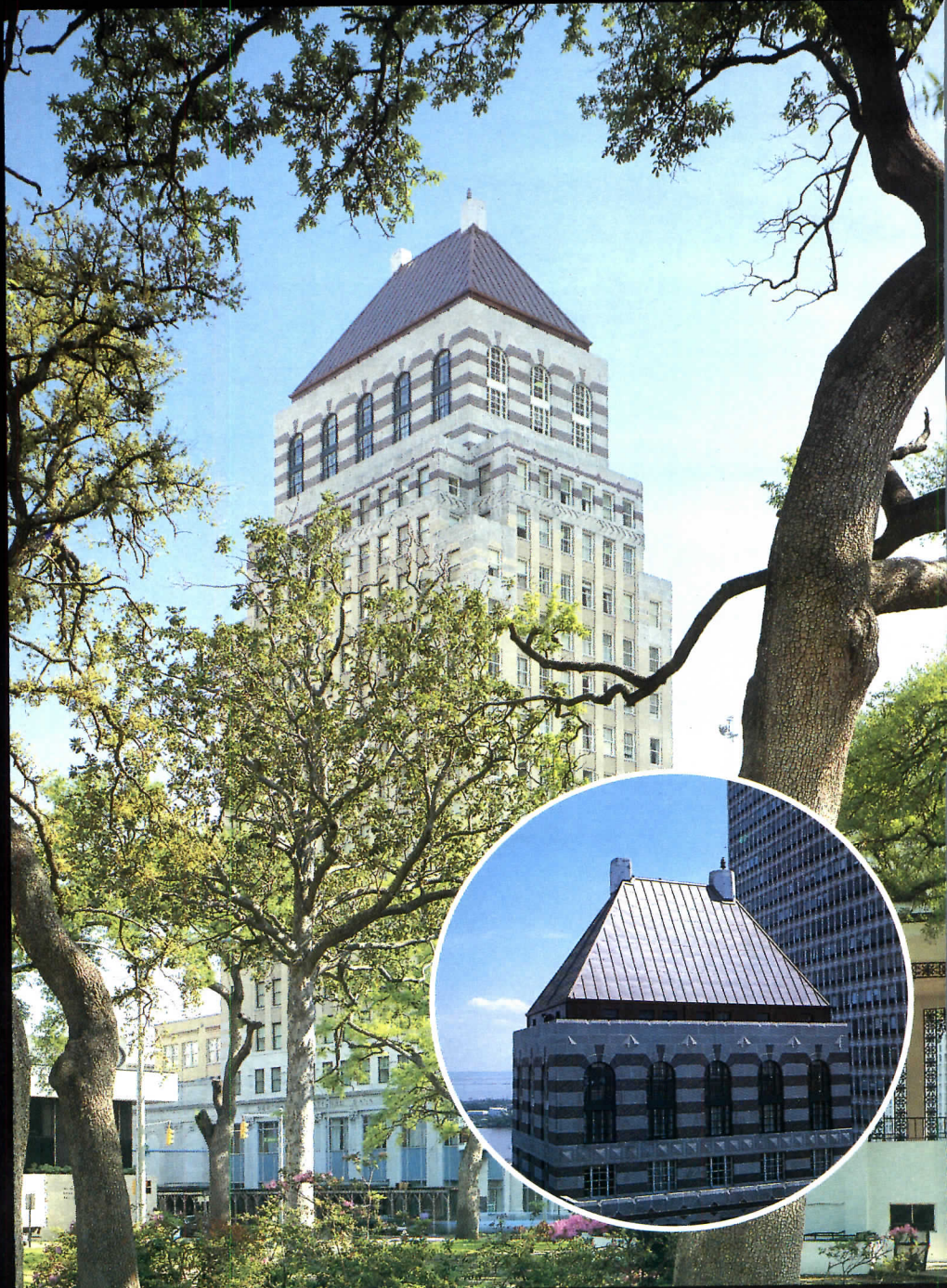
ROOFS FOR LANDMARKS



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The Merchants National Bank, Mobile, Alabama

30-year warranty

Overly Manufacturing Company - Manufacturers of Metal Roofing since 1928 - Greensburg, Pennsylvania 15601

Warranty to: _____ Job No. _____

Owner of an Overly Roof installed on a building known as _____

Overly Manufacturing Company, a Pennsylvania corporation, is the manufacturer of the Overly Batten Roofing System, P.O. Box 70, Greensburg, PA 15601. The Overly Batten Roofing System is a registered trademark of Overly Manufacturing Company. The Overly Batten Roofing System is a registered trademark of Overly Manufacturing Company. The Overly Batten Roofing System is a registered trademark of Overly Manufacturing Company.

Overly Manufacturing Company warrants that the Overly Batten Roofing System, as installed on the building named herein, shall be free from defects in material and workmanship for a period of thirty (30) years from the date of completion of the installation. This warranty is void if the roof is not installed in accordance with the Overly Batten Roofing System specifications and if the roof is not maintained in accordance with the Overly Batten Roofing System specifications.

Exceptions: This warranty does not cover damage to the roof caused by fire, lightning, wind, hail, or other acts of God. It also does not cover damage caused by the use of materials other than those specified in the Overly Batten Roofing System specifications. The Overly Batten Roofing System is a registered trademark of Overly Manufacturing Company.

Overly Manufacturing Company is not responsible for any damage to the roof caused by the use of materials other than those specified in the Overly Batten Roofing System specifications. The Overly Batten Roofing System is a registered trademark of Overly Manufacturing Company.

overly

Manufactured at Greensburg, Pennsylvania, 15601

DATE: _____

Secretary or Treasurer _____ President _____



The Overly Batten Roofing System. It's the only one today that comes with a 30 year warranty.

See us in Sweets or write for a copy of our warranty and a new catalog.

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DOES WHAT OTHERS DON'T

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West
P.O. Box 919
Montrose, CA 91020
(818) 240-6343 (TWX) 910-497-2761



Chairs

The *Trio* chair series features four models—plain seat and back with open or closed sides, or channeled seat and back with open or closed sides. The exposed wood is solid ash or walnut, and the upholstered frame is laminated wood covered with urethane foam over rubber webbing. The Barrit Corp., Philadelphia.

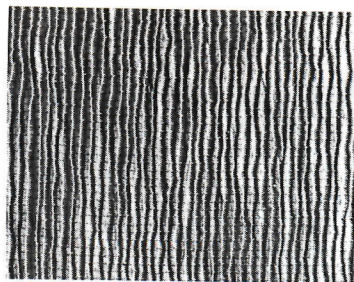
Circle 326 on reader service card



Computer furniture

The *Traditional Series* of furniture, with Chippendale styling, comes in walnut, while the contemporary *SE Series* comes in oak or walnut. Both series feature either locking casters or wood bases, slots for paper feed, and three kinds of disk storage. Nucraft Furniture Co., Grand Rapids, Mich.

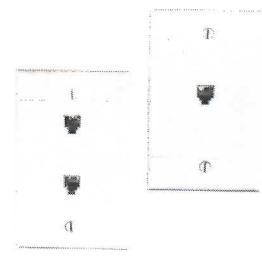
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Fabric wall covering

Mazurka cloque is a 100 per cent silk wall covering custom woven in France that is said to impart a trompe l'oeil impression of surface embroidery. The fabric is 39.5 in. wide and carries a 1-A flame spread rating. Gretchen Bellinger, Inc., New York City.

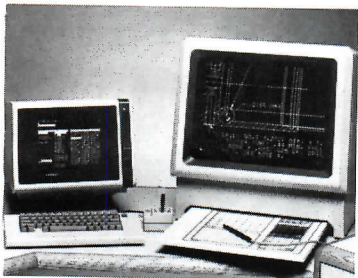
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Modular jack plates

A line of modular telephone jack plates is molded from high-impact thermoplastic. The plates come with one or two jack openings and are available in brown, ivory, or white. They are designed for 4-wire modular jacks. Pass & Seymour, Inc., Syracuse, N.Y.

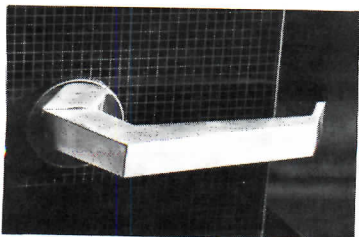
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CAD

In addition to a 12-in. monochrome CRT, the *Cascade X* CAD system features a 19-in. non-glare monitor with 1,024- by 798-pixel resolution. The system also includes a Motorola 68000 CPU backed by 756K of RAM, a keyboard, tablet, joystick, 5 Mbytes of hard disk storage expandable to 80 Mbytes, and a double-sided 5¼-in. floppy disk drive. Cascade Graphics, Inc., Santa Ana, Calif.

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Knobs and levers

Brass or extruded aluminum levers and knobs with 7- or 8-mm spindles can be adapted to existing latches and mortises. Brass models come in plated chrome and special finishes on request. Extruded aluminum models come in solid anodized colors or with brushed or polished aluminum lines contrasting with anodized colors. Knobissimo Corp., Birmingham, Mich.

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...and durable?



Unlike other companies in the curtainwall industry, Smith Construction Products has not changed its tough, durable Kynar® color coatings in more than 20 years. Nor do we make vague comparisons between Kynar and ancient ceramic coatings.

There's been no need to. Through all those years, Kynar color coatings have withstood acid rain, abrasive sand and dust, burning summer sun and bitter winter cold without failure. Kynar's performance is documented by 16 years of actual Florida subtropical outdoor exposure. The use of foreign tests and unknown measuring units or the use of tests not recognized in the coating industry, is not needed. To this day, Kynar continues to protect the metal substrate while retaining color and quality appearance.

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An attractive focal point, Mid-State quarry pavers serve as a hearth for the contemporary fireplaces in Genesis.

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One look at the new Broward Trade Center in Fort Lauderdale and you can see the contribution that the SUREWALL® SBC Insulation System made to the overall attractive appearance of this 36,000 square foot, six-story building. But, the real advantages of the SUREWALL SBC Insulation System are more than skin deep!

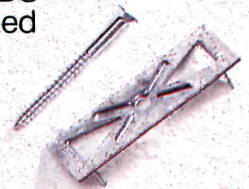
Impact Resistant. Unlike most "soft" exterior insulation systems, our system uses SUREWALL® Surface Bonding Cement to form a hard overcoating which readily resists damage and reduces maintenance costs. In short, good-looking buildings stay good looking longer.

Mechanical Fasteners. While many competitive systems use adhesives to fasten the insulation board to exterior sheathing, the SUREWALL SBC Insulation System employs patented 20-gauge galvanized metal fasteners. By using mechanical fasteners, this system is anchored to the actual framing members. In addition there is the assurance of knowing that this system will not delaminate due to the stress of climate and temperature fluctuations.

Design Flexibility. In using the SUREWALL SBC

Insulation System, the only limitation is your imagination. This system is versatile enough to be used on virtually any type or shape of wall. It can be panelized, as in this case. It can be employed in new construction, and it is especially suited for retrofit and renovation jobs. The SUREWALL SBC Insulation System can be ordered in 10 pre-mixed colors with special colors available on request. And, of course, it can be finished in virtually any manner that will enhance the good looks of the building.

So, as you consider the attractive advantages of exterior insulation, look for more than just a pretty facing. Get the facts about the SUREWALL SBC Insulation System. For a detailed brochure, write the SUREWALL® Producers Council, P.O. Box 241148, Charlotte, NC 28224. Or, call 704/525-1621 and talk with Ron Hodges.



See
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SUREWALL® SBC Insulation System

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