ARCHITECTURAL RECORD

Business Design Engineering
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June 1985

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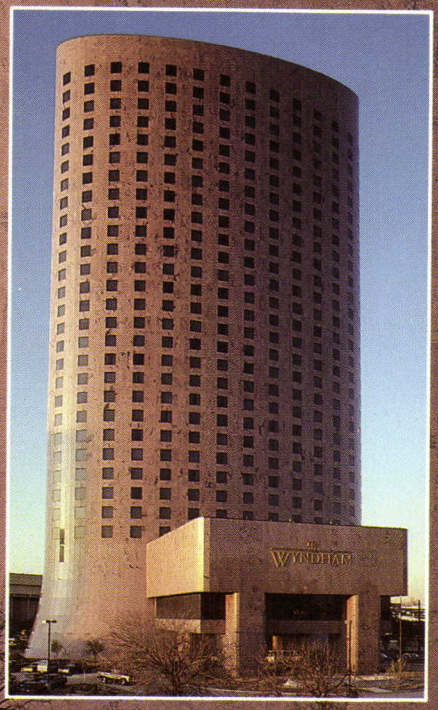
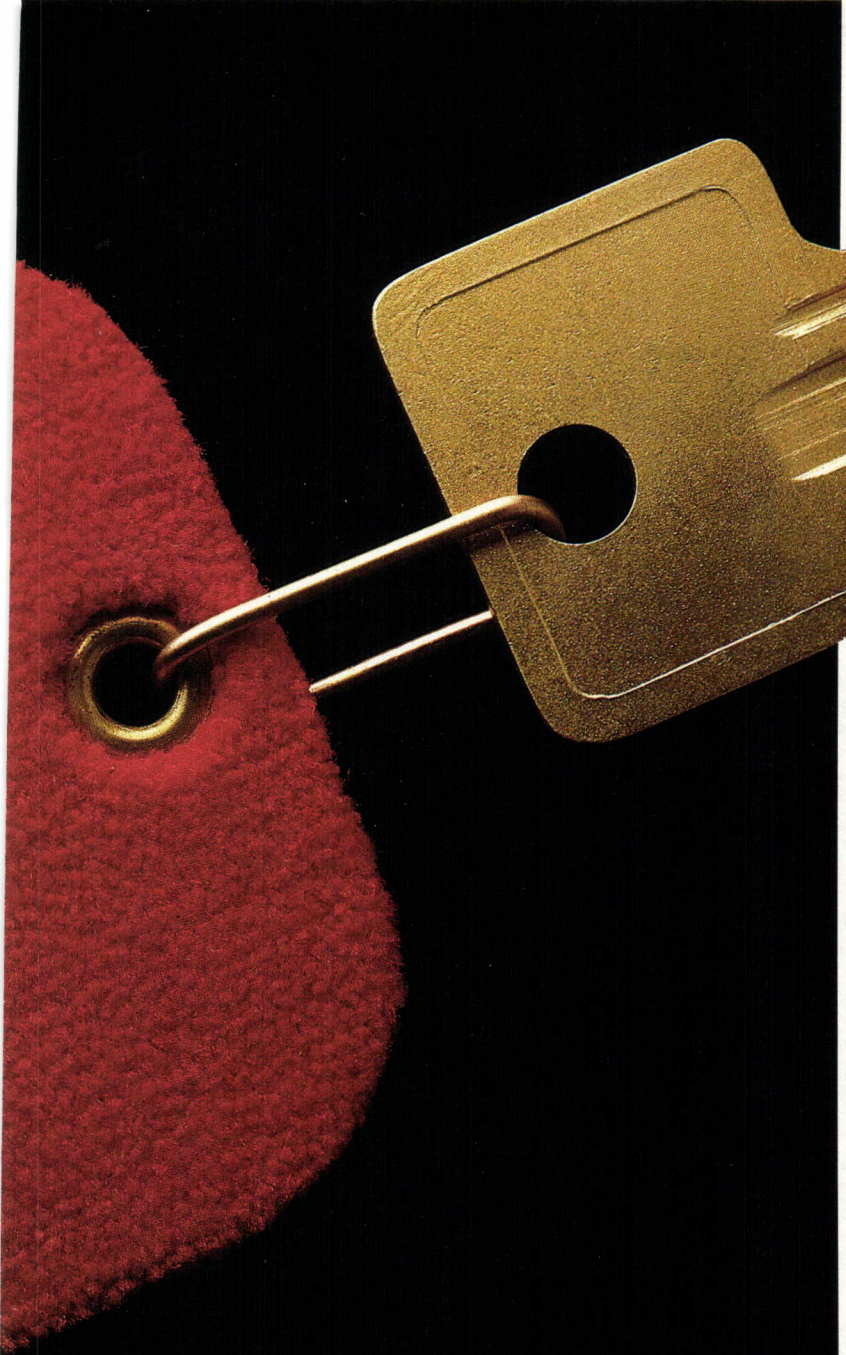


Wyndham Hotel
Dallas, Texas
Owner: Trammell Crow
Architect: Dahl/Braden & Chapman, Inc.
Granite: Indian Sunset

DIMENSIONAL STONE FROM COLD



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Circle 2 on inquiry card

Letters

Re: your March 1985 editorial on the goals of the AIA:

Out in 1985 is indifference to the contribution the media can and do make in raising the public's *and the architect's* appreciation of design excellence.

In will be architects speaking out on the local level in support of value architecture.

In will be bringing architects and the media together to serve the public's right to know.

Out will be architects who design projects that reporters and editors can only label ordinary, boring, or just plain bad.

In will be architects who do work that is worth honoring by the media and the public.

Out in 1985 is the AIA president who does not respond to the challenge of a supportive editorial.

In is deep appreciation for editors who are tough, honest, and caring taskmasters.

R. Bruce Patty, FAIA
President
The American Institute of Architects
Washington, D. C.

In the March issue, Paul S. Brown wrote a letter about Sid Frier's article on NCARB's education standard for certification [RECORD, March 1985, page 4]. My letter is not in response to Mr. Brown's but is, indeed, prompted by him.

The subject of education and the requirement of an accredited degree for certification has been debated for the past five years. And, on each occasion, the member boards of NCARB, by an increasing majority, have voted to establish the accredited degree as the standard in education and no longer accept practical experience as an equivalent to formal architectural education. The members also approved the identification of general and professional education that will meet the education standard when acquired outside a normal degree program. These areas of education are defined in NCARB's Circular of Information No. 3 and include: General Education; History, Environment and Human Behavior; Design; Technical Systems; and Practice.

Persons without the accredited degree in architecture may nonetheless satisfy NCARB's education standard by completing course work that meets in intensity and content that which is given in accredited programs of architectural education. Such courses may be offered by institutions with NAAB-accredited programs and other nationally or regionally accredited institutions. The subject of design, however, must be administered by an institution with an NAAB-accredited program in architectural education. These design studios may be offered either on- or off-campus utilizing regular faculty members, local practitioners, and visiting critics.

Education acquired in this fashion will be evaluated by education evaluators under a procedure directed by a firm called Education Evaluation Services for Architects (EESA), headquartered in Lexington, Kentucky. The EESA will receive from interested persons applications to compile a record of educational accomplishments, will have these evaluated and assessed for compliance with the NCARB education standard, will identify deficiencies in the applicant's educational background, and will provide information as to where the required additional education may be obtained.

A number of schools across the nation have indicated which courses in general education and professional education they will be able to offer to nonmatriculating students. The matter of enrollment, costs, and admission to courses is strictly a school matter over which neither NCARB nor EESA has any authority. A transcript will be prepared by EESA for each applicant showing that all required areas of education have been completed and copies will be sent to state registration boards and to NCARB for registration and certification purposes.

The optional route to acquiring the requisite education is beginning to fall into place. It is not an easy route. Individuals pursuing such a course will need to be diligent and will need to have great stamina to succeed. And, as in all other aspects of education, one must demonstrate proficiency at each level in order to proceed to the next.

Architecture is both an art and a science. Every project concerns itself with design principle and theory, with economic and legal constraints, with perceptual and socio-political aspects, and with technical matters. The complexities of systems, methods, materials, and the increasing sophistication of clients and uses demand higher levels of awareness and ability within the architect. A great deal can be learned from day-to-day exposure to technical matters, but the ability to respond in new, creative, and appropriate ways will rely heavily on both the depth and breadth of one's educational background.

Samuel T. Balen, FAIA
Executive Director
National Council of Architectural Registration Boards
Washington, D. C.

Calendar

Through July 1
Universe City, an installation combining architecture, sculpture and painting, by architect Stanley Saitowitz; at University Art Museum, Berkeley, Calif.

Through October 6
Timeless Sources: Rare Books in the Cooper-Hewitt Museum, an exhibit of selected volumes on design themes; at Cooper-Hewitt Museum, the Smithsonian Institution's National Museum of Design, New York City.

June 11-14
NEOCON 17, the World Congress on Environmental Planning and Design, sponsored by the Merchandise Mart; at the Merchandise Mart, Chicago. For information: NEOCON (312/527-4141).

June 11 through September 1
Carnegie Libraries: Sesquicentennial Celebration, an exhibit of photographs, postcards, drawings, and commemorative items; at the Cooper-Hewitt Museum, New York City.

June 16-21
35th annual International Design Conference in Aspen, "Illusion is Truth: Perception as the Basis for Design," Dr. Jerome Lettvin of MIT presiding; at Aspen, Colo. For information: Alexia Lalli, International Design Conference in Aspen, c/o Lalli and Moore Associates, Inc., 126 Fifth Ave., New York, N. Y. 10011 (212/206-8816).

June 21-23
Annual convention, Construction Specifications Institute, "Changing Influences in the Construction Industry," with exhibits and 30 concurrent educational sessions; at Orange County Convention/Civic Center, Orlando, Fla. For information: Katherine V. Bates, 601 Madison St., Alexandria, Va. 22314 (703/684-0300).

June 26-29
Theater tour and conference, sponsored by League of Historic American Theatres; in Colorado. For information: League of Historic American Theatres, 1600 H St., N. W., Washington, D. C. 20006 (202/289-1494).

June 28 through July 20
"Cities as Design," a three-week travel/study program in Italy; sponsored by Pratt Institute. For information: Jeanette Young, International Programs, Pratt Institute, 200 Willoughby Ave., Brooklyn, N. Y. 11205 (718/783-4891).

July 17-19
CALICON 3, Contract Show, sponsored by Western Merchandise Mart; at San Francisco. For information: Julie Goodman, Communications Director, Western Merchandise Mart, 1355 Market St., San Francisco, Calif. 94103 (415/552-2311).

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If you ever thought computers were just for the big firms, think again. That's what a new survey tells us...

On page 37 of this issue, you'll find a reader survey entitled "How are the firms with computers faring—and what are the nonusers waiting for?" As befits a report on survey results, the results are reported in straightforward, factual fashion—but on this page I have the license to offer some opinion and even some advice. Herewith:

There is just no doubt any more that architectural firms, even (or maybe especially) small firms, either need to get involved in computers—or have a very good, very well-thought-out reason for not doing so. That advice comes hard from an editor who not long ago was desperately hoping to get to early retirement without actually having to learn much about computers. But it is now clear that all architects (like all editors) have to learn a lot about computers—and that the benefits of computer usage are simply too large and too important to ignore.

Size of firm is clearly no longer an acceptable excuse for not taking the plunge. While many of the respondents to our survey who already use computers are medium- and large-size firms, the median size of computer-using firms was only seven employees, with three architects.

Cost of system is not much of an excuse either. Some 80 per cent of the computer users who responded to the survey report that their first, entry-level system cost less than $25,000 including software. And while most of them have expanded their systems, well over half report that their system investment is *still* under $25,000.

Those kinds of reasonably modest costs are explained by the advice given by many respondents: Don't be afraid to start small—with micro (personal) computers. Most small firms are clearly doing just that—and, according to the survey, more than a few larger firms (even if they already have a larger centralized computer system) are also buying personal computers so that their designers and draftsmen can do most of their work at their own desk and drafting board instead of having to move into a centralized "computer department."

The frustrations of the nonusers are clear. Asked "Why hasn't your firm invested in a computer system?," cost was the most-cited reason. But a little lack of information on cost is exhibited by the nonuser respondents: 70 per cent said they would be interested "if a system were available for less than $15,000"—and of course a goodly number of systems (including systems that can handle not just nongraphic functions but reasonably sophisticated CAD functions) are indeed available at that price.

But if you're interested in one editor's opinion, I believe the most telling comment from nonusers is the number who said they hadn't invested in a computer because "We can't sort out which system would be best," and commented in one way or another on "the difficulty of understanding and evaluating alternatives." In short, which is no news to anyone, the world of computer hardware and software is complicated, confusing, and competitive. But, in the final questions of the survey, computer users offer to their not-yet-user peers some awfully sensible advice about sorting out the confusions. They offer no *easy* ways—indeed they emphasize that there is no short cut to choosing the system that is right for your firm. And most of the respondents make the point that only the principal of the firm can make the choice—not just because it's the firm's hard-earned money that is going to be spent, but because only the principal(s) know where the firm should be going, and therefore what the computer should be asked to do.

But overriding everything else in the survey is the very-nearly-unanimous cry to "Do it, do it, do it!" There is no point in repeating here the savings/benefits listed by the respondents to the survey (see question 26 in the report, which, again, begins on page 37). But they make a powerful case to "Do it, do it, do it now!" *W. W.*

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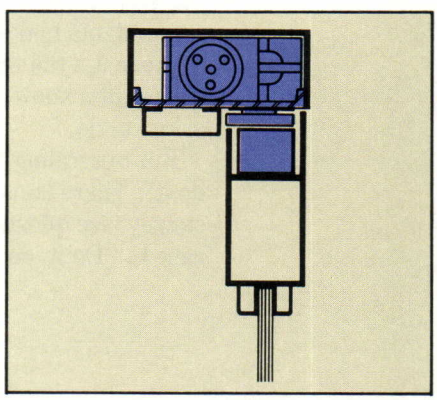

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ACEC announces current awards

Topping the list of this year's awards by the American Consulting Engineers Council was the Grand Conceptor Award to Sverdrup & Parcel and Associates for their design of a $240-million space shuttle launch complex in California. Innovations at the complex include permanent mobile skyscrapers and large stationary structures built to withstand blast-off impacts equivalent to some 323,000 pounds of TNT.

Other awards went to Sverdrup for the innovative use of slurry wall construction for a subway line in Cambridge, Mass., estimated to have saved some $3 million in construction costs; to Donohue, Engineers & Architects for advances in the detection of airport runway failures; to engineers and environmental consultants Dames & Moore for showing the feasibility of using utility waste for building site fill; to Coffman Engineers for their design of a compact, self-contained industrial community in the environmentally sensitive Prudhoe Bay area; to Black & Veatch, Engineers-Architects for the design of a coal-burning power plant in Colorado through innovations in flue-gas scrubbing, coal storage, and cooling by recycled sewage that also reduces water consumption; to EDI Engineering & Science for breakthroughs in the decontamination of styrene in nitrate fertilizer; to McNamee, Porter and Seeley for the design of a diverter for storm-water drainage that separates it from sanitary sewage before reaching treatment plants; to Hubbell, Roth and Clark for pioneering the use of magnesium hydroxide in the treatment of electroplate wastes in a facility that was built in 3 1/2 months; to Urban Engineers for techniques in the construction of a railway tunnel that allowed it to pass under landmark and high-rise buildings without damage; to the International Engineering Company for the design of the world's largest power plant in South America; to International Engineering again for innovations in the construction of a dam in Colorado; to Figg and Muller Engineers, Inc. for the design of a segmented concrete bridge that could be built with minimum disturbance of a scenic terrain; to Langan Engineering Associates, Inc. for the design of innovative foundations that allowed high-rise construction on a site with shifting subsoil conditions; and a grand award to architects and engineers Daniel, Mann, Johnson & Mendenhall for the design of a water-reclamation and wastewater treatment plant integrated into an Oriental-style garden.

U. S. design and construction abroad produces big revenues

American architects, engineers, and contractors working overseas add significantly to the nation's export earnings, contributing billions of dollars to the American economy, concludes a major analysis of the impact of the industry's foreign performance.

The report, by Price, Waterhouse & Co., Inc., found that the total revenue generated abroad in 1983 by the construction industry was $19.6 billion. A figure equal to more than half of that, $11 billion, benefited the American economy, either as direct dollar return flows or as revenues generated within the United States from overseas work. Total American exports that same year were $332 billion, including $132 billion in services.

The $75,000 study, entitled "The Contribution of Architect-Engineer-Construction Exports to the U. S. Economy," was commissioned by the International Engineering and Construction Industries Council (IECIC), an umbrella organization made up of the American Consulting Engineers Council, the American Institute of Architects, the Associated General Contractors and the National Constructors Association.

IECIC decided on the study last year following requests from both Congress and the administration to come up with numbers to back up the industry's contention that it contributes significantly to exports. Industry leaders had emphasized this message in hearings and meetings on Capitol Hill and with the administration in efforts to strengthen the Export-Import Bank, especially its direct lending authority, under attack from the administration, which wanted to do away with direct lending. In late April, the administration suffered a setback when the House Banking, Finance and Urban Affairs Committee authorized $2.4 billion in direct loans again.

NCIC's chairman David B. Perini told a press conference in Washington in mid-April: "We are happy finally to have the solid numbers to back our belief that enhancing the export environment for U. S. business is critical to our domestic economic health."

The study found that of the $19.6 billion generated abroad in 1983, almost $4.8 billion directly flowed back to the United States. A total of $15.1 billion were local expenses.

The backflow broke down into $2.2 billion in salaries and fringe benefits; $1.9 billion in material (usually equipment); $626 million on overhead spending; and $364 million in personal and corporate taxes. Foreign construction and design work directly created some 45,000 jobs, according to the study.

More important, foreign work generated some $6.1 billion in indirect revenues, a figure Price, Waterhouse arrived at by using multiplier factors developed by the U. S. Department of Commerce. This total included $4.1 billion in employee income, $102.1 million in corporate taxes, and $665.1 million in personal taxes. Using multipliers developed by the Labor Department, Price, Waterhouse found that foreign work was responsible for generating some 216,000 additional jobs at home.

While all this sounded terrific by itself, Perini pointed out that these numbers represented a significant downturn from the previous year 1982—"some very distressing news," as he phrased it—including a revenue loss of some $800 million, a tax loss of some $3.5 million and the disappearance of 7,000 jobs. *Peter Hoffmann, World News, Washington, D. C.*

National Computer Graphics Association terms its show a success

Offering some 243 exhibits to over 20,000 attendees in Dallas in April, the National Computer Graphics Association, termed its show, Computer Graphics '85, a turning point for CAD/CAM. "This is no longer a fragile segment of the computer industry, but a fully independent industry which has crossed over the threshold," said conference chairman Roy Bower. The association, a group of some 7,400 professionals and 90 corporations, has held six annual shows including this most recent one, and reports that the next show scheduled for Anaheim on May 12 through 15 is already sold out. Two regional shows are scheduled this year, in Los Angeles on June 25 and in Boston on August 13. For more information contact the association at 8401 Arlington Blvd., Fairfax, Va. 22031 (703/698-9600).

Glass Distinction

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The results of a RECORD survey: How are firms with computers faring—and what are the nonusers waiting for?

In several thousand copies of the February issue, we tipped in a four-page reader survey for "computer users—and nonusers." By the cut-off date, we had received 376 replies from firms that have committed themselves to computerizing their work—and 148 replies from firms that for various reasons have decided not to, at least not yet.

While the research mavens at RECORD have declared that this is not a statistically valid sample, the answers given—and reported on these pages—nonetheless provide some useful insights and information on reasons that architectural firms (most of them quite small) have taken the plunge and others have not done so yet. Further, the same research experts tell me, no conclusion can be drawn from the fact that 70 per cent of the respondent firms are computer users—that simply means that firms who have invested in computer systems are more likely to respond to a survey on computer use than those who are still waiting and/or wondering. Those caveats aside...

The first eight questions of the survey (which are repeated in the subheads at right) were addressed to nonusers. They ask why the firm has *not* taken the plunge (main reason, not surprisingly, cost) though the second most frequent answer is, "We can't sort out which system would be best for us." Other questions asked: to what extent the nonusers have tried to find out about computer use and its benefits; the main interest of the nonusers once they do make an investment (both graphic and nongraphic functions); about their interest in entry-level and therefore low-cost systems; and finally about what more help/information they feel they need "to further consider a computer installation."

Questions 9 through 20 were addressed to and answered by firms that *have* invested in computers—and ask about how long the firm has had its system, how it has been expanded, how much it cost, the functions that it is performing (and the list is a long one), the extent to which the systems are based on microcomputers/personal computers (a great deal!), which manufacturers supplied the hardware, and—most important—what the *benefits* have been.

Not surprisingly, the nonuser firms are quite small: the average firm size is 5.4 with 2.2 registered architects, and the median firm size is 3 employees, with 2 architects. For those firms who have computer systems, the average number of employees is 23.5 (a figure that is skewed upwards by the fact that 11 *very* big firms (more than 300 employees) responded. But the median size for computer-using firms was 7—with 3 architects.

Here are the survey results:

Nonusers were asked...

Question 1:
Why hasn't your firm invested in a computer system?
Only 4 per cent of the 148 firms responding to this question said "We're just not interested." But...

70 per cent thought "it would cost too much," even though, in response to the question, "About how much do you think an entry-level system would cost?" 21 per cent said "about $5,000," 35 per cent said "$5,000 to $10,000," 31 per cent said "$10,000 to $25,000," and only 14 per cent thought an entry-level system would cost "more than $25,000."

46 per cent said "We can't sort out which system would be best."

32 per cent felt "Our firm is too small to benefit."

24 per cent said, "No one in our firm has the expertise to get us involved in computer use."

17 per cent said, "We are afraid it would take too long to train ourselves."

The questionnaire invited write-in comments. A number of respondents were clearly concerned about the timing of any computer purchase: "We've been watching the field for three years; it changes so rapidly that a decision is difficult to reach"; "Concerned about rapid change in computer capabilities, and systems seem outdated before you can learn to use them"; "We've tried to learn as much as possible before making the investment, but we've begun to realize total comprehension is unachievable and expect to 'take the plunge' within 60 to 90 days." More than a few respondents listed "fear of computers by principals" or "management reluctant to change from 'the old ways' " as a reason for not taking the plunge. Most plaintive comment: "If only you could use voice commands—talk to the computer rather than typing...."

Questions 2, 3, and 4:
On learning about computer use
Of the 148 respondents not yet using computers, 25 per cent said they or someone in the firm had attended one or more AIA seminars on computer use; an astonishing 65 per cent had attended "other education meetings to 'look into' computer use"; and 14 per cent had attended a major computer conference "such as A/E Systems '84." Most of the respondents said they had "read articles in RECORD or other professional magazines on the use of computers."

Asked if they believe that local competitors (of similar size) are using computers: 37 per cent said yes, 39 per cent said no, and 24 per cent said "don't know."

Questions 5 and 6:
On hoped-for uses and hoped-for prices...
Question 5 asked: "If you were to consider a computer system in the future, what would you be primarily interested in? "

8 per cent said "computer graphics," 29 per cent said "nongraphic uses," and 63 per cent said "both."

Asked if they would be interested "if a system were available for less than $15,000" (and of course a number of systems are available at or near that price), 79 per cent said yes, 20 per cent said no (though a number of respondents volunteered that they were not interested in "just an entry-level system").

Questions 7 and 8:
What more help do nonusers want or need?
Question 7 asked: "What kind of information/help would you need to further consider a computer installation?"

The largest number of write-in comments focused on the difficulty of "understanding and evaluating alternatives." Many respondents were interested in hands-on demonstrations of systems at work, which of course seem to be available without trying too hard. A number were interested in "pilot or loaned systems for trial use prior to purchase." Another considerable group were interested in "help or advice to justify the cost of a system, especially in the small firm," with "definite, provable benefits, not just sales talk." There were numerous requests for ways to compare the capability of various software programs (indeed many more such requests about software than hardware capability)—with many words of praise of RECORD's October 1984 "Guide to computer software for architects and engineers" but a number of requests for "unbiased evaluations of all software" (which we are not qualified to perform and are probably the province of the computer magazines and/or an experienced consultant).

Question 8 simply invited "additional comments." Some of the most interesting:

"Everyone says 'select software first.' But no one is willing to take the time to explain software options first unless they think a higher-profit hardware sale will accompany the software."

"I have yet to talk to a vendor who addressed my needs as an architect."

"Catch 22: I want the best and most versatile software at the best price, so I need time to shop around. But we are too busy doing architecture to take the time to shop around."

"I'm afraid to start in the wrong way, but I'm also afraid to delay the beginning of computerization."

"Please keep a lid on your computer articles—at least until I get mine going and have a nice jump on the market."

Users were asked...

Question 9:
When did your firm first invest in a computer system?
Of the 378 respondents, the answers were:

Only last year (1984)	29%
1983	23%
1982	16%
1981	11%
Over 5 years ago	20%

... which suggests, of course and once more, that computer use in architectural firms (and remember that most of the respondents are small firms) is a relatively new phenomenon, is growing fast, and is accelerating....

Questions 10 and 11:
How did you use your first system and what did it cost?
As you might suspect, given that developments in computer-aided design and drafting are more recent, 84 per cent of respondents reported that their first system was used for non-graphic functions—job control, accounting, spec writing, and the like. Only 5 per cent of the first systems were used for graphic functions, and 11 per cent were used for both.

And most of those first, entry-level systems were relatively inexpensive—including software:

Less than $10,000	62%
$10,001-25,000	19%
$25,001-50,000	7%
$50,001-100,000	6%
More than $100,000	6%

Question 12:
Most of the systems (and investments) have grown
Of the base of 376 computer-user respondents, 67 per cent (or 251 firms) report that their system has been expanded since their first investment. And so has the total cost of the system, as can be seen by comparing the list below with the cost list just above:

Less than $10,000	8%
$10,001-25,000	49%
$25,001-50,000	12%
$50,001-$100,000	7%
$100,001-250,000	10%
$250,001-500,000	6%
Over $500,000	8%

These listings, taken together, show that while a majority of

Continued

Circle 39 on inquiry card

Contents

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"first investments" in computers and software were below $10,000, the "current investment" is considerably larger, with most systems reported in the $10,000-25,000 range and 25 per cent costing over $100,000 (only 6 per cent of first investments were over $100,000). These larger investments should be judged against the fact that 22 of the respondent firms have more than 100 employees, and of these 11 have more than 300.

Question 13:
List the functions you are handling to a substantial degree on the computer
The 376 respondent firms who do use computers, provided this list:
Office management
- Word processing..... 93%
- Specification writing 85%
- Spreadsheets 69%
- Database management... 54%
- Business development 44%

Other functions listed were "accounting and integrated accounting, accounts receivable, billing/invoicing, bookkeeping, business financial services, correspondence and electronic mail, investment analysis, mailing lists, programming special reports, scheduling terminal time, software production."

Project cost analysis and control
- Project cost accounting .. 43%
- Job estimating..... 40%
- Job budgeting 36%
- Job costing 35%
- Feasibility studies 25%
- Materials take-offs 13%

Project scheduling/management
- Job scheduling..... 25%
- Manpower utilization..... 22%
- Construction management..... 13%
- Resource management... 10%

Other functions listed were "CPM networks, building programming, occupant survey tabulation."

Space planning 15%
Facilities management..... 9%
Architectural engineering
- Energy analysis 19%
- Structural analysis..... 17%
- Hvac design..... 10%
- Lighting design..... 9%
- Electrical distribution 5%

Other functions listed were acoustical analysis, area and dimensional calculations, audiovisual system design, bridge design, civil engineering analyses, engineering software development, finish schedules, hydrographic survey calculations, input checking for structural analysis, rainfall analysis, security system design, soils engineering, solar calculations, teleconferencing system design, telephone system design.

Graphic functions
With the benefit of hindsight, we can see this question was not asked as clearly as it might have been—we had intended to determine whether the "preliminary-drawing" function was done only in two dimensions or in three dimensions or isometric; it was assumed that the "working drawing" function was two-dimensional. At any rate, here are the replies:
- Two-dimensional 33%
- Working drawings 31%
- Preliminary drawings..... 28%
- Isometric 14%
- Three-dimensional..... 14%

Other functions listed were "bubble diagrams, block diagrams, color modeling, details, finish schedules, door and window schedules, formatting text reports, organization diagrams, schematic diagrams of engineering systems, site contouring, sketching, stacking diagrams, survey plotting, title blocks."

Questions 14 and 15:
Most of the systems are relatively small
Asked what size computer their system is based on, 84 per cent of the 376 respondents said microcomputers/personal computers; 25 per cent said mini-computers; and 6 per cent said mainframe computers.

Asked how many workstations the firm has, 44 per cent said one, 28 per cent said two or three, 11 per cent said four or five, 9 per cent said six to 10, 5 per cent said 11 to 25, and 3 per cent said "over 25."

Question 16:
Who was the major hardware supplier for your system?
In this question, the numbers given are actual numbers of respondents who named the manufacturer, not percentages. You will not be surprised at the firm who has the most installations among the 376 respondents:
- IBM ..... 149 (of which 117 are IBM PCs or IBM PC XTs)
- Apple 72
- DEC 39
- Radio Shack..... 37
- Hewlett-Packard 28
- Compaq..... 17
- Wang..... 17
- Intergraph..... 11
- Prime 10
- Calcomp..... 7
- Kaypro..... 7
- NEC..... 7
- Epson..... 6
- Texas Instruments..... 6
- Vector Graphics..... 6
- AT&T 5
- CPI 5
- Data General..... 5
- Lanier 5
- Sigma Design..... 5
- Bausch & Lomb 4
- Commodore 4
- Compupro..... 4
- Compucorp 4
- Houston Instruments 4
- Televideo..... 4
- Columbia 3
- Computervision..... 3
- Eagle 3
- NBI..... 3
- NCR..... 3
- Victor..... 3
- Zenith..... 3

Manufacturers with 2 mentions were A. B. Dick, Auto-Trol Technology, Datapoint, Leading Edge, Morrow, Osborne, Phillips, Sanyo, Sperry, Summa Graphics, Tektronic, and Xerox.

Manufacturers mentioned by 1 respondent were AES Data, Altos, Bruning, Burroughs, Cascade, Cromomco, DFI, Fortune, Heathkit, Hitachi, Information Displays, Iomega, Lomas Data Products, Masscomp, MIS, Northstar, Olivetti, Onyx, Seiko, Sony, Sun, and Terak.

Question 17:
On time-sharing and use of service bureaus. . . .
Of the 376 respondents, only 4 (1 per cent) were involved in a time-sharing system, and only 9 (2.4 per cent) were using a service bureau.

The only time-sharing systems named by respondents were Boeing and McAuto. The service bureaus named were Design Online, of Columbus, Ohio; Harper & Schuman of Cambridge, Massachusetts; Oliver CADD Group of Hartford, Connecticut; T2C2 of Tallahassee, Florida; and Y.E.S. of Irvine, California.

Question 18:
Where did you find the software?
Over 250 separate vendors of computer software were named by the 376 respondents. RECORD will make every effort to contact each of these vendors for a listing in our 1985 "Guide to computer software for architects and engineers," to be published in October. Those suppliers who received more than 10 mentions are:
- Lotus 44
- Microsoft 35
- Wordstar..... 28
- Autocad 24
- IBM 23
- Radio Shack/Tandy 21
- Computerland..... 14
- Intergraph..... 14
- Apple 10
- DEC/Digital Equipment..... 10

In addition, 18 respondents reported that they wrote their own software.

Questions 19-25:
On choosing a system, on training, on getting up to speed
Of the 376 respondents, 89 per cent reported that a principal or partner chose the system the firm is using. Only 22 per cent reported that they used a consultant to help choose the system in use in their firm.

24 per cent of respondents said that before selecting a system they attended "a major computer conference such as A/E Systems '84"; 20 per cent attended an AIA seminar, and 46 per cent attended "some other educational meeting to 'look into' computer use."

Asked how people in the office were trained to use the computer system (question 22), 75 per cent said they were given training in the office by the manufacturer or vendor; 50 per cent said their people were aided in training by a manual provided. Other responses: computer-aided instruction, 17 per cent; training by manufacturer or vendor at his location, 16 per cent; training by consultant (3 mentions); training by knowledgeable staff member (3 mentions); and (1 mention each) college or university course, instructional workshops, and audio tapes.

Asked how long it took to "get up to speed" in using the computer (question 23), respondents replied:
- Less than 1 month 26%
- 1-3 months 46%
- Up to 6 months..... 18%
- Up to a year 11%

. . . which are time frames, as many respondents volunteered in write-in comments, that require a strong commitment to "work at learning the system," often in hours after the normal working day.

Asked for the reaction of employees who use the computer (question 24), respondents volunteered that it depended very much on individual attitudes and that attitudes varied widely within the firm. But over-all, respondents answered this way:
- Very positive 58%
- Positive 40%
- Neutral 8%
- Hostile 5%

. . . which would seem an encouragingly low level of employees who are not interested in learning to use the new technology.

Question 25:
How did you decide how much to spend on your computer system?
This question, in retrospect, was not a good question. Most of the answers were general, along the lines of, "We studied what we wanted the system to do, and spent as little money as possible to accomplish those functions."

Question 26:
What have been the savings, or benefits, of the computer system in your office?
Respondents were asked to check off benefits that RECORD assumed would be the major benefits, and were asked for write-ins of other savings/benefits.
Continued

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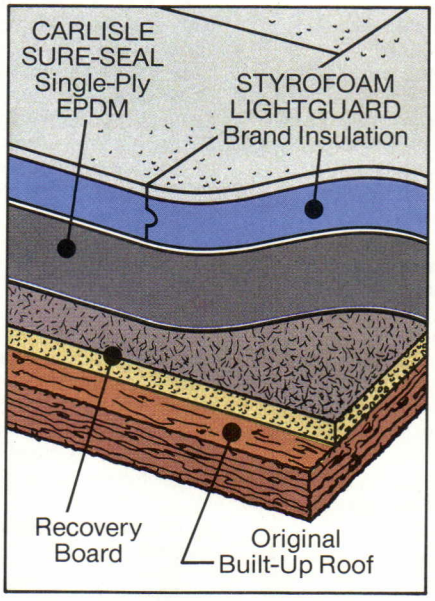

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The most frequently cited benefit was "better specifications"—of the 363 respondents who answered this question, 74 per cent checked off the spec-writing benefit.

Some 57 per cent checked off "office management efficiency increased"—and a long list of specific ways that was accomplished is given in the write-in responses below.

Of the 363 respondents, 136 volunteered information on "estimated *increase* in office-management efficiency." The average increase was 47 per cent, the median was 32 per cent.

35 per cent said they were accomplishing better job cost estimates/budgets/cost analyses.

About 25 per cent of the computer users responding said that "working drawing productivity is increased," and another 13 per cent said "drawing productivity not increased, but drawings more accurate." These percentages would presumably have been higher if they had been asked *only* of those with CAD systems, instead of being asked to *all* computer users. 66 respondents reported an estimated increase in working drawing efficiency; the average increase was 76 per cent, the median increase was 33 per cent.

And another 25 per cent reported "better control of job scheduling." Finally, over half of the respondents listed "other savings/benefits" including these write-in comments from the questionnaires:

"Many more design alternatives can be studied in a given time period"—a point mentioned by dozens of respondents.

"More accurate and current financial information."

"Simplifies the task of preparing proposals and contracts."

"200 per cent increase in speed of making engineering calculations."

"I don't know that CAD has increased the speed of doing working drawings—but I think our drawings are now of higher quality, and the overlay features have surely increased their accuracy."

"We have increased our fees through more complete and methodical preparation of fee proposals—specifically, analysis of 'what ifs' in preparing hours and scope of work."

"Greatly improved employee morale," wrote an associate of a 23-person firm. "There is a continued excitement in finding new, useful things for the computer to do."

"We feel we are preparing for the future—and for being competitive in the future."

"We are emphasizing problem-solving during the design period, which seems more important than production drawings, though we are getting savings there. Our gross fees are up 25 per cent per person," according to the principal of a 13-person firm.

"Offers more efficiency during design development—and makes changes much easier to cope with."

"Our biggest saving is the reuse of graphic information from one job to another (similar) job."

"Makes a big impression on clients. . . .Clients are much more impressed with computer-generated information than the same material typed or hand-lettered."

"Faster, more efficient energy analyses; faster location of specific files and data."

"By using computers, you develop a project database that you can pass along to the client when your work is done; and this has led to us being rehired for additional services."

"We find our employees more interested in their future with our firm as they see more opportunity to advance themselves."

"Quick development of real-estate feasibility analyses."

"Better able to manage our day-to-day operations because we have absolutely current information, and for the same reason we are better able to keep our clients informed on schedules and budgets. This ability has secured our position with larger clients."

"We're getting better prices from bidders due to the accuracy and 'finished look' of our drawings."

"Computers have put the fun back in my work," writes the principal of a one-man firm.

"The time for preparing marketing proposals has been cut by 80 per cent; contract preparation time has been cut by 50 per cent."

"It saves enormous amounts of time and effort in space planning."

"Expands your base for doing new kinds of work and exploring new kinds of markets."

"We've been able to sell software we have developed—giving us a small but significant profit."

"Getting a computer means you have to think through and organize all areas of your practice. And I really believe that is the most important benefit. . . ."

"By eliminating most of the cut-and-paste work, by freeing the principals of 'busy work' in managing the business, and by speeding up production, we have more time for design, which is what it is all about. . . ."

"It is easier to redo things that are not quite right—and easier to convince yourself to go back and get it just right."

Of the 363 respondents to the question on savings and benefits, 13 did volunteer that it was "too early to tell"—and only one respondent reported that he saw, in response to his investment, "no benefit."

Question 27:
My advice to firms who have not yet invested in a computer system is. . .
Respondents were invited to complete that sentence, and there was one answer that dominated the replies (in just these words): " Do it." "Do it." "Do it." "Do it." "Do it now."

And there were some more specific comments. Samples: "Buy a small and inexpensive micro system to get started." "Start now, but build up your system incrementally along with your skills. Don't buy a big expensive system first." "Buy a personal computer." "Visit architectural firms who have systems and see how they are doing and what they are doing. And get someone in the firm who is interested and get involved." "Buy a micro today, start systems drafting tomorrow, and commit yourself to having a computerized office."

A principal of a six-man office warned: "See ya later, Flintstone!" "Begin with word-processing, spreadsheet tasks, and database management on a micro system. I'd wait for graphics to develop further." "At least start investigating by attending seminars, meetings, and other learning sessions; and try to understand how the computer could impact your business."

"Get employee involvement, interest, and commitment before you buy."

"Get a consultant," said a score of respondents. "Take your time, thoroughly research software available and match it to your needs, then buy compatible hardware. Let patience and good judgment prevail."

Of the over 300 respondents who answered this question, only two sounded warnings: "Hurry up and wait—prices are coming down (but don't get left behind waiting for the right price)." "I'd wait. *Super-micro* development is just around the corner."

"Listen to your colleagues, don't listen to unqualified salesmen, think for yourself, check out service availability, kiss your wife goodbye for a while, and swear off strong drink and profanity for the first 90 days you have your computer. But dive in, do it!"

Final question 28:
Knowing what you know today, what would you have done differently in setting up your computer system?
Most respondents said, in effect, "nothing different," and many said, "I would have started sooner." But some respondents offered advice, such as: "I bought the right equipment manufactured by the right company. But I bought it from the wrong local dealer—his service is bad." "Train everyone who will use the computer right away, rather than training just one person to train the others." "Halt all office operations for intensive training of everyone involved." "Join a users' group—you get more reliable information and training than from most local retailers." "I would have planned our office space and furniture to accommodate PC workstations throughout the office. Shared computers haven't worked for us. . . ." "We should have more thoroughly investigated the software options before buying a computer; luckily we bought a computer that is compatible with many good software programs—but it was luck." "We bought a minicomputer; I rather wish we had waited for the powerful personal computers available now." "I'd have leased for awhile until I was sure of what we should buy." "I would have trained personnel before we invested so much money in our CAD/D system." "Make computer training mandatory for all staff members, and use professional consultants to do the training." "Set up for multiple workstations, not a central computer room." "Insist on involvement by reluctant staff members." "Simplify systems at every opportunity, and meet with staff on a frequent and regular basis to share learning experiences." "Pick a system with fast reliable service." "Instead of our fairly expensive system, I wish I had bought inexpensive PCs for *all* our key people." "I wish we had upgraded sooner, expanded faster, learned more applications, and networked our system." "I wish I had invested in one of the most popular systems—my 'off-brand' is limiting." "Start with hard disks—if you don't, you'll soon be buried in 'floppies.'" "Buy the hardware that is compatible with the absolute maximum of software."

A few respondents said they wished they had waited until prices got lower, and more than a few users said what they would do differently in setting up their computer systems was "to have more money." A common warning: "The transition to computer use is always difficult. You simply have to make your decision, spend your money, find people who want to use it, and go to work."

But again, the vast majority of computer users expressed their clear satisfaction with their computer systems by volunteering that there is nothing they would do differently if they were starting over. Which says a lot. . .

Walter F. Wagner

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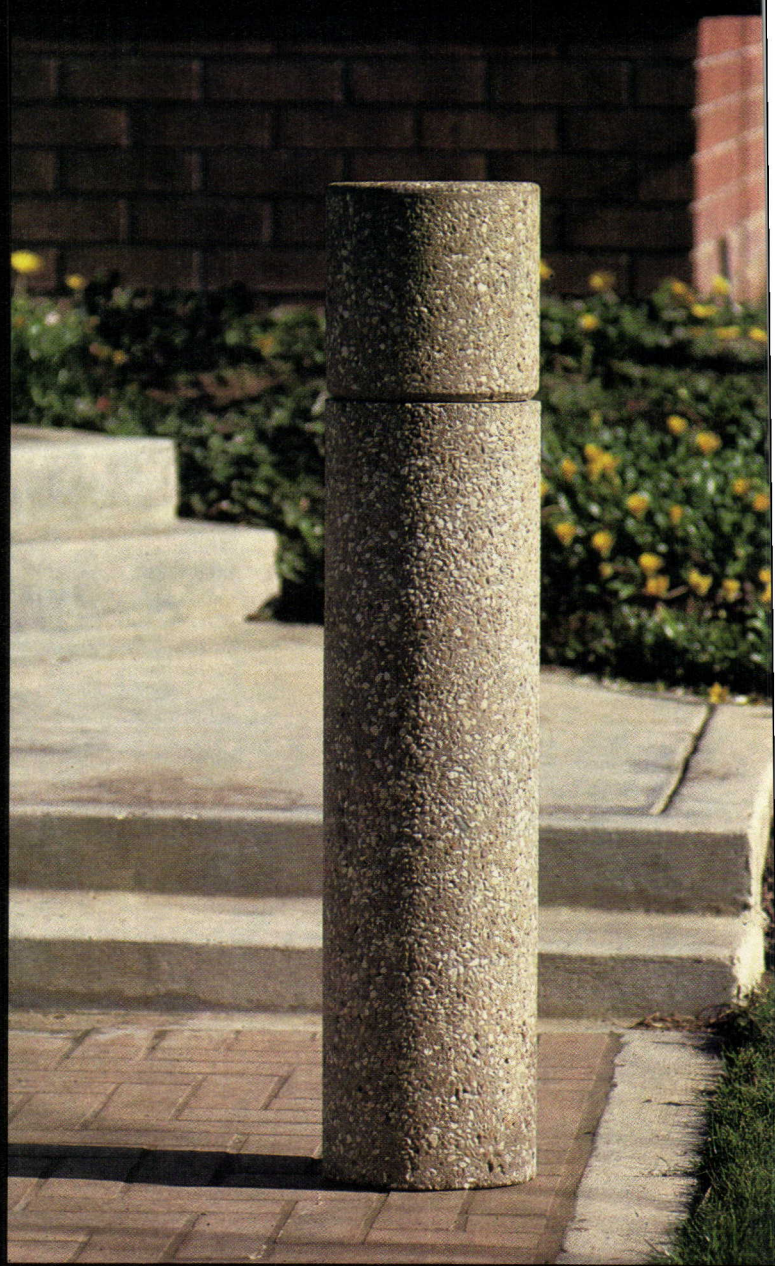

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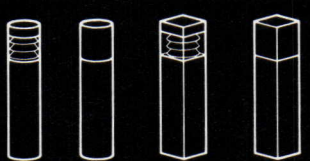

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Circle 41 on inquiry card

Management: Understand what graphics can do

The author explains what to expect from "environmental" graphics and from your graphics consultant, and why graphics now mean more than telling people where to go

By John Gaudreau

We are just beginning to understand the power and problems of visual communication. Psychologists estimate that approximately 75 to 80 per cent of what we learn is conveyed through our visual sense. Yet visual communication, as we normally see it, is complex and fragmented. Not helping the problem, the amount of information that the average person must absorb each day is increasing rapidly.

The emergence of what we now call environmental graphics as an architectural discipline derives from the need for cohesive visual messages that separate essential information from the superfluous, and that bring clarity, simplicity, and order to our surroundings—all things that graphics should have been doing all along, but may not have without a freshly organized approach.

At its most basic, graphics must call attention, announce locations, offer directions, explain sequence, and promote products and services. Whether the facility is an office, retail store, or a public facility, a user's first understanding of it is most often through graphics.

Graphics designers should be concerned with function and esthetics and . . .

They should be concerned with how people behave. Taking a broad view, this is no different from architecture itself, which can be called a stage for human experience. The concept here is that the validity of the architectural solution, and the graphics solution along with it, are, at least in part, ultimately determined by what the user experiences in the space. This experience involves more than functional relationships or image. It involves the pacing and the timing of action that occurs there. And that, to be successful, must be achieved by organized design.

We have all experienced the anxiety, confusion, and frustration of trying to find our way through an airport, convention complex, shopping center, or other major facility that is cluttered with unclear graphics. The result is a lasting negative impression that has little to do with the merits of the building design. Such conflicts are apt to occur if graphics are treated as an afterthought. They will lack logic and cohesion, even while they interfere with major building design elements.

Consequently, environmental graphics should be a natural adjunct to the conceptual design process in architecture and interior design. Rather than viewing signage and other graphics as independent physical elements to be ordered from a hardware catalog, architects and interior designers are becoming sensitive to the importance of graphics planning.

The graphics consultant should be brought in early. By approaching the project from the point of view of those traveling through it, the environmental graphics professional can make a substantial positive contribution to the project team, especially in early design development or even in master planning. At this stage, the architect, client, and graphics consultant should work in tandem to identify and deal with directional communications problems.

Take, for example, the design of an office building core. In planning circulation patterns, the architect and graphics consultant may approach the issue from very different perspectives. The architect is concerned with scaling the core to accommodate an anticipated volume of people (i.e., entrance/exit requirements for doorways, corridors, lobbies and stairs). The graphics designer considers movement patterns—how people will pass through the space—and determines the necessary placement and scale of the tools for directing them.

Potential design conflicts may result. A proposed directional element may impinge on a key architectural element. By dealing with these issues in the initial design development, the project team can avoid costly, last-minute modifications and achieve a unified design statement.

What you need, if you want an effective graphics program, are guidelines

An effective environmental graphics program is the result of a subtle interplay of forces: the building owner's desired image; the building's inherent design characteristics; the organization's operational requirements; and budgetary factors.

That is why these considerations should be studied in the early programming or master planning phase. In finding the ideal graphics solution to supply the necessary informational tools for the user, there has to be that close interface between architect and graphics designer to affirm the logic of the solution and determine its impact on the base building design.

The new graphics can be a strong unifying force in an architectural or interior design project. When a graphics program is developed as an integral part of the design package (as illustrated by the examples on the next page), it becomes a visual extension of the project's over-all character. By its graphics, an organization says a great deal about its operations, professionalism, and success.

Graphics can convey a powerful message. Depending upon image and marketing objectives, multi-level visual messages such as posters, murals, kiosks, and printed materials can be used to influence building users, as well as give them basic information.

Budgetary limitations for cost, life-cycle, and maintenance should also be established. And approvals may have to be obtained from appropriate regulatory agencies and community groups.

Finally, a graphics professional should provide a clear, well-defined timetable of the process from initial design to completion.

Within this framework, there are specific guidelines to follow in creating a well-executed graphics solution.

1. *Keep messages simple, straightforward and without visual clutter.* As the user's first knowledge of the facility is likely to be through the graphics, the initial impression is a crucial one. An effective technique is to utilize the project's architectural materials (i.e., marble, stainless steel, granite) in the creation of introductory signage. This approach establishes a strong unified graphics statement that is compatible with the architectural background.
2. *Move from the general to the specific.* As people pass through a space, the location, size, and height of directional graphics must communicate information in a logical pattern that relates to the pattern of circulation. Typically, the communication flow is from general information in entrances and lobby areas to more specific signage in corridors and departments. These messages must readily attract and hold the viewer's attention long enough to transmit the necessary information.
3. *Maintain graphics standards for unity.* Continuity in typeface, palette of materials, finishes, or colors can be used as a unifying element in the graphics program. For example, if the sizes and style of dimensional lettering are carefully controlled, the result will be good visibility and a sense of consistency in location and direction throughout the space.
4. *Provide built-in informational flexibility.* This can be a vital consideration when the information content must be changed regularly, such as in an airport departure lounge or a retail banking hall. The design solution should allow for change while preserving the

Continued

Mr. Gaudreau is a senior associate and the director of graphics in the Denver office of Gensler and Associates.

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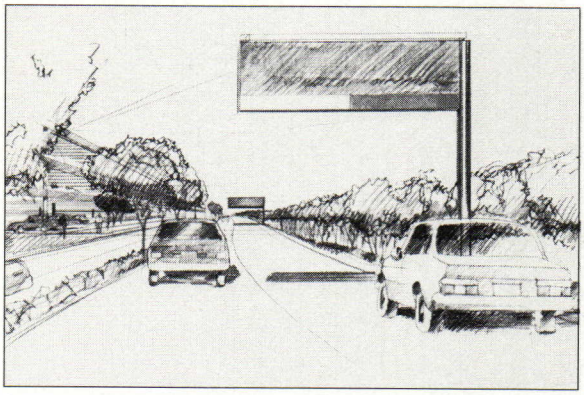
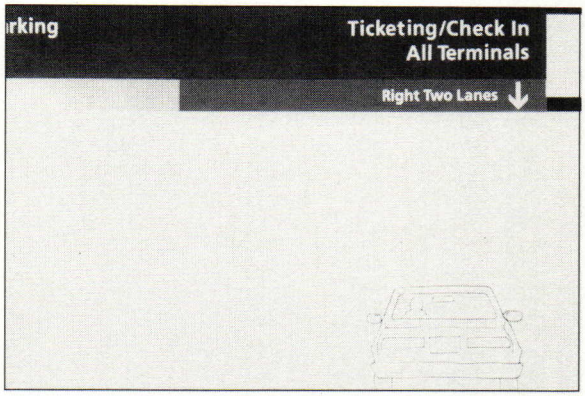
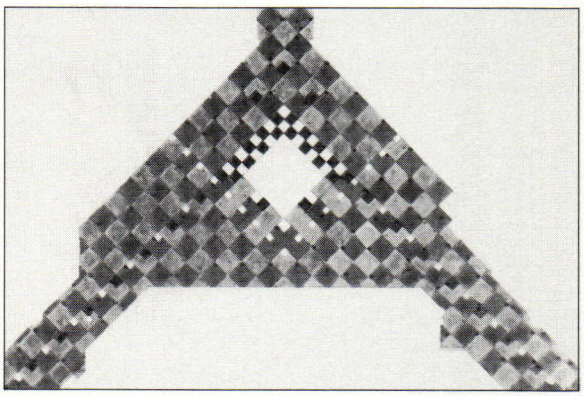
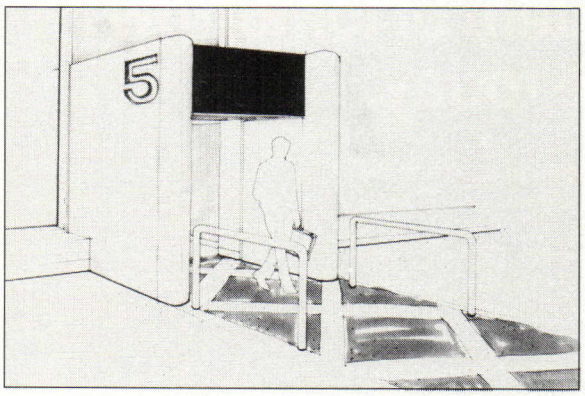
Circle 42 on inquiry card

The author's designs for graphics at the San Jose International Airport illustrate some of his points. In the top two views, getting the information to be conveyed in the right sequence for the viewers' movements means first identifying that information is going to be conveyed, and then getting it across in the right size and order for comprehension.









The two lower views demonstrate how the architects and building designers worked together to achieve distinctive floor patterns that fit the space and tell the traveler where to go, while emphasizing the basic building configuration.

continuity of the over-all graphics program.

It is important to remember that all project requirements are not alike. Each facility should be approached independently. The consultant's graphic solutions should not be based on preconceived materials, hardware, or fabrication techniques. Solutions depend upon the magnitude of the project, as well as budget and image considerations that are unique to each facility.

Communication between all parties during the design process is a prerequisite for success. The interactive process of team discussion and evaluation should involve the client as well as architect and designer. Presentations by the graphics consultant will be a key element.

One effective approach in helping the team analyze major concerns is the "story board" technique, in which the graphics designer's skills are used to illustrate the interior geometry of the project. Such issues as sight lines, circulation patterns, tenant identification, and retail signage placement can be dealt with more effectively when the team can "see" the spaces through sketches and renderings.

This discussion process should result in a better understanding of the value of environmental graphics to the project. Working toward a solution, the team learns from each other, and it is in working as a team that the best product can be developed. The objective is to arrive at a solution that fulfills all of the requirements that have been discussed here. And if the solution is inspired, it will also have that creative spark that is uniquely the designer's own.

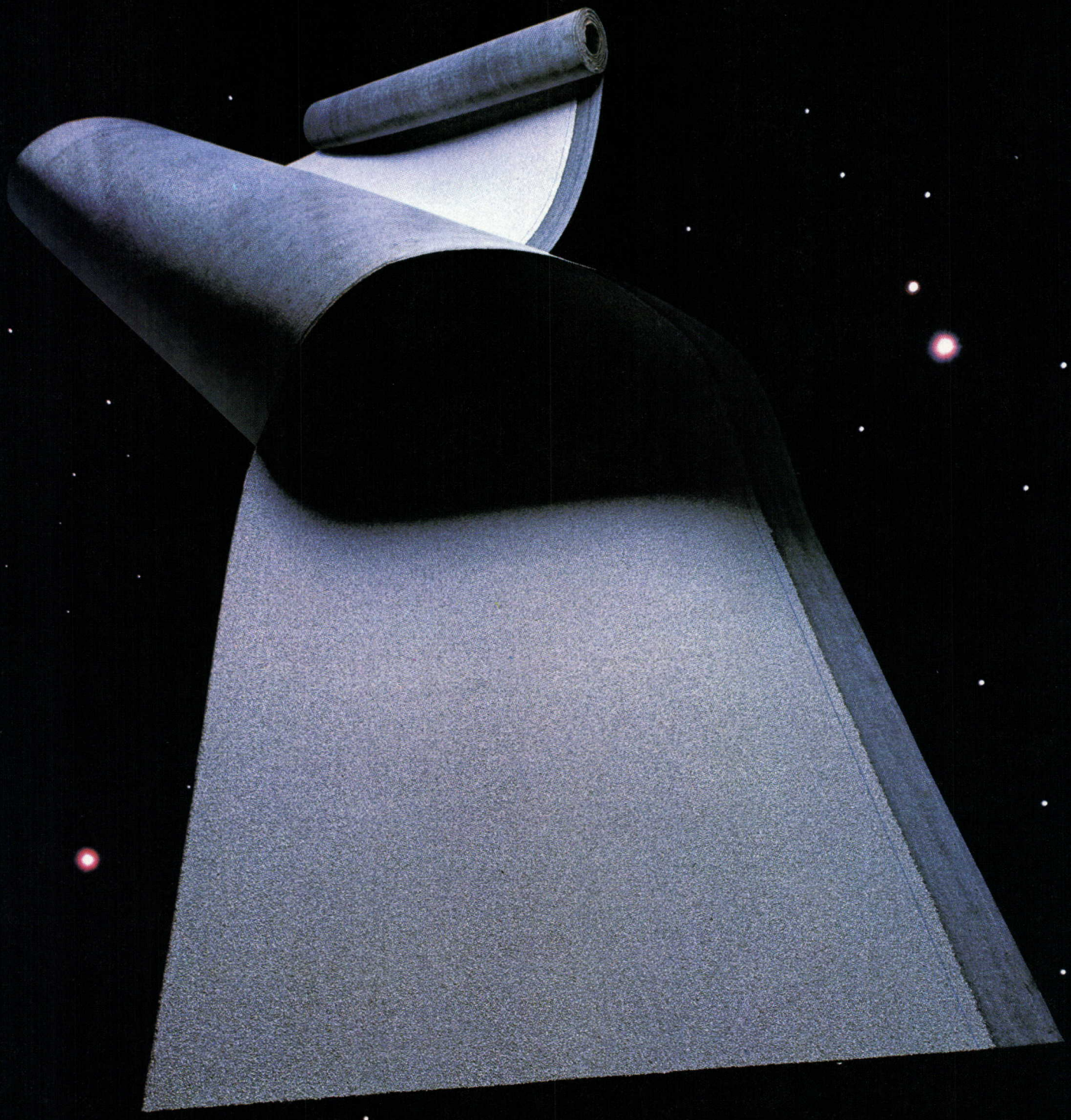
What do you look for when you hire an independent graphics designer?

The graphics designer serves in a specialized advisory role similar to that of an audio-visual or lighting consultant. As with the selection of any other professional consultant, it is essential to evaluate prospective design firms. Of course, there are as many design philosophies as there are designers.

What criteria should be used? Portfolio, track record, and references certainly head the check list. However, some initial "homework" on your part is necessary before beginning the selection process. Establish a clear understanding of the project's image requirements and the scope of the work to be undertaken. What are the budget and schedule parameters? How important is it for the prospective designer to have developed programs for similar client types?

With these factors in mind, the following concepts should guide the evaluation of a designer's previous work:

1. *A pretty picture is not necessarily worth a thousand words.* Graphic designers are artists but, more importantly, they are problem-solvers. Don't look at the designer's portfolio strictly in terms of attractiveness. While fine art creates a new or more intense image of reality, graphic design should convey reality in a manner that is readily understandable to the viewer. A beautifully executed piece of artwork may not be the right communication solution.
2. *The interview should be a dialogue.* After all, you are seeking a close working relationship with the consultant. How well does the consultant listen and respond? Did he or she come prepared with a clear understanding of the type of project that is being undertaken? The point here is compatibility and communication. If the work presented is professional and the dialogue between you is direct and effortless, the more likely that your working relationship will be a pleasant and productive one.
3. *Learning the basis for a design solution is the key objective.* Encourage the consultant to discuss the evolution of the design. Inquire as to what worked and what didn't work. Design is a process, a method of investigation and compromise. If the individual understands this, he or she should welcome the opportunity to relate how an idea became a reality.
4. *A design solution may be more (or less) than its seems.* Don't hesitate to challenge the project solution and implementation. By digging deeper than surface appearance, you may discover more about the consultant's flexibility and resourcefulness. Ask what cost constraints had to be met. Did unexpected factors affect the final design implementation (i.e., changes in budget, scheduling/supply problems, or unexpected modifications from the client)? If so, how were these problems resolved?
5. *The graphic designer should be knowledgeable about architecture and interior design.* Just as the architect and interior designer must be sensitive to graphics issues, the graphics consultant should understand architectural concepts and processes.



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Practice: Comes the facilities manager

Concluding her examination of this new phenomenon, the author gives insight into the type of client that design consultants doing corporate work may be dealing with

By Ann Nydele

Last month (see RECORD, *May, pages 51 and 53), author Ann Nydele described the rise of facilities management from a "basement operation" doing staff support to its current high standing as a vital part of long-term corporate planning. She gave the reasons for the rise as not only the need to make order out of corporations' more complex demands, shifts, and environmental concerns, including new technologies, but the growing portion of a given company's assets that is likely to be tied up in real estate—many corporations, in fact, having taken on a whole secondary business. In studying the way in which facilities managers may take over much more of the design professionals' traditional responsibilities than clients in the past, she rightfully observed that many architects, engineers, and interior designers are worried.*

An interview with Ben Cubler, the head of the facilities department for one major corporation, ARCO, *revealed both the objective and subjective qualities that a corporation may look for when hiring a design consultant. Herewith, the way that consultant will be dealt with once hired, how one prominent design consultant responds to all this, and a view by one prominent educator on where facilities management may be headed in the not-too-distant future. C. K. H.*

ARCO currently has five projects under way. For each, its construction manager has hired the prime contractors and reports to the company project team, which numbers up to nine people on one project. Officially, the construction manager gives his input to the project team, which relays it to the architect. Unofficially, everyone works closely together. The construction manager and, on smaller projects, the general contractor come on board at the same time as the architect, or immediately after, under what is called a "preconstruction services contract." The company's project teams monitor the design development from the conceptual phase through the final working drawings, with either the construction manager or general contractor doing feasibility evaluation and cost and methods evaluation of developments as they go along. This means they are watching constantly.

Cubler encourages constructive disputes between his construction managers and consultant architects, "because most good solutions are a compromise between functional and hard cost decisions, and esthetic concerns. What we do is assure that everybody else is doing his or her job, and that we're getting service out of the architect." With "healthy competition," Cubler feels, you get a good compromise—"you don't get tilted one way or the other.

"What you're looking for is a compromise between the esthetic solution and the best functional solution. And our project team will pull that out of the process. I'm an apostle of in-house capability," he affirms. "Still, we don't do design; we don't do architecture; and we don't do construction management, at least, in the classic sense."

Cubler does recognize that the ideas come from the architects and states that it is important not to impede the flow of ideas. But he also says: "Anyone who is there in a consulting role is there to make recommendations, and the role of the facilities manager is to review the recommendations and come up with a final set of recommendations for the executives to review."

This lack of architects' access to top management has, concedes Cubler, caused some friction. "Looking at it from an internal point of view, you have better control over consultants when you control their contact with our people who only know about specific areas. If the facilities manager can provide as much intelligent information as possible to the consultant, then the job should go smoother and cost the client less and still be a quality product."

Having heard the other side, here is how one prominent architect responds

"Architects," says Arthur Gensler, head of Gensler and Associates, one of the country's largest firms and one with wide experience in corporate architecture and interior design, "can manage the financial aspects of a project, but our industry is receiving strong criticism on this score." As in any industry, Gensler says, there are those who are inept in the financial area. "But I think most of the major firms doing competent corporate work recognize that there is a financial responsibility as well as a design responsibility, and that they're equally important."

Still, he believes, for reasons he will develop later on, that cost problems can come for reasons beyond the architect's control with or without a facilities manager. And these problems become particularly acute when it gets down to doing interiors, because interiors are done at the end of the project. "Any slippage in cost versus budgets that happened when a project was in its early stages becomes amplified at the end of the project. So all of the problems that occurred in the front end, if there were those, ultimately end up being reflected in the interiors budget. And I'll tell you why this is important.

"This tends to put things out of balance because of the close attention people pay to their immediate environment, while ignoring the building systems once they're in place. If you look at a chiller, at insulation on a pipe, or at a structural system," he explains, "the management and the people who use it don't have any personal relationship to it. They don't know what is inside the walls. But they care very much about the chair they're sitting on, the carpet under their feet, and the light on their desk. And that's where the people that are really going to use a facility notice a difference, especially if there are inadequate or unrealistic budgets established for what they perceive as their environment.

"It's a matter again of the client being realistic about the allocation of an adequate budget in the beginning of the job and maintaining control over *his* people." Here he begins to touch on one reason why a project's cost may get out of hand.

No matter who the client is, there can be changing demands after a project's scope is set

Gensler also talks about the effect of time on the budget, which can bring up factors rarely discussed at the onset or anticipated. Especially in large corporations, management will spend a great deal of money every year on shifting people around—even while your project for that company is being designed and built. "If you take a half-million-square-foot user," he explains, "he might move 20 per cent of his space and spend $20 a foot on that move. There might be $4 million spent every year to remodel or refit that space.

"However, when you build a building, you might say that it takes place in a time capsule, as though nothing is happening in corporate shifts. Often, therefore, when we're doing a project, there will be a major reorganization, a new company will be acquired, or a new technology will be introduced into the organization. As much as you try by a clever, well-done design to accommodate for change, you may not be able to answer all of the new issues that are raised.

"But the facilities manager," he

Continued

Miss Nydele is a communications specialist for design professionals, an author, and a freelance writer in the design field, and a contributing editor to facilities management publications. She is based in New York City.

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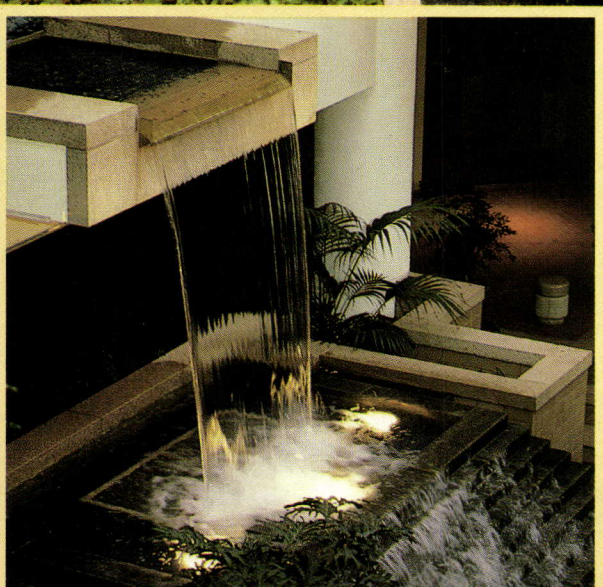

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An office building in Texas designed under the aegis of a major corporation's facilities management department, Dallas ARCO tower shows the results of one major architect, I. M. Pei & Partners, going through the new client-architect process.

points out, "doesn't look at that change as a change to the original scope of the budget for your project, but as though it should have been included from the beginning. Thus, changes are regarded as a change order that is required because the job wasn't done right the first time. That is not correct," he maintains. "The job was done right the first time. The problem is that you have change taking place while the project is going on, even as change happens when there is no project in progress."

One example of the kind of change that can happen occurs when a client wants a discrete building, designed for a specific kind of business. Through a merger or other event, he then finds himself in the position of having to sell a building that won't fit potential purchasers' needs. "The rate of change that is happening in the world today does not give companies the luxury of trying to make things quite so specific," he pointedly observes.

Some of the problems with facilities managers can spring from their inexperience

While some major corporations have highly developed and sophisticated facilities operations, there are many that do not. Gensler cites as reasons, the short time span for the discipline and the lack of training that is available. "The International Facility Management Association," he says, "started five years ago and spent the first five years crawling; now they're slowly walking, but they're hardly running yet.

"There is an almost zero body of literature and, up until recently, zero educational training, and although degrees are now being offered, the programs are limited. What you find out is that many of these people have converted from other disciplines: they are accountants, businessmen, or architects. Therefore, during this transition, they are groping as much as everybody else.

"From this point of view, you have to go back and analyze what's happening. All of a sudden, companies recognize that real-estate facilities are an important part of their asset base, maybe in some cases half their asset base, and they ought to manage it, as they manage everything else that they do.

"Historically, this was under the comptroller or the treasurer who collected rents and paid the bills for heat and light. But these people are not knowledgeable about real estate, or construction, or building design, or, often, even facilities operation. And so it is that many people in this group have been given this assignment of running buildings and their design with little training or experience in this area. They may be strong in one area and weak in another by the nature of their background, but they don't have the whole picture. That's one side of the issue."

Another part of the problem in dealing with facilities managers lies with the architects themselves

Gensler also chides architects for, in some areas, backing away from the responsible role of leadership that they used to play at the head of the team. "When architects are concerned about liability, they don't want to take the risk."

At the same time, clients are trying to keep the pressure on the architect for the liability *and* accountability. "Many clients," he says, "are willing to pay sub-consultants who ultimately take no responsibility, but these same clients keep whacking away at architectural fees, trying to drive them down.

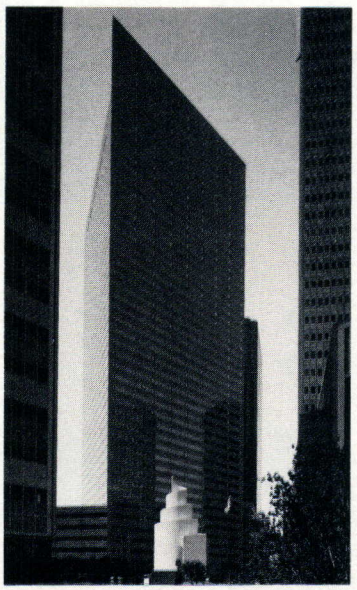
"What we are finding," he says, "is that we're having to do a great deal of project management, but we're not getting paid for it. They will pay attorneys $150 per hour, but object to paying $50 or $60 per hour to an architect who is taking responsibility for a lot of their money.

"However, clients are changing," he believes, "and some are recognizing that everybody on the team ought to make a profit. We are going back to the idea that if you're a sophisticated user and you really want the job done right, you will recognize that the success or failure of the project is made in the beginning, on the basic gut-decision issues. Then the smart client hires the best professional he can get, pays him well, and demands excellence."

How can at least a big firm answer the new problem of all the different personalities involved?

Gensler believes that in dealing with a corporate client, there is a big advantage in having a big firm. One reason, Gensler explains, is that chemistry Cubler referred to. "If you have a staff person on your side who isn't worried too much about numbers because they can be covered by your in-house team, but who is strong in construction, then this is a good balance with client expertise."

Surprisingly, Gensler resists his client's pressure to bring his team to initial interviews, covering only the top contact instead. "I will bring my senior person, because that's the one who will run the job." But, in the case of the people on the design and construction level, he



says that he wants to get a feel of the people on the client side, and how they're going to relate to the architectural firm staff.

"Often," he says, "I will say to the client: 'I would like you to come and sit with a few of our designers or managers and see who you're most comfortable working with.' We have the luxury of offering them two or three people so that they can see who they'll be most comfortable with during the course of what is at least a partial marriage. There's chemistry and a trust and a bond on a good project team in which the client is obviously the pivotal member.

"Large firms can have talent that is specialized and will provide support, and there is a need for large-scale support in these large-scale projects. But there can't be a standard format; if the facilities guy is stubborn, you have to get somebody in your organization who can work with a stubborn person. If you can't, you probably shouldn't take the job."

Gensler tries to handle disputes on the level at which they occur. When, in the client's explanation of what is wanted, there is a point at which a basic decision about a new facility has been made that is wrong, he tries to get an opportunity in the review process to make presentations that will show what the client is asking for and alternatives that the firm wants them to consider. But there can be a lot of questioning of the architect by the client. "We can go through a period of doubting and second-guessing," he says.

However, by and large, Gensler believes that most of the professional staffs of facilities groups are very professional, and do an excellent job of providing support for the architect because they understand what the architect is trying to accomplish. "Especially if they are architects, they can talk to other architects and communicate the corporate needs better than can businessmen," he concludes.

Where is this new relationship of design professional and corporate client leading?

Some of the changes and concerns that are currently occupying the attention of facilities managers and architects alike are coming from Europe, where mandatory standards are being legislated for the working environment as a result of the new technologies. "In the U. S., I think," says Ben Cubler, "corporations would like to take the position of voluntarily providing protective work environments for their employees, to take care of the problems without having the state or Federal government issue legislation." He believes productivity issues and employee concerns will be more unified in the future as corporations take on long-range planning, and that the activities of facilities managers will be tied even more directly to that long-range planning. Companies are integrating systems, facilities, and human resources with automated office machines, communications, and data processing. "Through a joint effort, all parties are working together to provide an effective environment," says Cubler.

The "facilities phenomenon" is now receiving a response from education in the form of a program at Cornell University that is designed to wed technology and design to business and financial training. Cornell's new Facilities Planning and Management program, offered by the Department of Design and Environmental Analysis, gives graduates both an undergraduate degree and the choice of going on to the first graduate program in facilities management. The curriculum is presented in four areas:

- *Human environmental relations*—the impact on both the individual and the organization, in terms of productivity, interaction, safety, and health;
- *Technology and design*—space planning, building technology, and interior design;
- *Business*—corporate financial planning, with the basics of accounting and business administration;
- *Real-estate development practices.*

At the same time, it is interesting to note that MIT is offering a doctoral program in real-estate development. Headed by Director Henry Spaulding, MIT's Center for

Continued

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Real Estate Development offers an M.S. in real-estate development, and also serves as a center of research on the development process. For the practicing architect, there are a number of catch-up programs in New York City, San Francisco, and other places. Other colleges, such as Cambridge College in Massachusetts and Penn State, offer a variety of degree programs for practicing architects who may want to apply their skills to real estate or facilities management.

"We graduated our first batch of students in 1983," says William Sims, head of the Cornell University department, "and they are being offered positions in major corporations for starting salaries of from $25,000 to $30,000. The shortage of qualified people for facilities management jobs is making this, along with a lot of jobs in new facilities consulting offices, a fertile field for architects and other professionals. It will provide opportunities for years to come."

The impetus toward professionalized facilities management is coming from, among other considerations, a realization that the working environment and productivity are related, says Sims. He cites two studies, the Brill Study and the Orbit II Study in which the collaborators are Franklin D. Becker, a Ph.D. and an associate professor in the Cornell program, the Harbinger Group at Xerox, and DEGW, an architectural and space planning firm. These studies show that a narrow overview by management in which workers are "squeezed down" is not working.

Now, corporate financial people are becoming aware that the physical setting can be as important as other benefits to the employee and can affect productivity and morale positively. At the same time, working with human resources people, corporate managers are seeing the importance of establishing better working patterns, ergonomically designed furniture that is adaptable and relieves back strain, and lighting systems that minimize eye strain from light reflected off computer screens.

And there are new problems with existing facilities. For instance, says Sims, the introduction of computers into older buildings that were not designed for them can create overheated areas resulting from the density of people and machines. Such buildings need retrofitting as systems wear out and the buildings prove poorly designed for the needs of information technology and of change and growth in the owner's organization. Through a company of their own, The Orbit Project, Sims and Becker are looking at studies that describe the impact of the corporate organizational changes on building systems so that those changes can be anticipated for future retrofitting.

The optimistic view is that there are new opportunities for design professionals

Sims believes that the impact of the facilities management concept on architects should be positive. "It will be the facilities manager's role to identify the characteristics of his own corporation's particular kind of management in the process of selecting an architect, and to manage the design program. This shifts that responsibility from architectural firms to the corporation.

"But architects don't have to see themselves as threatened by the efforts of corporations to exert more control over their building programs," says Sims. "This is both inevitable and proper. It is a proper activity for corporations to do their own programming and to look inside the design process and critique it, always allowing the architect scope for the creation of ideas. The result will be a better building.

"At the same time, some architectural firms are adding facilities planning and financial services to their operations, just as in the '60s, they added urban design and city planning to meet that need. Not all corporations have large, well-staffed facilities departments," Sims points out, "and architectural firms can serve those corporations either with their own facilities management services or by joint venturing with other consulting firms that offer them.

"Over the next decade, the facilities management process will provide increased jobs, more informed clients, and better client directives that will give the architects a stronger sense of how to handle projects. By providing back-up services that are needed, the facilities management process can help the architect to concentrate on doing the architecture and providing the client with a beautiful building that will work better in meeting today's changing, highly complex technological requirements and new approaches to employee management."

Over the next decade, it is going to be vital for architects who want to do corporate work to understand the philosophy, problems, and methods of the corporate facilities manager. At the same time that the facilities manager is offering challenges to the architect's traditional ways, he is offering opportunities to do things in a new way. And we only can hope that new way will be a better way.

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Facilities managers do bear credentials from the past

As we now know it and as a phenomenon, facilities management is less than five years old. In 1979, the Facility Management Institute, an educational and research organization of the Herman Miller Corporation (but now independent from it), studied 800 U. S. government and business organizations. They found that individuals involved in facility decision-making included "facility professionals; administrative and office services professionals; engineers; building services and maintenance professionals; personnel professionals; and purchasing professionals," with the largest category (26 per cent) having the term "facilities" somewhere in their title.

The study then concluded that a very small proportion of corporate executives were involved with facilities management although, in smaller organizations, the president might be involved. Among the 800 organizations surveyed, 27 per cent had a "facilities" department and 10 per cent had no such organization. Finally, most of the facilities "professionals" that did exist were on the middle management level, with only 20 per cent termed "director." Fifteen per cent were planners and designers; seven per cent engineers, and five per cent architects. Of the vice presidents or assistant vice presidents, only six per cent were involved with facilities. Thus, the facilities manager was a person who most likely had the responsibility to carry out policies made by others.

The emergence of facilities management as a science probably began with the "paper flow" theories of the Quickborner Team, a group of management consultants operating in post-World War II West Germany. With half a country to rebuild and a methodical culture behind it, the Quickborner Team's theme said that office layouts should reflect the flow of paper and the movement of people for maximum efficiency. It resulted in the so-called "office landscape."

The idea caught on quickly here, as American corporations experienced rapid expansion in the 1950s because both lower cost and flexibility could be met by the concept.

The Herman Miller Corporation quickly adopted the idea, creating a furniture system with demountable and interchangeable elements attached to movable partitions. Despite problems, the idea flourished and other manufacturers quickly followed with systems of their own. The contract boom of the 1960s and the influx of behavioral scientists into the picture with their concept of "individualization" in the workplace further encouraged the concept of open plan.

As major open-plan installations, such as those for Eastman Kodak, John Hancock, Sperry Univac, and Purdue University were made, a group of managers—administrator Herbert Dean of Eastman Kodak, space planner Jordan Berman of John Hancock, designer Robert Brancken of Sperry Univac, and Robert Sorensen of Purdue University—joined together to form the Office Landscape Users Group in Philadelphia. They conducted regular seminars and conferences for other managers who were getting into open planning. Formed in 1969, and still operating under managing director Frank Carberry, the group is probably the first formal facilities management group.

In 1979, Herman Miller's Bob Propst established the now-independent Facility Management Institute in Ann Arbor (now headed by John Adams) to provide an educational and research center for the study of facility management. Propst, in fact, is credited by the International Facility Management Association's Gerald Hubbard as being the first to realize that corporations needed to centralize all of their diffused activities going on that are related to facilities. The institute also produced the first working definition of facilities management: "The practice of coordinating the physical workplace with the people and work of the organization. It integrates the principles of business administration, architecture, and behavioral and engineering sciences." Today, the institute might well add financial management to this list.

In addition to the previously mentioned groups, there are several other facilities management associations now. The International Facility Management Association, formed in 1980, is the largest.

The emerging profession is being expanded for the future, as diploma holders emerge from the first graduate facilities management program, as offered by Cornell University. And plans for an accreditation program and the application of professional standards of membership are in work at IMFA.

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Architectural education: Construction is essential to the design process

In this article— abstracted from a larger, more general essay, "Beaux Arts, Bauhaus or Basic"— Gerald McSheffrey makes a strong stand towards closer integration of construction, practice (and computers!) in architectural education

By Gerald R. McSheffrey

To keep on repeating that old saw that architecture is both an art and a science, as if that makes us more important, is also specious, since every art contains some science and every science, some art.

Aristotle tells us: *Architecture is an art that is, in essence, a rationally creative state of mind. There is no art which is not a rationally creative state of mind nor any such state of mind which is not an art.*

When we emphasize the technological aspects of architecture and separate them from the whole creative process, we do a disservice to education. Moreover, we are just repeating the mistake of the Victorians by encouraging further the separation of architecture and construction. It is also this attitude that lays the architectural education process open to charges of vocationalism.

Teaching construction should not be separated

The detailed study of a window section and the writing of an essay are two very different types of activities. On the one hand, we may find that one presents the solution to a problem, and the other explains the nature of a problem. But who is to say that one activity is more valuable than the other, or that the emphasis on one precludes knowledge of the other? Much of the process of architectural education in the past has been one of learning by doing. I believe that this is one of its strengths. For example, I am opposed to teaching construction on the basis of lectures without the reinforcement of studio sessions. The best way and place to learn construction is, of course, on the building site—but that takes more than a lifetime.

Undoubtedly, the next best way is to draw and study the details of construction and, more important, the principles of construction. These exercises can be structured around the idea of building types, and structural/material relationships relative to space enclosure can be studied. (Alfred Caldwell's courses at IIT are a paradigm for this way of teaching.) The student begins to learn that in making decisions about construction details he is, in effect, making "design" decisions that contribute to the quality of his or her building. Hopefully, it may also occur to the student in this process that design and construction are inseparable aspects of the synergistic activity that we call architecture.

This would be contrary to the impression of most students today, who believe that architectural design, and thence architecture, consists mainly of functional analysis, movement, space, and light, and worse—fashion. All in themselves, with the exception of the latter, are important issues in architecture, but not so much so that they make the basic issue of construction (and I am including structure as an integral part of construction) of secondary consequence. Style (or fashion), it should be remembered, may be the manifestation of architectural form; however, it should not be mistaken for the essence.

Experience would indicate that the second and third years are an excellent time to instill in students the fundamental principles of construction and the essence of how buildings go together. Instilling principles in the student by doing gives them an excellent feel for the nature of materials, the problems of joining different materials to keep out water and wind, and the need to modify indoor and outdoor temperatures. However, it is important to draw a clear distinction between teaching construction principles and making construction or working drawings. Construction principles, it must be emphasized, are an essential basic ingredient of what we call the "design" process. Construction documentation or working drawings, on the other hand, are a means of communication between architect and builder. Typical working drawings may be made by students of architectural projects in the senior years where appropriate.

Gerald R. McSheffrey is dean of the College of Architecture and Environmental Design at Arizona State University; former director of architecture at the School of Architecture & Urban Design, University of Kansas; and former dean of the College of Architecture, Planning and Design at Illinois Institute of Technology.

Construction is integral to the design process

To summarize, therefore, I would contend that as architects and teachers, we have become separated from the business of building for so long that no one quite knows just how to deal with the issue. Thence, a question often asked by educators is, "how do we integrate construction technology into the design studio?" I suggest that they have asked the wrong question. The question presupposes that the construction process is a supportive function of and ancillary to the design process. It is my contention that construction is part of and essential to the design process; and without it, the design process makes no sense except in the abstract, since it deals only with limited issues and can never be realized without the means—construction.

Moreover, since construction is dependent to a large extent on both economical and geographical factors, in the end it inevitably becomes *the* determinant of the design process. The exception would appear to be those monuments of industry, government, and commercial power where neither economics nor the architect's fee is a consideration. I hope that all students will one day get a chance to build a monument; conversely, I hope that education will not be predicated solely on that chance. What is taught in studio does not have to be limited to current design fashions or case studies, or superficially simulated practice conditions.

Computers loom in the future of architecture

Now let me look at the future of architectural education. Over the past five years, we have seen an influx of computers into even the smallest practice and into the design studios of some of our schools. Both schools in Arizona already have their computer laboratories and a number of faculty with computer design skills. A massive infusion of micro-computers into our schools over the next five years must be expected and considered in our curricula planning.

As to the more distant future, twenty years ago anyone of us could have stood here and boldly extrapolated the future from past events. Now we know that this is no longer possible. While accepting the inevitability of change, no one today can claim to have any unique perception of the character of that change. Nor can anyone have a clear comprehension of the time frame in which that change is likely to occur. One thing we can be sure of, and it is at last clear to everyone, is that our natural resources are not infinite. And while diminishing reserves of oil are the most obvious examples of this, diminishing natural resources such as land and water are becoming equally important in a universe where we are still witnessing an exponential increase in world population.

We also know that we have entered the second phase of the computer revolution. It has been forecast by Christopher Evans in his book, *The Micro Millenium*, for example, that by the end of this decade, it will be possible to store very large books, perhaps even sets of books, on microchip—and a whole library in a space about the size of one of today's paperbacks. He goes on to speculate that such events could well result in the decline of established professions, since they would no longer become the exclusive repositories and disseminators of knowledge. In a poetic conclusion of these speculations, he states, "Books come down from their shelves, unlock and release their contents and then cajole and beseech their owners to make use of them." If these forecasts of the future have any validity, then we can expect that the accessibility to vast amounts of knowledge will be available to every student. But as John Ferguson McIntosh points out in a doctoral dissertation:

As personal computers proliferate in the office work place, the concept of an electronic desk top is used as a metaphor *to help people grasp the utility of the new tool. In an architectural office, the automated drafting system is similarly a metaphor that explains a new process in terms of a well-understood older activity. These metaphors are aids that serve to ease the transition from an old technology to a new one, but they ultimately must be discarded, as was the horseless carriage metaphor, if the impact of the new technology is to be fully understood.*

The future of architectural education needs active effort

The immediate future may also provide an even greater opportunity for cooperation between the professional offices and the schools. Barriers between practice and theory can be broken down even further, and professional development through a continual education process may become the norm rather than the exception.

This, I believe, is some indication of a possible future state of affairs in both education and practice. The possible redistribution of wealth and the realization of the finite nature of natural resources are manifestations of the post-industrial society that will make new demands upon the skills of the architect. The architect educated in problem-solving techniques and in decision-making may be well placed to meet the demands of this new society and a broader range of clients.

Architecture, in the specialized

Continued

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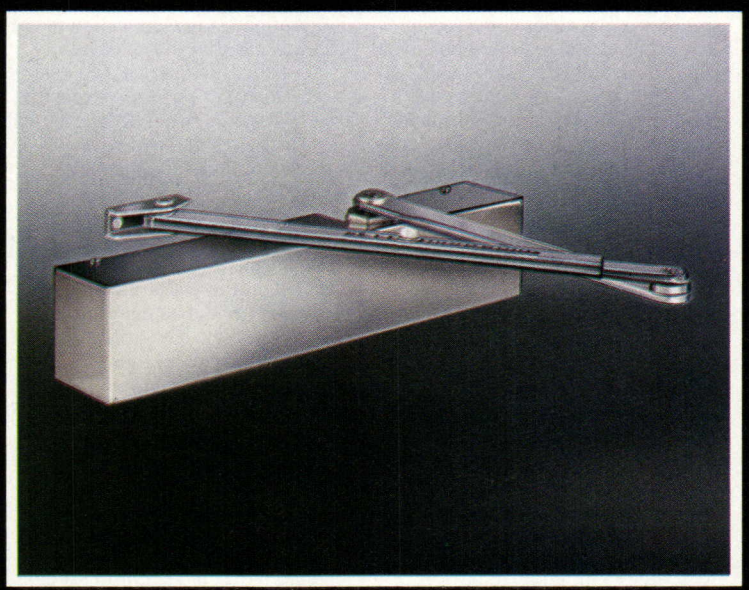

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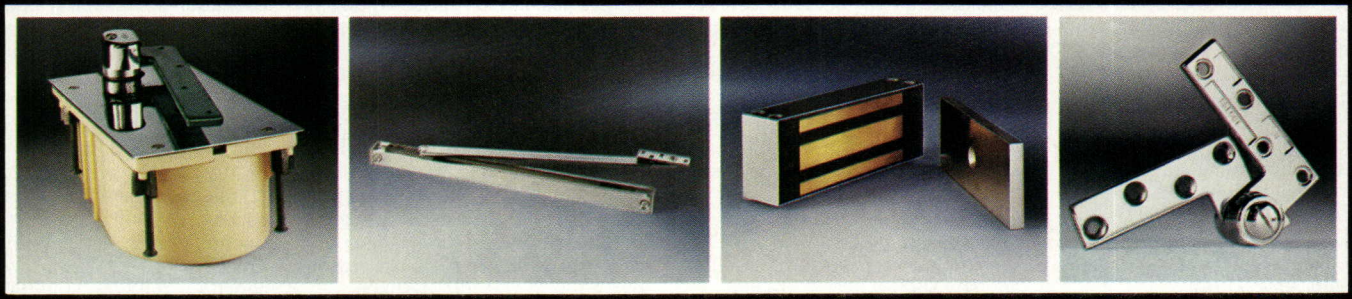

Circle 51 on inquiry card

sense, will continue to be user based; otherwise, it will have no significance—other than that of the monument. The spatial/functional and psychological needs are, of course, of paramount importance to the creative architect. But the basic decisions concerning structure and materials, the careful detailing of windows, the choice of door hardware, light fittings, finishes, light, and color comprise a palette of multifarious elements from which decisions must be made.

The mature and rounded student should understand how and why such choices are made by the time he or she graduates. In addition, those graduating with professional degrees should be encouraged to specialize in professionally related areas such as business and construction management, real estate and development, computer-aided architecture and urban planning or in research.

Graduate education should provide architects with opportunities for exploration and for original research. My own view is that the purpose of graduate education should be to enlarge the range of specialized knowledge and to advance the standards of teaching and practice. There should, therefore, be a credible gap between undergraduate and graduate education, with a higher level of expectancy in the quality of the student who has attained a higher degree. It is difficult to even create this level of expectation if graduate education is seen as an extension of what has gone before.

There must be clear commitment to research and research methods if education is to offer leadership to the profession and industry rather than vice versa. Our graduate education models should reflect this commitment. Just as faculty in universities are given opportunities for renewal and development through the sabbatical process, I would hope that practitioners will take time off for renewal and to explore their ideas through graduate programs in research and through teaching.

Historical references still have impact

Finally, even with the onset of the 21st century, I am still captivated by Sir Henry Wottons's 17th-century definition of "commodity, firmness, and delight" as the constituents of architecture. He was, of course, paraphrasing the Vitruvian trilogy of durability, convenience, and beauty:

Durability *will be assured when foundations are carried down to the solid ground and materials wisely and liberally selected;* convenience, *when management of the apartments is faultless and presents no hindrance to use and when class of building is assigned to its suitable and appropriate exposure; and* beauty, *when the appearance of the work is pleasing, in good taste, and when its members are in due proportion according to correct principles of symmetry.*

We should continue to offer students the most important ingredient in their education: ourselves as teachers, our principles, and our values. As Mies van der Rohe put it in an address:

Different as practical aims and values are, they are nevertheless closely connected . . . human experience is predicated on the two systems together. Our aims assure us of our material life. If this is true of all human activity where even the slightest question of value is involved, how especially is it true of architecture.

Our students need to have a secure footing, so that they are not afraid to address change as a natural and evolutionary process. The advent of the microcomputer and the widening scope of professional services are elements that will assist us in enhancing that educational process. In doing so, we should not forget another piece of advice from Vitruvius:

Architects who have aimed at acquiring manual skills without scholarship have never been able to reach positions of authority to correspond to their pains, while those who relied on theories and scholarship were obviously hunting shadows, not the substance. But those who have a thorough knowledge of both, like men armed at all points, have the sooner attained their object, and carried authority with them.

Conclusion: rationality and vision are needed

These are but a few personal thoughts on where we are in education. I have by no means dealt with every facet and have avoided all reference to the influence of key contemporary figures such as Colin Rowe, Robert Stern, Robert Venturi and other post-Modern theorists. However, their views have been well documented of late and have little in common with my own. And while it is difficult even looking at current trends to predict accurately the nature of change for the profession, it is clear that the rational problem-solving nature of what has been taught in many of our best architectural programs should be maintained. It is equally important also to maintain in our schools the quality of skills, and, more important, the whole idea of visual quality.

Last, but not least, I believe it is imperative that we continue to expand our emphasis of the social purpose that is inherent in everything we do. It would be ironic, and typical of these times, if in the search for social relevance in architecture, knowledge of computer languages such as Basic or Pascal may prove more critical to the future of architecture than historically based philosophies.

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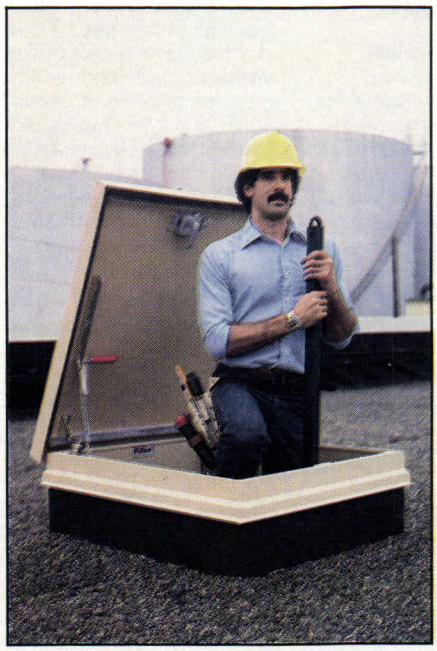

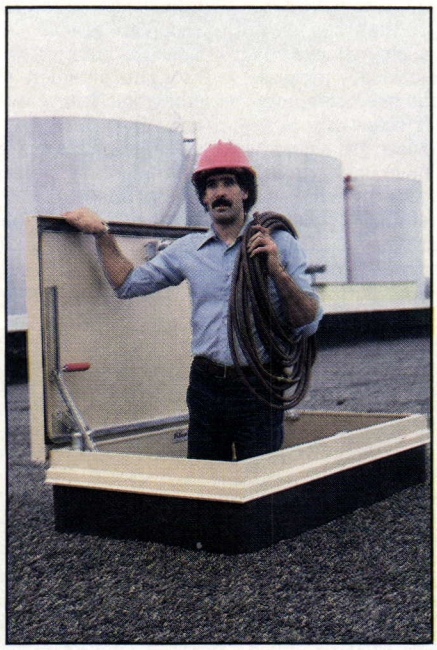

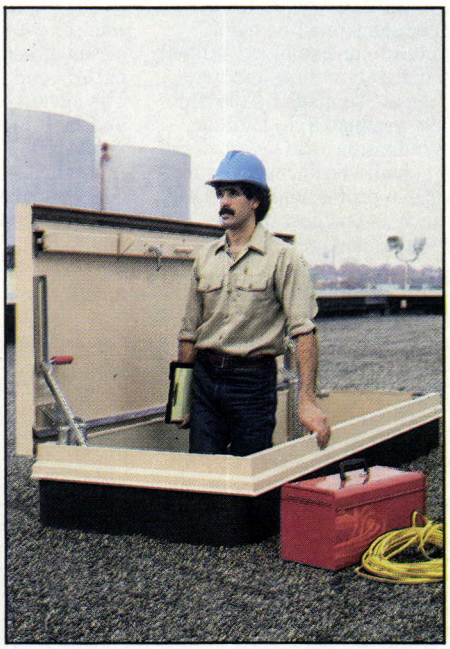

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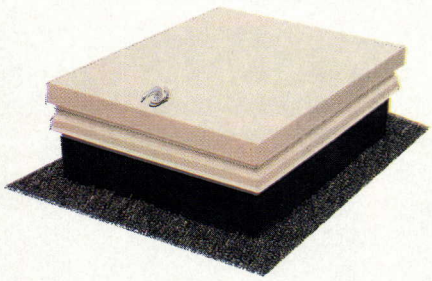

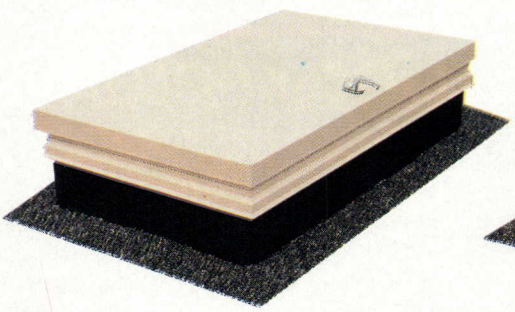

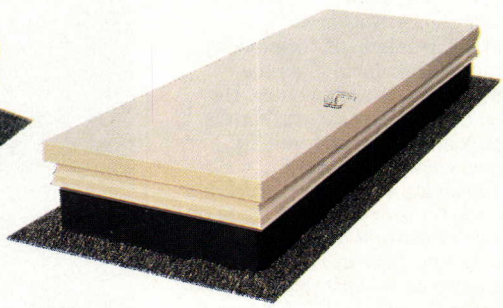

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Reinterpreting a classical past: A new mixed-use project in San Francisco

San Francisco's Van Ness Avenue, once lined with grand two-story automobile show rooms, is gradually evolving into a medium-rise residential and office district. A good example of the kind of architecture that may characterize the boulevard's future, Daniel Burnham Court is a mixed-use development comprising 245 condominium units in two towers joined by a 65-foot-high glass

atrium. Named after the great Chicago architect who worked extensively in San Francisco after the 1906 earthquake, the 506,000-square-foot project will feature an office/retail podium clad in terra cotta, stepped glass terraces, and picturesquely massed hip roofs—details that architects Wurster, Bernardi and Emmons hope will "echo the residential buildings that climb the nearby hills."

Lofty ambitions

Although the glass-topped atrium has become something of a cliché in many new and renovated commercial buildings, that much-used architectural element, when done right, still has considerable visual impact. Witness plans for Curtis Center, a 760,000-square-foot office conversion project on Independence Square in Philadelphia that will transform the open delivery courtyard of a former publishing company headquarters into a soaring, 12-story-high atrium. With its patterned marble floor, 32-foot-high columns topped by palm-planted capitals, and sculpted fountain, the 10,000-square-foot vaulted space will be a spirited contrast to the building's stately neo-Georgian exterior, designed in 1909 by Edgar V. Seeler. Architects for the conversion, which is scheduled for completion this fall, are Oldham & Seltz.

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News briefs

The Aga Khan has announced a ten-year extension of a program in Islamic architecture that was begun at Harvard and MIT in 1979. A new grant of approximately $900,000 per annum is meant to insure expansion of the joint venture to include an advanced degree program in Design for Islamic Cultures.

Benjamin Thompson has been named the winner of the 1985 Louis Sullivan Award for Architecture, given biennially by the International Union of Bricklayers and Allied Craftsmen to honor design excellence in masonry.

The Frank Lloyd Wright Foundation has announced the establishment of a program to manufacture and sell authenticated reproductions of Wright's decorative designs. The five manufacturers and retailers selected to work with the Foundation include Cassina S.p.A. and Atelier International (furniture), Tiffany & Co. (china, crystal, and silver), Schumacher (fabrics and wallcoverings), and V'Soske (rugs). The initial designs are expected to be on the market early next year.

The New York City Landmarks Preservation Commission recently celebrated the 20th anniversary of its founding in ceremonies at City Hall. In its first two decades the commission has designated as landmarks over 700 individual structures and 48 historic districts throughout the city's five boroughs.

William Pedersen and Arthur May of Kohn Pedersen Fox Associates were named joint winners of the 1985 Arnold W. Brunner Memorial Prize in Architecture, awarded annually by the American Academy and Institute of Arts and Letters.

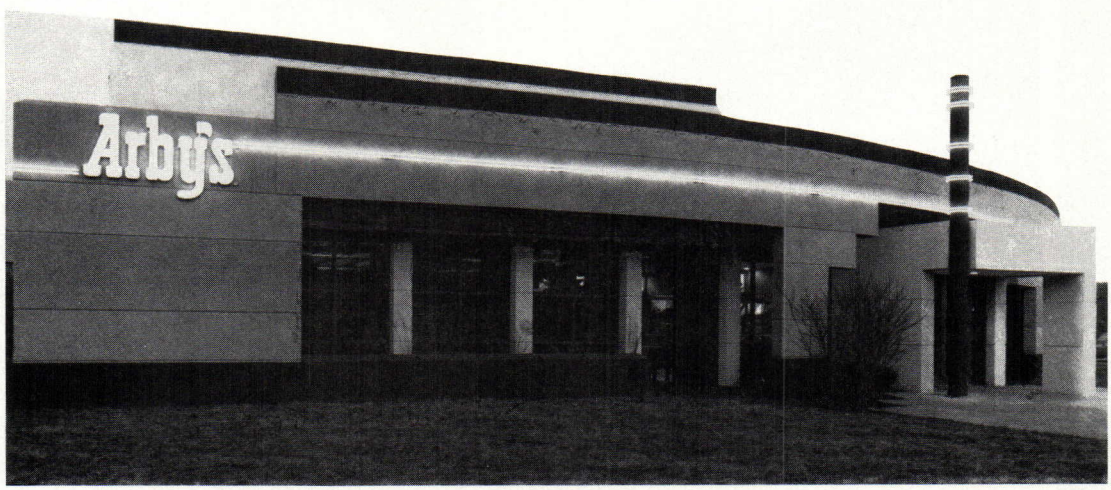
The world's tallest building may be the result of a plan to redevelop the four-acre New York Coliseum site in midtown Manhattan. Among the 14 proposals recently submitted to the city were three towers designed by Eli Attia and Associates, Murphy/Jahn Architects, and Skidmore, Owings & Merrill that would rise higher than Chicago's Sears Tower, the current champ. The city's Board of Estimate is not expected to pick a winning scheme until late next year.

The Egyptian Museum in Cairo will be renovated in a joint venture between an American and an Egyptian firm. The American partner is The Architects Collaborative, working in association with the Arab Bureau for Design and Technical Consultations of Cairo.

Updating an architectural archetype: Two projects in Boston and Pittsburgh

A renewed interest in the setback tower, the architectural form that virtually defined American skyscraper design during the 1920s and '30s, continues to characterize current high-rise building projects. Even The Stubbins Associates, a firm best-known for such elegantly sheer, freestanding towers as the Federal Reserve Bank in Boston and Citicorp Center in New York, have joined the historicist bandwagon. For a 28-story office tower near Boston's South Station (left), the architects have proposed a 689,000-square-foot structure whose stepped massing is meant to echo the zigguratlike profile of an adjacent Art Deco office building. Sheathed in reflective glass with white mullions, the structure will boast two bow fronts, intended to "give the building an exuberance of form," according to Hugh Stubbins. And for downtown Pittsburgh, the Stubbins office has designed a striking 30-story tower clad in polished granite piers flanking glass curtain walls (right). The structure's slotted pyramidal crown is a geometrically abstract adaptation of the elaborate tops that articulated many early-20th-century architectural progenitors. Associated architects for the project are Williams Trebilcock Whitehead.

Post-Modernism hits the road



Let McDonald's, Burger King, Pizza Hut, and other fast-food chains continue to litter the American roadside landscape with their pseudo-mansard boxes. Arby's, the country's seventh largest fast-food outlet, feels it has an esthetically more pleasing way of purveying its roast beef sandwiches and chicken dinners. As part of an over-all plan to upgrade its image, the Atlanta-based firm has built its first "new concept" restaurant in Louisville—a 3,700-square-foot facility designed by FABRAP Architects that Arby's intends to test as a working prototype for future restaurants. In order to "create a better dining experience" (company's words), the architects have designed the upscale-looking eateries with such post-Modernist touches as curving walls of smoothly finished exterior insulation material painted in stripes of mauve, rose, and burgundy; neon banding; and a formal entrance pavilion marked by a tall pole. Startlingly serene when compared to the exuberant highway architecture of the 1950s, the new Arby's may represent the last word in corporate efforts to bring good taste—at least in terms of design—to those who eat their meals on the run.

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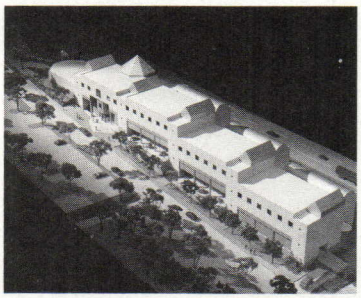
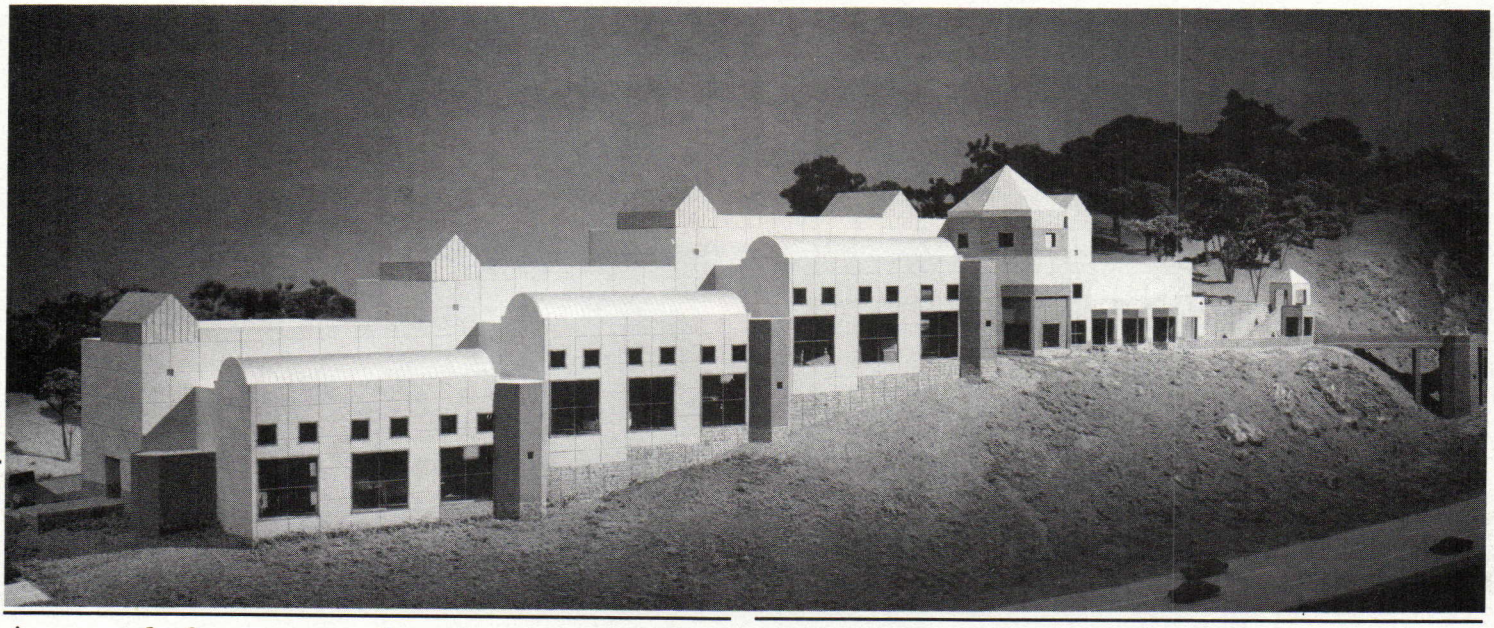
Mountainside structure to house Birmingham science museum

The Red Mountain Museum in Birmingham is a multidisciplinary science center located on the site of an expressway excavation that reveals layers of limestone, iron ore, and coal—the natural materials that played a crucial role in the development of the Alabama metropolis as a steel-making center. As part of an over-all plan to expand its programs, the museum has initiated an ambitious proposal for a new 102,000-square-foot facility. Designed by E. Verner Johnson and Associates, the building will exhibit a linear configuration that was developed in response to a narrow, mountainside site. The structure's most unusual feature is its combination of exterior materials and colors: red stone symbolic of the region's geology will sheath the ground floor, while upper stories will be clad in tan cementitious panels alternating with green, metal-covered angular bays—all to be topped by peaked, barrel-vaulted, and flat silver roofs. Visitors will be greeted by a three-story-high rotunda lobby (polygonal pavilion in model views) that leads to exhibition space, an auditorium, and an orientation display for outdoor interpretive walks accessible via a pedestrian bridge.

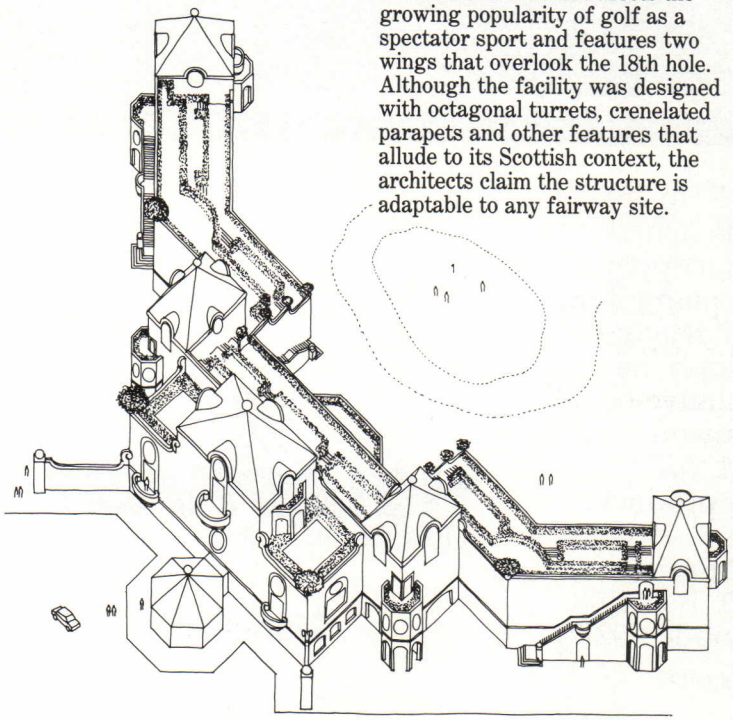




©Steve Rosenthal photos

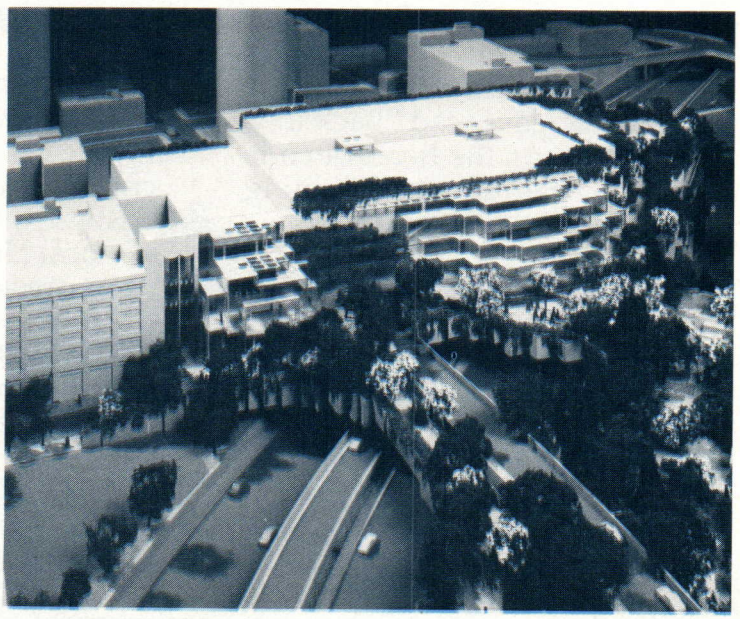
A new role for the 19th hole

Responding to a request by the Turnberry Golf Club in Scotland, the American firm of Kaufman Black & Lyons has designed a prototypical facility combining a traditional clubhouse with a terraced rooftop viewing stadium. The unusual scheme reflects the growing popularity of golf as a spectator sport and features two wings that overlook the 18th hole. Although the facility was designed with octagonal turrets, crenelated parapets and other features that allude to its Scottish context, the architects claim the structure is adaptable to any fairway site.



Seattle project to bridge downtown expressway

Designed to occupy the air rights over Interstate 5, the new Washington State Convention and Trade Center in downtown Seattle will comprise a 300,000-square-foot exhibition hall and an elaborately terraced network of landscaped pedestrian parks and plazas. Architects for the highway-spanning project are TRA + HNTB, with Pietro Belluschi and Danadjieva & Koening Associates.



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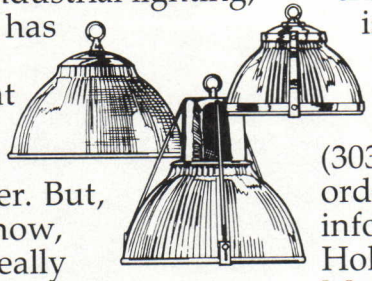

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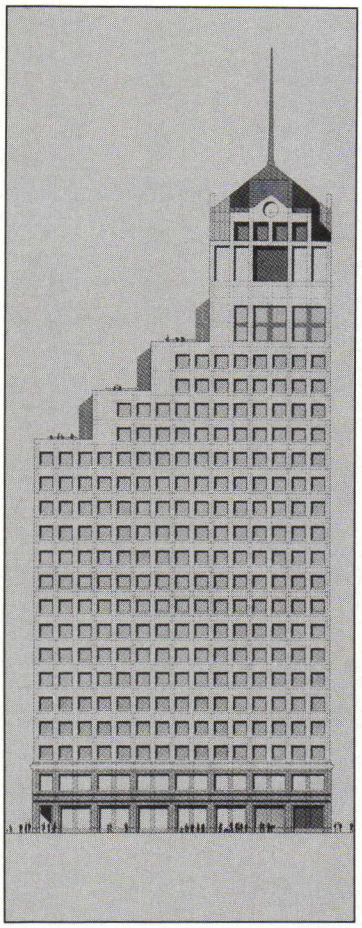
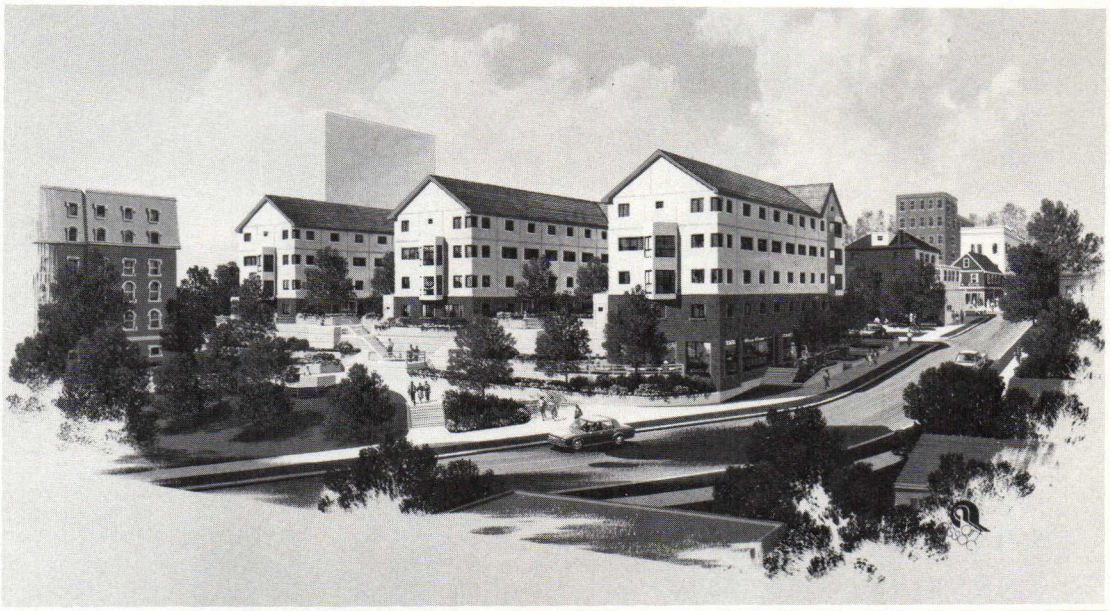


Morgan Keegan Tower is a 21-story office building under construction in downtown Memphis that at 402 feet will be the tallest structure in the Tennessee metropolis. Clad in Italian red granite, architectural precast concrete, and glass, the 383,000-square-foot tower is part of River Center, a development that will include a second office building, a hotel, and parking facilities. Architects are 3D/International.

Town and country

Ithaca is not your typical upstate New York town. As the home of Cornell University and the site of some of the most spectacular gorges east of the Mississippi, the community has always been something of a mini-San Francisco—an alluring combination of urban sophistication and rural natural beauty. As such, the city suffers a chronic housing shortage, fueled in part by Cornell students who simply don't want to abandon the city's charms after graduation. That problem may soon be eased somewhat with the construction of Eddygate Park, a privately sponsored, mixed-use development of apartments and street-level shops rising above a city-owned parking garage. Located directly adjacent to James Stirling's new performing arts center, the four-story project will be grouped around two landscaped garden courtyards that command views of Cayuga Lake and the central New York countryside. Peaked roofs, projecting bays, and facades sheathed in a combination of brick and synthetic stucco are details meant to harmonize with the domestic character of the surrounding neighborhood. Project architects are Hoffman O'Brien Levatich & Taube.



Competition calendar

• Hispanic students and young professionals from 10 northeastern states are invited to submit entries to the annual Hispanic Talent Search Architectural Competition. Prizes totaling $5,000 will be awarded. Entry deadline is September 9. For information contact Mary Strowbridge, Castro-Blanco, Piscioneri and Feder Architects, 10 East 39th St., New York, N. Y. 10016 (212/889-6220).

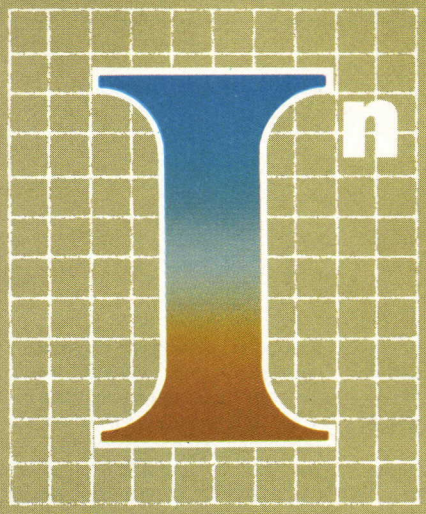
• A call for entries has been issued for the first triennial King Fahd Awards for Design and Research in Islamic Architecture. Open to students and recent graduates, the program will award prizes totaling $100,000 to 20 entries in design and research categories. Entry deadline is December 30. Write King Fahd Awards Office, Research Center for Islamic History, Art and Culture, P.K. 24, Besiktas, Istanbul, Turkey.

An office obelisk in Orange County

A proposal for the tallest office project to date in southern California's burgeoning Orange County calls for a 24-story commercial tower, clad in precast concrete panels and reflective glass, and an adjacent six-level parking facility. Crowned by a decidedly post-Modern metal-and-glass pyramid, the 475,000-square-foot structure was designed by Daniel L. Dworsky and Associates.

Revamping a Deco dowager

Fifteen years after it was vacated, the old YMCA in downtown Akron is about to get a new lease on life. The striking 1929 Art Deco building will be converted into a mixed-use facility comprising 55 rental apartments in the tower and 45,000 square feet of YMCA office and recreational space on the first four floors. Restoration architects are Trivers Associates, in association with Hecky Levy Architects.



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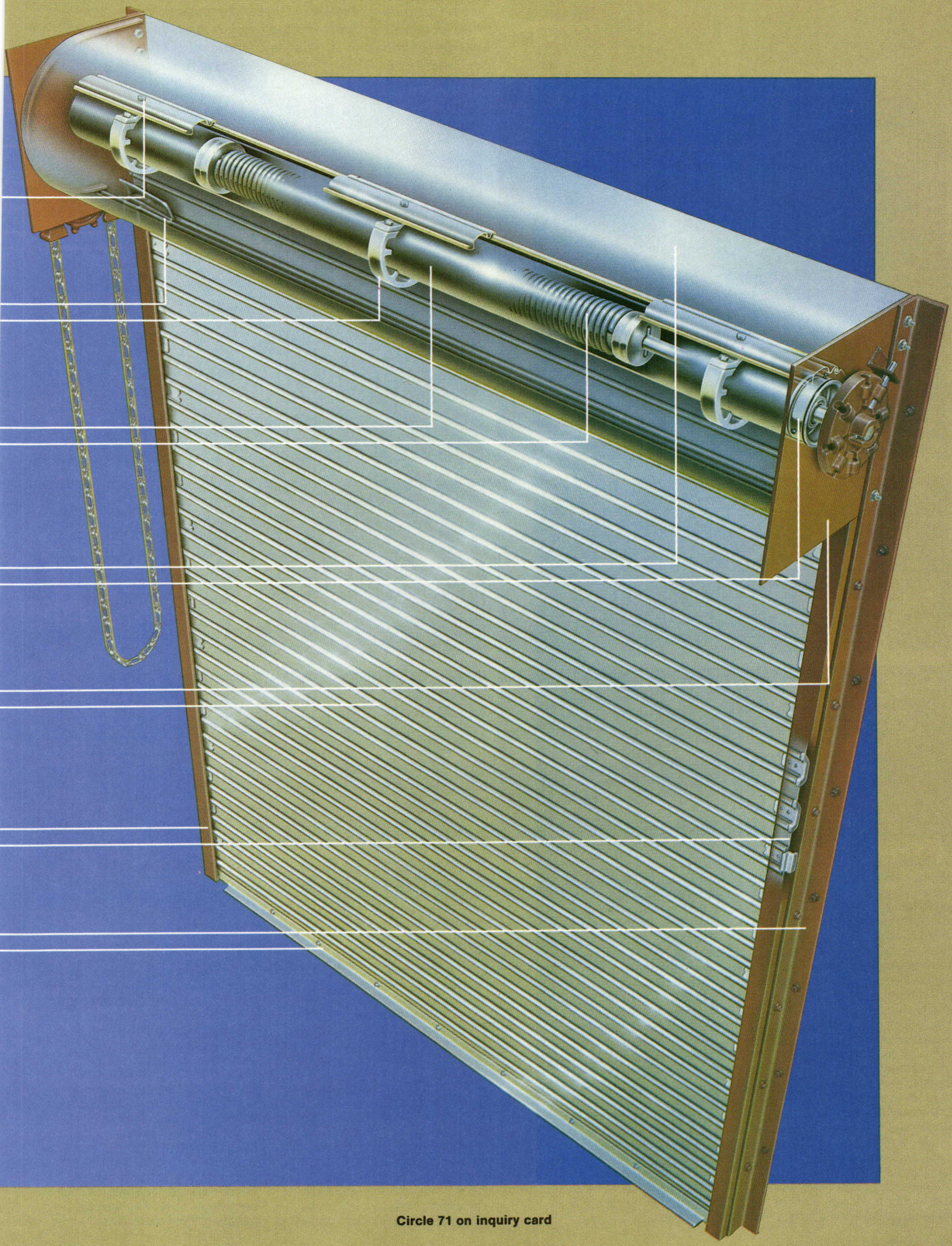

Circle 71 on inquiry card

Design awards/competitions: 1985 AIA Honor Awards

If the honor awards program annually sponsored by the American Institute of Architects is frequently viewed as reflecting the current state of the art, then the message conveyed by the 12 winning designs illustrated below may be that architecture has embarked on an era of thoughtful good taste. Or as 1985 jury chairman James Stewart Polshek, FAIA, noted in his comments: "We looked for and found numerous examples [among the 600 entries] of buildings that did not depend on predetermined originality or highly personal stylistic expression. The jury tended

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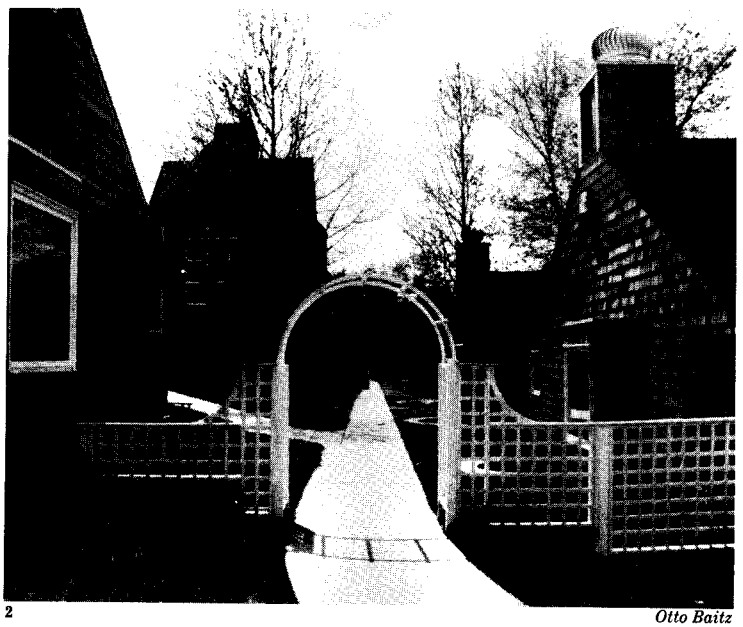
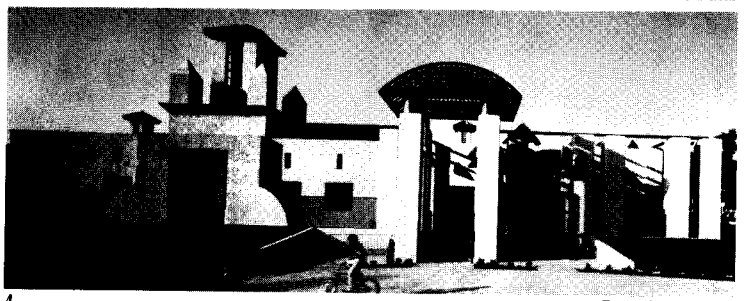


2 Otto Baitz

3 ©Peter Aaron/ESTO



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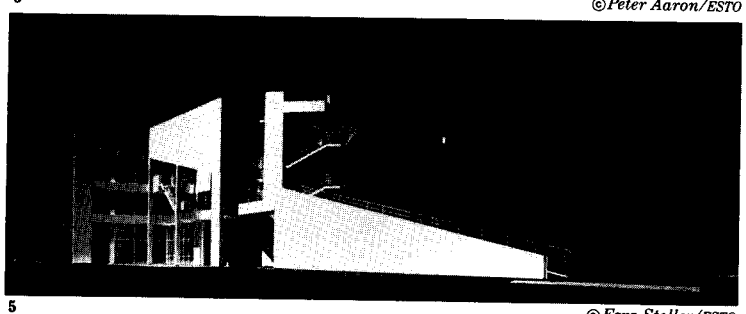

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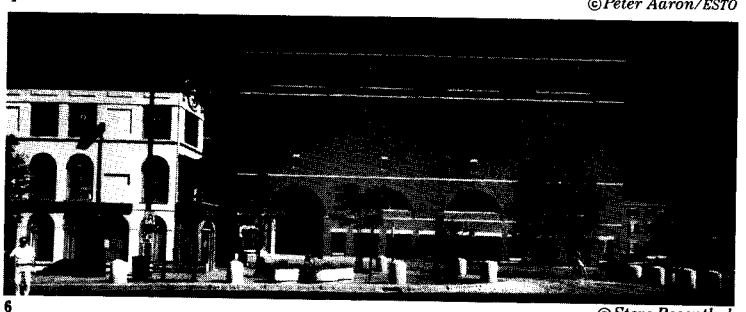


6 ©Steve Rosenthal

1. Church Court Condominiums, Boston, Massachusetts; Graham Gund Associates, Architects. Two walls and a tower from a fire-gutted Romanesque Revival church in Boston's Back Bay were incorporated into a seven-story, 43-unit residential project. The jury called the complex "a masterpiece of contextual design. Using colors, forms, and a variety of materials that resonate with the spirit of the neighborhood, the architects have taken pieces of the city and transformed them into something distinctive and new, but completely at home on its site."

2. Roosevelt Solar Village, Roosevelt, New Jersey; Kelbaugh + Lee, Architects. A housing complex for the elderly comprises an intimate 21-unit enclave of attached, shingled cottages and a three-story brick community center, all enclosed by a wood lattice fence. Extensive provisions for passive solar heating and ventilating include solariums, unvented Trombe walls, direct-gain windows, and solar vent stacks topped with rotary ventilators. "A model of low-income housing for the elderly that is at once domestic in scale, energy efficient, beautiful, and fully cognizant of human needs," observed the jury.

3. Residence at Chilmark, Martha's Vineyard, Massachusetts; Robert A. M. Stern Architects. The jury noted: "This summer house is a beautifully designed object that, through its fresh interpretation of the New England shingle-style coastal cottage, evokes a clear sense of place. Both the inventive exterior and the warm and comfortable interior are marked by skillful construction, detailing, and craftsmanship."

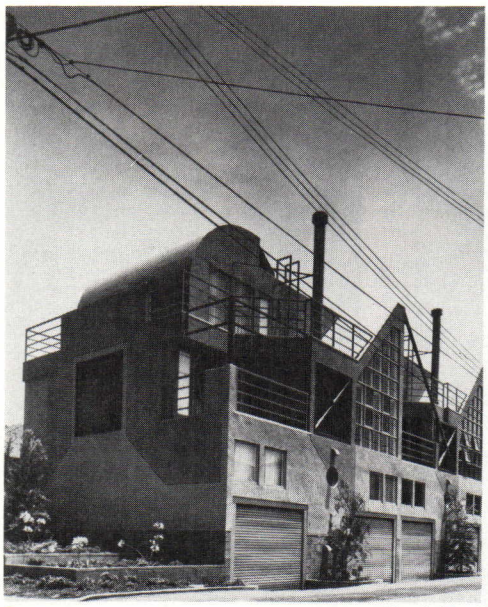
4. San Juan Capistrano Library, San Juan Capistrano, California; Michael Graves, Architect. "Through its scale, indigenous materials, and spatial invention, this library is a masterful transformation of the Spanish mission vernacular into a modern composition," noted the jury. "The plan is original and brilliant, with the organization of spaces and functions around the courtyard offering natural control of light and climate while creating the spirit of a small town."

5. The Atheneum, New Harmony, Indiana; Richard Meier & Partners, Architects. The jury called this visitor orientation center "a breathtaking gateway to the historic utopian village of New Harmony, . . . a highly personal vision of an architectural ideal. The design's striking sculptural elegance stands in stark contrast to the evidence of an earlier search for the utopian and provocatively compels thought about the town and its significance. Its special beauty is infinitely intriguing and stands as a beacon of inspiration for artistic expression. The Atheneum begins the journey not only to New Harmony, but also to a new way of looking at American architecture."

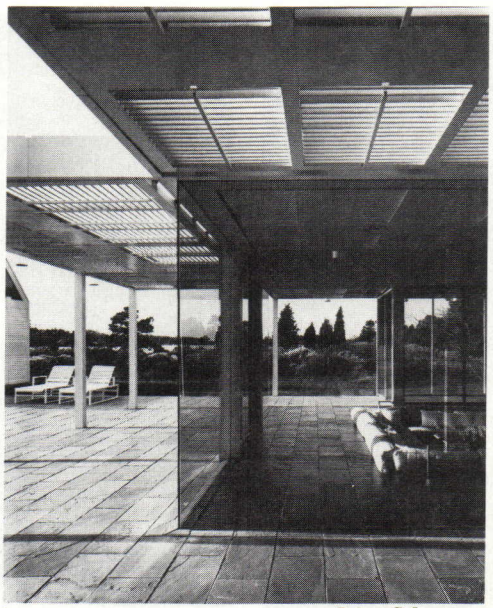
6. Charles Shipman Payson Building, Portland Museum of Art, Portland, Maine; I. M. Pei & Partners, Architects (RECORD, November 1983, pages 108-119). Located on a major public square amid landmark brick structures, a museum expansion project was praised by the jury as "a compelling building that enriches its community without overpowering it. The elusive and surprising interior is ingeniously organized and graced by an extraordinary quality of light and space."

to look more favorably upon projects that expressed a strong dependence on basic architectonic principles, . . . and we valued solutions that were urbanistically appropriate or socially useful to their communities." Although the jurors were heartened by what they perceived as "the idealism that continues to inspire our country's architecture," they observed that the number of submissions of multiple housing projects in lower- and middle-income ranges was "disappointingly low, reflecting the neglect of subsidized housing by the Federal administration." In addition to Polshek this year's jurors were Alejandro Barberena, AIA, of Austin, Texas; Thomas L. Bosworth, FAIA, of Seattle; Robert Campbell of Cambridge, Massachusetts; William H. Grover, AIA, of Essex, Connecticut; James Kalsbeek of Cincinnati; O. Jack Mitchell, FAIA, of Houston; Roger Schluntz, AIA, of Tempe, Arizona; and Harry Weese, FAIA, of Chicago.

Awards news continues on the following page with the results of the renovation and reconstruction program sponsored by the American Wood Council.



7 *Marvin Rand*

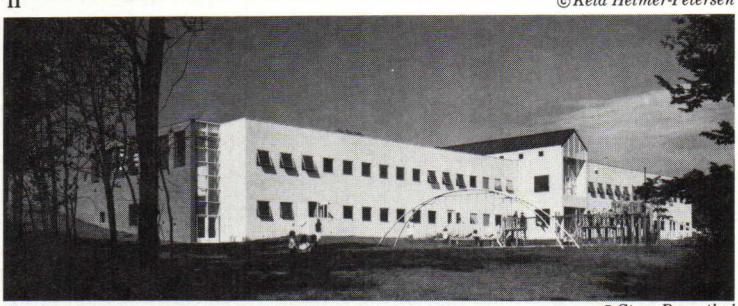


8 *Robert C. Lautman*

9 *Jaime Ardiles-Arce*

10 *©Robin Bartholick*

11 *©Keld Helmer-Petersen*



12 *©Steve Rosenthal*

7. Pacific Town Houses, Santa Monica, California; Rebecca L. Binder and James G. Stafford, Architects. Four town houses located in a densely built-up oceanside neighborhood were designed to take advantage of Pacific views. The jury particularly liked the project's vigorous geometry and high-tech imagery, which they characterized as "a new vision of post-industrial housing."

8. Tidewater House, Eastern Shore, Maryland; Hugh Newell Jacobsen, Architect (RECORD, mid-April 1984, pages 74-81). A serene composition of four connected pavilions sheathed in clapboard and glass characterizes a shorefront weekend and summer house. The jurors admired the building's "freshness, simplicity, and restrained profile against the sky," and they had special praise for the architect's ingenious application of louvered shutters, which serve as sunscreens when raised to their horizontal position and vandal-resistant walls when lowered.

9. Weyerhaeuser Technology Center, Tacoma, Washington; Skidmore, Owings & Merrill, Architects. For a research, development, and engineering facility on a 480-acre site, "the architects have drawn upon the richest traditions of American Modernism to create a strikingly handsome building carved out of a rugged natural setting. Almost effortlessly, the building accommodates its multiple uses, offering smooth transitions from office to laboratory to engineering facility to social space. With its cedar and glass exterior shaded by the densely wooded site, the building is not so much an *object* in its environment as an integral *part* of its environment."

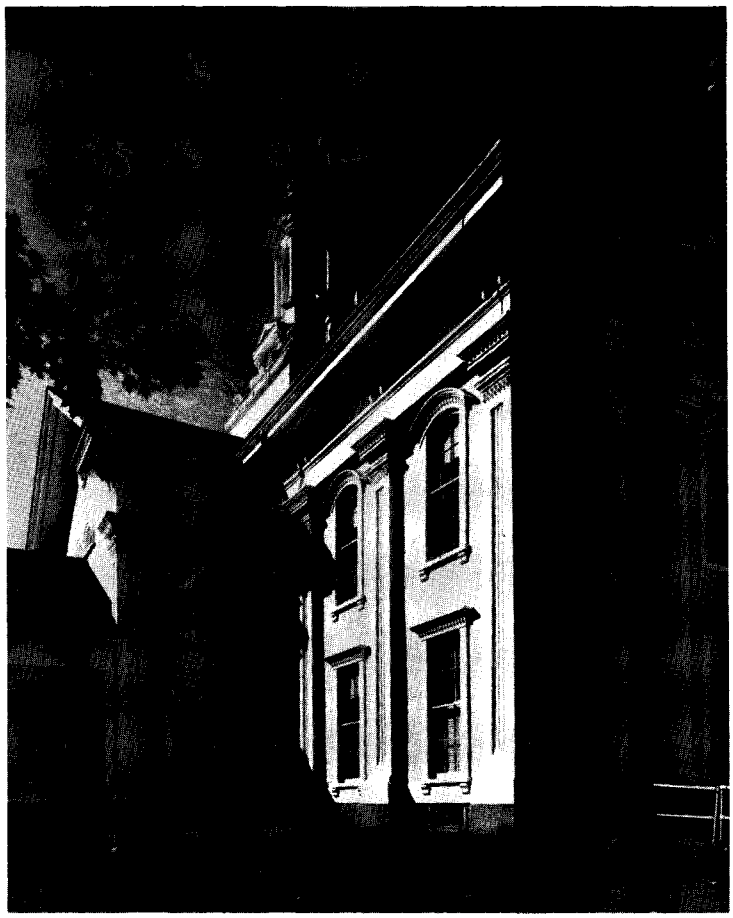
10. Pike Place Market, Seattle, Washington; G. R. Bartholick, Architect. Faced with demolition in the 1960s, a 22-acre market district was saved by a voter referendum and restored into "one of the best mixed-use environments in the United States," in the jury's words. "One of the [project's] most appealing aspects is a quality of authenticity: the design is clean, spare, handsome, consistently interesting, never predictable, and always faithful to its long and colorful history, . . . a place for interaction among all members of the Seattle community."

11. AB Volvo Corporate Headquarters, Gothenburg, Sweden; Mitchell/Giurgola Architects. An elongated formal entry circle reminiscent of a Swedish farm court sets a dignified tone for the headquarters of a major European automobile manufacturer. The jury praised the architects for their "remarkable capacity to operate with grace and ease within a cultural esthetic other than their own. The building expertly merges art with architecture, creating an atmosphere of elegance and quality rare in corporate environments."

12. Middlebury Elementary School, Middlebury, Connecticut; Tai Soo Kim/Hartford Design Group, Architects. For a 50,000-square-foot public school, the architects specified red brick and white concrete-block walls—a color combination that alludes to traditional red-and-white New England barns. Another regional reference is a two-story skylit circulation spine, meant to suggest a covered bridge. The jury lauded the evocative imagery and called the school "a marvelously refreshing learning environment."

American Wood Council 1984 Renovation and Reconstruction Design Awards

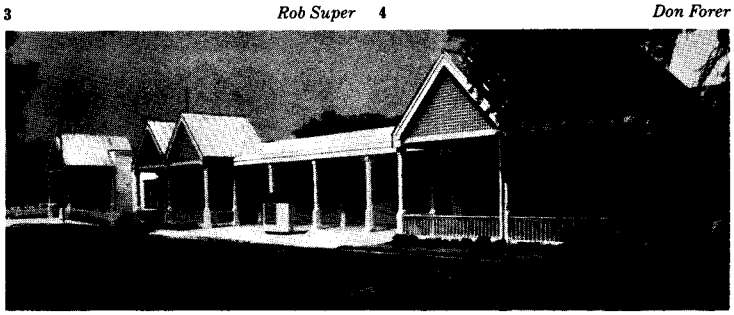
The American Wood Council, an alliance of wood manufacturers and trade groups founded in 1969, sponsors two biennial design awards programs—one for new construction and a second for renovation and reconstruction—that honor nonresidential wood architecture. The 1984 renovation program attracted 173 entries and resulted in the 12 award-winning projects and one special citation shown here. The jurors were Joan E. Goody, AIA, of Goody, Clancy & Associates; Joseph Esherick, FAIA, of Esherick, Homsey, Dodge & Davis; and E. Fay Jones, FAIA, of Fay Jones & Associates.



1 *D. Randolph Foulds*

3 *Rob Super*

4 *Don Forer*



5 *Tim Rhoad & Associates*

2 *Rob Super*

6

1. Mary Lyon Hall, Wheaton College, Norton, Massachusetts; CBT/Childs Bertman Tseckares & Casendino, Architects. A wood-frame and heavy timber academic building, erected in 1849, was restored for classroom and administrative use. Work included the replication of missing wood ornament and an interior redesign that returned the main entrance to its original central location. The jury praised the architects for "showing great respect for the qualities of the building."

2. Cakebread Cellars, Rutherford, California; William Turnbull Associates, Architects. Unfinished Douglas fir, new redwood siding, and a wood shingle roof help a 10,500-square-foot remodeling and expansion of a Napa Valley winery blend in gracefully with its agricultural setting. The jury called the project "a very simple, straightforward, and elegant building. [It is] the image of how an American winery should look."

3. Architects' Offices, Palo Alto, California; Carter/Cody Associates, Architects. In order to adapt an unsound warehouse erected in 1905 into their own offices, the architects conceived a freestanding braced frame of bolted 6 x 6s that relieves wall loads and becomes the central design element. All surfaces were painted white to unify the various species of wood. "From a minimal shell, a pleasant, fresh interior has been created," observed the jury.

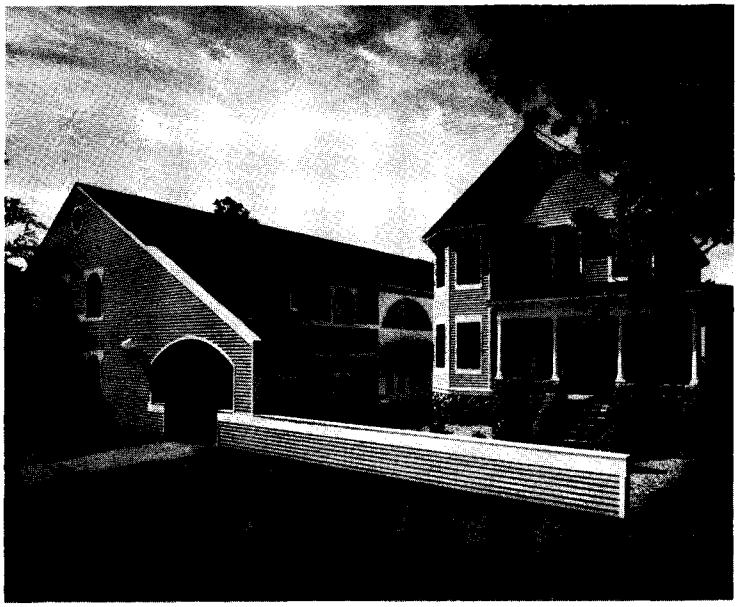
4. Architects' Offices, Coral Gables, Florida; HCDA, Architects. In converting a former warehouse for its own offices, the architects wrapped the interior on three sides with a loft and designed a series of modular workstations that serve both as drafting tables and as second-story railings. Singling out the workstations, the jury called the design "an inventive use of plywood that... is visually strong and functionally quite clever."

5. Renovation of City Hall and the Davis Building, St. Mary's, Georgia; The Spriggs Group, Architects. The architects unified and enhanced a row of undistinguished 1960s commercial buildings by resheathing them in white clapboards and adding a columned arcade, latticed wood gables, balustrades, double-hung windows, and uniform signage—details that harmonize with elements found in an adjacent historic district of 19th-century wooden architecture. The jurors praised the architects for taking the existing buildings, which they characterized as "two mundane shells," and making them compatible with their neighbors.

6. William Temple House Addition, Portland, Oregon; Fletcher Finch Farr Ayotte, Architects. A two-story, frame addition to an Episcopal mission reflects the form and details of an adjoining Romanesque Revival house. Cedar shingles on the new building are stained to match the color of slate shingles on the original structure. Although one building is masonry and the other wood, "the over-all form, breakdown of elements, and subtlety of design has resulted in a compatible set of images," said the jury.

7. RPI Playhouse, Rensselaer Polytechnic Institute, Troy, New York; Bohlin Powell Larkin Cywinski, Architects (RECORD, November 1984, pages 110-113). Built during World War II as a USO hall, a modest wood frame structure was remodeled in the style of a

7 *Otto Baitz*

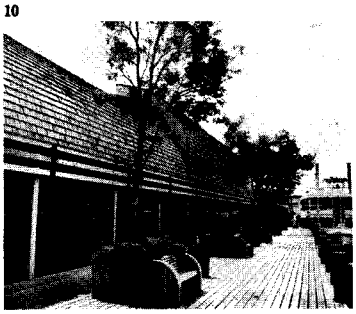


8 *Edward Jacoby/APG*

9 *Bill Schuemann*

10

11 *Tom White*



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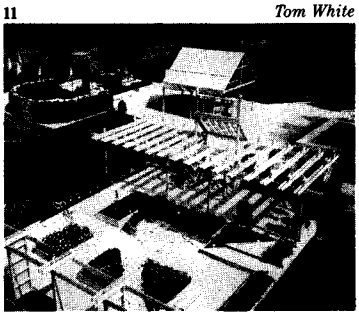

13

summer stock theater, complete with painted clapboard siding, contrasting wood trim, and a gabled false-front facade. "With an economy of means, the architect has created a building with a certain pizzazz . . . well-suited to its function as a playhouse," observed the jury.

8. 402 North Main, Randolph, Massachusetts; Charles T. Stifter Architects. An 8,000-square-foot office project on a residential suburban street incorporates a new two-story building and a late-19th-century farmhouse. Painted clapboard siding, contrasting trim, and attention to the sizes of openings and volumes unify the design. The jury praised the architects' "deft handling of materials, color, proportion and general form"—elements that allow "two totally different expressions to play against one another with a pleasing contrapuntal effect."

9. The Athenaeum Hotel, Chautauqua Institution, Chautauqua, New York; Robert C. Gaede Architects. Located on the grounds of a renowned cultural arts institution, an imposing 100-year-old hotel required extensive structural repairs and code upgrading. Care was taken to preserve existing wood siding and details, and new millwork, where needed, exactly replicates the old. The most striking additions to the structure are a new octagonal porch and grand double stairway leading to the lake.

10. Fort Humboldt Restoration, Eureka, California; Office of the California State Architect. Nineteenth-century U. S. Army records and findings from an archaeological dig provided architects with source material for the rehabilitation of a dilapidated military hospital and surgeon's house on the California coast. New cedar shingles and redwood columns, clapboards, and timbers were utilized in the rebuilding.

11. Simpson Hall Renovation, Nyack College, Nyack, New York; Schofield Colgan Architects. A former bible college built in 1897 was gutted, stripped to its original balloon frame, and reconstructed with new cedar bevel siding and shingles stained to match the original colors. The jury called the project "an impressive exterior restoration and mechanical upgrading [that is] consistently good all the way through."

12. Hidden Harbor Restaurant, Pompano Beach, Florida; The Architects, Inc. Laminated wood arches, a gently curved ceiling deck lit by clerestory windows, and cedar shake wall cladding characterize the interior and exterior reconstruction of a one-story harborside restaurant. The jury singled out the "excellent use of glu-lams as a structural and decorative element. The design picks up the geometry of the waterfront and builds on these motifs."

13. National Country Garden, Washington, D. C.; Guy L. Rando & Associates, Architects (Special Citation). A demonstration project at the U. S. National Arboretum features the innovative application of reuseable lumber in garden structures. Trellises, decks, fences, benches, and planters were fashioned by volunteer laborers from recycled doors, wood concrete forms, crates, and pallets. The jurors lauded the resulting 13 outdoor rooms for their "rhythm, pattern, and visual appeal," and they cited the over-all project as "an inventive reuse of materials and a creative community program."

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Gottfried Semper: In Search of Architecture, by Wolfgang Hermann. Cambridge: MIT Press, 1985, $35.

Reviewed by Barry Bergdoll

Although Gottfried Semper (1803-1879) built some of the most prominent public buildings in Vienna and Zurich, he owes his place in architectural history primarily to his writings. His great treatise *Der Stil* (1860-63) was as influential on succeeding generations of architects as the writings of Viollet-le-Duc or Ruskin. Semper's influence was never confined to his native Germany, from which he was exiled for his involvement in the revolution of 1848-49. He was, by force of circumstance as well as point of view, a cosmopolitan who made his mark directly in Paris, London, Zurich, and Vienna. He died in Rome in 1879. His writings were taken up—and often misunderstood—by such father figures of modern architecture as H. P. Berlage, Otto Wagner and even, it seems, John Root and Louis Sullivan, as well as other Chicagoans who read Root's excerpts of *Der Stil* in the *Inland Architect* in 1889-90. These were the only parts of Semper's voluminous writings ever to be translated into English, and historians have acknowledged their influence on Chicago architects, all of whom seemed taken by Semper's views on social needs as the determinants of architectural form. He posited a series of archetypes that were initially expressed in craft; subsequently, these types underwent extensive evolution and were incorporated into advanced architectural forms. The type, for Semper, retained a kernel of immutable meaning almost the way a word retains an essential relation to its etymological origin. But few of his contemporaries were sensitive to the linguistic metaphors in Semper's work, and the question of his influence has always been complicated by misrepresentations that have risen around his theory of architectural origins and changes.

Architectural historians have long hoped that someone would undertake the invaluable, though thankless, task of fully translating *Der Stil.* But Semper's text is long, repetitive, and written in German that is abstruse even by 19th-century standards. He was given to inventing terms for his more complex ideas, so that the very essence of his theory lies often in the most difficult aspects of his language. Even more frustrating for architectural historians, Semper's elaborate theory of the origins of archetypes in the industrial arts of ceramics and textiles, which occupies the two volumes of *Der Stil,* was intended only as a prelude to a third volume in which Semper would have extended his ideas to architecture. Because that work was never written, scholars have depended upon Semper's earlier writings to assess his views on architecture.

Wolfgang Hermann has filled some of the gaps for English-speaking scholars by translating and assembling for the first time five of Semper's most suggestive early essays. *Gottfried Semper: In Search of Architecture* is a major event for anyone interested in modern architectural theory. Most of the essential themes of Semper's work are exposed here in brief essays both more accessible and more vibrant than the elusive *Der Stil.* These essays, moreover, contain the frank assessment of Semper's contemporaries and his pessimistic view of the state of architecture that Hermann speculates was one obstacle to completing the final volume. For example, Semper bemoans the "domineering influence of a late master"— clearly Schinkel—in Germany. Turning to France, he disdains the reductivism of Durand, whom he labels a schematizer, and he dismisses Viollet-le-Duc's rationalist interpretation of Gothic. Semper was seeking no easy solution or formula, and his text is never prescriptive. A new architecture would only emerge slowly through the cooperation of all the arts and crafts, guided by a general theory of art. Semper devoted his entire life to articulating such a theory based on idealist notions.

Hermann introduces his selection of Semper's writings with his own chapters on the architect's life and intellectual development, placing Semper's theoretic speculations in the context of a tumultuous career pursued across Europe. Although these chapters form neither a biography nor a monograph, they do shed considerable light on issues in Semper's own texts. Hermann, who himself left Germany for political reasons in 1933, is keenly sensitive to the decisive impact of a prolonged exile on Semper's intellectual development and the prime role given to political and social factors in his philosophy. (The author, in fact, devotes his longest chapter to Semper's six years of exile in France and England.)

Another full chapter is given over to a discussion of the 1851 Great Exhibition in London and its catalytic influence on Semper's concept of architectural origins. All the main themes of *Der Stil*—the primacy of social needs and functions over materials as formal determinants, the role of fundamental primordial ideas (*Urformen*) in the evolution of architecture, and his famous theory of cladding (which some have seen as influential on the Chicago curtain wall)—were clarified by Semper's confrontation with actual primitive architecture displayed at the Crystal Palace.

Other chapters disentangle the complex publication history of *Der Stil* and recount Semper's early career as an architect in Dresden. Perhaps the most valuable part for the general reader, however, is the collection of six new essays on major themes of Semper's theory, which set out not only to clarify the issues raised in Semper's short texts but also to place those themes in the context of contemporary debates. Hermann contrasts Semper with Durand, Viollet-le-Duc, and the father of the Tectonic approach, the archaeologist Karl Böttcher. Most importantly, he debunks systematically many of the common misconceptions of Semper's views. Indeed, Hermann's book makes Semper an accessible theorist and opens the way to re-establishing his major role in the development of modern architectural thought and practice.

"They did it in L. A. They did it in L. A. Is that all you people can say?"

Barry Bergdoll teaches art history at Columbia University.

Design: Bonnell Design Associates, Inc. Photography: Rudolph

"What I tried to do with the *Barto* chair was to provide all the essential mechanisms that are required but avoid the look of a treatment machine. The back itself actually flexes and is visually interesting. In the design of the operator chair, instead of fitting the back tightly to the seat a space was left so that the back could move forward and back. The back cushion has a constant radius so both a short and a tall person get the same support–just touch the back at different points. In all the chairs, the surface you are sitting on is general rather than specific–it's not contoured. These were ways of simplifying the mechanics of the chair. The *Barto* is so comfortable for me: a lounge chair when I lean back and when it's all the way forward, it's like a back brace. Of course, this is the kind of real comfort Domore's been involved in for evermore!" –R.M.S.

Newsweek's chair of the year: the *Barto*, designed by Richard Sel

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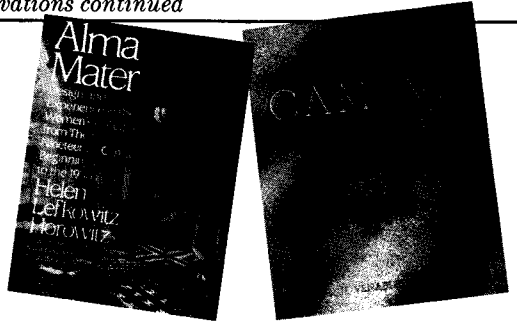


Alma Mater, by Helen Lefkowitz Horowitz. New York: Alfred A. Knopf, 1984, $25.

Reviewed by Thomas Matthews

History in architecture goes deeper than style. Complex social forces—some understood, others obscure—inform what cultural historian Helen Horowitz calls "the relations between material objects and their contexts." Her book *Alma Mater* examines the casual interplay between structure and society in the development of women's colleges in America. By analyzing campus planning, building styles, and patterns of use, she reveals the educational philosophies that underlay social, curricular, and physical change.

Horowitz's study concentrates on the northeastern institutions known as the Seven Sisters and, to a lesser extent, three younger progressive cousins. These colleges were pioneers in claiming and developing an educational equality with men. Horowitz points out that "each of the seven . . . began with a vision. None . . . developed in a pragmatic, *ad hoc* way." Their founders confronted a tradition of buildings set in open space that had been previously established in the campus planning of men's colleges. They deliberately broke the pattern.

Mount Holyoke, founded in 1837, constructed a single building to contain all its classroom, dormitory, and administrative functions. The utilitarian brick structure could have been a factory or an asylum, save for the veranda tacked awkwardly to its facade. This domestic touch signaled the college's protective intentions, the functional plan its design to transform country girls into professional women. The double desire to control and transform created a tension that is visible in every woman's campus.

At Vassar and Wellesley, both built after the Civil War, the single structure persisted even as the vision expanded. Vassar's Main Hall, modeled by James Renwick after Versailles, was briefly the largest building in the country. But the very intensity of a community thus established and so cloistered led to an unintended feminism. In the phenomenon Horowitz calls "college life," an autonomous student culture valued self-expression over propriety. In response, Smith's "cottage system" grouped "families" of girls in the town of Northampton in order to separate residence from instruction and maintain domesticity within a professional curriculum.

Thomas Matthews is a freelance writer from New York.

But despite these defensive maneuvers, building design reveals a steady erosion of "femininity." Bryn Mawr, inspired by the German research university, "had nothing of home, . . . the campus gave no clue as to the gender of its student body." Luxurious Jacobean quadrangles broke with Holyoke's seminary tradition, and "women's colleges entered into the mainstream of collegiate architecture."

The dilemma of integrating a man's education into a woman's life persisted, however, and Horowitz tracks changing attitudes as the schools grew in size and stature. She also shows how a movement away from their professional curricula led almost inadvertently to the social freedoms championed at Sarah Lawrence and Bennington. Initial decisions *not* to prepare students for careers allowed a less formal approach to instruction and governance. Reflected in small-scale campuses whose buildings integrate social and educational activities, these "progressive" ideas led ultimately to an emphasis on free self-development that would have shocked the schools' founders.

Horowitz's analysis of the struggles involved in this century-long evolution as recorded in building types is convincing, especially when her examples are specific—a library at Bryn Mawr, a chapel at Wellesley. In these, it becomes clear that issues in design go beyond some internal esthetic development to include in-house power battles, donors' whims, fiscal constraints, and prevailing social climate. But when Horowitz ignores these factors to insist on the power of design, she loses plausibility. She describes Wellesley in 1931 as "the heroic vision of the women's college . . . [in] its most complete expression." However, an aerial photograph shows an amalgam of the garden college of Frederick Law Olmsted and the monastic quadrangle of Ralph Adams Cram. As Paul Turner shows in his fine study *Campus: An American Planning Tradition,* these influences had earlier and broader concerns than sex.

Although Horowitz's building descriptions are clear and evocative, there is a disappointing absence of maps, plans, and elevations, and the photographs, while engaging, are inadequate, snapshots from an album found in some dusty attic. In this scholarly survey, history takes precedence over architecture, social and philosophical issues over questions of style. But architects may benefit from this lesson in the limits of design. Planners must strive less for visual effect, more for responsiveness to human needs. As *Alma Mater* makes plain, these will always prevail in the end.

Campus: An American Planning Tradition, by Paul Venable Turner. Cambridge: MIT Press, 1984, $35.

Reviewed by Roger Kimball

In this engaging and well-illustrated study, Paul Venable Turner chronicles the evolution of American campus planning from colonial times to the present. His brief introduction distinguishes the tradition of campus planning in America from its European precedents, and the seven chapters that follow provide a detailed survey of the major forms and variations of this characteristically American enterprise in architectural expression.

As Turner points out, the distinctive quality of the American college—which he describes as typically "open and extroverted"—is implicit in the very word "campus." Most of us will remember that "campus" comes from the orthographically identical Latin word meaning "field"—a field for military exercises, for example, or for games or public meetings. It is perhaps less well-known that the use of the term to designate the grounds of a school or college is of more recent, American provenance. In the common contemporary sense, "campus" had its origin in the 1870s, apparently at Princeton. At this stage, it still referred primarily to the expansive fields on which most American colleges or universities were then situated. But the word gradually came to mean the entire school property, including the buildings, until now we can speak without contradiction of an "urban campus," where the closest thing to a campus in the old sense is a vacant parking lot.

But even in its broader, less rustic application, "campus" remains peculiarly evocative of American college life. It has, writes Turner, "taken on other connotations, suggesting the pervasive spirit of a school, or its *genius loci,* as embodied in its architecture and grounds. [The word] *campus* sums up the distinctive physical qualities of the American college, but also its integrity as a self-contained community and its architectural expression of educational and social ideals."

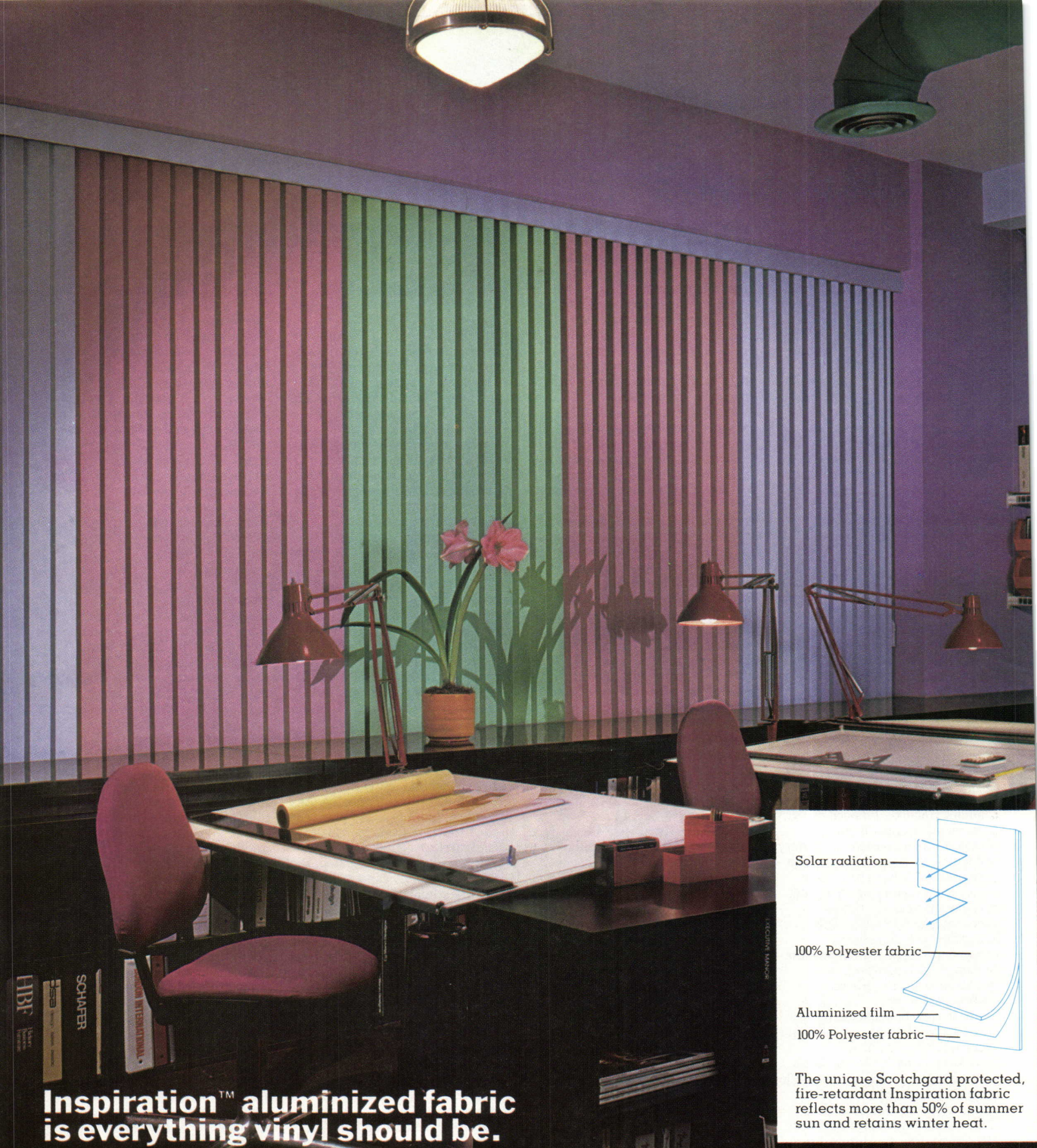
Unlike universities on the continent, where students were left to make living arrangements on their own, American colleges have from the beginning aspired to provide a total living environment for students and faculty. The American college was not merely an aggregate of classroom and lecture halls but—as Jefferson put it in describing his goal for the University of Virginia—it aimed at being an "academical village." In this sense, the American college has tended to emulate the English collegiate system, creating "an intimate community of undergraduate students and teachers, with shared intellectual and social values, and emphasizing the development of character or culture more than the learning of a trade." But where English schools were essentially urban, their early American counterparts—Turner singles out William and Mary and Dartmouth for particular notice—offered the first examples of the truly rural college.

Beginning with an overview of the nine colonial colleges, Turner proceeds to discuss the character of colleges in the early republic, when plans for a national university were much discussed. College planning became increasingly grand and ambitious from the 1820s through the 1850s—a period epitomized by the classicizing work of Alexander Jackson Davis—but they underwent something of a revolution after the Civil War with the Land Grant College Act of 1862. The impulse for democratic educational reform—for a "people's college," in Horace Greeley's phrase—sought to replace the traditional emphasis on recitation and a prescribed, classically rooted course of study with a "practical" education that would be relevant to the common man's everyday work requirements. Modern, experimentally oriented science began to be championed—Harvard and Yale both inaugurated scientific schools around 1860—and there was a deliberate movement away from formality in campus design.

A guiding force in campus planning at this time was the landscape architect Frederick Law Olmsted, whom Turner singles out as the person most responsible for creating "a type of campus that reflected the new democratic impulses in education." Involved in the design of at least 20 schools from the 1860s to the 1890s, Olmsted proposed parklike settings and informal groupings of buildings that aimed at integrating democratic life with the "civilizing" influence of nature.

Perhaps inevitably, there was a return to greater formality from the 1890s through the 1920s with the birth of the City Beautiful movement. The Beaux-Arts system of architectural planning, with its insistence on hierarchy, unity, and central planning, seemed the perfect answer to the new building requirements. At the same time,

Roger Kimball contributes frequently to The New Criterion *and other magazines. He is a doctoral candidate in the Modern Studies Program at Yale.*



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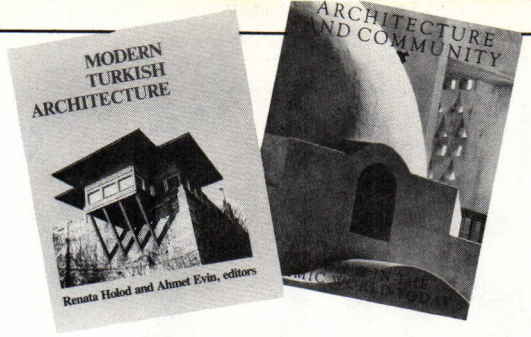


however, there was a reaction against the size and impersonality of the university and a renaissance of the collegiate ideal. This was evidenced especially in the resurgence of collegiate Gothic architecture, most notably in Ralph Adams Cram's work at Princeton, and in the institution of the House system at Harvard and the College system at Yale in the late 1920s and early 1930s.

Contemporary developments—which Turner reviews in a chapter optimistically called "Dynamism, Change, and Renewal"—reflect the new pressures of rapid increases in enrollment following the GI Bill and "baby boom" of the 1950s. With universities comprising tens of thousands of students, Jefferson's "academical village" was transformed into an academical city, and the architect now faced all the problems of circulation, traffic and crowding endemic to modern urban environments. Not surprisingly, there once again have been numerous attempts to return to the traditional collegiate ideal—Turner dwells particularly on Kresge College at the University of California at Santa Cruz—that can still offer the diversity and wide competence of the university.

But Turner does not confine his attention to purely architectural matters. His chief interest, in fact, is in "the relationship between ideas and physical environment"—in the way architecture can be used to articulate a particular social or spiritual vision. This makes *Campus: An American Planning Tradition* as much a history of American educational trends as of the buildings fabricated to accommodate them. The repeated flowering of the collegiate ideal—which Turner characterizes as "inward-turning" and "elitist"—may lead us to question his description of the American campus as essentially "open and extroverted;" based on the evidence presented in this book, it would seem to defy any easy characterization. Yet Turner has succeeded admirably in showing not only how the American campus has been "the laboratory for perhaps the most distinctively American experiments in architectural planning," but also how campus planning in this country has been "shaped by the desire to create an ideal community," a "uniquely American place." He has judiciously sifted through a great deal of material, from 18th-century educational manifestos to contemporary architectural renderings, and his careful scholarship alone would guarantee the book a respected place in the annals of this relatively neglected area of architectural history.

Architecture and Community: Building in the Islamic World Today, edited by Renata Holod with Darl Rastorfer. Millerton, New York: Aperture, 1983, $40.
Modern Turkish Architecture, edited by Renata Holod and Ahmet Evin. Philadelphia: University of Pennsylvania Press, 1984, $25.

Reviewed by William Hubbard

A venerable part of the repertoire of stand-up raconteurs is the Talking Dog. You know the stories. Talking Dog barks out sounds, and one of two situations unfolds: gullible character imputes non-existent meaning to the sounds and so is led to comic disaster, or skeptical character misses inherent meaning and so is led to similar straits. The comedy works in us because we have all confronted the unfamiliar and wondered: "Is this important? Does this mean something?" The exotic presents us with this dilemma.

Looking at the projects in these two compendiums of Islamic architecture, I kept hearing soft barking noises. When moved by a project, I asked: "Am I imputing profundity where none exists?" When unmoved, the question was: "Am I missing something important?" Admittedly, the Dog barked only infrequently during my reading of *Architecture and Community: Building in the Islamic World Today.* This book is a presentation of the first cycle of Aga Khan Awards for Architecture, a group of projects chosen from the production of the world's Islamic countries from 1950 to 1977. A wide casting of the net has brought forth works that in nearly all cases persuade by their exquisite quality or sheer architectural power—a persuasion aided by the sumptuous presentation accorded the works.

But the Talking Dog was at my side throughout *Modern Turkish Architecture.* Confronted with the task of showing the general run of Turkish building since the break-up of the Ottoman Empire, the authors have had to include works that elicit all those doubts about unseen significance (a situation not helped by the many snapshot-quality, black-and-white photographs).

Fortunately, though, neither book relies solely on images. Both come with introductory essays that offer ways of looking at the pictures and of understanding the architecture they depict. The Aga Khan book offers a cultural context for its buildings in essays on conservation, urbanism in the Islamic world, the twin problems of poverty and aspiration, the roles of design and craft, and the meanings of Islamic symbols and decoration. The cultural background is then given concrete instance by more pointed essays on building types—housing, schools, facilities for recreation and tourism, and mosques.

The most provocative of these essays for me was Muhsin S. Mahdi's "Islamic Philosophy and The Fine Arts." Mahdi tells us that the Koran and collateral writings impel the Muslim artist to seek *perfection,* seen as alignment with the mind of God. In Islamic philosophy, however, there is no agreement as to the proper path to that perfection. Does one try to perfect one's own intellect and by that effort "intersect" with God? Or does one try, through deeds and thought, to contact God? The distinction is central because the first mode would imply a freely questing intellectual life, whereas the second would suggest a more contemplative approach.

The authors of *Modern Turkish Architecture* focus less on Islamic issues and more on Turkey's particular conditions and recent history. An introductory essay by Ilhan Tekeli serves as an abstract of the basic themes of the book, which are enriched in individual essays. Tekeli's essay, however, propounds the two most forceful basic ideas—peripherality and periodicity.

Tekeli's conception of peripherality is that in the modern world, the very ground rules for creative endeavor have been set by the West: the West has insinuated into the minds of architects everywhere not just the notion that Western architecture must be dealt with, but also the idea that a nation (nationhood itself being a Western idea) must evolve its own national architecture. A double bind if ever there was one. Tekeli shows how Turkish architects have handled this imposed, but accepted, contradiction by resorting to a series of redefinitions of nationhood, each occurring in an identifiable period, some of them embracing the West, others wholly or partially rejecting it. In the 1920s Turkish nationalism was to be expressed by invoking the pan-Eastern cosmopolitanism of the Ottoman past; in the 1930s, by embracing the revolutionary spirit of European modernism; in the 1940s, by looking to the native architecture that existed beneath Ottoman cosmopolitanism; in the 1950s, by a renewed fascination with modernism, by then defined by the tenets of CIAM; and after 1960, with a generalized concern with architecture as an instrument of social justice. Through this schema of periodicity, Tekeli offers us a way of looking at Turkish architecture: we should look for the manner in which it embodies the definition of Turkish nationhood prevalent at the time of its creation.

It is interesting to note that these two ways of *seeing* architecture imply a similar approach to *creating* architecture. Under both, an architect would, in effect, cup a hand over a set of revered practices or ideas in order to maintain them while, with the other hand, pushing out the boundaries of inquiry. In Turkey the protected core is the then-prevalent conception of nationhood; in Islamic philosophy, the core is a conception of God's will. Both methods stand in contrast to the modernist method of creating, which is not to cup a hand over a revered core but to push critique outward with both hands—with the threatening result that a void will be left in the middle. Seen in this way, the two approaches described in these books differ only in extent and not in kind: under Islamic philosophy, the hand cupped over the desires of God is never to be moved, while under the Turkish approach one should from time to time tip up the cupped hand to see if the core still felt worth protecting.

But this "cupped hand" approach suggests itself as more than simply a way of seeing Islamic architecture. It offers a way of seeing any architecture in which a revered set of ideas contends with the forces of modernity—of seeing even our own "peripheral" architecture produced by local designers and craftsmen. To cite just one example, might we not say that O'Neill Ford cupped his hand over local Texas ideas about how a house should look while exploring, with the other hand, issues of new living patterns, increased density, and energy consumption?

This way of thinking about architecture has been echoed by several critics in recent years seeking a consensus about a way around the modern-postmodern dilemma. But if this is indeed a consensus about how to think about architecture, the question remains: Are we ready to *create* architecture in this way? Having felt for so long the revolutionary certitude of modernism and then the heady release of postmodernism, can we feel at ease with cupping a protective hand over revered localisms? For to do so implies that (unlike modernism) we limit our field of maneuver. Are we ready, for the sake of preserving regionalism, to give that up?

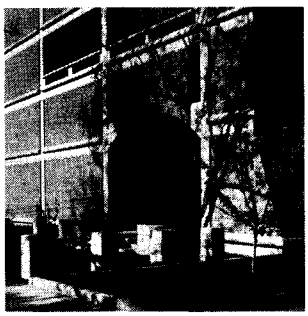
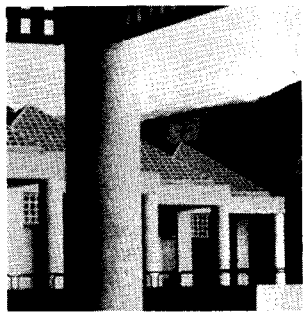
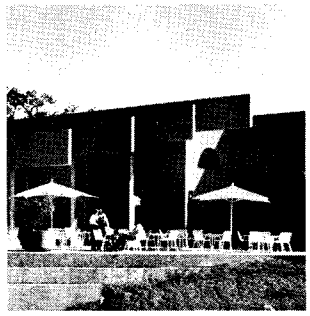
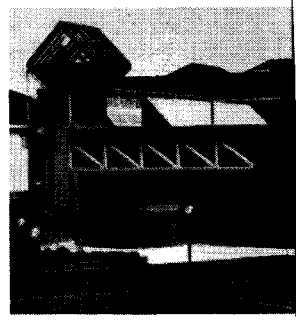
The universal applicability of these questions is a reflection of how much these two books make us want to understand these architectures—to know when they speak and what they say and thus, finally, to quiet the tragi-comic barking of that exotic Talking Dog.

William Hubbard, a frequent contributor to RECORD, teaches at the UCLA School of Architecture and Urban Planning.

A N N O U N C I N G

Call For Entries

THE CRSI DESIGN AWARDS VIII PROGRAM

Recipients of the CRSI Design Awards VII include:

Wornall Road Bridge, Kansas City, MO
Architect and Structural Engineer: *Howard Needles Tamen and Bergendoff, Kansas City, MO*

Seeley G. Mudd Library, New Haven, CT
Architect: *Roth and Moore Architects, New Haven, CT*
Structural Engineer: *Spiegel and Zamecnik, Inc., New Haven, CT*

The Vintage Club, Indian Wells, CA
Architect: *Fisher-Friedman Associates, San Francisco, CA*
Structural Engineer: *Robinson-Meier-Juilly and Associates, San Francisco, CA*

Piper-Sonoma Cellars, Healdsburg, CA
Architect: *Roland/Miller/Associates, Santa Rosa, CA*
Structural Engineer: *Zucco Associates, Santa Rosa, CA*

Civil/Mineral Engineering Building, University of Minnesota, Minneapolis, MN
Architect: *BRW Architects, Minneapolis, MN*
Structural Engineer: *Meyer, Borgman and Johnson, Inc., Minneapolis, MN*

1985 marks the 8th Concrete Reinforcing Steel Institute Design Awards Program. Since 1972, this design competition has honored excellence in concrete structures — and their designers.

The awards recognize creative design achievements utilizing site-cast, conventionally reinforced concrete. All entries will be judged on esthetic expression, engineering achievement, functional excellence and economy of construction. This AIA endorsed program has entry requirements that correspond to those of the AIA Honors Awards Program, so that entries can be submitted easily to both programs.

Winners will receive distinctive plaques at local award ceremonies, as well as national exposure through a widely distributed winners brochure and through advertising/publicity campaigns.

General Information

Categories of Awards — The program is open to site-cast reinforced concrete structures of all types.

Criteria of Awards — Esthetic expression, engineering achievement, functional excellence, or economy (or any meritorious combination of these qualities.)

Architectural Award — Several Awards will be presented, each equally acknowledging excellence of achievement. Each Award will consist of (1) engraved commemorative plaques for architect, and engineer, (2) publication of the winner's story and structure in print advertising sponsored by CRSI, and (3) presentation of the Award at a special ceremony.

The Jurists — A distinguished panel of recognized professional architects and engineers from throughout the United States will select the winners.

Eligibility — The CRSI Design Awards Program is open to all registered architects and engineers (entrants may be individuals or teams). Eligible structures must be located within the continental United States and have been completed since January 1, 1983 or essentially finished by November 1, 1985.

AIA Approval — This program has been approved by the American Institute of Architects and is patterned after the AIA Honor Awards Program.

Announcement of Winners — To be made as soon after judging as practical.

Ownership and Publication of Entries — All entries shall become sole property of CRSI. No materials will be returned. CRSI reserves the right to use or publish all entries and accompanying materials in CRSI advertising, CRSI publications or for any and all editorial purposes. By entering, entrant grants a royalty-free license to CRSI to use any copyrighted materials. Such right includes publication of photographs and names of Award winners without compensation to entrants.

Jurists' Decision Shall be Final — Upon entering the CRSI Design Awards Program, entrants waive their right to make a claim against the panel of jurists (or any member thereof), or to make a claim against Concrete Reinforcing Steel Institute (or any member thereof).

How To Enter

The following requirements correspond to those of the AIA Honor Awards Program. Entries prepared for the AIA Program may be submitted in duplicate to the CRSI Design Awards Program. **However, please also include the descriptive data sheet specified in item 4.** All other entries should be prepared as specified in items 1 through 5. No entry forms are required.

1. Binder
All material must be contained in an 8½" x 11" binder.

2. Photographs and slides
For every project, submit sufficient photographs (either black and white or color), and slides to properly illustrate the design solution. **All architect and project identification must be removed from all such submitted materials.** Minimum requirements are set forth below:

Exterior Photos
- One 8" x 10" print showing each exposed side of the building.
- One additional 8" x 10" print showing the immediate environs of the building as these abut the selected side being shown (may be omitted if environs are included in above.)

For a group of buildings or an urban project (or segment thereof), one 8" x 10" photograph of the project sufficient to illustrate the concept including relationship to its environs.

Interior Photos
- One 8" x 10" print.

Slides
- A minimum of five 2" x 2" 35mm color slides must be included for each entry — three exterior views and two interior views. They are to be of completed buildings and emphasis should be on adequate effective slides which show the merit of the project and each facade of the building.

3. Plans
Site plan — at small scale, showing the project and its immediate environs. Floor plan or plans and one or more sections — sufficient to explain the solution. Plans must be at scale, but may be shown in any medium. Scale at discretion of entrant, as large as practicable. Scale must be shown graphically.
Plans must be on 8½" x 11" sheets placed in transparent window sleeves.

4. Descriptive data
To preserve anonymity during judging, submit the following data typewritten on plain white 8½" x 11" paper.
- Description of type of structure.
- Size of structure in total square footage.
- Date structure was completed or scheduled for completion.

Important
Please provide complete information on the following:
a. Structural framing system: Indicate which portions of system are conventionally reinforced, prestressed, or precast concrete. (Remember, structure must be predominantly site-cast and conventionally reinforced.)
b. Unique structural and/or architectural design features: Describe any that deserve special consideration by the jurists.
c. Reasons for choosing reinforced concrete: Please be specific and include comparisons with other structural systems where applicable.

5. Concealed identification
All information requested here **must** be included on a separate typed sheet. Please be certain that **all** spelling and **all** punctuation are absolutely accurate.
- Proper name of structure
- Name, address, and phone numbers of:
  Architect
  Engineer
  Contractor
  Owner
- All titles or other designations such as consultant, associated architects, project architect, architect in charge, associate architect, etc.
- All city and state locations.

Deadline
All entries must be received no later than November 1, 1985 at CRSI headquarters. For additional information, call 312/490-1700.

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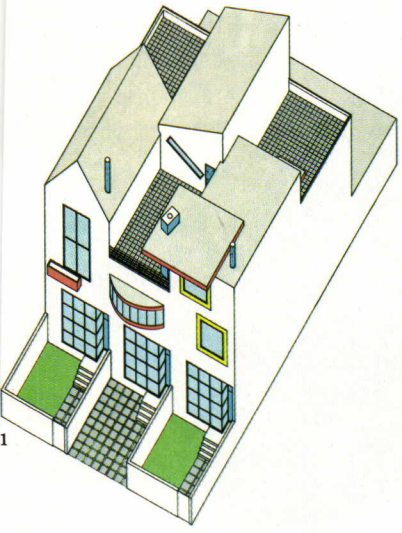
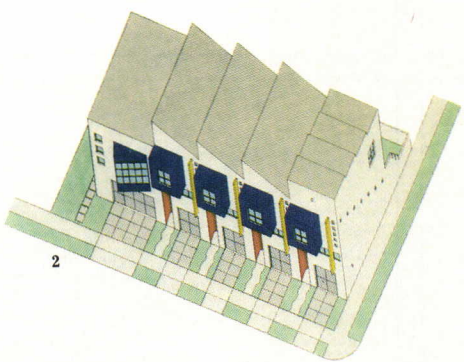


1

"Show me another firm that has produced a portfolio of townhouses this interesting," challenges Bernardo Fort-Brescia, co-principal of Arquitectonica, the firm responsible for the portfolio of townhouses Fort-Brescia holds in such high esteem. And though we may wonder at the 33-year-old architect's not-uncharacteristic immodesty, after scrutinizing the eight residential enclaves in this portfolio, we must confess alternative firm names do not leap instantly to mind. Like it or not, Fort-Brescia has a point: these townhouses are, at the very least, "interesting." For whether you count yourself friend or foe of the particular brand of ecstatic Modernism that Fort-Brescia and partner Laurinda Spear have devoted their first seven professional years to blitzing home-base Miami with, it does possess a seductive visual allure that is hard to resist. True, this current chapter in Arquitectonica's scrapbook registers a reduction in scale from those first stop-your-heart condominium towers along Brickell Avenue, but they deliver no less emphatic an esthetic punch.

There's appreciably more to this particular Arquitectonica story than eight new colorful facades making merry—this time in Texas—on once-quiet streets in Houston, Austin, and Dallas. As a collection, these townhouses acknowledge a growing trend toward the densification (and frequently gentrification) of modest single-family-house neighborhoods that 20 years ago were considered suburban, but, after decades of urban growth, awoke in the '80s to find themselves enviably close to downtown. And since no one's idea of a good time is a 90-minute commute in rush-hour traffic, these neighborhoods are now coveted by ever-acquisitive yuppies who want to be near the commercial and cultural action, and, consequently, by the quick-witted developers who prefer to keep the lag between demand and supply as short as possible. The bottom line is that the old neighborhood is changing: The Smiths' three-bedroom Colonial is gone, replaced by five $250,000 townhouses—and 10 cars.

But if change is a demographic fact of life, the method by which to effect change is surely subjective. For instance, Fort-Brescia believes that Arquitectonica's townhouses have had an extremely positive effect—"they've generated a whole new generation of developments that are much better than they used to be"—whereas there's at least one skeptical Texan (see veteran Houston observer Douglas Milburn's critique, page 133) who seems to eye these latest Florida exports as more Miami vice.
Charles K. Gandee



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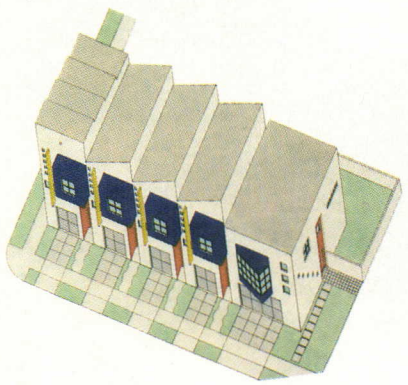
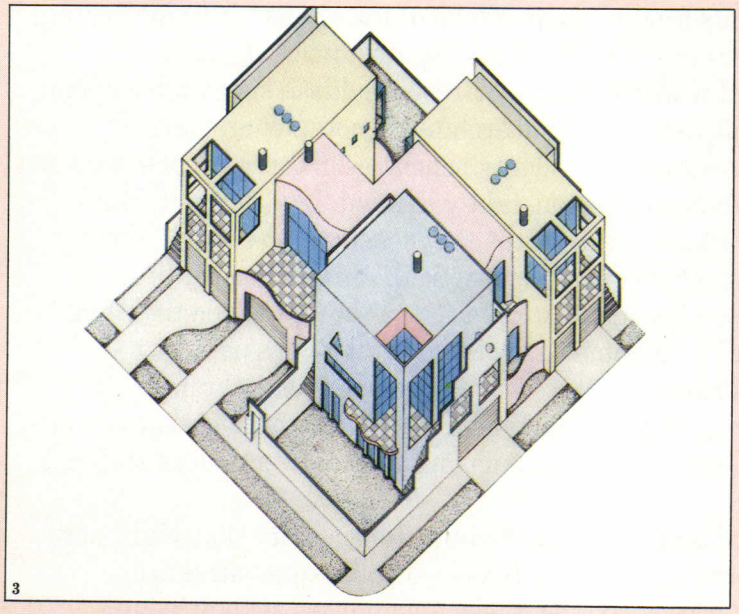


1. Rodrigo Townhouses, Houston
2. Haddon Townhouses, Houston
(RECORD, August 1984)

Although the realtor charged with handling two of Arquitectonica's eight Texas townhouse projects characterizes the buildings' style as "contemporary," most of us would choose "Modern" as the more appropriate stylistic umbrella under which to place the sprightly medley (previous page and below). For though architect Bernardo Fort-Brescia not incorrectly boasts of the portfolio's "variety," in terms of design, there is a consistent reliance on abstraction. In scrutinizing these 47 units of pricey housing stock, however, we see that Arquitectonica has loosened up its "Modernist" collar over the last three years. Moving, in chronological order of design, from Taggart (3) to Haddon (2, overleaf) to Milford (4) to Mandell (5) to Exposition (8) to Nantucket (6) to Newton (7) to Rodrigo (1, overleaf), we can't help but note a gradual rounding of the hard edges; an early tendency to line up tightly composed facades like so many cubist soldiers at attention versus a later tendency to let more loosely composed facades stand at ease. Reflecting on the almost-arbitrary appearance of the later work, partner Laurinda Spear reflects: "We would never get good grades in school now, because everybody asks 'why did you do this?' and 'why did you do that?' And to say 'we did it for composition's sake' is not a good enough answer. The premise we go under at this point is that of course we can make it work functionally—so we just gloss over all the basic stuff. That means the only interest left is composition and design. We try to keep the architecture as pure art without so much burdening it down . . . We might as well be painters or sculptors."



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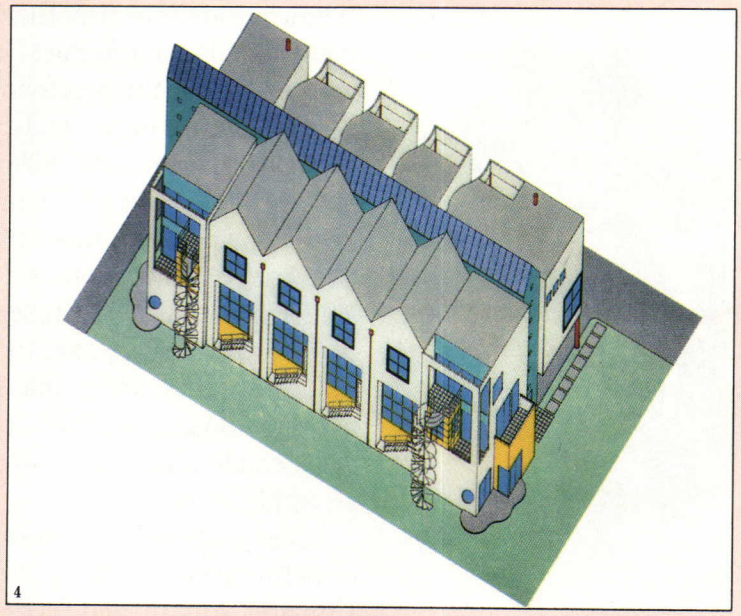

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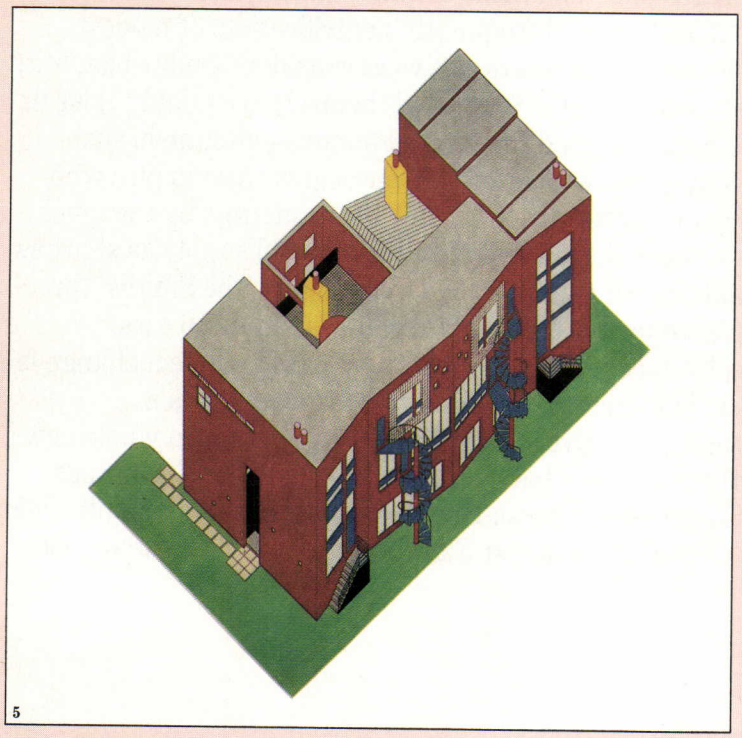

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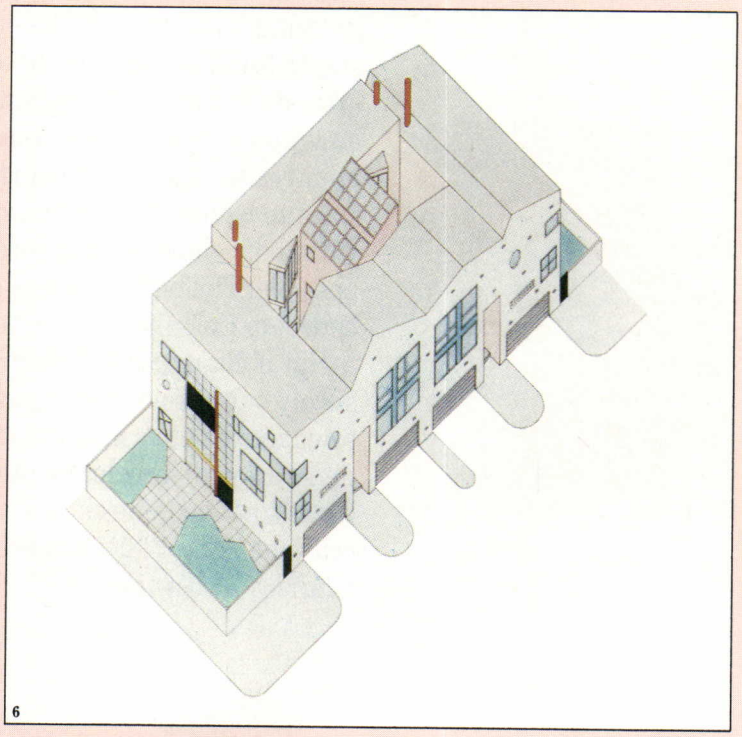

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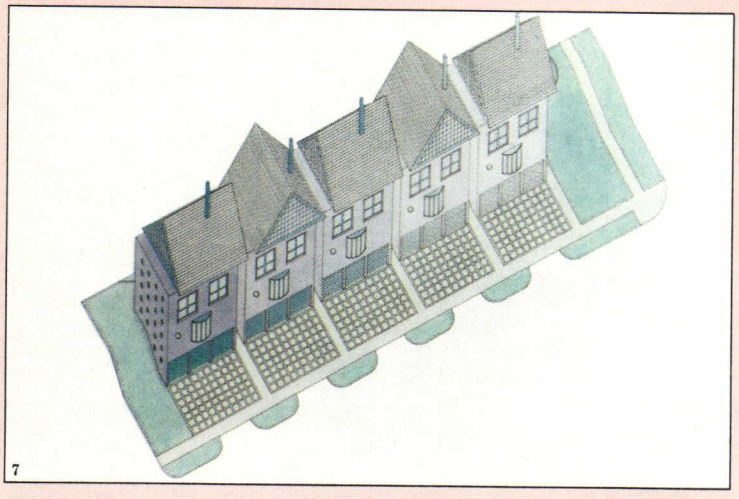

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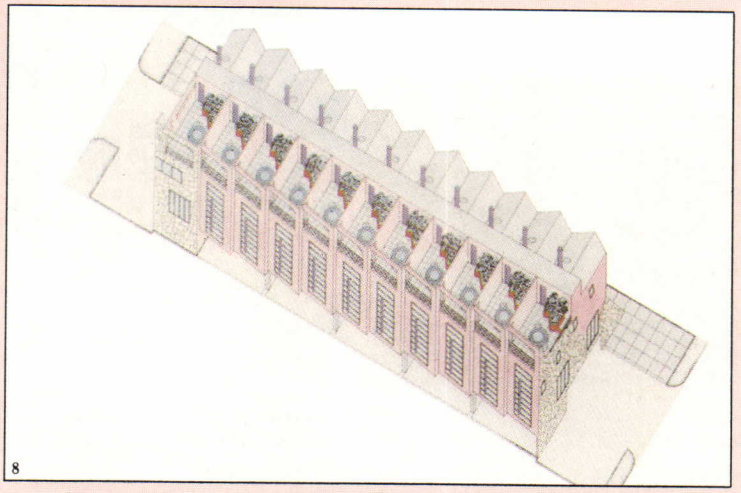

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"I wouldn't call the work contextual, but then why would I want to relate to this context? It's disappearing, and it's not very attractive. Maybe our buildings will start creating a new context."

Bernardo Fort-Brescia is shameless. Or so many will regard him, owing to the heresy of his confession—nay, boast—that Arquitectonica's work is *not* contextually sensitive. For to be an architect in good standing in this decade it seems one must sing alleluias of contextualism—which both dyed-in-the-wool Modernists and born-again post-Modernists are doing in numbers and at a volume that can be conservatively, and respectively, termed overwhelming and thunderous. To do otherwise, i.e., not to raise at least your voice to honor-thy-neighbor contextualism, is to run the risk of incurring the wrath of your colleagues. But Fort-Brescia and partner Laurinda Spear are accustomed to running that risk. Since founding Arquitectonica in 1977 they have done nothing so much as thumb their noses at their profession's conventions—preferring to ignore the prevailing currents and chart their own, brazenly independent course.

Unlike many of their peers in the under-35 set, who frequently report enormous difficulty in making the transition from classroom to drafting room, Fort-Brescia and Spear have shown a remarkable talent for maneuvering not simply in the "real" world of clients, budgets, and deadlines, but in the super-real world of cutthroat speculative commercial real estate. Using the Arquitectonica motto of "No job too large or small" as his guide, Fort-Brescia pursues small-, medium-, large-, and mega-scale development work with a hunger that approaches the insatiable. And while Spear has shown a more prolific talent for producing her signature colored axonometrics of those developments than Arquitectonica's clients have shown for constructing them, she and Fort-Brescia can nonetheless boast a portfolio of built work guaranteed to intimidate a more-than-modestly-successful colleague in their parents' generation. Not incidentally, the various pages in that enviably-thick portfolio reflect another, no less idiosyncratic predilection of the husband-and-wife team: at a time when pre-20th-century historicism is sweeping drawing boards from Tokyo to London, Fort-Brescia and Spear are near-rabid advocates of Modernism. Though even the most relentless attempt to extort an acknowledgement of specific architectural influences, or even sympathies, elicits only a coy "I'm not going to deny or accept" from partner Spear, she and Fort-Brescia nonetheless appear especially well acquainted with certain chapters in the history book of the Modern movement. Their work suggests that their study began, as all good Modernists' study must, with the Bauhaus and Le Corbusier chapters, but then diligently continued on to the Russian Constructivism section (particularly the part on color and fantasy by Nikolai Ladovsky), on through the Art Deco pages, through Morris Lapidus's baroque aside, and on through the contemporary Dutch architect Rem Koolhaas's late entry, until finally Arquitectonica decided simply to throw away the book and write its own reinterpretation. Partner Spear, however, cautions would-be readers of *Modern Architecture According to Arquitectonica* not to take it all too academically: "It's not something that you have to refer back to some historical architect to understand—forget about all that. It has more to do with lifestyle and visual impact . . . it's just a visual event. What you respond to is color, form, and composition. . . . We start from the premise that you should have a certain emotion when you see it." And you do.

Just ask any visitor to any one of the Houston or Austin or Dallas neighborhoods which has been (or will be soon) the beneficiary of one of Spear's aforementioned "visual events." The firm that stopped the professional and popular presses (and cornered the market) with a series of surreal condominium towers in Miami now aspires to similar goals in the low-rise townhouse category in Texas. And though they hit their target city of Houston at an especially troubled moment (there are at present 35 million square feet of vacant office space in the city, according to one developer), Fort-Brescia's barracuda business instincts and Spear's architecture-as-incitement conspire to give Arquitectonica powerful ammunition with which to wage its assault on the complacent world of butterscotch brick townhouses.

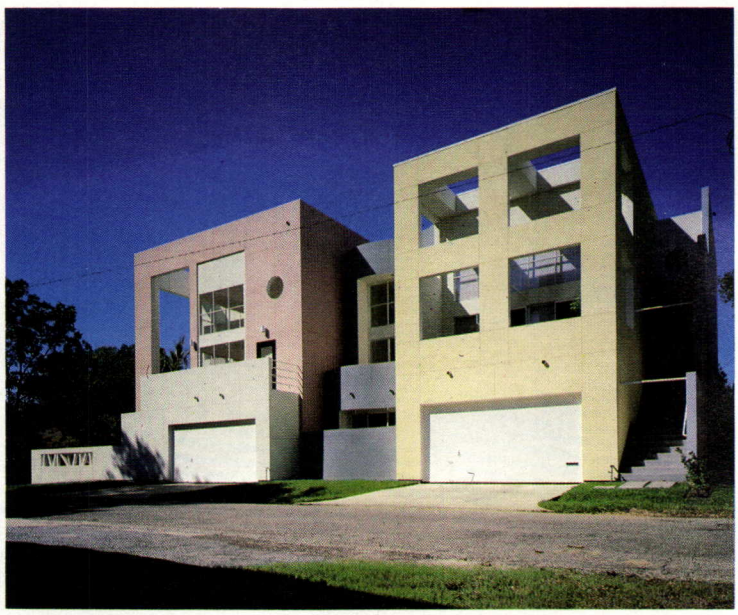
"Arquitectonica is the best bargain in town—there's no doubt about it; they do good work and they charge a very nominal fee." Mike Wilson is a small-scale developer/contractor (at least by Texas standards) whose first three projects have all been designed (as you might have guessed) by Arquitectonica. His development/construction company, Principium Inc., recently completed the Milford Townhouses (figure 4 and pages 128-132) and will soon begin the Nantucket Townhouses (figure 6). The 38-year-old Wilson's admiration of—and loyalty to—the Miami architects is based on his interest in pursuing a market segment he refers to as "innovators, typical yuppies." He sees the jazzy Arquitectonica esthetic as helpful in that pursuit because "it is of singular quality," because "it defines the target market so distinctly," because "we felt that it was going to be our competitive edge in the [soft] market," and because "we like to get a little attention." But the critical factor, according to Wilson, was Bernardo Fort-Brescia's flexibility during contract negotiations. The first Arquitectonica-Principium project was a simple bottom-line consequence of Fort-Brescia offering a per-square-foot design fee that was nothing short of irresistible.

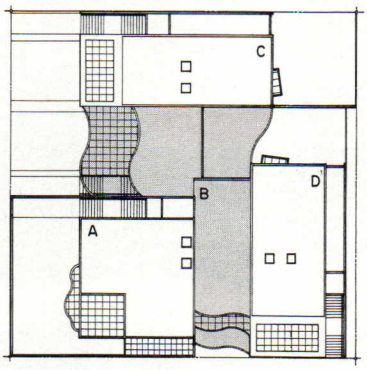
Jerry Maba is another loyal consumer of Arquitectonica's talents. The small-scale developer of residential properties initiated his now-long-standing relationship with Fort-Brescia and Spear after glimpsing their first project in a Japanese magazine (the "pink" house, as it has come to be known in Miami). Although the single-family house Maba commissioned Fort-Brescia and Spear to design for his own use remains unbuilt, he registered his satisfaction with their efforts by following the house project with three townhouse developments—Taggart (figure 3 and pages 120-125), Exposition (figure 8), and Rodrigo (figure 1). Though one might initially be skeptical about Maba's unabashed enthusiasm for the first-to-be-completed Taggart project—"It's not just four townhouses. . . I consider this a work of art"—after meeting Maba, one realizes it's not hype, it's heartfelt. Lest anyone think Maba a contemporary Medici, however, know that he, too, keeps at least one eye riveted to the bottom line: i.e., when the Taggart bids came in too high, he "took a samurai sword to the drawings."

The image of a razor-sharp shaft of steel slashing through an Arquitectonica townhouse drawing may delight some observers, who would argue that while Fort-Brescia and Spear are merely responding to the exigencies of contemporary real estate in their flashy projects, they are responding with perhaps too much esthetic exuberance. For though Arquitectonica did not make the initial rent in the once-smooth single-family-house fabric of the neighborhoods in which they are inserting their projects, eye-catching colors and alien forms cast the awkward rite-of-passage from single- to multi-family into painfully high relief. While there is no way for any architect to mask the fact of replacing a homey 1,200-square-foot house with 12,000 square feet of "luxury" townhouses intended to appeal to the fast-lane tastes of fast-track young urban professionals, some might suggest that a little esthetic compassion is rarely unwelcome. It comes down to a choice: Arquitectonica could have designed these Texas townhouses in such a deferential way that, figuratively speaking, they would have spoken in hushed tones—"Hello. We're your new neighbors. We may be cumbersome, but we'll try to be as unobtrusive as possible." Instead, Arquitectonica designed these townhouses in such an unapologetic way that, figuratively speaking, they shout—"Wake Up! Wake Up! We're here." But then Laurinda Spear and Bernardo Fort-Brescia would argue that hushed architectural tones are for the timid, the meek, the insecure. Which, as we know, isn't Arquitectonica's style. *C. K. G.*

Taggart Park Townhomes
Houston, Texas
Arquitectonica International, Architect

Certainly the most reserved of Arquitectonica's Texas townhouses is the Taggart complex, a four-unit residential enclave on a corner lot in Houston's formerly modest, but now trading-up, Memorial Park neighborhood. The mannerly "townhomes" owe their good neighborliness to a shifting pastel (not primary) palette, to a push-pull (in-out) site and massing plan, to a layered and variegated facade for both Taggart Avenue and Coppage Street (photo right). . . in other words, to the fact that Arquitectonica resisted the expedient temptation to simply line up four identical units (as other architects are doing in the immediate neighborhood). Consequently, purchasers of the $298,000 units are offered that elusive commodity in townhouse ownership, unit identity—"It's the pink house on the corner." The snappy (but not too snappy) cadence of the plans, colors, and elevations, also helps reduce the apparent scale of the new neighbor, which is always appreciated in single-family-house areas in the grip of "densification." For those concerned that the purchaser of the pink unit may decide to hate pink but love brown, developer Jerry Maba reassures us that the townhouses come with deed restrictions—any esthetic modifications must be approved by Arquitectonica. A non-esthetic footnote: According to realtor Judith Briggs, who is handling not only the Taggart townhouses but the Milford townhouses, Arquitectonica's projects get an extraordinary number of "lookers," but "in a softer market people feel more comfortable in terms of resale with more 'traditional' design." (The impressive resale record of Arquitectonica's Miami condominiums has not caught up with them yet in Houston.)



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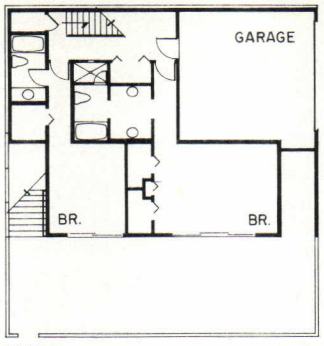
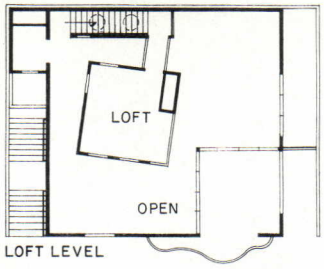
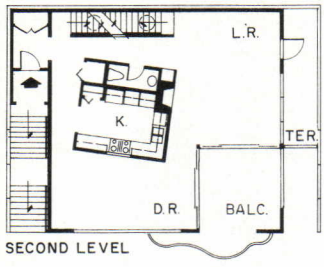


UNIT A
GROUND LEVEL 5



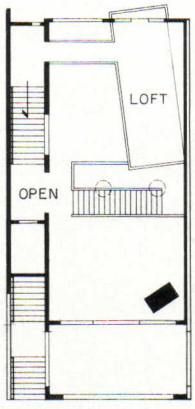
LOFT LEVEL



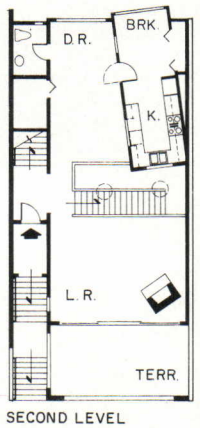
SECOND LEVEL

"They grab you with color outside, but you have to live inside. . . the feeling of the spaces is what's important," assays developer Jerry Maba. And though Arquitectonica's three floor plans for Taggart's four units can stand up against the best of what the competition can offer, they in no way convey the character of interiors that rely on vertical space as much as horizontal for their quality (right). Assisting in that qualitative cause is the more-than-generous glazing, which obviously floods the double-height living and dining rooms with sunlight, but also affords expansive aerial vistas from the second-floor public zone (the bedrooms share the ground floor with the garages) to the verdant lawn of Taggart Park, across the street.

Taggart Park Townhomes
Houston, Texas
Owner:
Jerry Maba, Developer
Architect:
Arquitectonica International Corporation—Bernardo Fort-Brescia, Laurinda Spear, principals and project designers; Robert Tolmach, project coordinator; Mark Volpendesta, project manager; Jenifer Briley, assistant
Engineer:
Cunningham Associates (structural)
General contractor:
Neartown Builders, Inc.



LOFT LEVEL



SECOND LEVEL

UNITS C AND D
GROUND LEVEL
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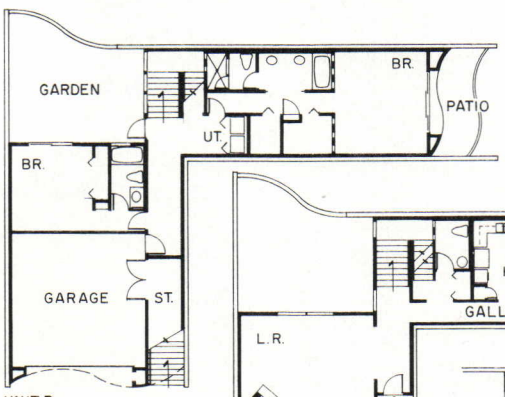
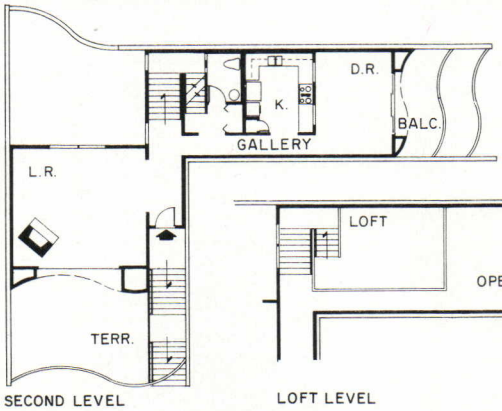
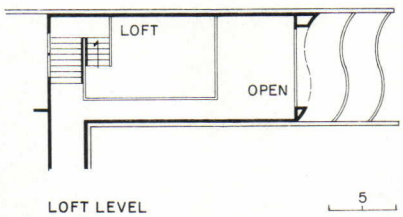


UNIT B
GROUND LEVEL

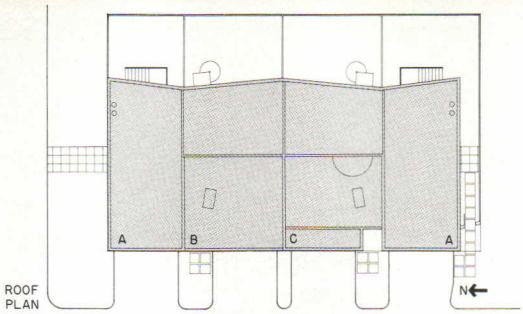


SECOND LEVEL



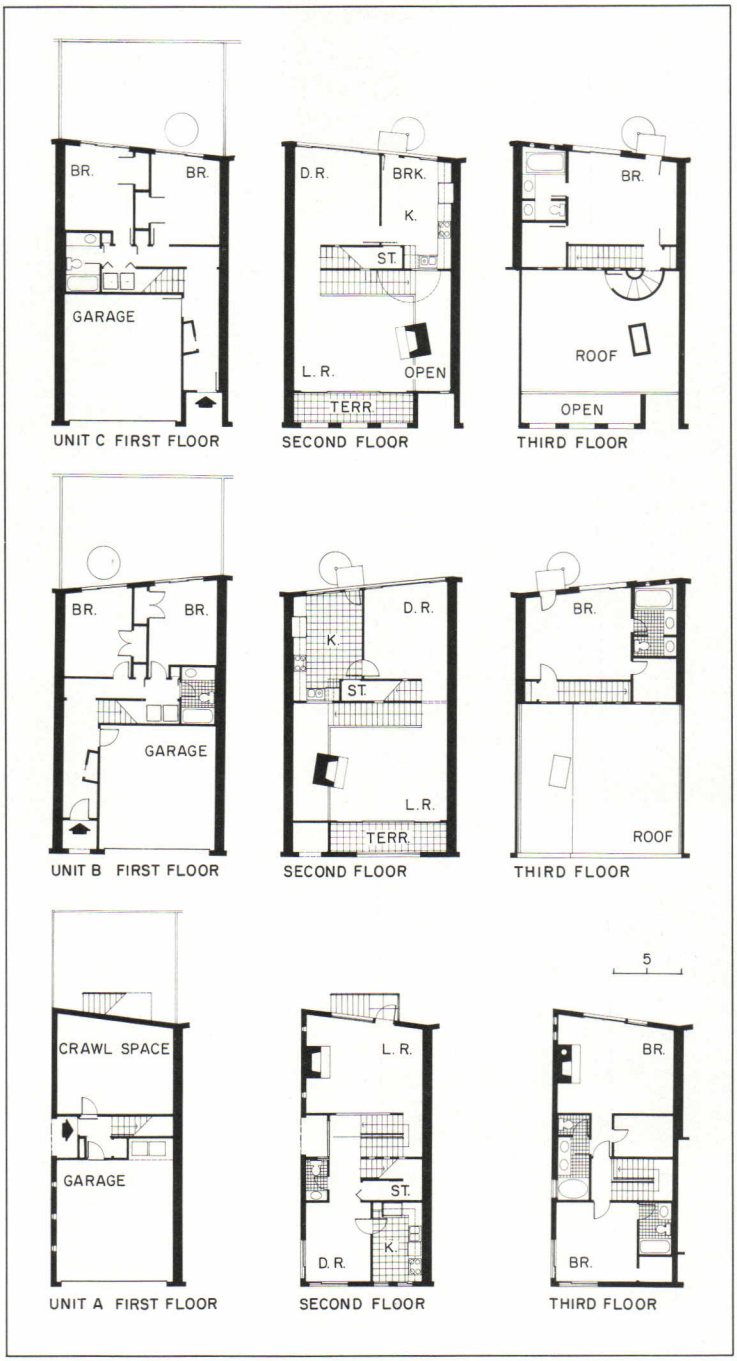
LOFT LEVEL 5

Mandell Residences
Houston, Texas
Arquitectonica International, Architect



One suspects that architect Bernardo Fort-Brescia is indulging in a bit of public relations when he claims that his client's mandate for brick for the four Mandell Residences posed "a good opportunity for Arquitectonica." Why the suspicion? Because if you ask a brick what it wants to be, it most likely won't say the Mandell Residences. The lighthearted insouciance that characterizes the design of Mandell doesn't quite get off the ground, i.e., a cockeyed gable is something less than cocky when weighed down in reddish-brown brick. But the gable is Arquitectonica's way of providing individual identity for unit B; just as the grid, the triangular window, and the white glazed surround are Arquitectonica's way of providing identity for A, C, and D. Explains partner Spear: "We didn't want it to look too repetitious... we wanted everybody to feel like their own little house had something special." Once past the turquoise front doors recessed into black alcoves, however, it's back to Arquitectonica business at its best: the interiors at Mandell, as in the firm's other Texas townhouses, offer commodious volumes flooded with light, and as much vertical interest as horizontal. Though the east elevation (axonometric, page 118) is not as variegated as the west (below), the quadrifold panels of the private facade subtly reflect the two pairs of twin plans contained within (right).

Mandell Residences
Houston, Texas
Owner:
The Milford Partnership
Architect:
Arquitectonica International Corporation—Bernardo Fort-Brescia, Laurinda Spear, principals and project designers; Jenifer Briley, project manager; Robert Tolmach, project coordinator
Engineer:
Cunningham Associates (structural)
General contractor:
Neartown Builders, Inc.

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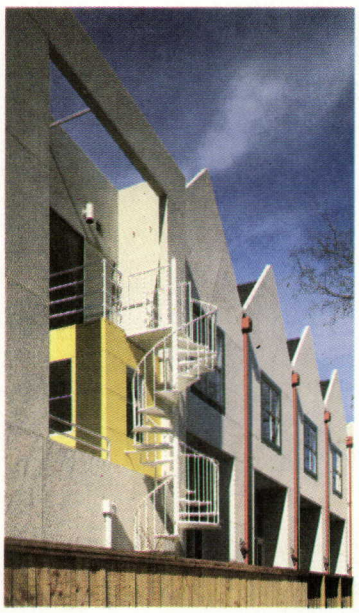
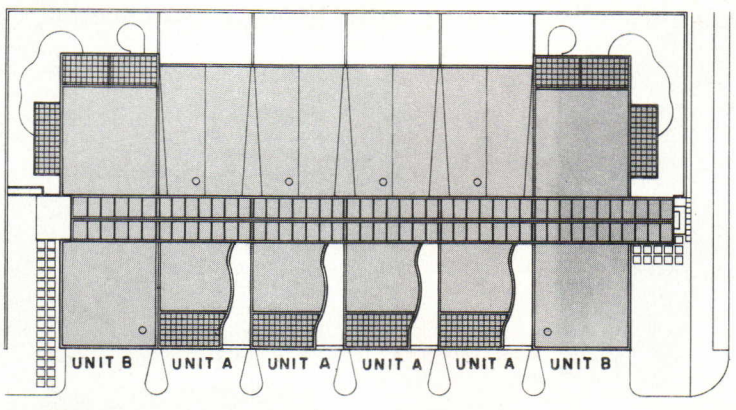
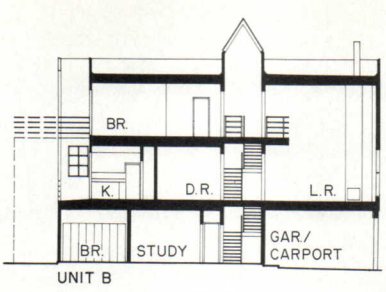
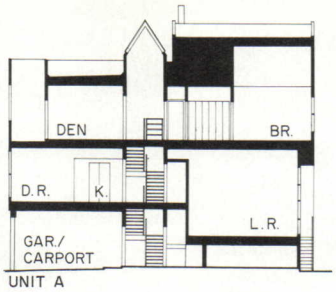
Milford Townhouses
Houston, Texas
Arquitectonica International, Architect

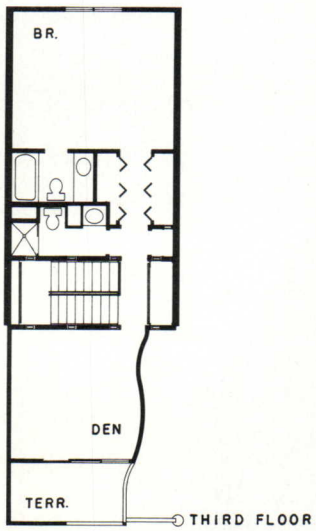
Shoehorning 11,600 square feet of housing onto a 52- by-125-foot site is a bit like trying to fit the unrealistic customer who insists she's a delicate 5, when you know she's a perfect 9. The shoe will go on, but not without considerable effort and discomfort. In simple fact, the program for the Milford Townhouses was something less than ideal—especially considering that the neighborhood is primarily comprised of modest single-family houses. But real estate is real estate, and the 6,500-square-foot corner lot is situated in a coveted transitional zone between a venerable boulevard of million-dollar houses and a trendy commercial strip leading into Houston's museum district. Arquitectonica's answer to the problematic program and site neatly flanks four 1,700-square-foot townhouses with two 2,400-square-foot townhouses. A mandate for on-site covered parking raised the street-side half of the complex up on piloti (facing page), while the private rear half of the complex was allowed to remain on terra firma *(below right). The distinction between the "almost Brazilian Modernism" of Milford's front and the almost caricatured suburbanism of Milford's back is boldly drawn with a linear skylight that pops out at one end, looking very much like some vestige of a moment's fascination with the neo-rationalism of Aldo Rossi (above). But the lengthy skylight is more than architectural conceit: it opens a vein through the center of the six Milford Townhouses, drawing sunlight into the heart of units that otherwise would have been the dark, dreary railroad flats the site almost seemed to demand. And a dark, dreary railroad flat is not what any self-respecting yuppie envisions for his or her new $275,000 digs.*

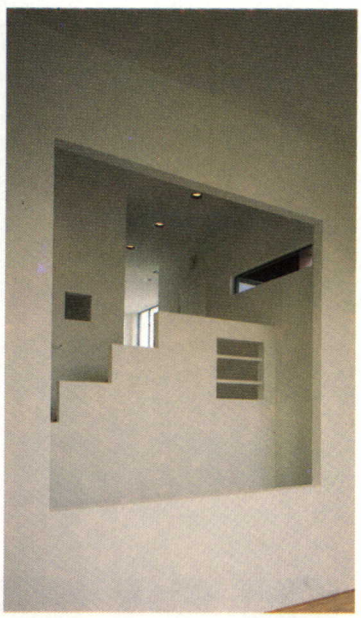


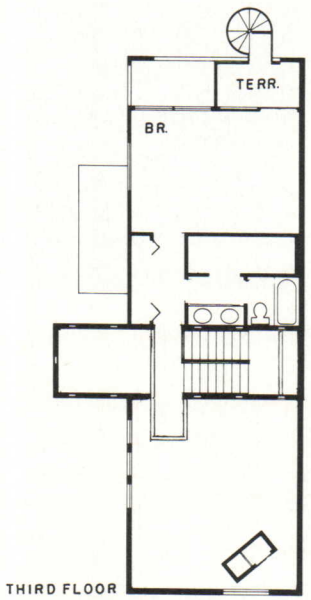


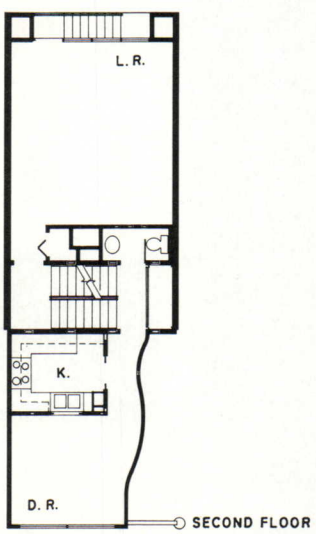


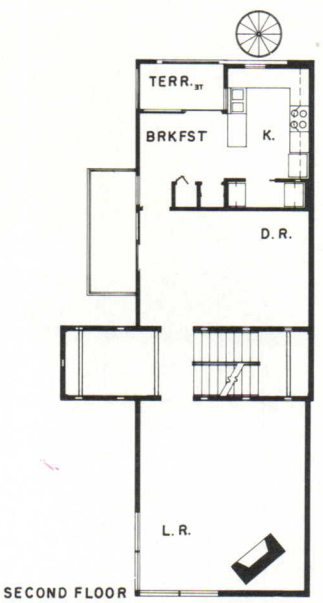


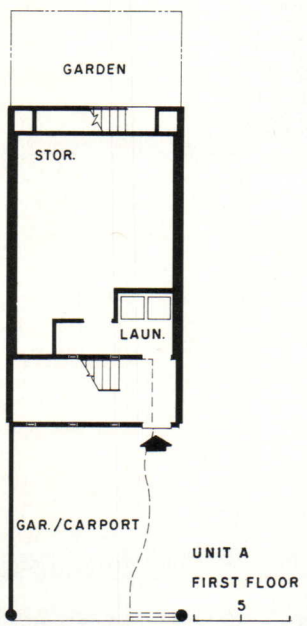






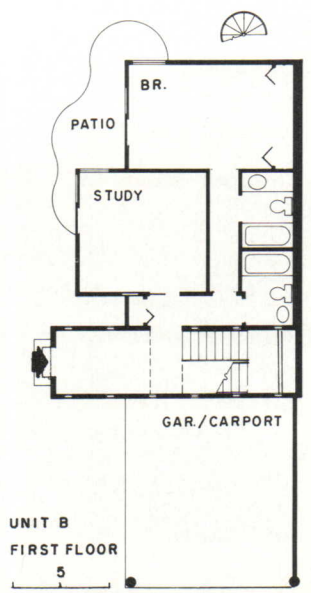


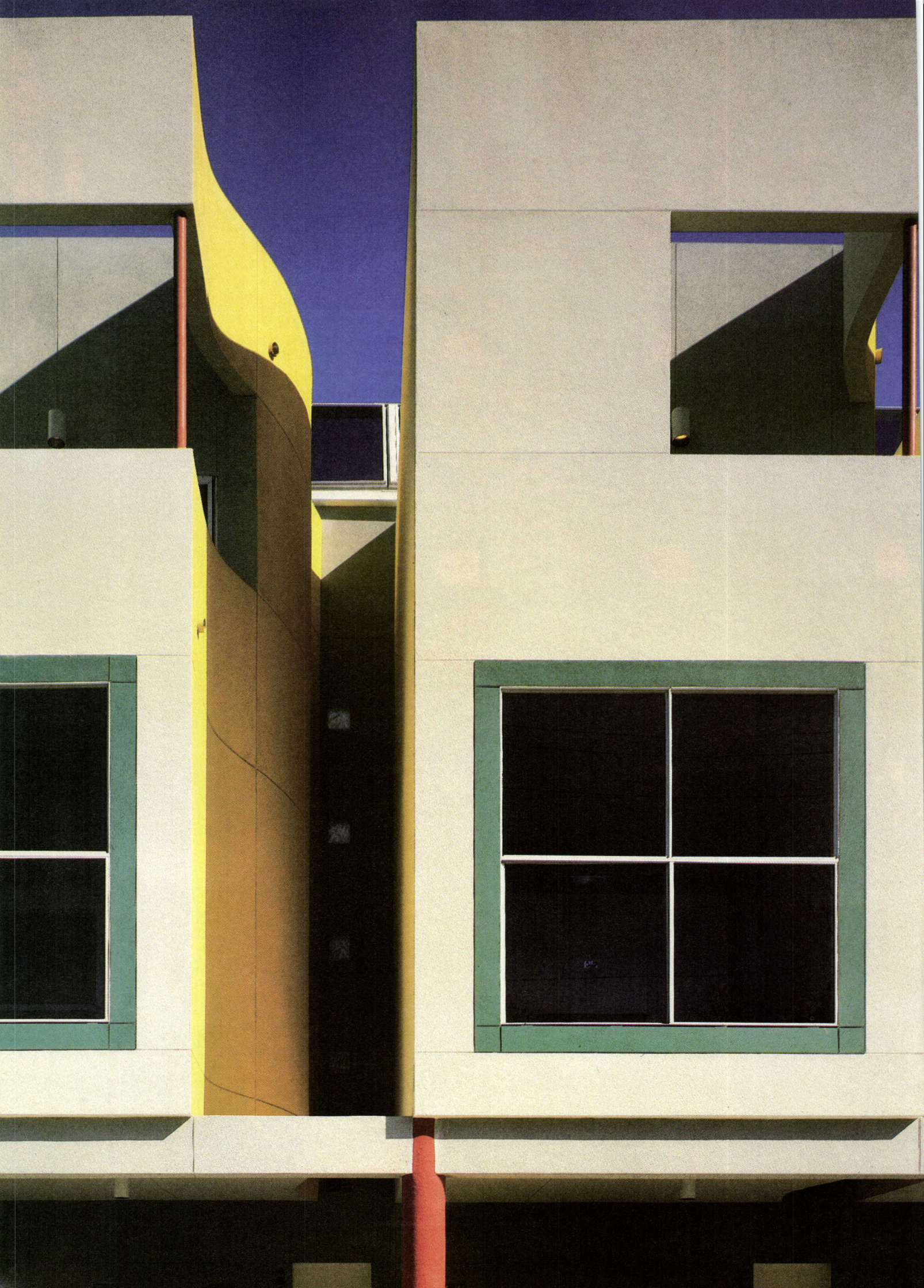




Since architects Fort-Brescia and Spear realized that the parked cars guarding the front doors of each of the Milford Townhouses were less than hospitable, they made sure that once inside, visitors would receive a reward for their earlier affront. One enters and is instantly greeted by a flood of sunlight streaming down from the linear skylight (photo above) that bisects the townhouses and caps the vertical circulation zone of each unit (section top). "We would like people to forget what they had to come through [the cars] to get in," offers Fort-Brescia somewhat apologetically. The natural light almost does the job. And even if it doesn't quite, however, the double-height living rooms with their glass-block-perforated walls allowing sun to seep in from the adjacent skylit circulation zone surely will (facing page).

Milford Townhouses
Houston, Texas
Owner:
Principium, Inc.
Architect:
Arquitectonica International Corporation—Bernardo Fort-Brescia, Laurinda Spear, principals and project designers; Jenifer Briley, project manager; Robert Tolmach, project coordinator
Engineer:
Cunningham Associates (structural)
General contractor:
Principium, Inc.





P. S. I don't quite love you

An insider's perspective on Arquitectonica's contribution to Houston's upscale housing stock

By Douglas Milburn

Several factors combine to make Houston housing a special design challenge. One is the climate, which is fiercely subtropical—sort of Miami without the sea breeze. Before air conditioning, Houston residential designers had no choice but to be responsive to the heat and the humidity. Roof overhang—to keep out the sun—and air circulation were critical factors. Then there is the soil, a less-than-stable clay loam. Pile and beam was the accepted foundation method, because it elevated the structure above the dampness and also because it effectively insulated the house from the shifts in that unsteady soil.

To these natural parameters Houston long ago added the socio-political fillip of no zoning. In an earlier Houston, deed restrictions kept the city from developing in a wholly laissez-faire manner, but following World War II, those restrictions began to lapse at the same time that air conditioning became widespread and the oil boom was starting. The result of 40 years of building under those no-holds-barred conditions is a cityscape which, depending on personal prejudice, baffles, dismays, or delights observers. All in all, it's an urban area that offers such unprecedented freedom that more than a few designers—and developers—have lost their way.

One of the city's many paradoxes is the fact that a number of older neighborhoods have managed—either through lack of commercial interest or by maintaining the deed restrictions—to retain a certain coherence, which the designer disturbs at his own risk.

To this long-time Houston observer's eyes, Arquitectonica's residential responses to the city reveal some of the difficulties in coming here from the outside. Because of the constructional diversity, the city is remarkably forgiving of and receptive to facades, and except in the more conservative (and controlled) affluent neighborhoods, almost any design within reason will soon become an accepted, and acceptable, addition. The one affront to Houston's visual permissiveness is scale. And it is here that Arquitectonica has had its major problem.

The Mandell Residences [pages 126-127], for example, occupy a site on the border between Southampton, one of the richest areas of the city, and Broad Acres, a much more modest little neighborhood of single-story postwar slab houses. While the four Mandell townhouses present an appealingly asymmetrical brick face to the large houses across Mandell Street, they turn a very cold three-story back on the lesser neighborhood which starts, literally, at the rear property line [figure 5, page 118]. And while they nicely reflect the scale of the Southampton houses to which they want to belong, the sheer size of the four-unit complex totally overwhelms the adjacent low-pitch roofs to the rear. One assumes that the buyer would curtain the back windows—thus blocking an otherwise splendid view of the downtown skyline.

Two blocks away from Mandell, the Milford Townhouses are somewhat more successful [pages 128-132]. The area, originally known as the Turner Addition, was developed in the '30s as a mix of two-story apartment houses, brick duplexes and fourplexes, with some larger-than-average houses, all on small lots with narrow streets. The visual effect is one of packed urban density such as one rarely finds in Houston. Giving the impression that not a square inch has been wasted, the compact Milford project seems quite comfortable in this setting which, because of its proximity to the city's art museums, is rapidly becoming one of the most desirable inner-city neighborhoods. Again, while the colorful facade works well here, the back wall where the units have high walls of glass, looks directly at a two-story brick house only a few feet away.

Moving a couple of miles north to the very similar Haddon houses [page 117], we again run up against the problem of scale. Put down in another '30s neighborhood—this one of mostly brick, one-story bungalows—the Haddon development is a visual shock, not for the colors or the rigid symmetry of the facade but because of the size. Here, at least pending the complete redevelopment of the entire area, tenants will have no choice but to look out upon an old-fashioned, low-profile neighborhood above which they appear quite literally to float.

Another mile to the north across Buffalo Bayou, the Taggart Park Townhomes [pages 120-125], with their sculptural, airy spaciousness and slight setback, are the most successful of the four projects. Before air conditioning, Houston was a city of big windows—you wanted as much circulation of the heavy, humid air as you could get. Here, Arquitectonica has surrounded residents with light, opening up huge parts of the outside walls to let in the sky, which is one of Houston's underappreciated glories. A Gulf of Mexico sky, it is filled most days of the year with huge, playful cumulus clouds, and what a delight to live where that sky could be seen daily.

Compared to the rather severe lines of the other projects, the Taggart townhouses exude a casual, relaxed elegance very much in keeping with—if there is such a thing—Houston tradition. And in a city of yards, it is an extravagant but worthwhile gesture to give townhouses at least the suggestion of a yard. The small green space provides both a buffer and a transition to the older neighborhood.

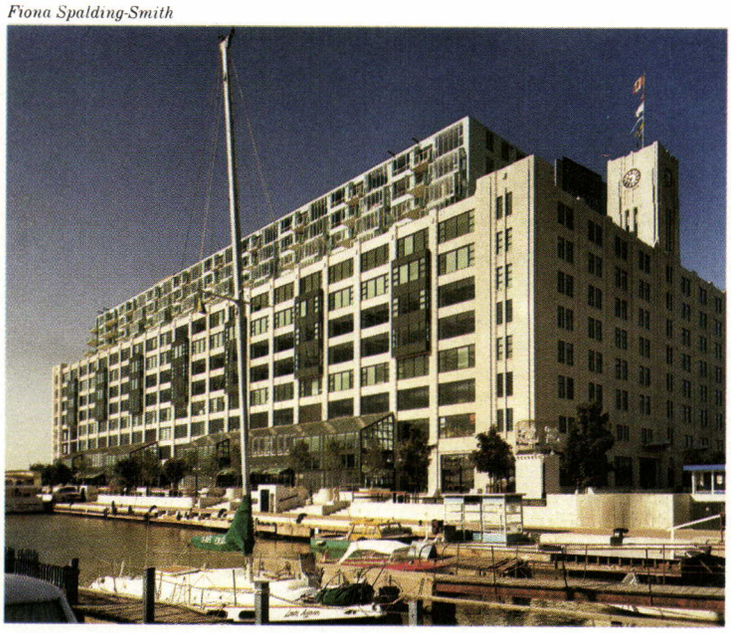
The sales record to date of the Arquitectonica projects has to be seen in the present Houston context, which, in a word, is overbuilt. The softening of the oil market and the collapse of the peso combined to put severe pressures on local developers. According to Bob Tolmach of Arquitectonica's Houston office, the Haddon houses are all occupied, one of the Milford houses is occupied and one is sold, two of the Taggart houses are occupied and one is sold, and the Mandell project is still under construction.

Hines's Law reads: Design sells; good design sells even better. Late-20th-century Houston is the laboratory in which developer Gerald Hines formulated and practiced—in a programmatic and spectacularly successful manner—this insight into successful urban construction. With the Taggart Park Townhomes, Arquitectonica has tapped a tropical vein which no designer up to now has consistently exploited here. So effectively do these four townhouses fit and reflect the climate and the topography, that it is likely—as soon as the housing market firms up again—we will see numerous imitations of precisely the sort of playful, colorful, tropical openness which Arquitectonica has realized on Taggart Street.

Finally, three of the four projects are stucco. While it is true that stucco was popular in Houston some sixty years ago, neither the climate nor the shifting soil has been kind to those older structures. Hairline cracks appear which allow the year-round moisture access to the inner walls. One notes sadly that areas of the Haddon townhouses are already showing splotches, either of fading paint or of moisture.

Douglas Milburn is an associate editor of Houston City Magazine.

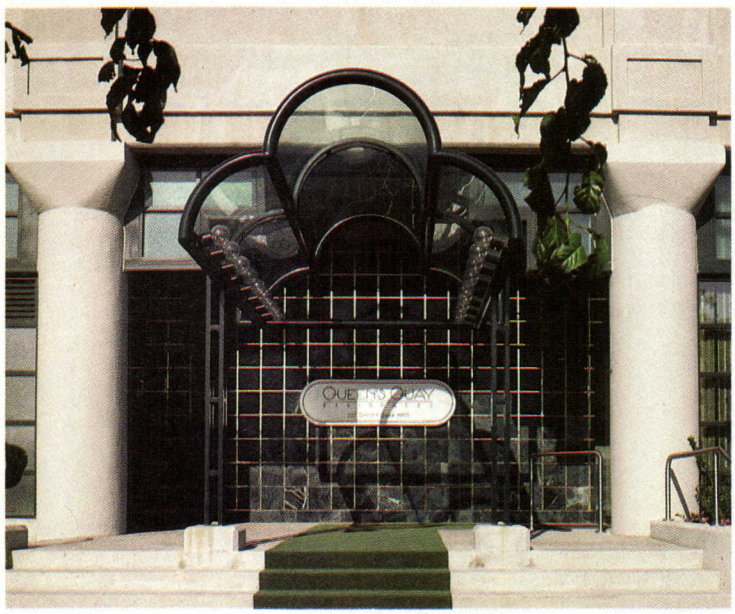
Fiona Spalding-Smith

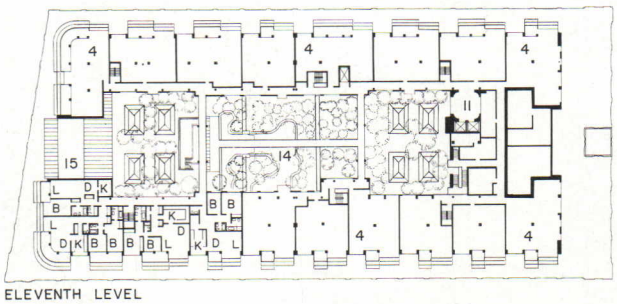


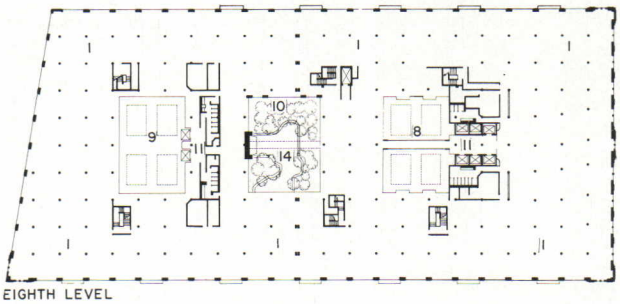
As part of the new fenestration at Queen's Quay Terminal, architect Zeidler added shallow bay windows to both the east facade (at top above) and the west facade (directly above), essentially to admit light for the office floors and to establish a rhythm and less formidable scale for those elevations. On the west front, however, one of the bay windows extends to a depth of six floors for reasons of practical esthetics: to fool the eye into aligning some out-of-register spandrel beams (see also preceding pages). At the southwest corner, a three-story glass arcade (directly above and opposite) allows a ground-floor restaurant to flow outside the building onto the uppermost of three promenade levels, while an awning-covered stairway entices strollers to stores on the second floor. Here again, though, the esthetic element has a practical purpose: it conceals scars left by the removal of a wing for refrigerated storage. A glass-enclosed swimming pool occupies the center of the apartment structure to command a view of the water.

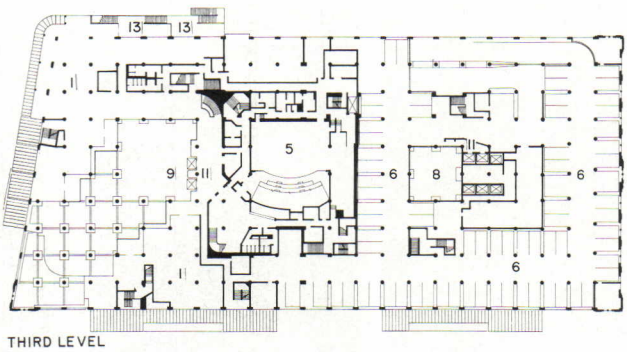

Theatre, Shops & Restaurants
Queens Quay Terminal
Theatre, Shops & Restaurants

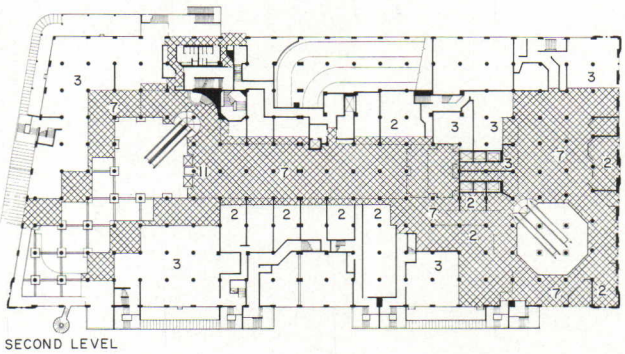
1. *Office*
2. *Retail*
3. *Restaurant*
4. *Condominium suite*
5. *Theater*
6. *Parking*
7. *Public walkway*
8. *North atrium*
9. *South atrium*
10. *Court*
11. *Elevator lobby*
12. *Loading area*
13. *Terrace*
14. *Fountain*
15. *Pool*

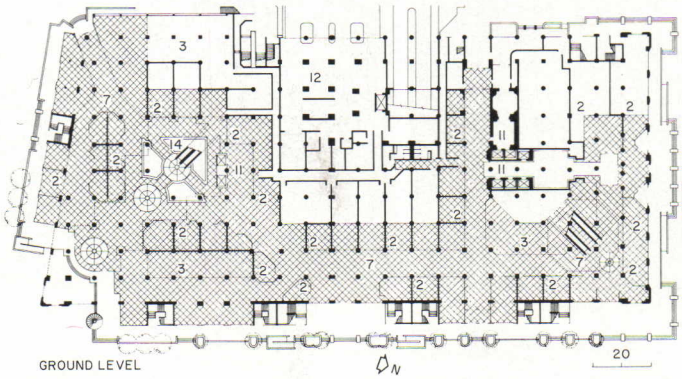






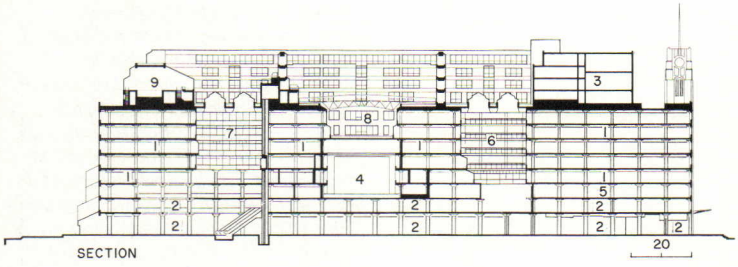




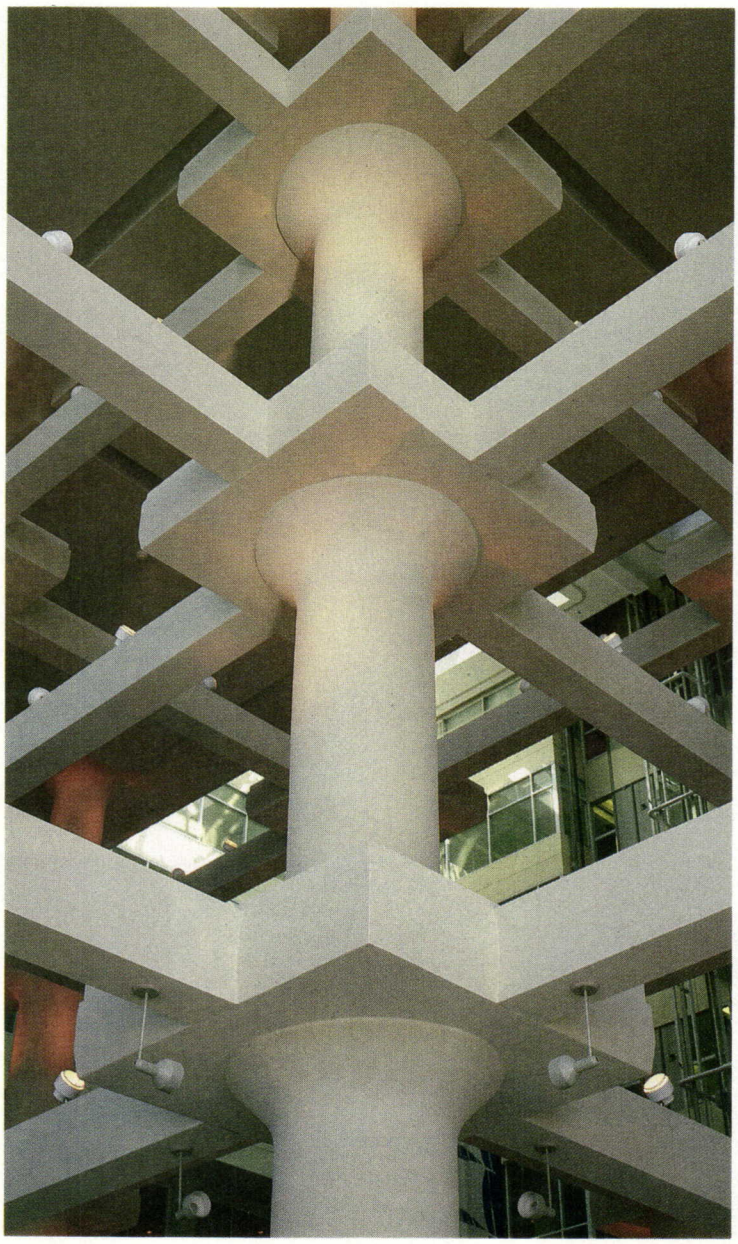


To let light into the big building and to establish a variety of interesting and comprehensible circulation patterns, existing structure was removed for two skylit atriums (plans at right and section opposite, the lower three levels public space, the eighth level typical offices and the eleventh typical apartments). The largest and most important of these is the south atrium, which goes all the way down to the ground floor and for which four columns were sacrificed; the north atrium goes down only to the second floor. Another two columns were removed at the center of the third floor for a dance theater. On the ground floor, the chief circulation route lies on the east side of the building and leads to a diagonal route that opens into the south atrium; the main walkway takes people past interior storefronts, while the stores can spill past the building line to the outdoors in good weather. The atriums also serve to divide the 100,000-square-foot office floors into workable areas, as well as to provide views for office workers. The roof of the theater bears a landscaped park with a 20-foot waterfall; apartment dwellers have access to this park, to landscaped areas on roofs above the atriums, and to a steel bridge that overarches the central park. The mixed use at Queen's Quay is not only functional and commercial, but social as well. Though office workers have direct routes to their elevators, they inevitably commingle with the general public even in the elevators. Apartment dwellers have a private entry and elevator lobby, but they, too, have easy access to all public facilities. For the main entries to the building—offices (at top above) and apartments (directly above)—Zeidler devised modern-day glass marquees in emulation of pre-War elegance.

At the southeast corner of Queen's Quay Terminal, Zeidler opened up arches at the base of the building to emphasize the intimacy of building and water. Intended solely as a public pleasance, the corner offers two pedestrian levels: the spare, sunny openness of an esplanade on the water, and the loftier vantage of a balcony reached by an outside spiral staircase and protected by the exposed structure.



1. *Office*
2. *Retail*
3. *Condominium suite*
4. *Theater*
5. *Parking*
6. *North atrium*
7. *South atrium*
8. *Court*
9. *Pool*



The nobility of the Terminal Warehouse's beefy reinforced concrete columns shows self-evident cause for preservation. Each mushroom capital spread to receive a square dropped panel, which in turn supported a concrete slab floor. Not only were columns removed to make space for the new theater and the south atrium (opposite), but the slabs were in many cases removed to expose the structure as sculpture. The square capitals now seen comprise two layers: the old dropped panels, topped by a smaller square of the old slab. The beams providing lateral support are new: steel sections covered with gypsum board painted to match the concrete. Patrons of shops and restaurants on the second and third levels look out on activity below from railed balconies, while office workers receive light and views through internal windows.

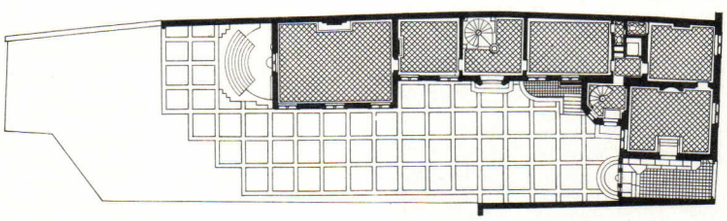
Queen's Quay Terminal
Toronto
Owner:
Olympia & York Development Limited
Architect:
Zeidler Roberts Partnership/ Architects—Eberhard H. Zeidler, partner-in-charge of design
Engineers:
M. S. Yolles & Partners Ltd. (structural); The Mitchell Partnership Ltd. (mechanical); Mulvey & Banani International Inc. (electrical)
Landscape architect:
Baker Saloma Hess Ltd.
Consultant:
Artec Consultants, Inc. (theater)
General contractor:
Olympia & York Development Limited

En rapport

Renovation of Hôtel Torrentius
Liège, Belgium
Charles Vandenhove, Architect

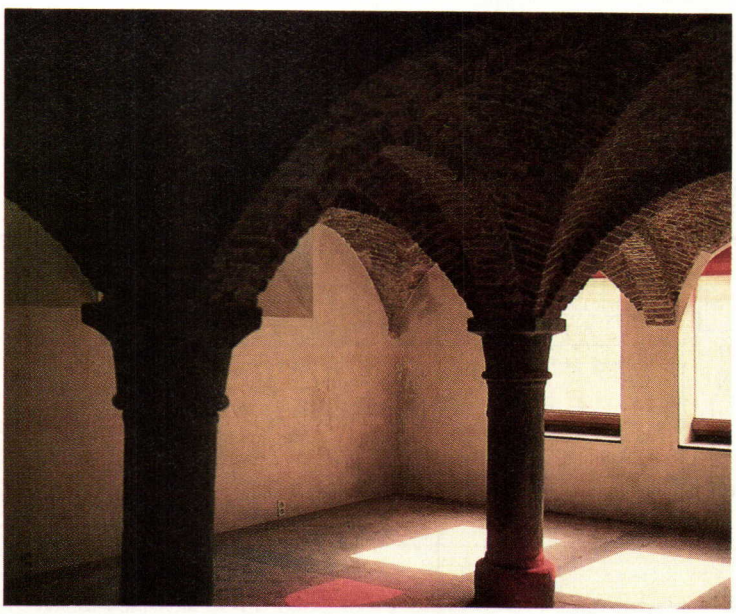
The Hôtel Torrentius commands a hilltop overlooking the historic center of Liège; the L-shaped building's narrow street front (center photo this page, far right in plan) faces north across lots cleared for urban renewal. To the east stands the birthplace of composer César Franck, and to the south, beyond the inner courtyard (photo bottom right) are ancient ramparts. The house was erected around 1561 as the residence of Laevinus Torrentius, a priest who served as private counselor to the prince-bishop of Liège. Torrentius was also a noted Latinist with a taste for classical art that is reflected in the mansion designed for him by Lambert Lombard. Although Lombard is credited with introducing the Italian Renaissance style to a still-gothic Liège, his Hôtel Torrentius retains a strongly medieval cast in its steep roofs, asymmetrical plan, and polygonal corner stair tower. The stylistic mélange was compounded by later owners of the house, such as an 18th-century burgomaster who added the limestone doorway and wrought-iron balcony at the center of the long courtyard facade (detail upper right), and inserted a domed staircase within. Various occupants plastered over murals, and tore out wainscots, mantels, and even entire stone gateways. At some point, much of the exterior masonry trim was shaved off the street facade, the corner stairs were removed, and new interior partitions installed, completely transforming the plan (section overleaf). Charles Vandenhove confronted a baffling archaeological puzzle with many missing pieces. Intent on reviving the *spirit* of Lombard's scheme, he determined, however, that a strict antiquarian reconstruction was neither feasible nor desirable. Nonetheless, within the limits imposed by its current function as Vandenhove's office and residence, with two rental apartments, the interior layout recreates the original parti. Decorative elements were repaired in a manner that clearly distinguishes new work from old, some anachronistic accretions were kept as historical evidence, and total lacunae were filled with unusually sympathetic modern replacements.

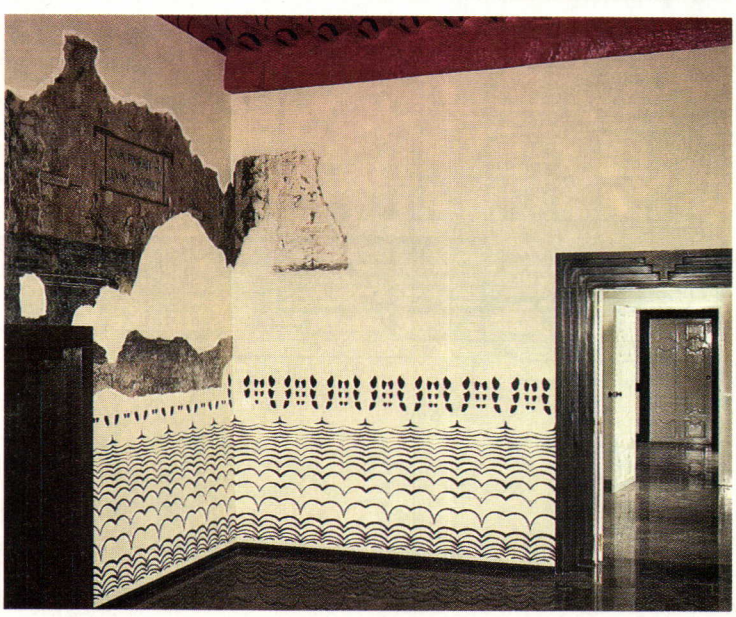
The vaulted coach entrance (opposite and cover) had long since been stripped of its original surrounds when Vandenhove acquired the property. He refurbished the porte-cochère with lattices of varnished oak whose grids announce a geometric motif that reappears throughout the house. Belgian artist Daniel Buren painted the enameled sheet-metal ceiling. The modern statue in the courtyard is by sculptor César.



At the outset of renovation, cracked and sagging under the retained.) The interior laid out by corner tower had been demolished.

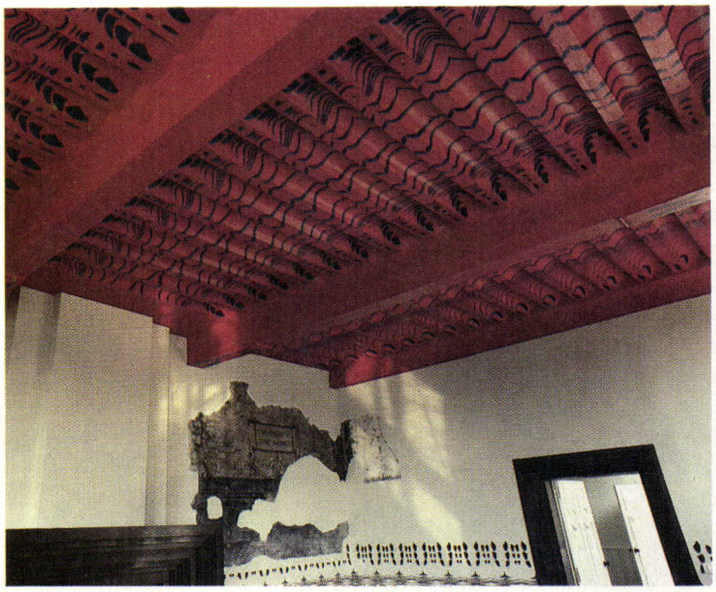
Except for the crypt (bottom left), most interior spaces had been altered radically since the 1560s. Once the warren of later partitions had been demolished, and meticulous surface inspection begun, Vandenhove's team discovered fragmentary Renaissance murals in the ground-floor reception rooms, as well as traces of polychrome decoration on joists elsewhere in the house. The most important murals, which were probably painted by Lombard's assistants, adorn three walls of the grand salon at the south end of the main floor (this page, top and bottom right, and opposite). Similar to the "grotesque" frescoes that both Torrentius and Lombard had seen in Rome, these images include sphinxes, garlands, trompe-l'oeil paneling, and a Biblical quotation in Latin. After cleaning and stabilization had been completed (in collaboration with the Institut Royal du Patrimoine Artistique), a three-centimeter-wide depression was cut around each fragment to emphasize its integrity as an artifact, and the loss of all connective decoration. The new floor is polished local stone. (Every ground-floor room is paved in a different color scheme. Oak planks salvaged from this level were reinstalled upstairs over fiberglass

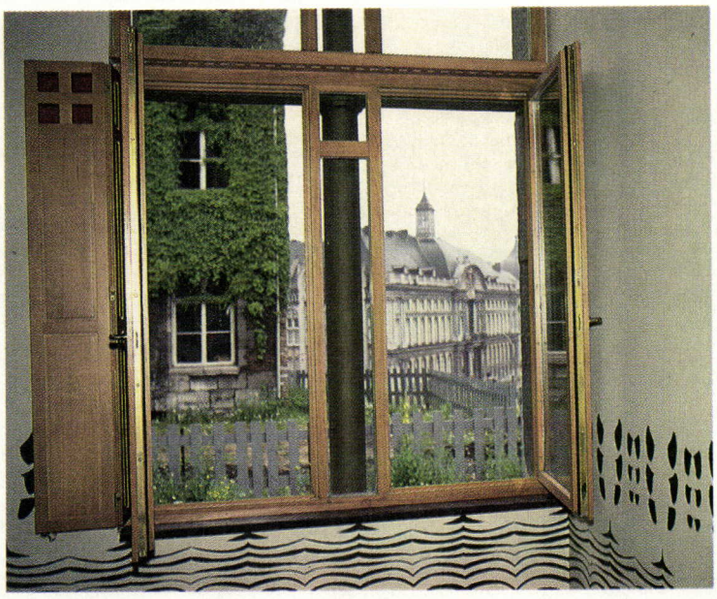




acoustic insulation.) Stenciled wainscots and ceiling décor are the work of contemporary painter Olivier Debré, who believes that "the progressive rhythm of our own irrational age marries with the symmetry of sober, logical humanism more harmoniously than would mere plagiarism of Renaissance forms." Vandenhove's likeminded esthetic is manifest in his own contributions: the glossy black limestone moldings of door frames and mantel, a custom-made oak table, and paneled shutters inset with stained glass. Through the casement, beyond the vine-clad wall of the Pavillon César Franck, one glimpses the palace of the prince-bishops (bottom right).

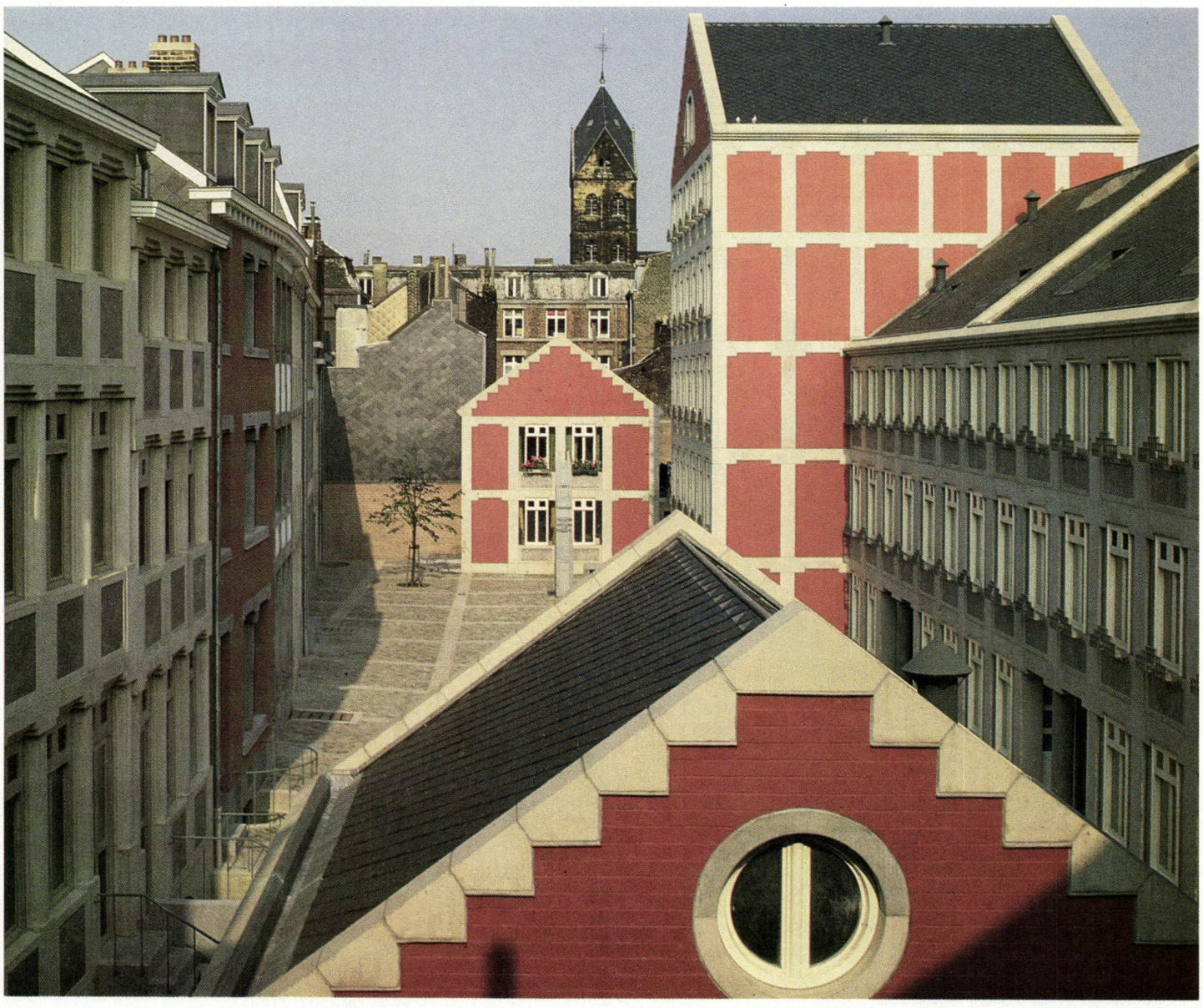
Renovation of Hôtel Torrentius
Liège, Belgium
Owner:
Charles Vandenhove
Architect:
Charles Vandenhove, Architecte—Charles Vandenhove, principal-in-charge; Jacques Sequaris, Prudent De Wispelaere, Marie-Louise Delairesse, Michèle Lemmens, Nicole Sougnez, Alain Sabbe, Alain Dirix, design team
Consulting engineer:
René Greisch
Interior wall and ceiling decoration:
Daniel Buren, Olivier Debré, Léon Wuidar
Sculpture:
César
Mural conservation:
Commission Royale des Monuments et des Sites—Jacques Folville

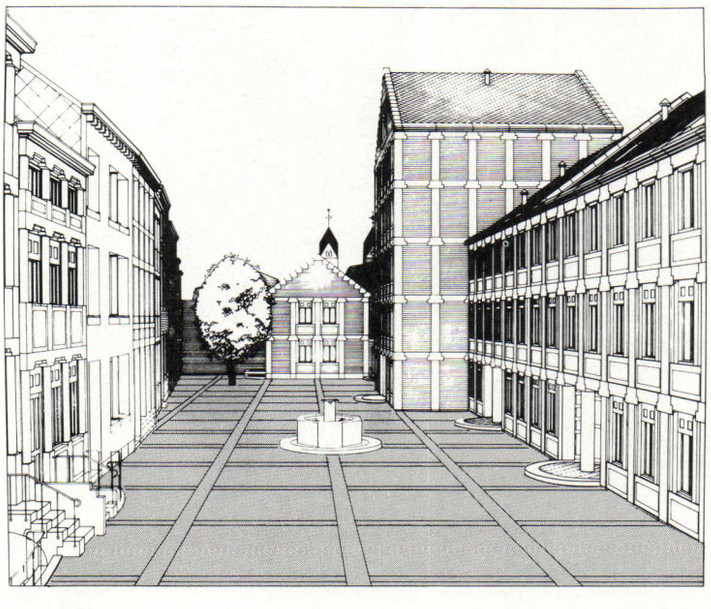




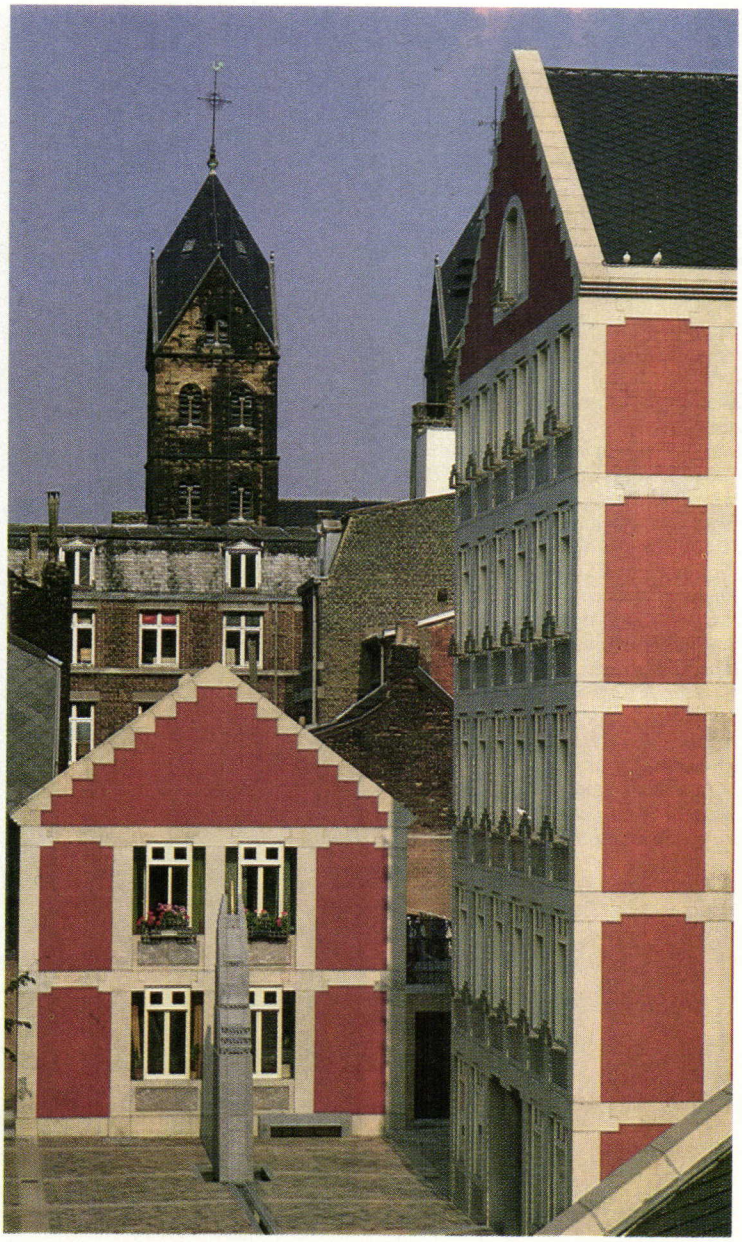
Renovation in Hors-Château
Liège, Belgium
Charles Vandenhove, Architect

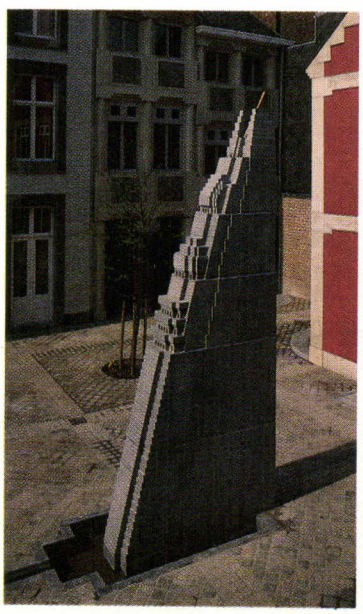
The Romanesque spire of the Church of Saint-Barthélemy dominates the skyline beyond Vandenhove's new square, the Place Tikal. Built on the site of a former brewery depot, the courtyard and new apartment block cover an underground garage. Low gabled pavilions at either end enhance the seclusion of the plaza, which supplies the only quiet public space in an area devoid of parks. Traffic noise is muffled by the plashing of a fountain obelisk (opposite top left). Run-off from the cylindrical basin trickles through a channel à la Louis Kahn that terminates in a marble-and-bronze sculpture, Tikal, *by Anne and Patrick Poirier (opposite top right and bottom). The porticoes leading into the square (one of which boasts Vandenhove's idiosyncratic "Ionic" capitals) derive from* arvôs, *traditional porches at the entrance*

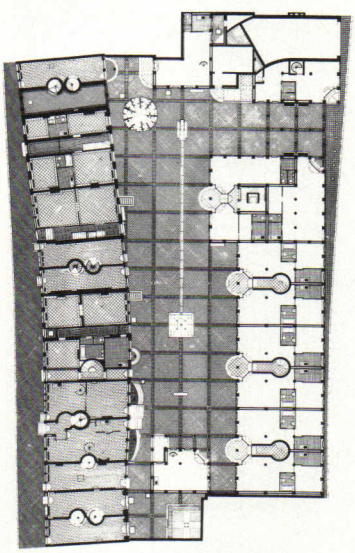




to Liège alleys. Rounded stoops, circular stairs, and stepped gables recall other regional prototypes. The frank expression of post-and-beam structure is one of the salient features of Mosan vernacular architecture. Vandenhove has adopted this unifying schema for his entire project—both as a tectonic armature and as the basis for a decorative system of grids and columns (details overleaf). Variation in the scale of his columnar orders gently implies a hierarchy of public and private domains. Program spaces range from shops and offices, located at basement and street level, to studio and multiplex apartments. The site belongs to the regional government, which issued 99-year leases to occupants through a deferred payment plan. Priority for housing was given to local residents displaced by the renovation project.

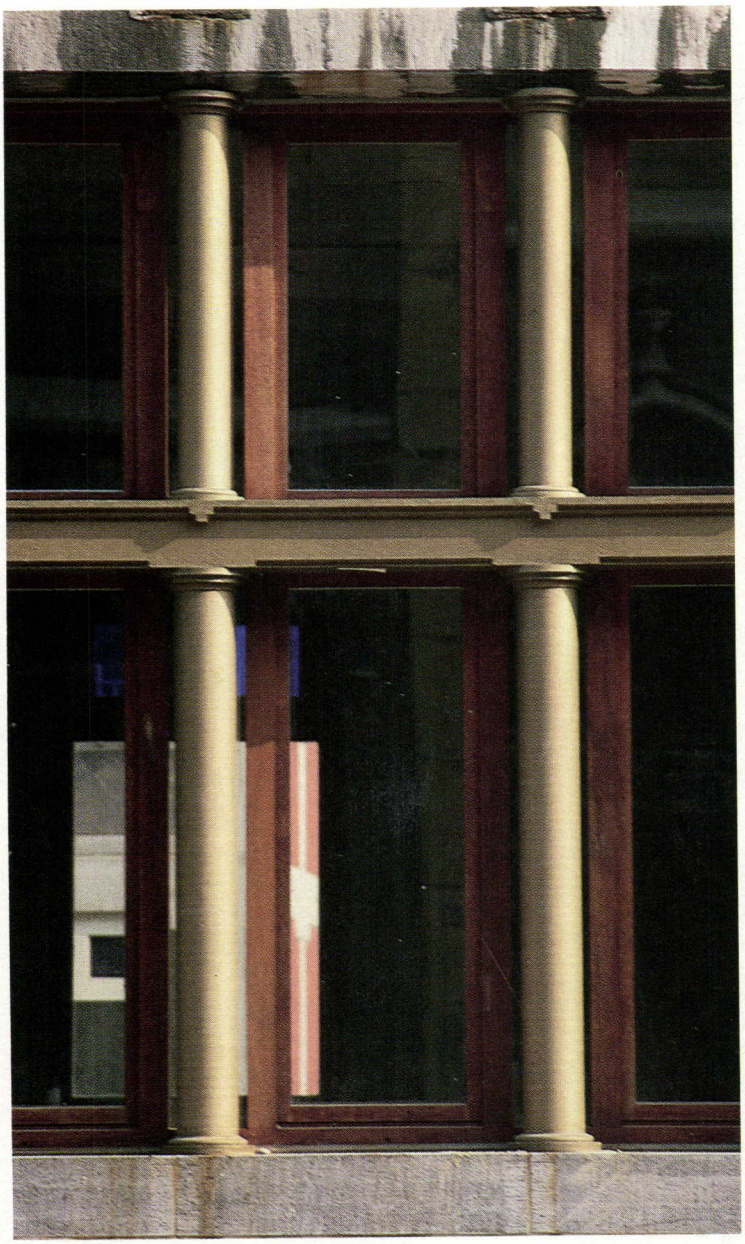






Every window in the new apartment building on the rue des Brasseurs is embellished with colored glass transom panes and a latticed iron flower-box frame (opposite). Vandenhove comments: "Such small details express by their tangible value that our essential effort has been to insure the primacy of the human being . . . not technology, and assert a possible alternative to the alienated, faceless occupant."

Renovation in Hors-Château
Liège, Belgium
Owner:
Région Wallonne, Belgium
Architect:
Charles Vandenhove, Architecte—Charles Vandenhove, principal-in-charge; Marie-Louise Delairesse, Prudent De Wispelaere, Alain Dirix, M. C. Gaber, Michèle Lemmens, Claude Magniez, Alain Sabbe, Jacques Sequaris, Nicole Sougnez, P. Deramay, design team
Consulting engineers:
René Greisch, A. Lothaire, A. Maccan, S. Zovi
Sculptors:
Anne and Patrick Poirier
Project manager:
Service Logement de la Région Wallonne—Marie-Laure Roggemans, René Schoonbrodt



From object to space: an interview with Paul Rudolph

City Center
Fort Worth, Texas
Paul Rudolph,
Architectural design consultant;
3D/International, Architect

Architect Paul Rudolph has several skyscrapers under construction and has recently completed a pair in Fort Worth. Strongly opposed to post-Modernist theory and practice, he goes his own way, still exploring esthetic and urbanistic themes in Modernist terms. For him, the clear articulation of the parts and functions of a building remains an essential goal. Skyscrapers fascinate him as immense objects that must be transformed into human-scaled space at the ground.

He brings to his interest in relating the high to the low, the intimate to the grand, the ordered to the casual, an heroic, almost Wrightian attitude, producing an architecture of splendid gestures—all very much out of fashion for now. In a recent interview, Rudolph discussed the ideas that shaped his Fort Worth towers.

MFS: *No one these days designs buildings in the particular way you do. You are off by yourself. I think it must take a great deal of courage to continue to do what has always interested you in spite of what the most predominant segment of the profession is doing.*

PR: I have no alternative, so I don't think it takes courage at all. I continue to be interested in urbanism and believe that one of the reasons we have so much difficulty with city design is that we don't really understand scale and especially the scales of high-rise buildings. The problem is new, and we haven't come to terms with it. In designing the skyscrapers I am building in Singapore and Djakarta and the two towers we are discussing in Fort Worth, I have been influenced by the fact that people perceive the first six stories (or 120 feet) of a high-rise building in a very different way from the rest of it. I came to that 120 feet because it has been shown (and I tested this myself) that most people can't recognize other people from more than 120 feet. So what happens higher than this matters only as seen from a great distance. Therefore you can argue that above 120 feet, the high-rise tower can be scaleless, but below this level, down to the sidewalk, the building must achieve a human scale.

What makes a tower scaleless?

When there is not a detail or proportion that can be related to a human being at all. If, for example, you can't read the distance from floor to floor.

And so in Fort Worth you have articulated the difference between the bases of the towers and their shafts by making the former relate to human dimensions and the latter without such reference?

Well to a degree, but not quite. It's a little bit more complicated. In the Fort Worth skyscrapers, the first six floors are indeed treated in a very different way from the remainder, and the remainder can be called scaleless, but that is not quite what I had in mind. One of the unique things about these towers is that they are always leading you around from one facade to another. They are not frontal. They are not on axis, or not usually at least. I wanted, oh how I wanted, to make a fine space between the two. But the space you create between two high-rise buildings is very different from the space you can create between two six-story buildings. How do you define a space between very high buildings in a way that doesn't make the pedestrian feel that he is at the bottom of a well? Articulating a space among four high-rise buildings would be even harder, but doing it among four six-story buildings would again be the simpler task.

You see, I am fascinated by the differences between the rules which govern that which is small and the rules which govern that which is large. For instance, take the ribbon window. There is many a marvelous low-rise building that very successfully uses the ribbon window. But put them on a skinny 40-story tower and it will look ready to twist, turn, and collapse.

What about the rules that govern the relationships between large and small buildings? In Fort Worth, your two towers are immense vertical landmarks springing upward in the midst of a rather humble, low-rise 19th-century neighborhood, which your client Sid Bass is determined to preserve.

Yes, well you can't pretend that a 40-story-high building is low. The towers are accused of not being "contextual." I understand the word urbanism, but I don't understand the word contextual. If I read the literature correctly, and I am not sure that I do because I am not very good about reading the polemics of what I like to call the "Paint Modernists," I think they mean leave out the cars or make it seem there are no cars. Certainly when you are designing a building you must pay attention to what is around it. But you needn't slavishly imitate its surroundings. I keep thinking of the Piazza San Marco, which took a thousand years to get itself built and is in so many styles, yet is one ensemble. But the problem today is that we don't know how to make a skyscraper look like what it really is without absolutely overwhelming what it is next to.

Unless its neighbor is another giant. But how, specifically, did you try to handle this problem in Fort Worth?

I managed, in the 120-foot vertical span that counts in human scale, to make each of the four sides of each tower start at a different height from the ground. Several facets of the towers begin at a point only one story off the sidewalk, others begin at six stories, the rest are somewhere in between. At the base of the towers this creates a loggia of varying heights into which are placed a bank, lobbies, and other elements. At the pedestrian level, this loggia is in scale with some very delicate adjoining buildings.

On every tower floor each one of the four corners is brought forward in a trapezoidal projection, adding three additional planes of window wall and additional floor area. In addition to the commercial attractiveness of this device, the parts that are brought forward reflect themselves in the opposite tower. Each facade then appears as a cluster of towers in reflection, not as a single shaft. I have also added what I call hinges, projecting glassed-in elements marking the intersection of each tower wall with its base. At the top of each tower are little leftover hinges that are not big enough to read the way the lower ones do.

Your towers stand almost alone on the skyline, being some distance from the high-rise downtown development of Fort Worth. You must have tried to create an outstanding double silhouette.

I don't think the silhouette is strong enough. The project started out with only one tower, you know. It was always expected that a second tower would be built, and before the first tower was finished, the second tower was started. Alas, the two buildings appear to be almost the same height. I truly wish the second tower could have been six or seven stories higher.

You once said that you would never do an all-glass building. What happened in Fort Worth?

Well, I went through the whole thing about how to make these buildings seem more sympathetic with the low-rise buildings in the surrounding rehabilitated neighborhood. I could have faced the towers with brick to match the low-rise, but brick connotes weight and masonry bearing, so I couldn't do that. Glass curtain walls turned out to be the most economically feasible, so I went ahead and used them. Besides, as I have said, my intention was to relate to the three-story-high buildings by scale, not by materials, or paint, or "motifs." By sheathing the towers in glass, I didn't have the option of articulating the upper parts. The early high-rise buildings articulated, especially in Chicago. You could easily tell what was holding them up, what parts were infill, which elements were for ventilating and which for view. Mechanical systems, lighting systems, structural systems, entry sequences, these elements of a building all play roles. When you sheathe a building you nullify all that. You can justify the sheathed and therefore scaleless high-rise building, but it would be difficult for me to justify the sheathed six-story-high building.

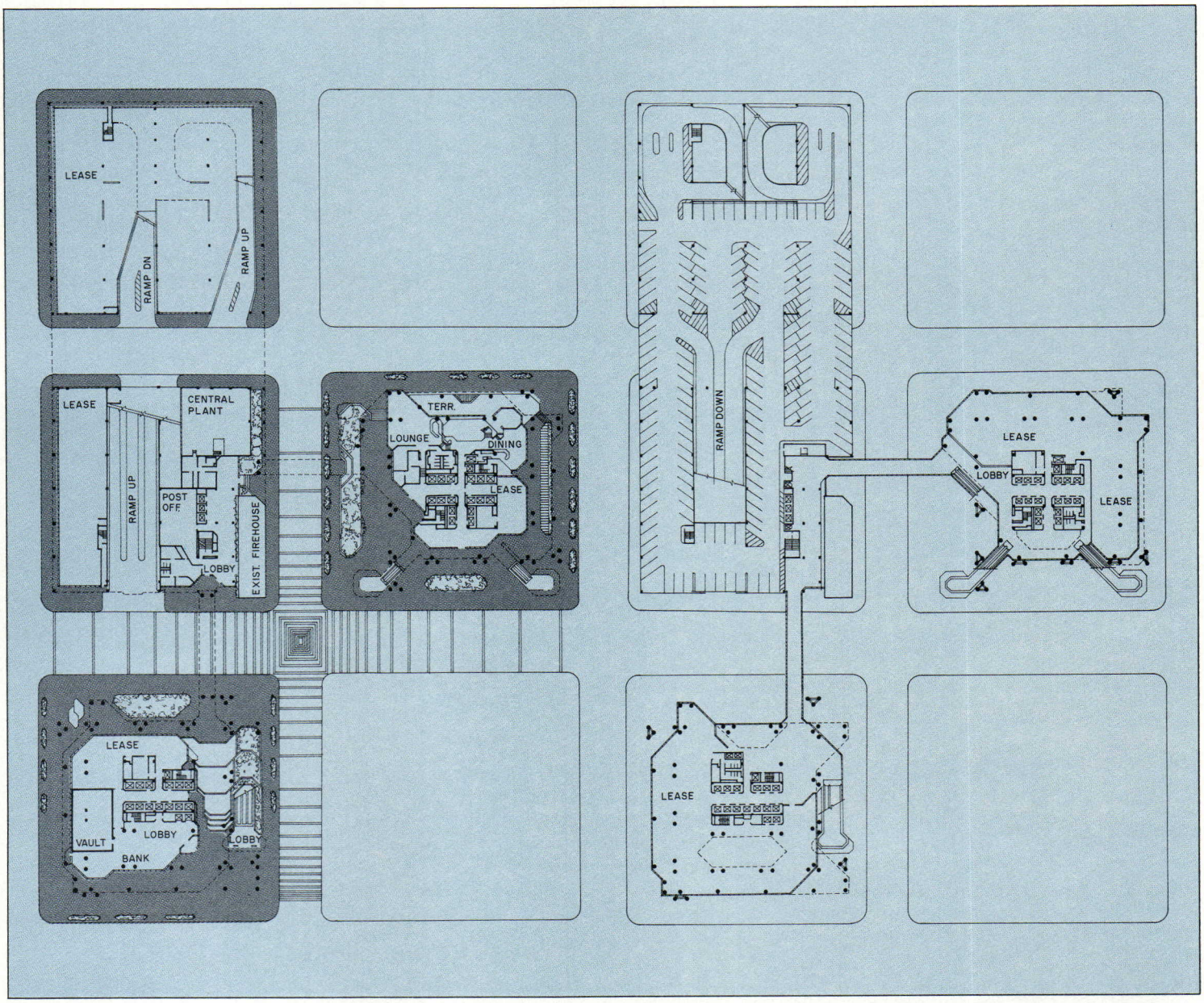
If you articulate the first six floors, you are showing how the building is made to people at ground level moving through. What happens above is not directly perceived, so you might as well sheathe it. This is what you have done in Fort Worth.

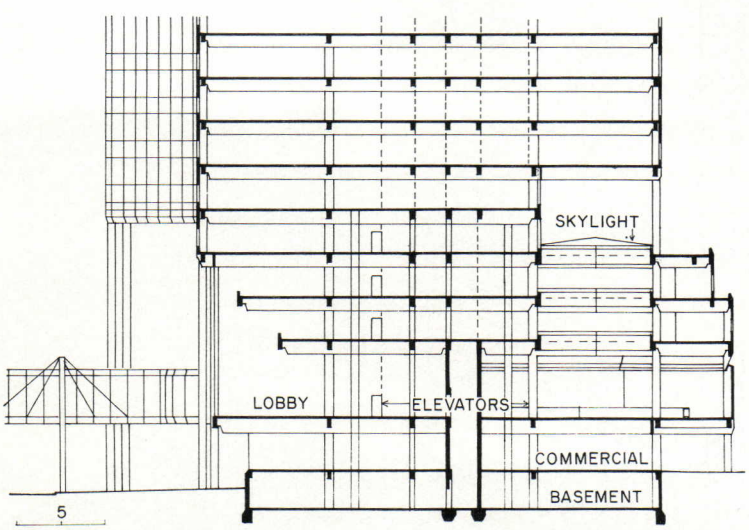
That's right. On the subject of articulation you will notice that there are no large columns at the base of these towers; instead, I have slender single columns or clusters of two and three. A single column holds up a six-story-high part, but the various clusters are necessary to wind brace and carry the loads of the rest. I am fascinated by the problem of creating a sympathy between the low and high components of buildings and hope I have done so here. This is one of the unique challenges in 20th-century architecture. And it remains a problem of scale, humanized scale. You see, people who add on imitation quoins or other historical references are attempting to give their buildings scale, but they use such low means to accomplish this that I want to get off the boat.

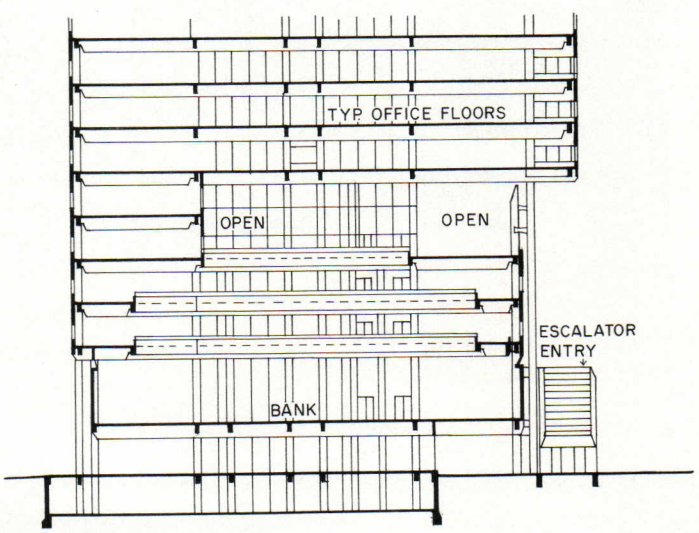
I assume that if the Fort Worth towers had not been speculative office buildings built to a limited budget, you would have made them richer, more articulated, like your current work in Djakarta and Singapore. As an architect of rare gifts, you hope to accomplish as many of your ideas in built form as the world will let you. What do you think you have accomplished in Fort Worth?

Well, apart from successfully articulating the lower parts of the towers from the upper parts, I was fascinated with the idea of these two buildings as points in space. Multi-story buildings, no matter how they are shaped, are either points or slabs in space. If they are points, you are very aware of their three-dimensionality, much more so than you are in viewing lower buildings. You read or sense the plan of a high-rise building more easily than a low-rise as you view the former in space. And I think the organization of the Fort Worth buildings is very clear. Further, these towers show how they are constructed and what they are made of. I still think buildings should do this. This is very old-fashioned of me, I know.

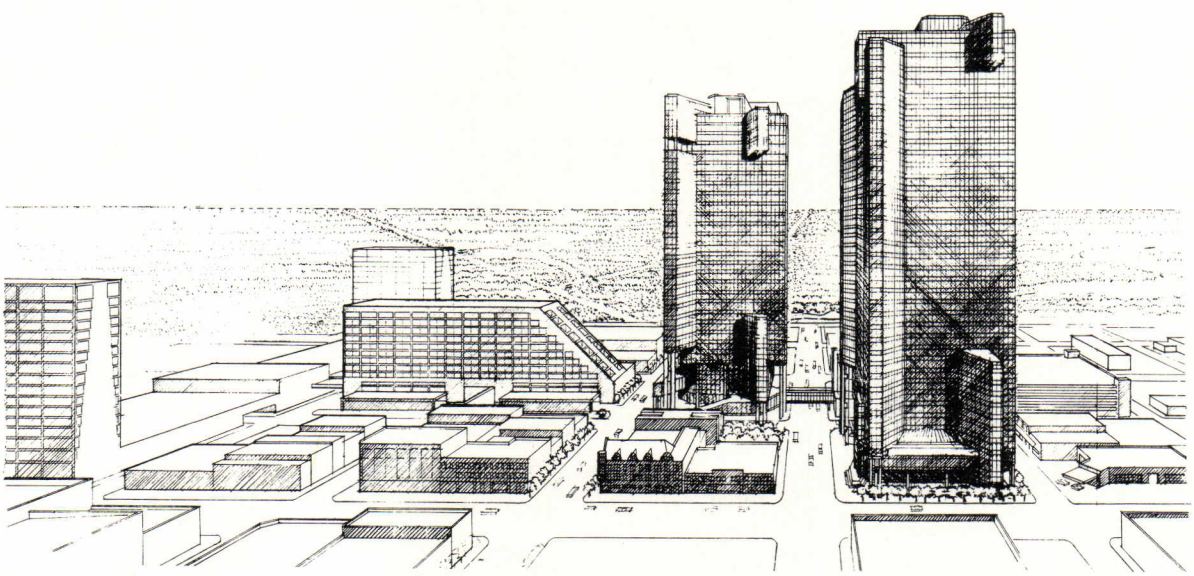
City Center covers a four-block area and includes a 32-story tower for a bank and a paired, but not identical, 37-story tower. The two skyscrapers and the neighborhood are served by a 1,000-car parking garage. All three buildings are connected by glass-enclosed skyways. The Center adjoins a new hotel (the building with the diagonal facade shown in the rendering) and a two-block area where 19th-century buildings have been restored by Fort Worth developer Sid Bass. Included among the restorations is a fire station on the southeast corner of the garage block. Built in 1907, the fire station has become an integral part of the City Center parking garage and houses the lobby area for its elevators and office facilities. The entire complex enhances a new concentration of business growth in downtown Fort Worth. As the plans







indicate, each tower is organized within a square the size of a city block. The concrete parking garage takes two. Typical tower office floors are square, organized around a central core, with each corner extended to form a wing, providing corner offices with windows on three sides. Each tower is supported by 16 metal-clad column clusters extending five to seven levels above the ground. (For a detailed description of the towers' structural system, see RECORD, *July 1982, pages 124-127.) The bank building has a four-story-high skylit atrium which can be seen in the sections below. Both towers are sheathed in gray glass chosen for its light-reflective coating and energy-efficient qualities. The office towers have been designed to meet and exceed Federal energy requirements.*

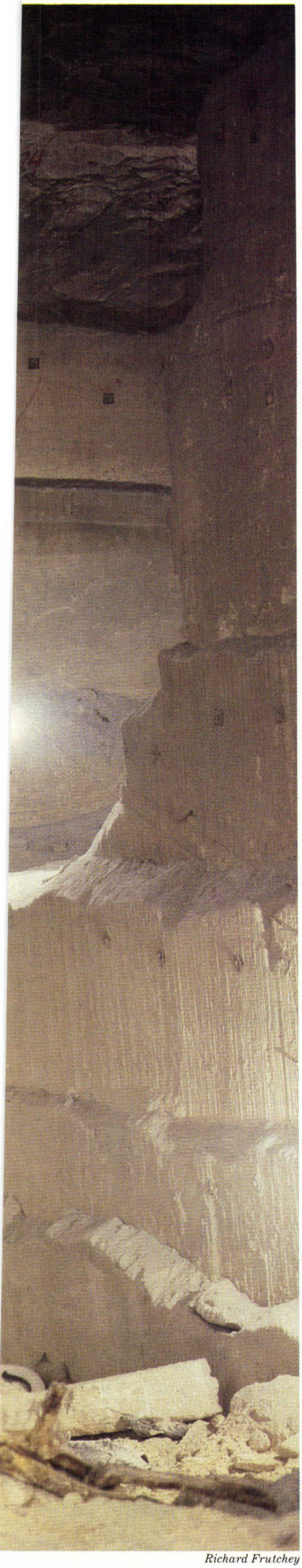


Each side of each tower begins at a different height and extends to varying heights. Thus, each ground-level part—a bank, athletic club, shops, and circulation bridges—are articulated independently of the central mass. In Rudolph's words: "The variety of functions at the base is used to break down the scale, in an effort to make the scale at the base more sympathetic with the human being. Urbanistically, the towers resemble human beings or robots. They walk proudly among the three-to-six-story-high buildings as giants, for they cannot and should not disguise their size."

City Center
Fort Worth, Texas
Owner:
Bass Brothers Enterprises, Inc.
Architectural design consultant:
Paul Rudolph
Architect:
3D/International

Engineers:
CBM Engineers, Inc.—Joseph Colaco (structural); 3D/International (mechanical, electrical, plumbing); Calvin Kort (elevators)
General contractor:
Linbeck Construction Company

Well-tailored stone



Richard Frutchey

Technology is changing the way architectural stone is quarried, fabricated and installed, thereby increasing its availability. However, some things about stone haven't changed. It is unique among building materials for having an absolutely site-specific source. At the Danby Quarry in Vermont, pictured here, seven strata of white marble are quarried parallel to the vein. Each stratum at Danby, as at every other quarry, has a one-of-a-kind color and physical property that cannot be matched with any other stone. This is, of course, part of the beauty of this natural material.

The craft of masonry is as old as civilization and is still very much with us. Owing to changes in the economy and developments in technology, the cost of architectural stone has changed little over the past decade, making it a cladding material that is competitive with many glass and metal curtain walls and precast concrete systems. Materials that require energy-intensive manufacturing, such as metal and glass, jumped in cost in the 1970s with the price of oil. Stone, which is merely pried from the earth and cut to shape at a modest energy expenditure, was not significantly affected by energy costs, which has helped suppliers hold prices steady.

Technological advancements within the building-stone industry have also been a force in bringing about the resurgence of stone. Most of these techniques were first developed in Italy and Germany and then transferred internationally. The greatest changes have been in fabrication processes. Computer automation, better cutting equipment, and new methods of management have increased output and improved safety in the plant. Fabricators have also devised new ways for finishing stone surfaces, among them, a technique for granite that uses high-pressure water jets to render the face of the stone with a roughened texture termed "thermal jet honed." New systems for installing stone have also been developed, and old systems have been improved.

Of the five systems most often used, *conventionally set stone* is the most traditional. With this method, each stone is put into place separately and tied back to an inboard masonry wall, usually concrete block. The weight of the stone wall is picked up by metal anchors, which are in turn typically tied into each floor at the slab or edge beam. (The three installations that follow all illustrate conventionally set stone.) *Stud systems* substitute a light-gauge metal stud wall for the masonry backup wall. As with the conventional system, stones in the stud system are individually placed, tied into the stud wall, and carried by a mechanical anchor at each floor. *Stone-faced precast concrete*, which has routinely been fabricated in panels of up to 14 by 7 ft, has most often been used with limestone or marble veneer because of those stones' compatibility with concrete in expansion. In making a stone-faced precast concrete panel, the stone is laid face down as part of the form into which the concrete is poured. Stainless steel loops anchored to the back of the stone serve as the bonding element between stone and concrete. *Preassembled frames* are a system in which stone is installed in a plant on steel framework, shipped as a unit to the site, and lifted by crane to position for fastening. Finally, lightweight panels of natural stone are being incorporated into conventional *curtain walls.*

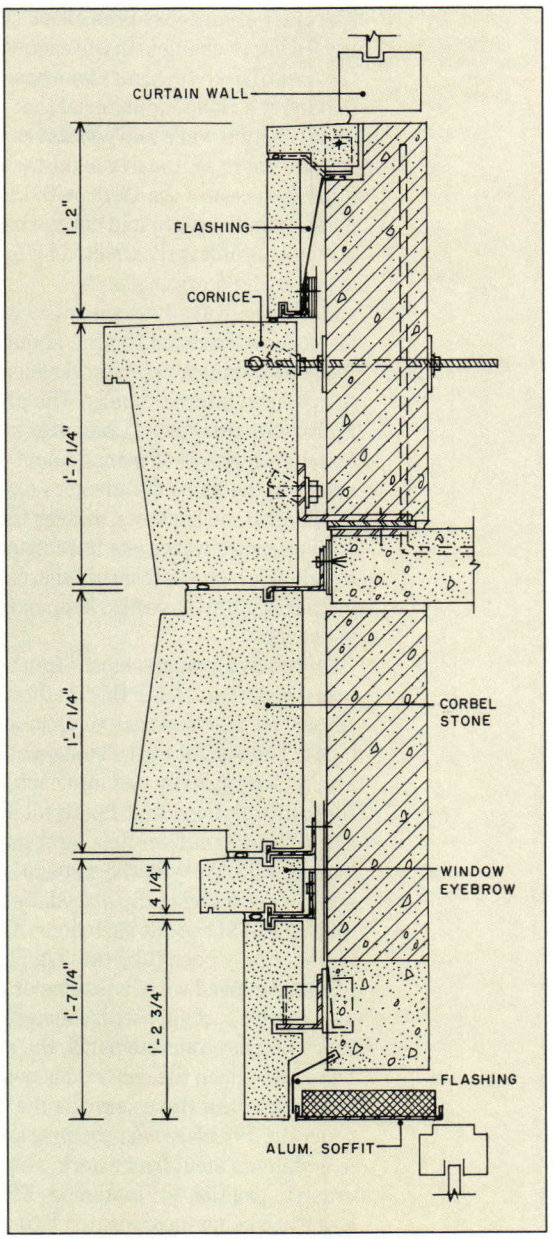
The profusion of available stone colors, finishes, and installation techniques currently available present architects with the challenge to artfully select and detail the material in a style that is fitting for the time. Kohn Pedersen Fox Associates is one firm that has, through a series of commercial building commissions, emerged as an innovative leader in the use of stone. The three projects that follow (also see RECORD, February 1985, page 142, for One Logan Square) reveal their attitudes—and some handsome details. Rather than treating stone like flat tiles that are monotonously applied, Kohn Pedersen Fox acknowledges the sculptural character of the material. Their cornice details, window frames, articulated joints (real and false), and recessed planes bring the walls into a restrained bas-relief, the surfaces washed with light and shadow, beautifully rendering the richness of the natural stone. Their well-tailored seams, evident from the profiles in construction sections, combine with tower massing to convey a sense of gravity appropriate to the inner tension of stone. They have also distinguished the color and finish of each specified stone by sympathetically juxtaposing it with other varieties of stone and/or finishes and with non-masonry materials. It is gratifying to see that the resurgence in stone technology is being taken up with verve by creative designers who are changing the face of stone. *Darl Rastorfer*

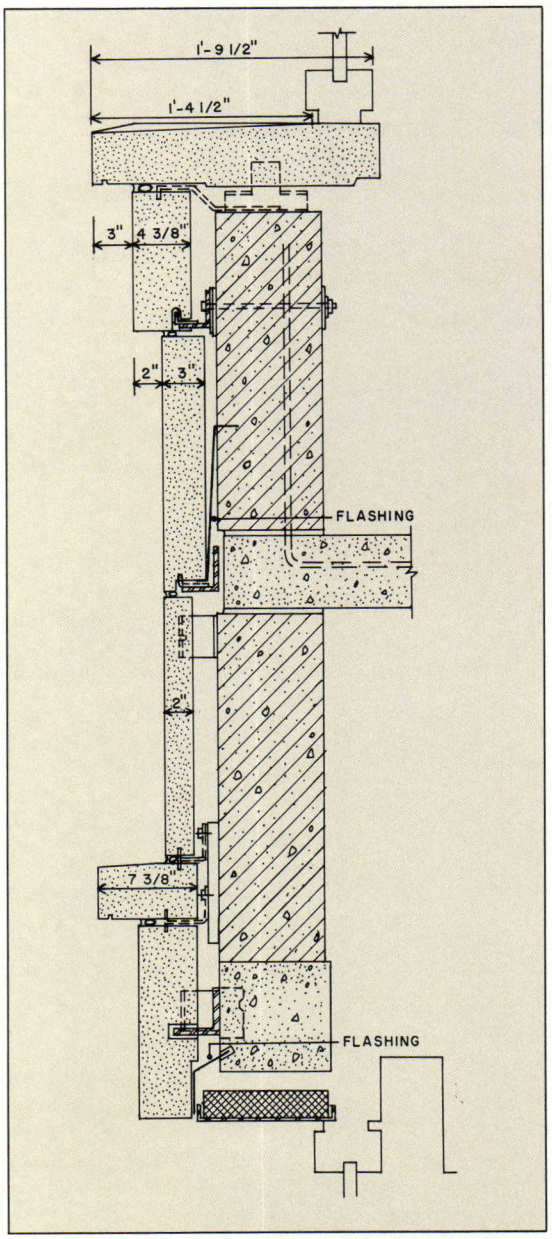
Hercules Incorporated Headquarters

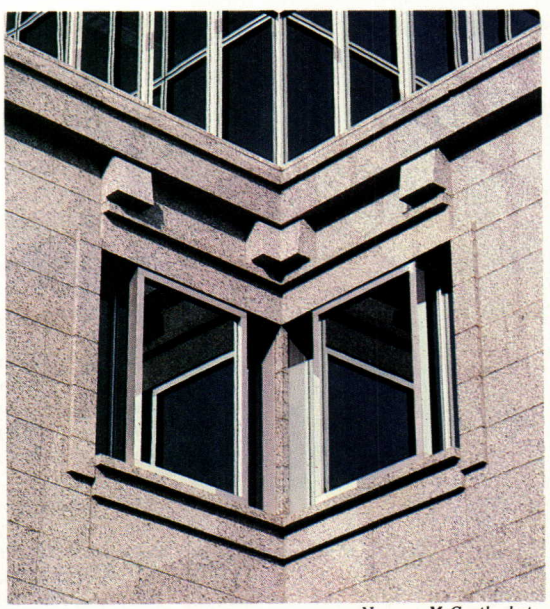
At first glance, the Hercules Headquarters looks as though a sleek reflective-glass, curtain-wall building was erected inside a 19th-century stone structure. However, closer inspection reveals that the stone detailing has the tough, crisp restraint of contemporary design, and that Kohn Pedersen Fox Associates' use of a stepped granite base with punched windows has as much to do with mediating the scale of a medium-rise building to its residential neighborhood as it does with bringing a tactile material to the level where people pass by and enter the facility.

The architects believe that the character of stone—its color, texture and inherent blockiness—is revealed by light and shadow. For this reason, the walls are detailed with projecting cornices, dentils, and an intricately raised frame around windows (see photographs below right). To further articulate the mass of the facade, windows are made with vertical reveals that capture a sliver of space between the stone wall and the central sheet of flush glass.

The granite, quarried in Rockville, Minnesota, is conventionally set. Typically 2 in. thick, each piece is tied to an 8-in. concrete block backup wall. Major support is given with anchorage at each floor slab. Here, a relieving joint in the form of a clip prevents any stacking effect from one floor to another. Surface joints around each typical stone are routed 1/4 in. wide and 1/8 in. deep. This detail, like other planar articulations, gives scale and reaffirms that the cladding is a thick, chiseled material. The stone is given a thermal finish that stands in contrast to the polished reflective surface of the blue-green glass.

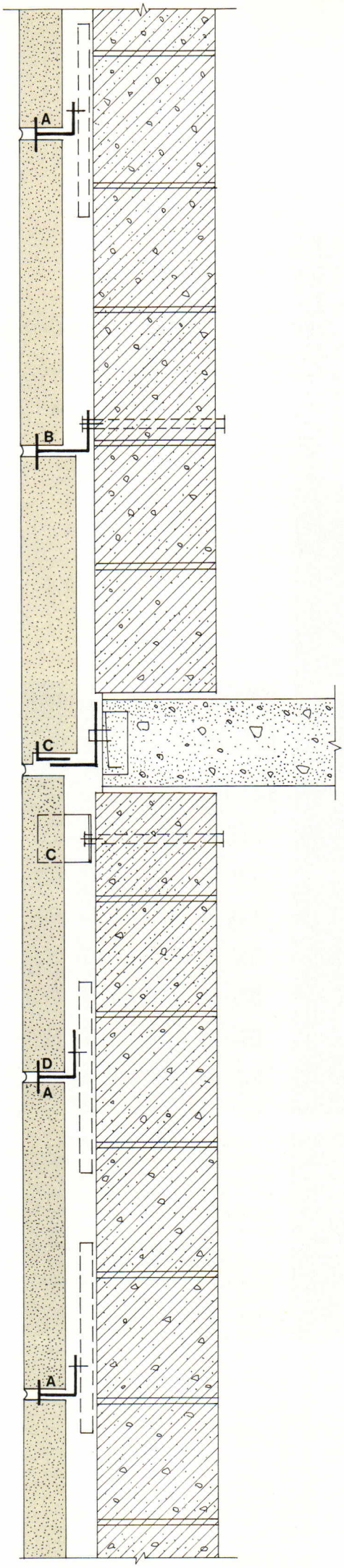


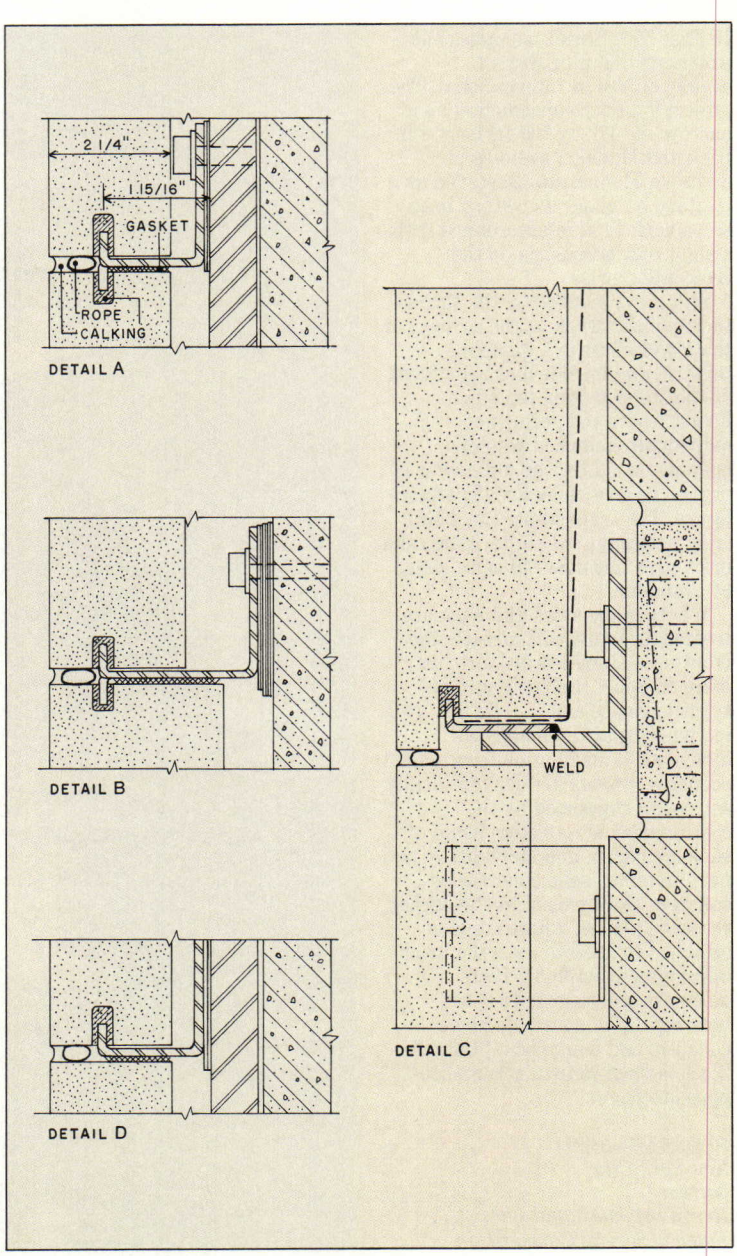




Norman McGrath photos

Hercules Incorporated Headquarters
Wilmington, Delaware
Owner:
Hercules Incorporated
Architect:
Kohn Pedersen Fox Associates—Sheldon Fox, partner-in-charge; Arthur May, design partner; Robert Evans, senior designer; Demetrios Pantazis, project manager; Ken Rose, job captain
Stone consultant:
Gordon H. Smith Corporation





Details for the cornice and dentils and spandrel zone between window openings (opposite page) show a range of special stone profiles that were developed to give depth to the wall. A typical wall section (at left) delineates the standard anchors and ties used to attach the granite to the concrete block backup wall and the floor slab. The four detail drawings (above) show the assembly around the stainless steel hardware. Stone profiles were fully cut in the fabrication plant before being shipped to site. The silicone sealant is backed by a neoprene rope. A gasket seat is used between the anchor and the top of the stone. Channels at the top of the stones, cut to receive anchors, are filled with caulk.

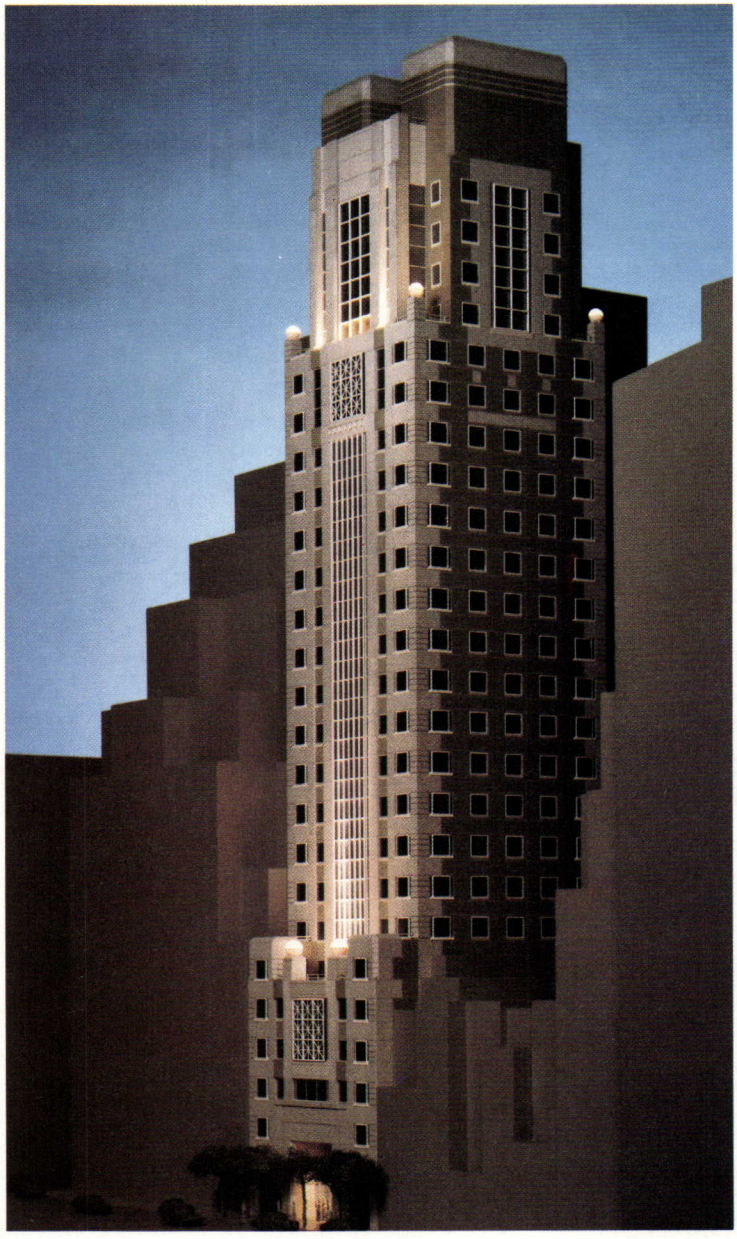
70 East 55th Street
New York City

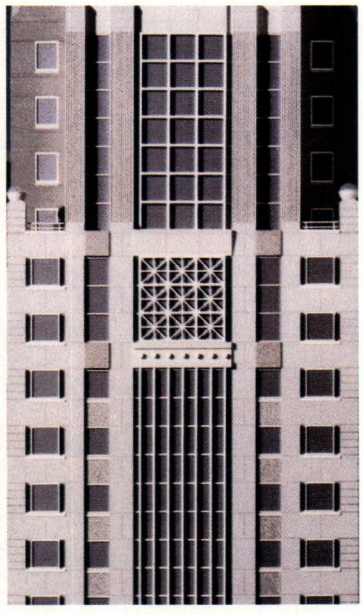
70 East 55th Street will mark the American debut of British developer Heron International. The project is under construction on a narrow site (72 by 100 ft) between Park and Madison avenues in midtown Manhattan. Designed as a 26-story building, its 6-story base steps back 14 ft in accordance with zoning regulations, as do the crowning stories.

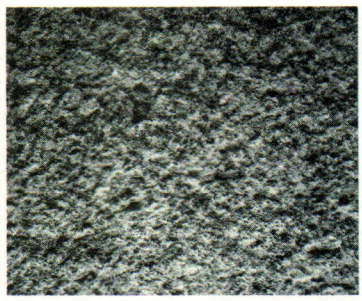
Stone will be used on the facade facing 55th Street, at the corners of the tower shaft in a quoining pattern, and on side and back faces of the stepped-back top office floors, where the pattern of individually punched window openings used for the mid-tower is organized as a collective decorative figure. The scale created by bold, crisp patterning of stone, glass, and brick give this small tower a sense of grandeur.

Whereas the sides and back are treated as an overall surface, the front uses stone toward a richer, more complex composition. The typical granite slab is 5 by 8 ft by 2 in., pushing at the material's dimensional maximums for greatest economy. Stones are conventionally set, being supported by the reinforced concrete edge beam of each floor slab, and individually tied back to either solid concrete or concrete block except at the darker recessed planes, where stone is attached to steel to keep the inside office dimension flush. Piers alternate where granite is set between 14-in. poured-in-place concrete and 8-in. block. Concrete block is used to turn corners (see opposite page).

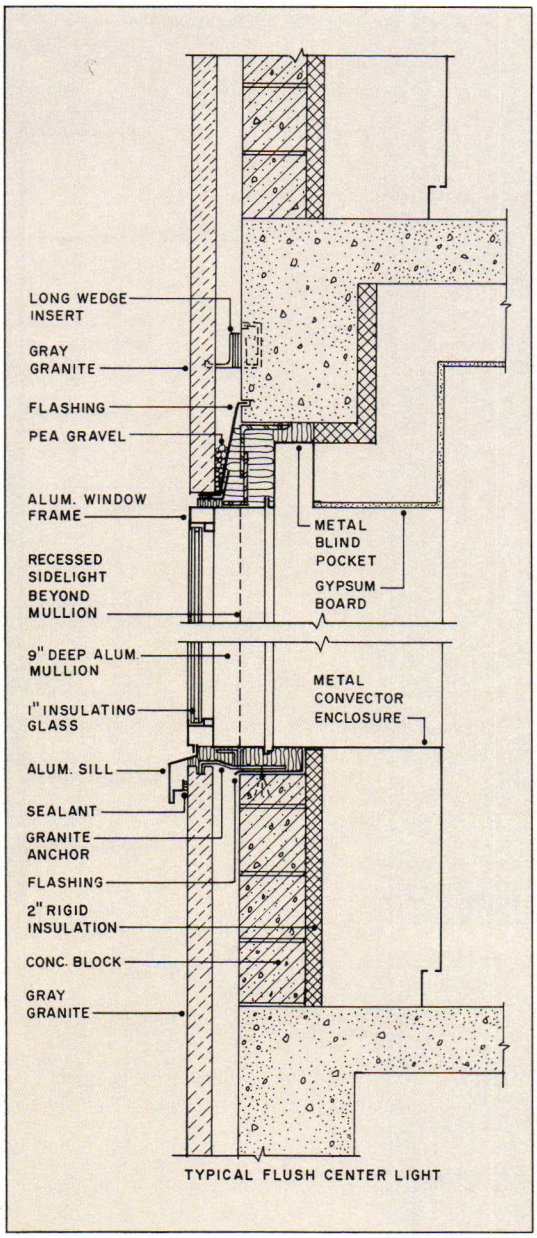
70 East 55th Street
New York City
Owner:
Heron International Ltd., Fidelity Service Corporation
Architect:
Kohn Pedersen Fox Associates—A. Eugene Kohn, partner-in-charge; William Pedersen, design partner; David Leventhal, senior designer; Myron Sigal, project manager; Bun-Wah Nip, job captain
Stone consultant:
Gordon H. Smith Corporation



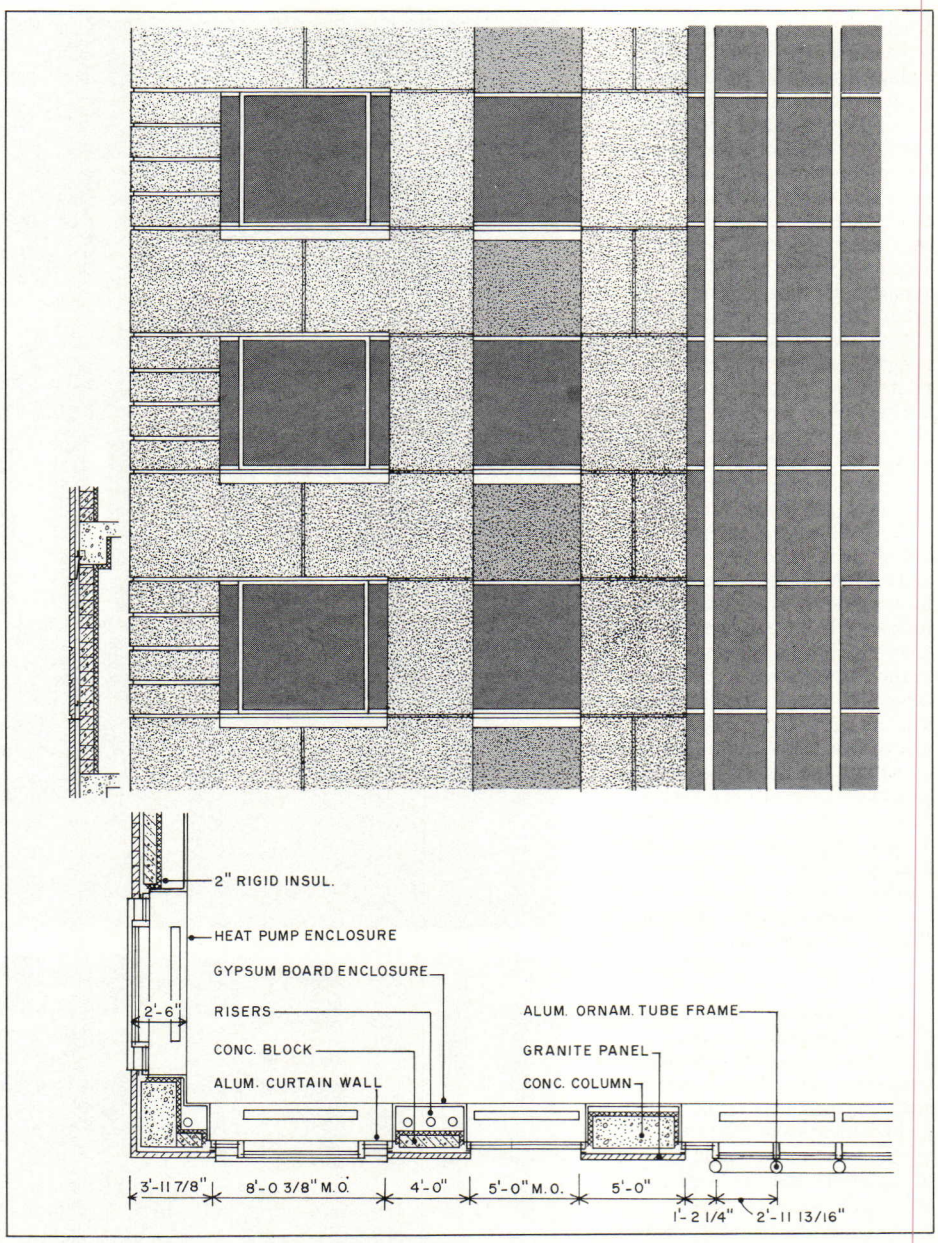


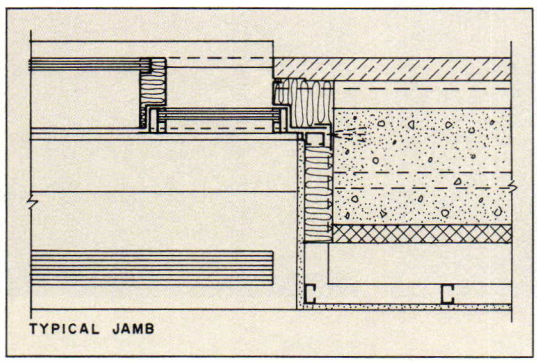


The facade is given sculptural quality by shadow-casting slitted window reveals, curtain wall mullions, and a recess at the inner punched windows. To accentuate the apparent depth of the recessed plane, the color is changed from light gray to a darker, green-toned granite. Both stones, quarried at Rockville, Minnesota and Jay, New York respectively, will be given a soft-looking, thermal finish (left).



TYPICAL FLUSH CENTER LIGHT





TYPICAL JAMB

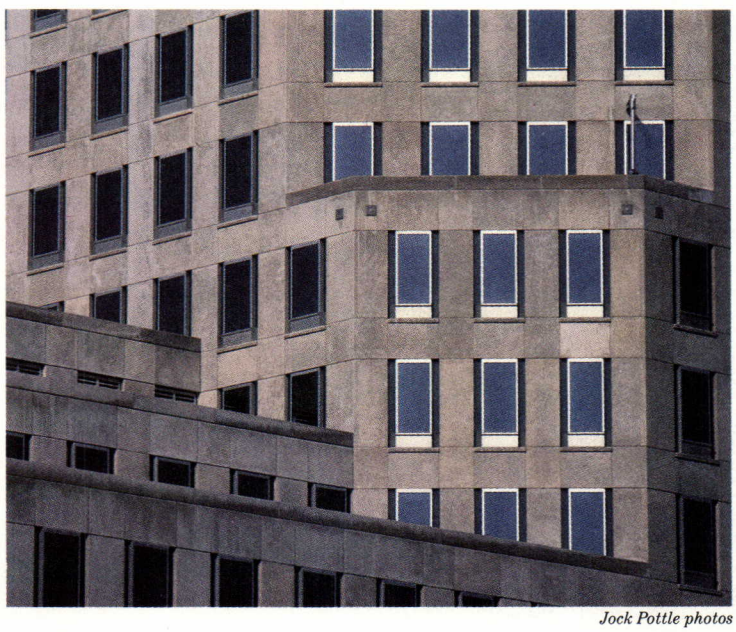
Though stones in this conventionally set facade are individually tied back, major structural support is given at each floor by stainless steel anchors attached to the edge beam. Except at the sidewalk level, all stone joints will be sealed with silicone caulk. At the pedestrian level, mortar will be used for esthetics. The "rustication" at the corners (see rendered elevation) is a false joint scored into the stone to add depth and scale to the wall.

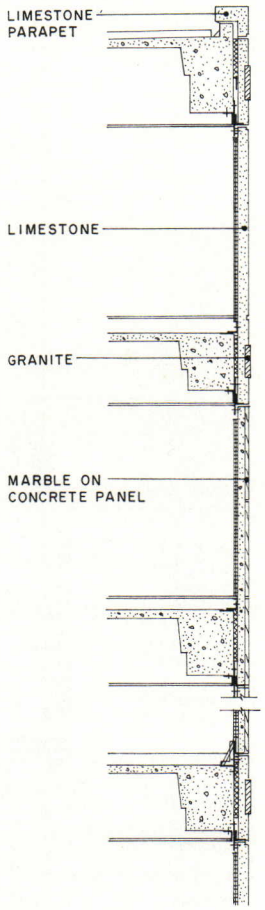
Procter & Gamble World Headquarters

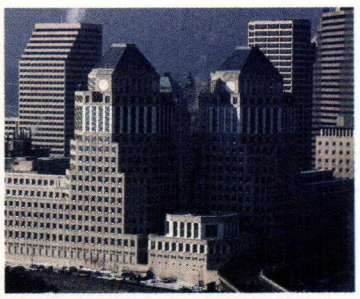
Much of Cincinnati is built in Indiana limestone, and its solid-looking structures contribute to the unique character of that city. When the Cincinnati-based Procter & Gamble chose Kohn Pedersen Fox Associates to design a major extension to their world headquarters, limestone seemed an appropriate choice in terms of corporate image as well as a sympathetic contribution to the urban fabric. The building consists of two low, six-story, perpendicular wings spreading out from a pair of 17-story, octagonal towers. There are two small pavilions at the base of the towers: one in the crux that serves as an entrance, and one at the rear used for the employees' cafeteria (see photo, far right).

The buff-colored Indiana limestone is enriched with granite and marble decorative motifs. Deer-brown granite quarried in Quebec forms a 6-ft base at the pedestrian level that lines a colonnade leading to the entrance while defining a large civic plaza. The granite is also used as square, decorative medallions, doweled into place, that punctuate the limestone surface (see photos near right). White marble from the Danby quarry in Vermont articulates the front and rear pavilions and the tower drums. Marble was also specified for the super-scaled roundels that animate the towers' summits.

The limestone is typically 6 in. thick and 14 ft high. It arrived on site fabricated to finish size and was lifted and individually set into place. The stone's monolithic dimension spans from floor to floor for anchorage, and therefore requires no backup system. The ease of erection and reduction in quantities of materials that the large stones afforded had an economic advantage. Chunky stone is also used at sills and for coping (see section at right and opposite page), contributing to the deeply carved, rugged quality of the building.



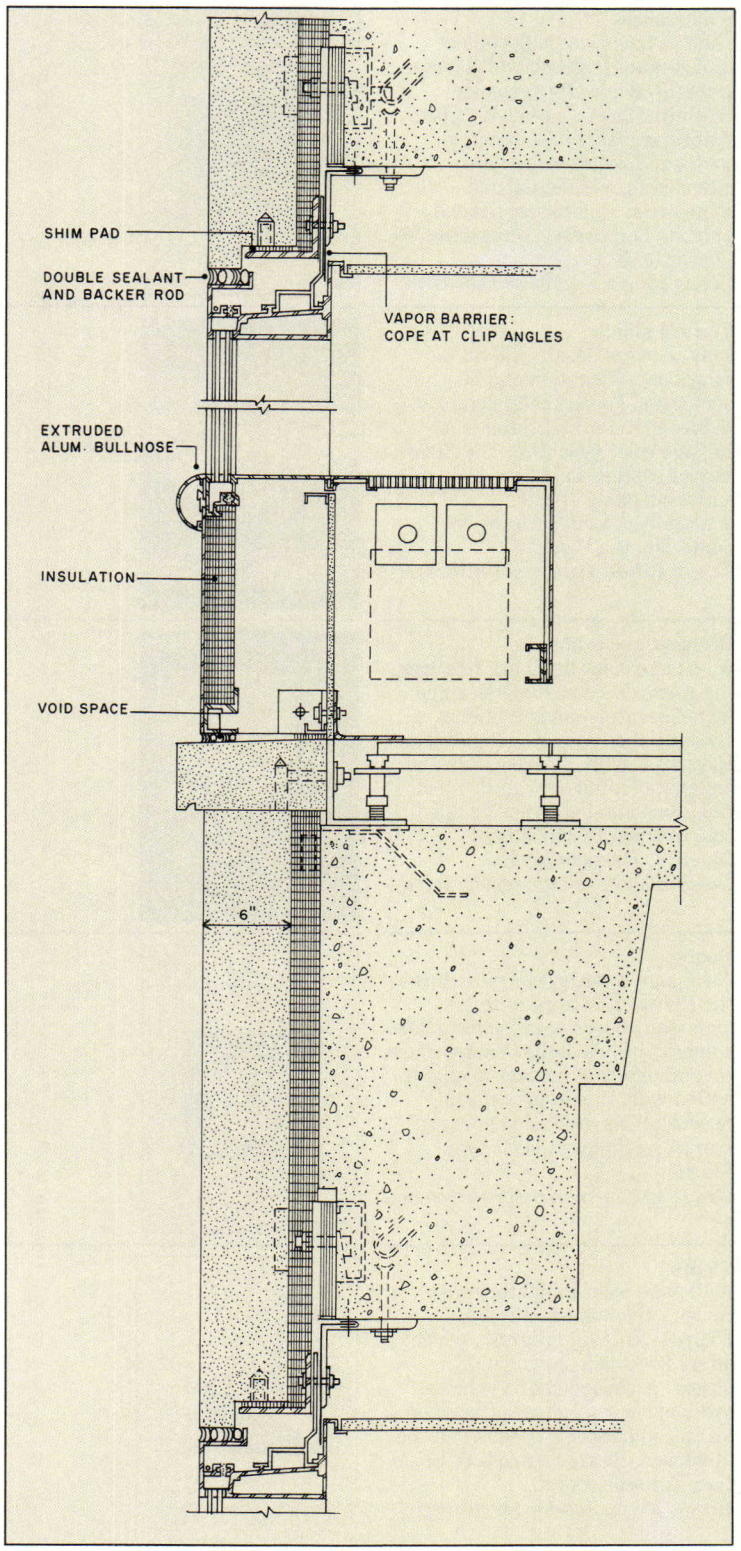


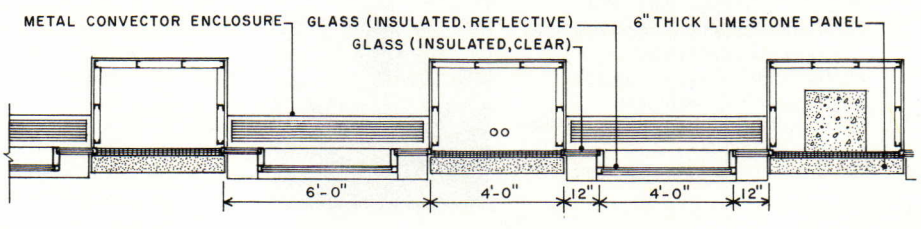


Jock Pottle photos

The three types of stone used in the tower are each set differently (see section at left). Limestone, spanning floor to floor, is conventionally anchored to edge beams; but because there is no stacking of stone within the floor level, no backup system, such as block, was needed. Marble was fabricated in thin sheets, fitted with hairpin anchors, and incorporated into the pour for precast concrete panels. Panels were then bolted and welded into place. Granite medallions were doweled to recesses in the limestone. Because the stone is 6 in. thick, reveals are "meaty." The punched-out windows have a three-part infill consisting of vertical recesses at the sides and flush glazing in the middle (see section and plan at right). The windows were not set in a conventional frame; therefore, to effect a clean junction between glass and masonry, a dual-zone caulking was detailed to prevent water infiltration.

Procter & Gamble
World Headquarters
Cincinnati, Ohio
Owner:
Procter & Gamble Company
Architect:
Kohn Pedersen Fox Associates—
A. Eugene Kohn, partner-in-charge;
William Pedersen, design partner;
Robert Cioppa, managing partner;
Alexander Ward, senior designer;
Timothy Hartley, Lee Polisano, project managers;
Benedict Curatolo, job captain
Stone consultant:
Kluesner Engineering, Inc.





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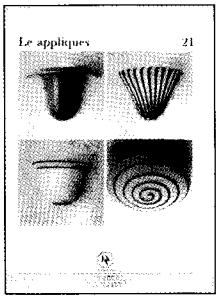
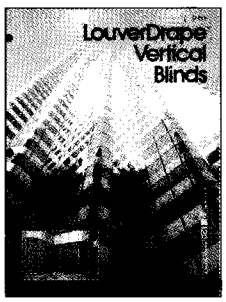
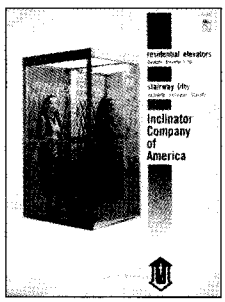


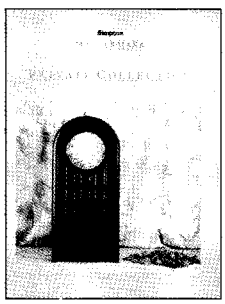
Wall sconces
The *Le Appliques* collection of Italian-manufactured wall sconces is featured in a 20-page color brochure. The sconces have glass shades available in a variety of colors and patterns, and are intended for residential and commercial applications. David Thomas Lamps and Accessories, Charlotte, N. C.
Circle 400 on reader service card



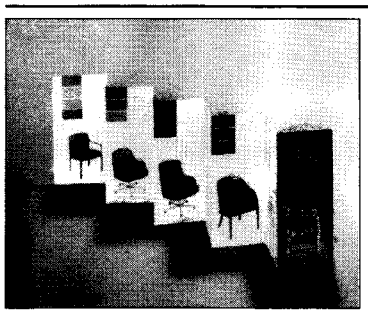
Vertical blinds
Vinyl louvers designed to block solar heat infiltration and perforated louvers intended to reduce glare are featured in a 28-page color brochure. The *Zirlon* carrier system, said to reduce louver stacking space, is described. LouverDrape Inc., Santa Monica, Calif.
Circle 401 on reader service card



Residential elevators
An 8-page color brochure features the *Elevette*—a custom-designed home elevator—and additional residential elevators and stairlifts. Diagrams show the assembly and installation of an elevator's steel rail guide and hardwood-paneled cab. Inclinator Company of America, Harrisburg, Pa.
Circle 402 on reader service card

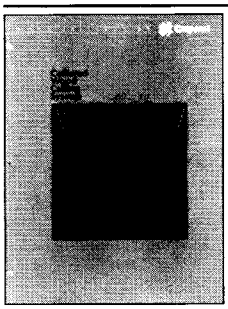


Doors
An 8-page color brochure features the *Private Collection* of mahogany doors with leaded glass windows or sidelights. Photos show several different models, available with a walnut or cherry finish. Specifications are included in the literature. Simpson Door Co., Seattle.
Circle 403 on reader service card



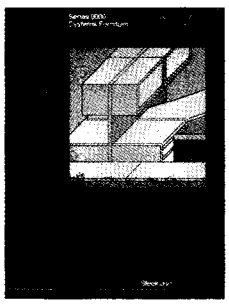
Chairs
A 10-page color mini-brochure reviews the manufacturer's *Express Seating* program, which offers five-week shipment of orders. A collection of 14 chairs, available in a selection of wool or leather upholstery, is shown in the literature. Helikon Furniture Co., Inc., Taftville, Conn.
Circle 404 on reader service card

Lamps
A collection of lamps designed by Gianfranco Frattini, Rodolfo Bonetto, Toshiyuki Kita, and Ferdinand Porsche is featured in a 12-page brochure. Color photographs of each lamp are accompanied by technical information and dimensions. Nessen Lamps, Bronx, N. Y.
Circle 405 on reader service card

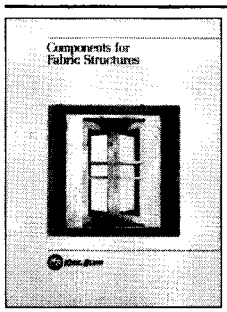


Wood ceilings
The manufacturer's coffered wood ceiling system, designed by Michael Anthony, is featured in a 4-page color brochure. Diagrams show the system components, including cove moldings, track moldings, and lay-in panels, which are attached to a T-bar exposed-grid suspension system. Capaul Corp., Plainfield, Ill.
Circle 406 on reader service card

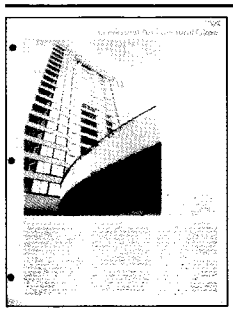
Garage door
The manufacturer's new garage door, made of roll-formed embossed steel *Thermacore* panels, is featured in an 8-page brochure. The units' seal, track, and balancing systems are reviewed in the literature. Thermacore, Williamsport, Pa.
Circle 407 on reader service card



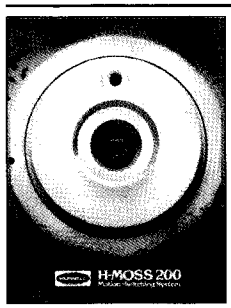
Systems furniture
A 32-page brochure reviews suggested solutions to space planning problems that incorporate the manufacturer's *Series 9000* systems furniture. Drawings of system components and descriptions of the hardware designed to attach the furniture to panels are included in the literature. Steelcase, Grand Rapids, Mich.
Circle 408 on reader service card



Fabric structure components
A folder with several inserts contains information on fabric structure components, including inflation systems, revolving doors, and air locks. Diagrams show the dampers, vibration isolators, and filtered inlets of the two inflation systems. The Kirk & Blum Manufacturing Co., Cincinnati.
Circle 409 on reader service card



Laminated glass
Category II laminated glass—which consists of two layers of glass and a .03-in. PVB interlayer—is shown in a 4-page color brochure. Photographs and descriptions of the manufacturer's selection of bent glass are included. Safety and sound-control features are reviewed. Laminated Glass Corp., Telford, Pa.
Circle 410 on reader service card



Light-control switch
The *H-Moss 200* light-control/occupancy-sensor switch is described in a 4-page color brochure. The electronically controlled, passive infrared sensor is said to detect and respond to changes in radiated heat and movement within a room. Harvey Hubbell, Inc., Bridgeport, Conn.
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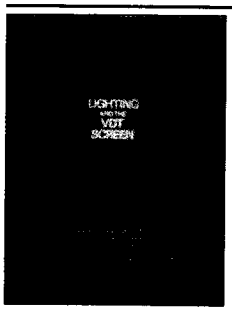
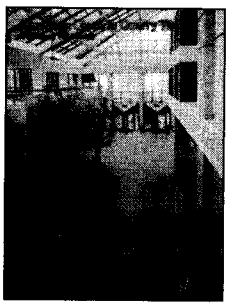
Continued

Product literature *continued*

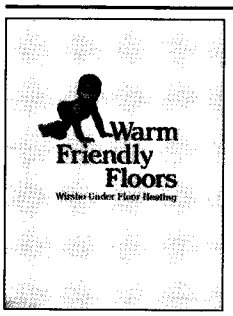
For more information, circle item numbers on Reader Service Card



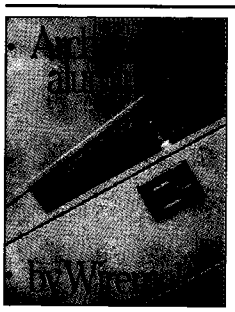
Lighting
A 4-page color brochure reviews the results of VDT lighting tests, which considered such factors as glare on the computer screen and levels of light distribution. The performance of the manufacturer's lighting system is described. Peerless Lighting, Berkeley, Calif.
Circle 412 on reader service card



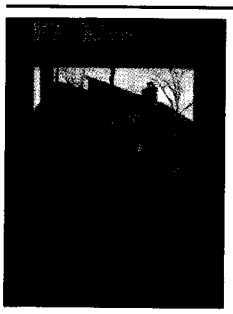
Tile
The manufacturer's four new lines of quarry tile—including 26 colors and 11 sizes—are featured in an 8-page color brochure. Photos of each line are accompanied by product specifications. American Olean Tile, Lansdale, Pa.
Circle 413 on reader service card



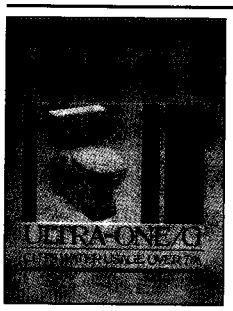
Underfloor heating
The manufacturer's underfloor heating system, which uses plastic distribution piping and emits heat by radiation, is described in an 8-page color brochure. Diagrams show how the system can be installed in both concrete and suspended wood floors. Wirsbo Co., Rockford, Ill.
Circle 414 on reader service card



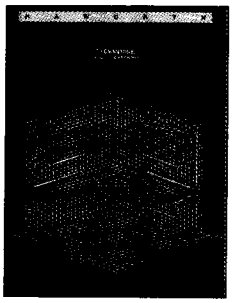
Raceway
A 4-page color brochure includes photographs and a description of the manufacturer's new aluminum raceway, designed to distribute power, data, and telephone wiring in commercial installations. The raceway's anodized finish is said to be corrosion resistant. The Wiremold Co., West Hartford, Conn.
Circle 415 on reader service card



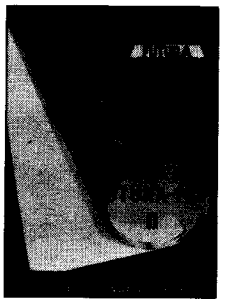
Shingles
New Dimensional III two-ply fiberglass shingles, faced with ceramic-clad granules, are one of several shingle lines featured in an 8-page color brochure. Dimensions and available color selection of each line are included. The Celotex Corp., Tampa, Fla.
Circle 416 on reader service card



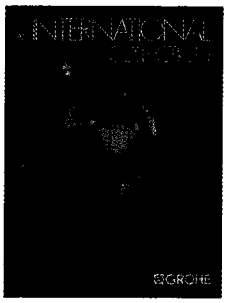
Toilet
The manufacturer's *Ultra-One/G* toilet, which is said to use only one gallon of water per flush, is described in a 4-page color brochure. Diagrams show the flushing cycle. Installation information is included in the literature. Eljer Plumbingware, Pittsburgh.
Circle 417 on reader service card



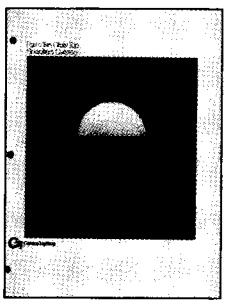
Space-planning software
Cadvantage space-planning and facilities management software is described in a 6-page color brochure. The software programs allow designers to create elevation and plan view drawings, generate orders, and control inventory. Haworth Inc., Holland, Mich.
Circle 418 on reader service card



Single-ply roofing
A 6-page brochure reviews the properties of a new urethane single-ply roofing membrane. The roofing system's operating temperature range and chemical and puncture resistance are described in the literature. The system is said to be bondable to any roofing substrate. Futura Coatings, Inc., Hazelwood, Mo.
Circle 419 on reader service card

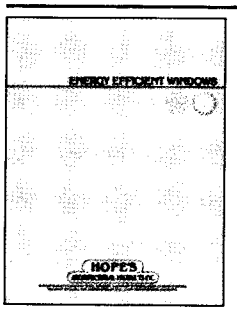


Bathroom fittings
A 12-page color brochure contains a selection of German-manufactured custom shower heads, hand-held showers, and sink, bathtub, kitchen or bar fittings. Photographs of each product line are included in the literature. Grohe America, Inc., Wood Dale, Ill.
Circle 420 on reader service card



Lighting
The manufacturer's *Form Ten Glow Top* luminaires for outdoor lighting are featured in an 8-page color brochure. Performance data for the four available optical systems are reviewed in the literature. Housing, ballast, reflector, and pole specifications are included. Gardco Lighting, San Leandro, Calif.
Circle 421 on reader service card

Vinyl flooring
Descriptions, specifications, and technical data on the manufacturer's line of commercial sheet vinyl and vinyl flooring tile are included in a 24-page color brochure. The flooring is asbestos-free. Tarkett Inc., Parsippany, N. J.
Circle 422 on reader service card



Windows
A 4-page brochure compares the U-values of the manufacturer's 1-in. insulated glass, thermally broken aluminum windows with insulating glass, and non-thermally broken aluminum windows with non-insulating glass. Window and glass thermal performance terminology is reviewed. Hope's Architectural Products Inc., Jamestown, N. Y.
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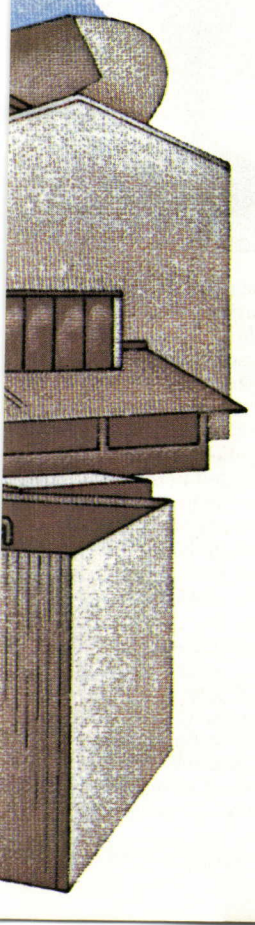
The Versacor® epoxy base coat, heart of the Robertson protected metal system, is unsurpassed in its resistance to corrosion, chemicals and industrial pollutants.



Specify the best for both beauty *and* protection with Versacor PF from Robertson. You'll get the finest fluoropolymer (PVF_2) finish coat (Duranar with its Kynar® 500 resin) on the outside, then just beneath that, the world-class, 3-mil thick protection of Versacor epoxy base coat over galvanized steel or aluminum substrate, depending on corrosive situation and owner preference.

Put the protection of Robertson Versacor and the beauty of PPG Duranar enamel to work for you on low- or mid-rise metal wall or roof panels, high-rise curtain wall systems, or any of a variety of industrial metal product applications. Because, no matter what the product, or where in the world you use it, Versacor PF* will out-perform any other PVF_2 finish system.

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*Robertson uses PPG Duranar as its finish coat for all Versacor PF products and applications, worldwide.

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New products

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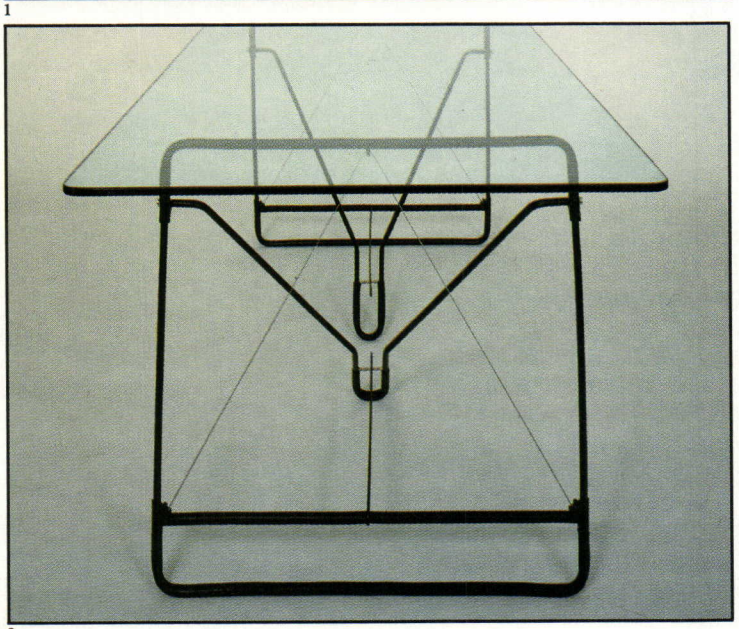

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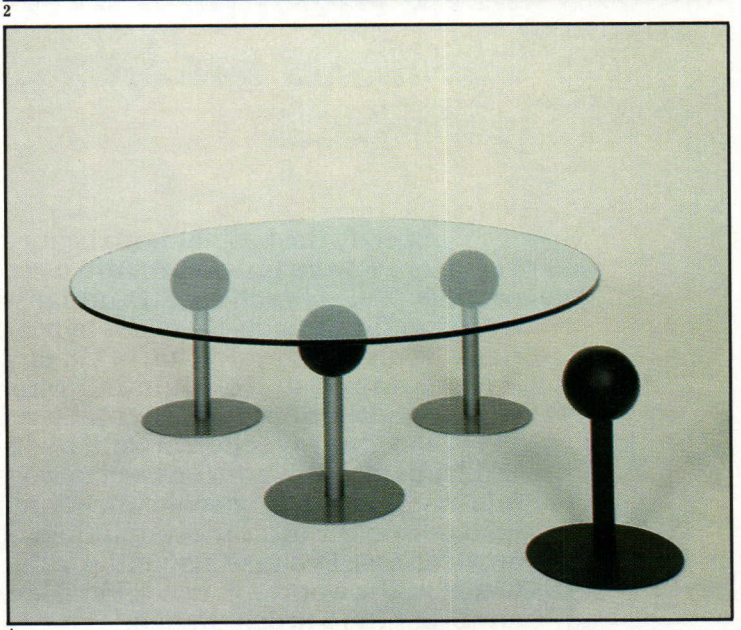


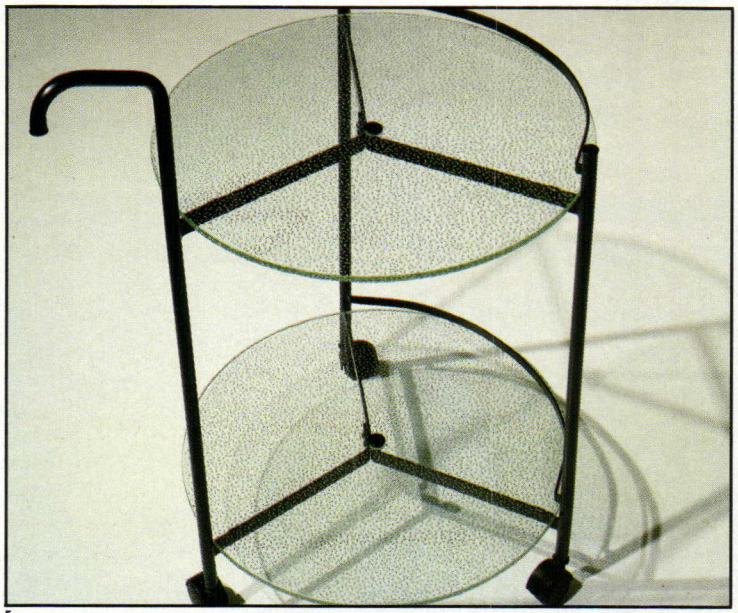
4

Wait and SEE

The array of international designers represented in the inaugural collection of Spatial Environmental Elements (SEE) includes both rising stars like Frenchman Philippe Starck, who has designed furniture for such diverse clients as his country's president and a café and nightclub on two different continents, and others still relatively unknown in this country. The pieces were featured at the 1984 Milan Furniture Fair by their respective manufacturers and subsequently brought together—and into the United States—by partners Leora Douek and Carolyn Walton, who formed SEE as an experimental adjunct to their small, but thriving, interior design firm.

Like Starck's varied clientele, the SEE furniture is both serious (in intent) and whimsical (in execution). Toward that end, and in an attempt to be sympathetic to the spatial limitations of apartment living, several pieces take functionalism to the extreme and are, in fact, multifunctional (the adjustable *Sube y baja*, for example, can be used as a coffee table and raised for dining). But the collection's interest is by no means limited to the mechanical, for it has its own facile wit. Items like the easy-to-assemble flat-chested, big-shouldered *Miss Wirt* chair and the two-tier *Eclipse* table, whose upper surface passes over the lower one in partial or total eclipse depending on user need, also display a welcome sense of humor.

Douek and Walton were careful to limit their selection to pieces they felt would be in style for years to come. The result is a collection of basic, compatible items whose destiny may well be as classics of the future. Douek and Walton are gradually adding new pieces to the



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group and reinvesting all profit in expanding inventory and building a stock. Fortunately, they have the fallback position of their interior design firm, and they are well aware that had they started without it, their incentives—and their motives—might have been a lot different. *K. D. S.*
Spatial Environmental Elements, New York City.
Circle 300 on reader service card

1. Eclipse, *R. Isern, G. Bernal.*
2. Rataplan, *R. Tapinassi.*
3. Dipode, *E. Franch.*
4. Pepper Young, *P. Starck.*
5. Circulo, *R. Isern, G. Bernal.*
6. Miss Wirt, *P. Starck.*
7. Spring Chair, *R. Arad.*
8. Sube y baja, *R. Heritage, R. Webb.*

A touch of beauty with a feeling of security.

Introducing the Russwin 900 Series Security Bolt, the most innovative advance in heavy duty locksets in over a quarter century.

Imagine the solid security of a hefty, cast bronze or stainless steel lockset featuring a dual-action bolt that functions as a ½" throw latchbolt or 1" deadbolt. (Activated by key outside, turnpiece inside.)

A beautifully styled lockset with graceful, tapered-return lever handles that travel no more than twenty degrees and satisfy most applicable major handicapped codes.*

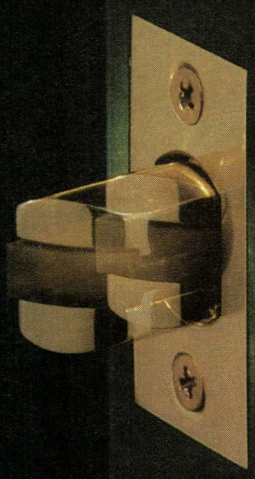
One with a standard removable core cylinder that simplifies rekeying and can be adapted to virtually all types of conventional and high security systems.

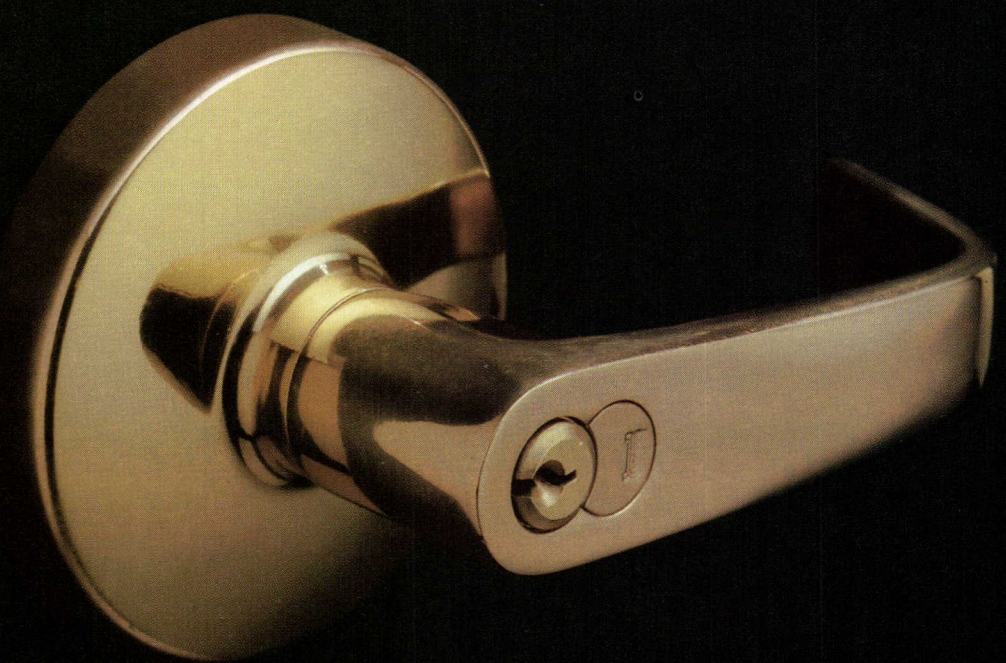
All at a price that's in line with other high quality, heavy duty locksets. And well within most new construction and retrofit budgets.

These are but a few of the advanced features that have made the new and evolutionary Russwin Security Bolt one of the most talked-about locksets in years. Easy installation (fits standard 161 door prep), easy operation and a handsome selection of architectural finishes make it even more appealing.

The Russwin Security Bolt. A beautiful blend of flawless style and function. Like more information? Call your Russwin Distributor or contact Russwin Division, Emhart Hardware Group, 225 Episcopal Road, Berlin, Ct. 06037. (203) 225-7411.

*The Security Bolt also meets applicable ANSI Grade I standards and is UL-listed for Class A doors.





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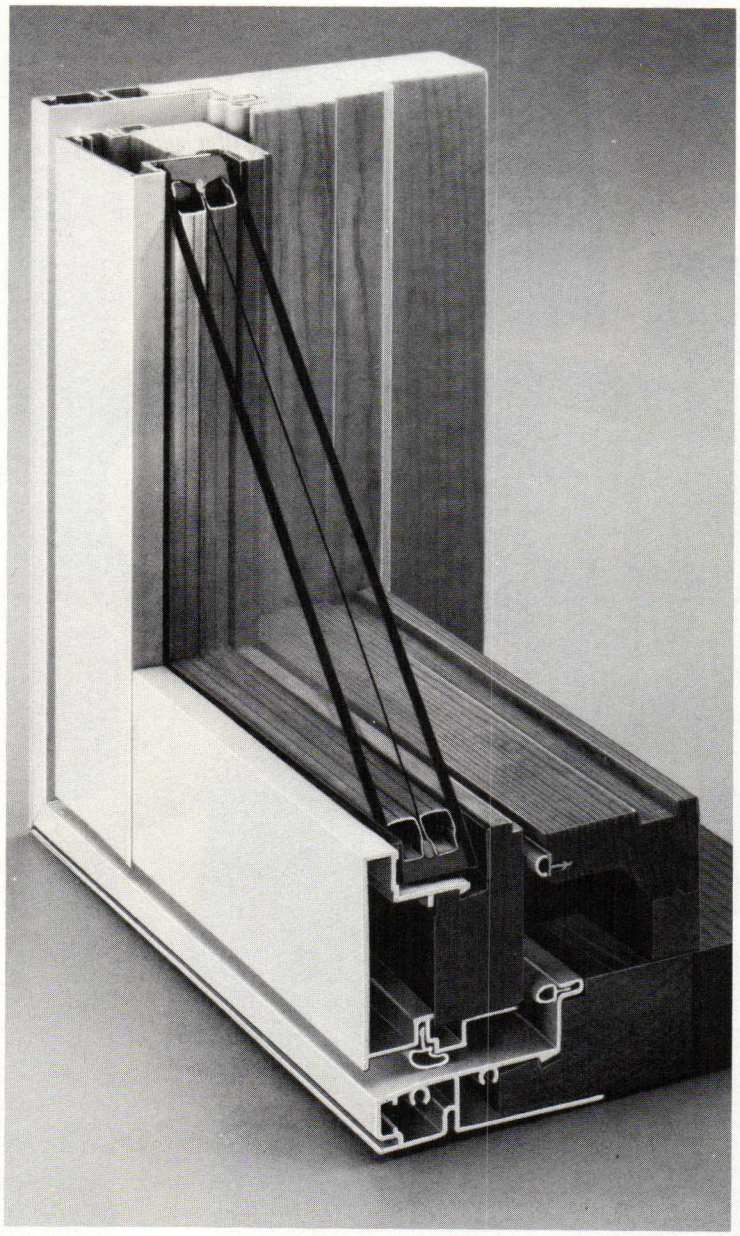

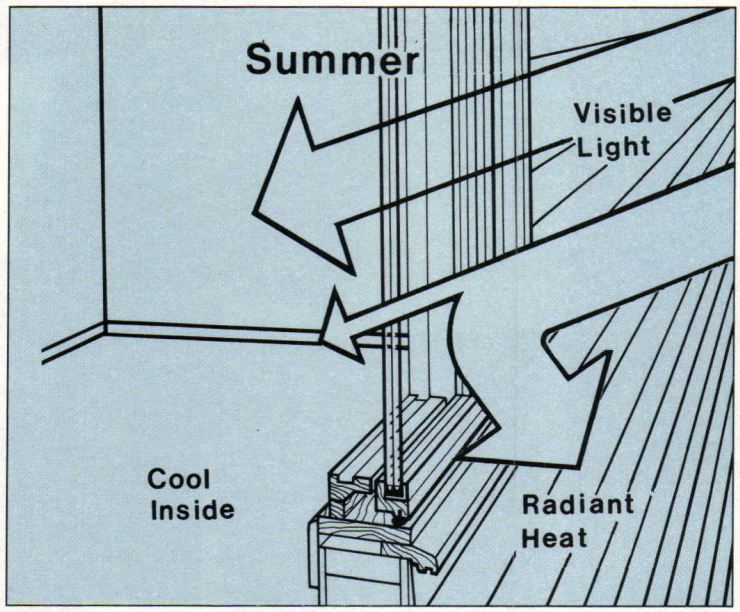

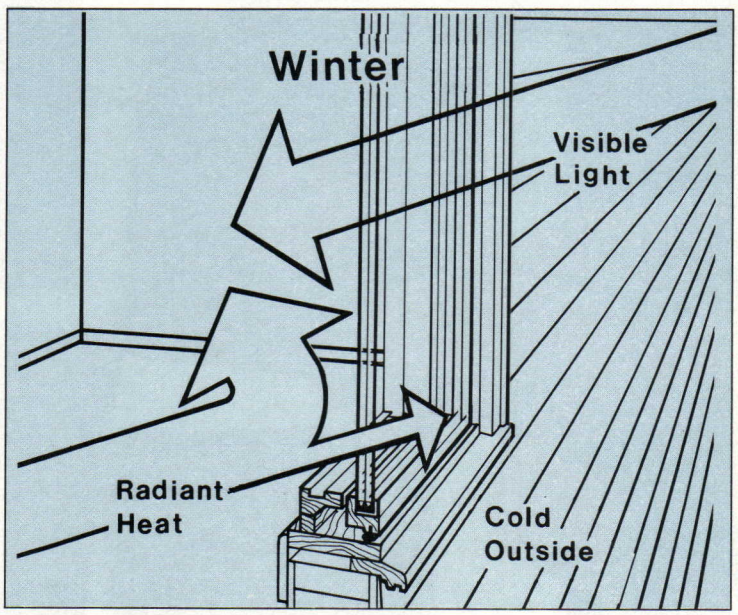

Keeping heat out and letting light in

The joint efforts of Hurd Millwork, manufacturers of residential wood windows and patio doors, and Southwall Technologies, makers of *Heat Mirror 66* transparent insulation, have produced the new *Sunbelter* line of windows that is intended to perform what may appear as two mutually exclusive tasks: admitting the sun's light while excluding its radiant heat. Southwall's clear, polyester film insulation, which has a heat-reflective metallic coating, is suspended between the two panes of Hurd's double-pane windows in order to do just that.

Although many types of metallic-coated tinted glass successfully reflect the sun's radiant heat, they often block out a substantial portion of the available natural light. Laboratory testing has shown, however, that even though *Heat Mirror 66* has a 33 per cent lower relative heat gain than tinted glass, it still admits approximately 66 per cent of the sun's visible light. *Heat Mirror* also improves insulation performance by reflecting heat back toward its source, to the outside in summer and to the inside in the winter.

The *Sunbelter* line includes casement, double-hung, and fixed windows and patio doors with Ponderosa pine frames and sashes and either aluminum or wood exterior cladding. Hurd Millwork's windows can also be specified with Southwall Technologies' *Heat Mirror 88*, designed for colder climates and intended to maximize solar heat gain and insulation values. Hurd Millwork Co., Medford, Wis.

Circle 301 on reader service card

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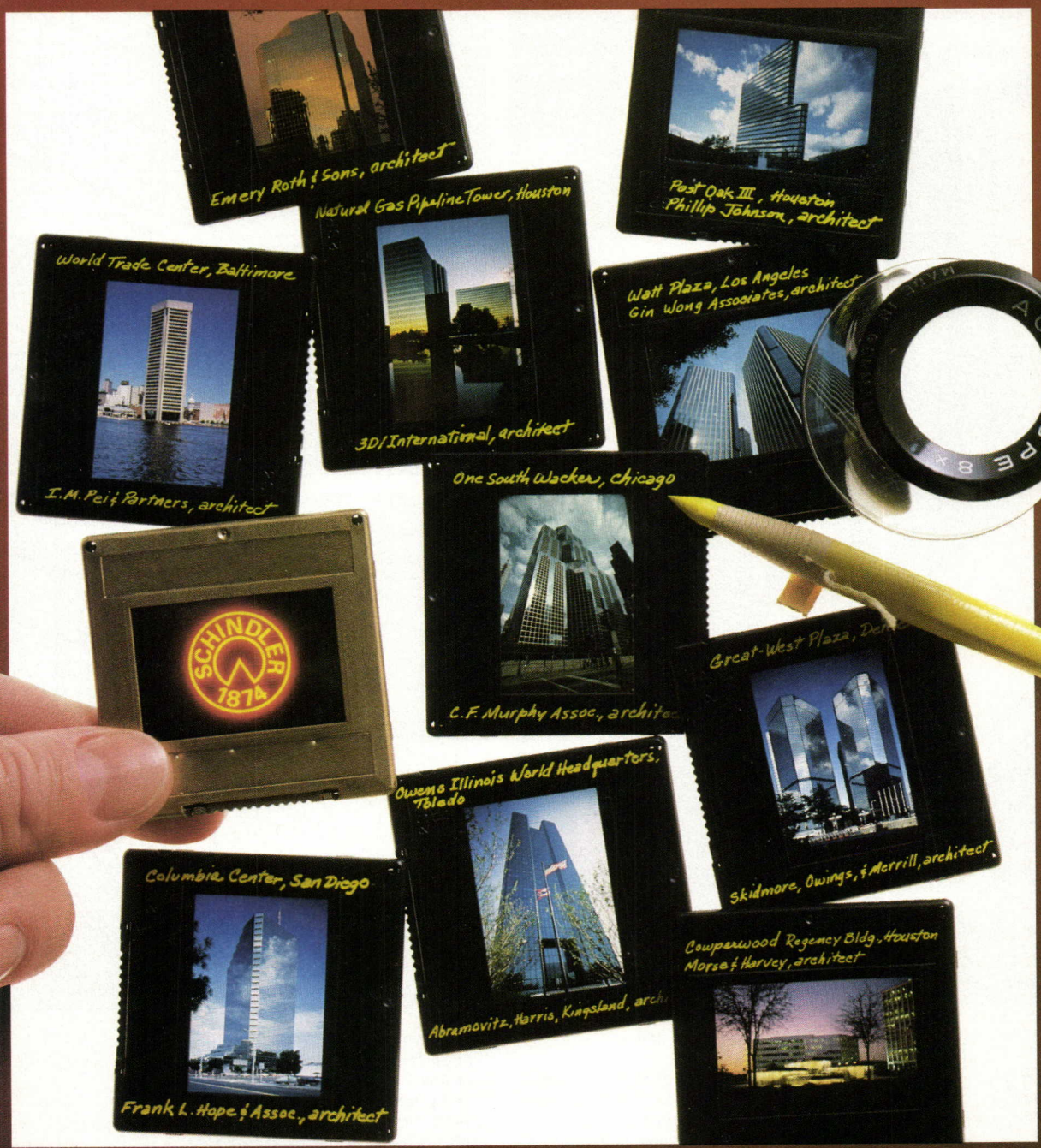
SCHINDLER ELEVATOR



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ELEVATOR CORPORATION
Toledo, Ohio 43695

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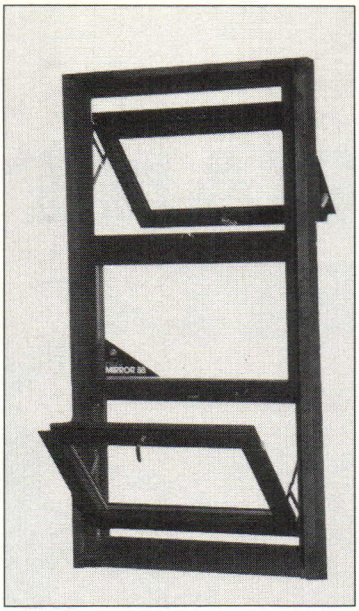
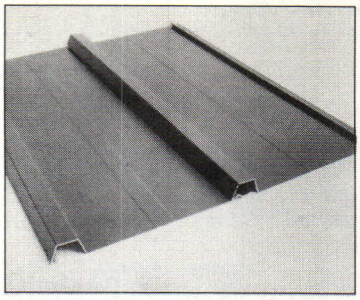
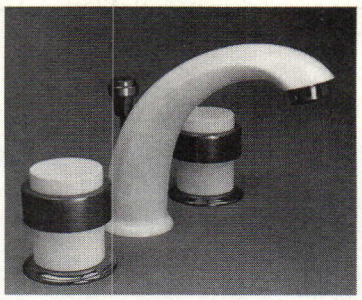


Windows
Series 600 windows with operable vents are designed to fit inside 2 1/2-in.-thick aluminum frames. The windows can be specified with any combination of awning or hopper vents and fixed panes. Glazing or insulating panels up to 2 in. thick are available. Louisiana-Pacific, Barberton, Ohio.
Circle 302 on reader service card

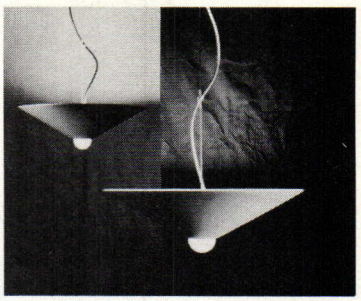
Grout
The manufacturer's new *Dense Grout*, made from a mixture of sanded Portland cement, washed quartz aggregates, and color pigments, can be used for quarry tile, brick, cement pavers, slate, and ceramic tile installation. The grout is available in 18 colors and is said to be resistant to alkalies, abrasion, and temperatures up to 500F. W. R. Bonsal Co., Charlotte, N. C.
Circle 303 on reader service card



Aluminum panels
The *Citation* line of aluminum panels with a concealed fastening system is intended for use in commercial applications, including mansard roofing, facades, fascia walls, and equipment screening. The panels are made from 0.024-gauge sheet aluminum and are 12 in. wide by 12 ft long. Reynolds Metal Co., Ashville, Ohio.
Circle 304 on reader service card



Faucets
The *Top Brass 73 Series* of sink, bathtub, shower, and bidet faucets is available with a coordinating line of towel bars or rings, hooks, and toilet-paper holders. The line comes in 11 metal finishes and three enamel colors. Harden Industries, Los Angeles.
Circle 305 on reader service card



Light fixtures
The *Mackinaw* hanging uplight is intended for lobbies, atriums, stairways, and other public areas. The fixture has a 22-in. conical shade with a glass sphere at the tip to diffuse light. The power cord spirals around a steel-cable support line. Lazin Lighting Inc., New York City.
Circle 306 on reader service card
Continued on page 185

DO ARCHITECTS WANT TO MAKE A PROFIT?

At a recent conference, Michael Hough, publisher of Professional Services Management Journal, stated that most architects don't want to make a profit. It was indicated that most design professionals, especially architects, don't feel comfortable with the idea, feel that it is unprofessional, and maybe unethical. If you have the same beliefs, then you might feel that CAD is not for you.

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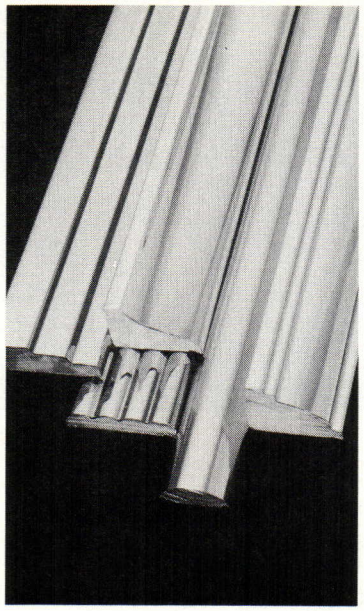
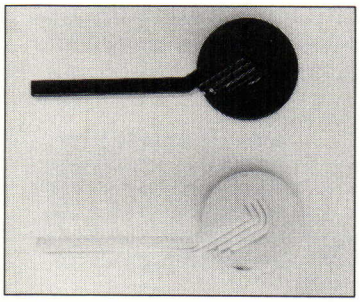
Continued from page 183

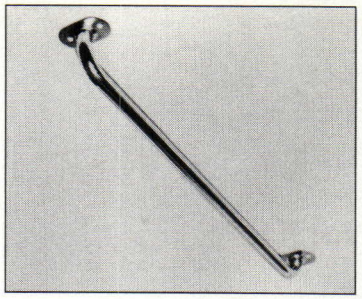


Moldings
A line of wood-core, metal-clad moldings is intended for installation along walls, across seams, and around corners and windows. The moldings are said to be lightweight and easy to install. They are available in 12 lacquer-coated finishes, including brass, copper, and chrome. CMF/Colonial, Brooklyn, N. Y.
Circle 307 on reader service card

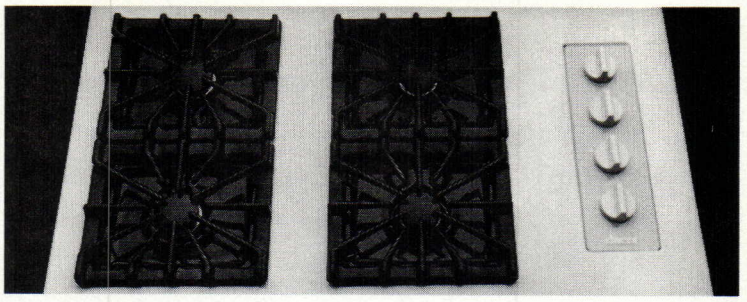


Door levers
A new line of door levers designed by a group of Italian designers that includes Ettore Sottsass, Gregotti Associati, and Gae Aulenti is now available in the United States. The lever sets, door knobs, and coat-and-hat hooks are die-cast of solid brass and are finished in brass, chrome, ebony, and a selection of colors. Fusital, Div. of Valli & Colombo (U. S. A.) Inc., Duarte, Calif.
Circle 308 on reader service card

Exit signs
BetaLux-E exit signs are self-luminous and are not tied into a building's electrical system. Each unit has a gray casing and is available in a selection of interchangeable facings. Saunders-Roe Developments, Inc., Winston-Salem, N. C.
Circle 309 on reader service card



Grab bars
The manufacturer's new line of heavy-gauge stainless steel grab bars have a finish that is said to resist corrosion. The bars are available in diameters of 5/8 to 2 in. and in lengths of 18 to 41 in. Electrolurgy, Inc., Irvine, Calif.
Circle 310 on reader service card



Cooktop
The control panel of the manufacturer's new 36-in. *Incomparable* gas cooktop is recessed flush with the cooktop surface. Other features include burner grates said to be thicker than standard grates and a burner cap intended to prevent food particles from falling below the drip pan. Dacor, Pasadena, Calif.
Circle 311 on reader service card
Continued on page 187

LOOK BEHIND THESE DOORS

You'll find much more than the opulence of New York's Rockefeller Center. Because these are Armour glass doors. Behind them stands a commitment to quality and design excellence that has made Armour an acknowledged leader in the field of architectural glass.

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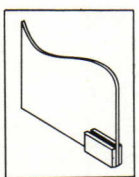
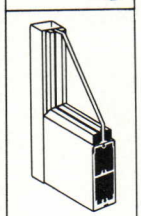
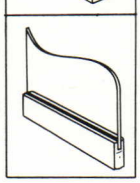


Armour All Glass Entry Systems (A.G.E.) emphasize the glass area while minimizing the door hardware for a beautiful, functional entry. And we'll custom fabricate to any design.



Armour Sentry-Vue Full-Framed Doors are handsomely finished in polished or satin stainless steel or brass, yet offer maximum protection against thieves or vandals.



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The Sea Grill Restaurant, Rockefeller Center, New York, NY.
Contractor: Collyer-Sparks, New York, NY.

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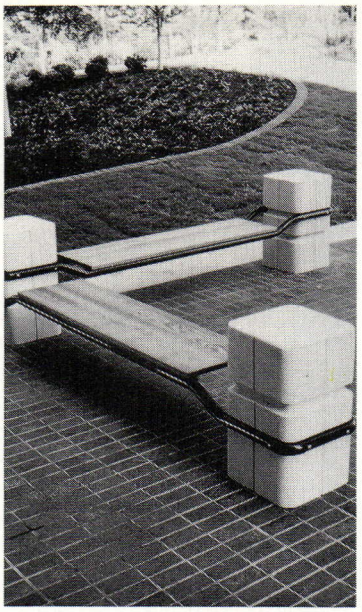
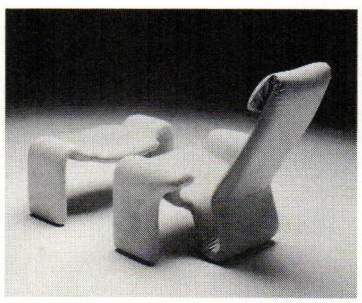
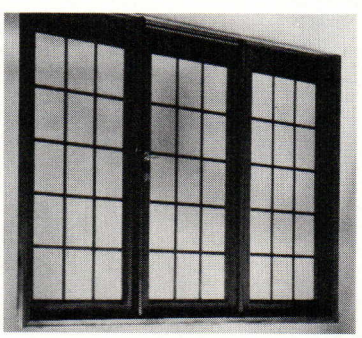
Continued from page 185



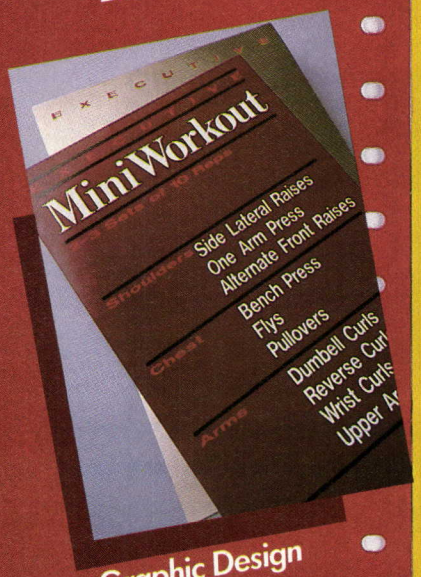
Site furniture
The *Ultrum* line of site furniture includes benches, trash receptacles, and planters. The units have powder-coated metal frames, glass-fiber-reinforced concrete bases, and wood surfaces. The benches are 72 in. long and 20 in. wide and are available in oak or redwood. Gametime, Fort Payne, Ala.
Circle 312 on reader service card



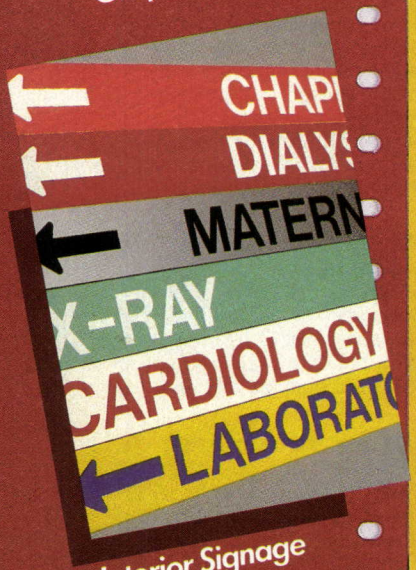
Chairs
The *Walter K. Collection* of chairs and coordinating ottomans was designed by David de Mayo. Low- or high-back chairs and lounge units with flexible backrests are available. The collection is available in leather or fabric upholstery. Brayton International Collection, High Point, N. C.
Circle 313 on reader service card



Patio door
A new center-swing three-door unit of *SwingSet* patio doors is now available. The unit has double-contact weatherstripping and adjustable sills that are said to reduce air infiltration. The door has brass hardware and is available prefinished or unfinished. Morgan Products Ltd., Oshkosh, Wis.
Circle 314 on reader service card
Continued on page 189

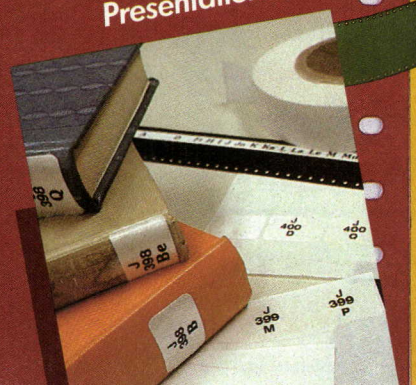


Graphic Design



Interior Signage

AudioVisual Presentations



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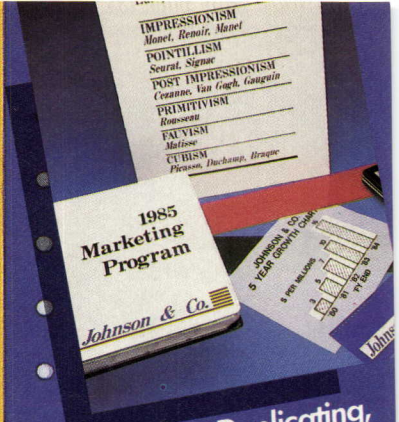
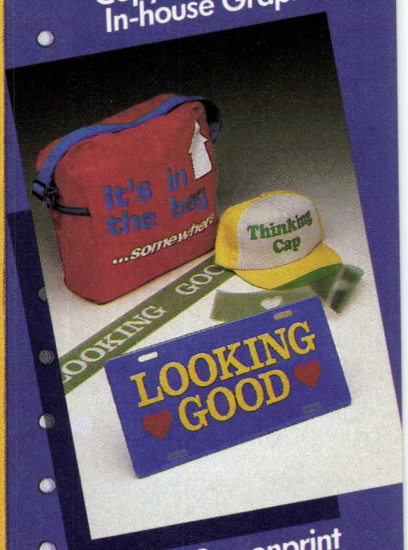
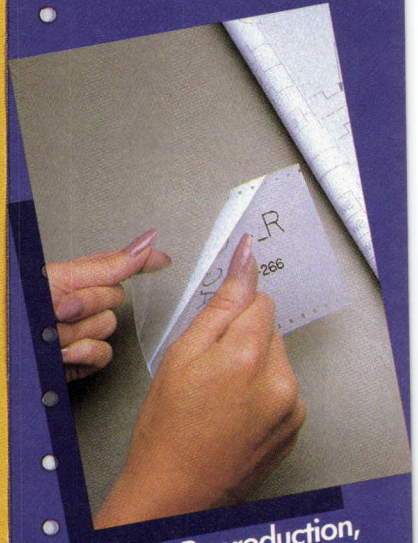


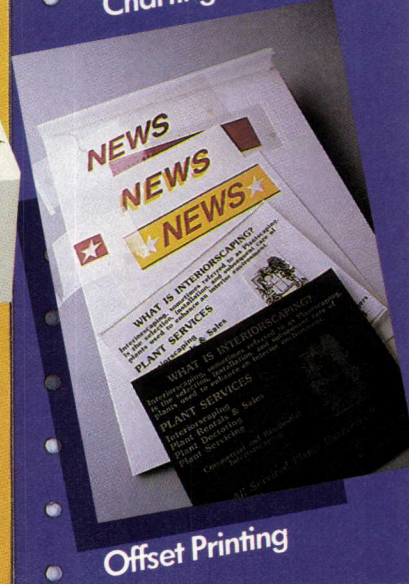
Copying, Duplicating, In-house Graphics



Stencil, Screenprint



Diazo Reproduction, Charting / Graphing



Offset Printing

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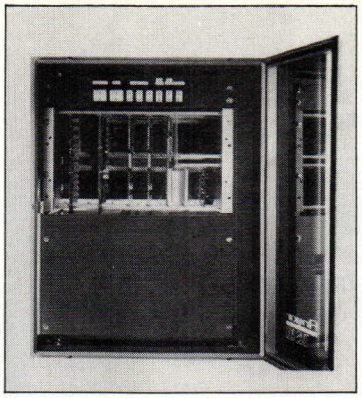
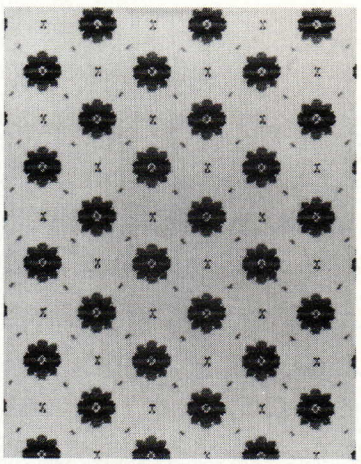


Elevator control system
The new *Traffic Master 200* elevator control system is intended for low- and mid-rise office buildings with elevators traveling from 100 to 450 ft per min. The system can be programmed to monitor elevator speeds, waiting times, and traffic patterns. Armor Elevator Co., Inc., Louisville, Ky.
Circle 315 on reader service card



Carpet
The *Snowflake* carpet is part of the manufacturer's new *Britannia Collection* of reproductions of authentic 18th- and 19th-century English rug designs. The carpet is made on a Brussels loom and is available in custom-specified colors. Stark Carpet Corp., New York City.
Circle 316 on reader service card

Work surfaces
Three different-sized work surfaces that can be mounted on the partitions of the manufacturer's *System 2Plus* open office system are now available. The table tops come in a selection of finishes, including oak and walnut. Panel Concepts, Inc., Santa Ana, Calif.
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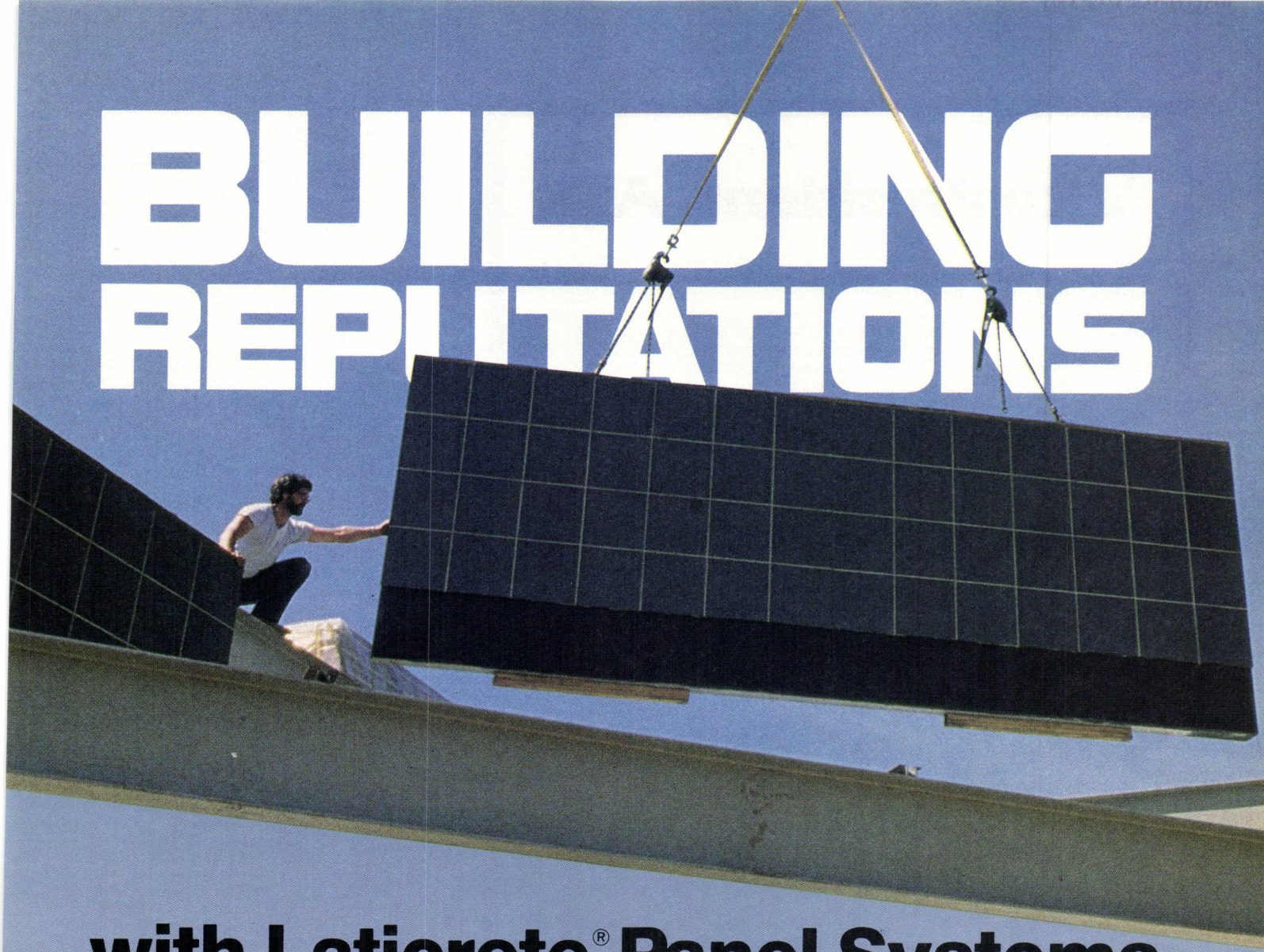

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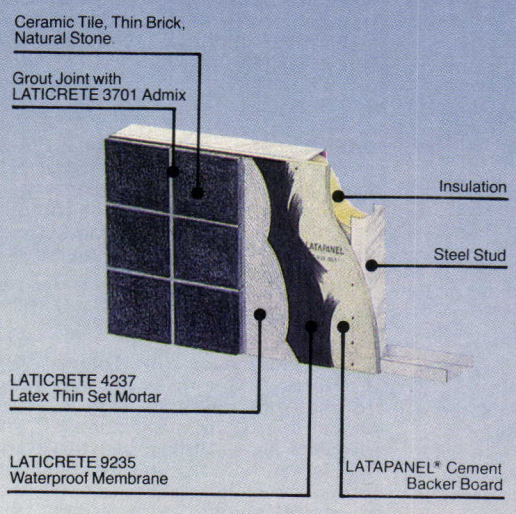

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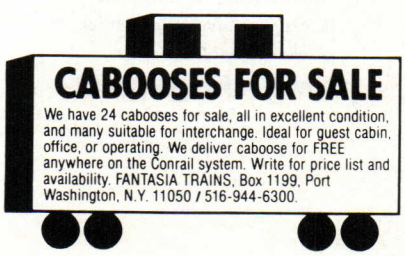

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Taggart Park Townhomes
by Arquitectonica International
Pages 120-123—Paint: Integral Color. Windows: Keller. Lights: Lightolier. Chimney: Majestic. Leaders: Smith Sheet Metal. Iron grille: M. T. Welding. Pavers: Monoceram.
Pages 124-125—Paints: Sherwin Williams. Drywall: A. I. Morin.

Pages 126-127
Mandell Residences
by Arquitectonica International
Brick: Hope (Arkansas). Windows: Non-Ferrous. Exterior doors: Imperial. Lighting: Lightolier.

Pages 128-132
Milford Townhouses
by Arquitectonica International
Pages 128-129—Stucco: Joyce's Plastering. Windows and glass doors: Keller. Paint: Glidden. Skylights: Tico. Glass block: Solaris. Spiral stairs: Stairway Inc. Downlights: Lightolier. Locksets: Schlage.
Pages 130-131—Paints: Glidden. Fireplace: Superior. Lighting: Lightolier.

Pages 134-141
Queen's Quay Terminal
by Zeidler Roberts Partnership/Architects
Pages 134-137—Windows, curtain wall: Antamex. Bay windows: Kawneer. Arcade addition: Lord & Burnham. Glazing (throughout): Canadian Glass Div., Ford. Locksets: Sargent. Globe lights: Revel Luminaires.
Pages 138-139—Entrance: Kawneer. Canopy: Hickey Plastic. Five-globe standards: John Hauser Iron Works.
Pages 140-141—Terrazzo flooring: TMT Contractors. Fountain: Crystal. Elevators and escalators: Montgomery Elevator. Panoramic elevator cab: Dahlstrom of Canada. Railing: Dundas Iron. Lighting: Revel Luminaires.

Pages 156-161
City Center Towers 1 and 2
by Paul Rudolph; 3D/International
Page 157—Curtain wall: Windowmaster. Glazing: PPG. Column cladding: Windowmaster. Setback pavers: Acme Brick.
Page 161—Stone flooring, walls and desk: Intrepid (Capao Bonito). Ceiling: National Rolling Mills/Acoustex. Light fixtures: Lightolier. Escalators and elevators: Otis.

Pages 164-165
Hercules Incorporated Headquarters
by Kohn Pedersen Fox Associates
Thermal granite facing: Cold Spring Granite Co. Curtain wall: Anaconda.

Pages 166-167
70 East 55th Street
by Kohn Pedersen Fox Associates
Granite panels: Cold Spring Granite Co.

Pages 168-169
Procter & Gamble World Headquarters
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White marble: Vermont Marble Co. Limestone: Indiana Limestone. Granite: Blakley Granite (Deer Brown).

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