

ARCHITECTURAL RECORD

Business Design Engineering
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July 1984



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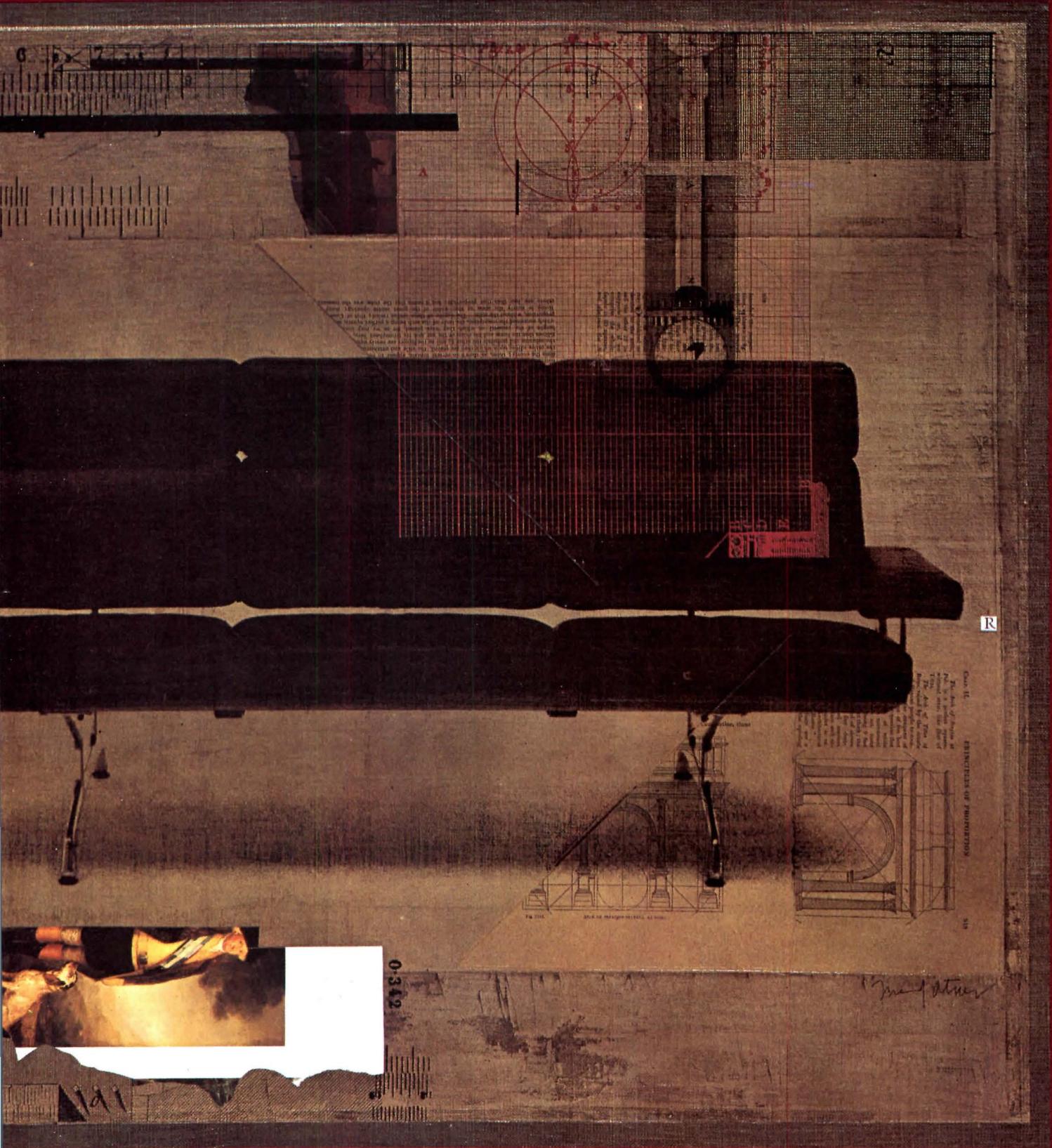
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Fred Otnes's drawing of the sofa is from *Reference Points*, a book of furniture portraits by nine artists. Other pieces in the volume have been designed by Eames, George Nelson, and Isamu Noguchi, with colors and fabrics by Clino Castelli.

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herman miller

Glory hallelujah! I never thought I'd live to see the day, but there, in the April 1984 ARCHITECTURAL RECORD [page 79], I find an architect with the audacity to show power poles and lines, and a jury with the daring to give the drawing an award.

My amazed but heartfelt congratulations to Phil Hamilton of The Brewer Firm and the Memphis Chapter of the AIA.
*Hector L. McIntyre, President
Canada Museums Construction
Corporation Inc.
Ottawa*

While reading your March 1984 issue, I wondered if anyone else had made the same mental leap I did from the hortatory words of George Notter, found in your editorial, to the inconoclastic sentiments of James Wines, found in your 12-page story on various of SITE's projects.

It amuses me to consider that while the presidents of the AIA, year after year for as long as I can remember, have been admonishing the profession "to bring the public into the process," SITE seems to have been doing it all along. And doing it much to the consternation of the profession's straightest arrows.

Before the philosophical sea changes that have recently affected the practice of architecture, I daresay the very idea of giving SITE 12 pages would have been unthinkable. As James Wines remarks, unarguably, "Everyone was very serious about everything."

May I, knowing George Notter to be a fine architect and a reasonable man, use your pages to offer him a suggestion? I say, let us be honest with ourselves and admit that exhortations by numerous past presidents of AIA to work together with the public have not made any appreciable difference in the quality of the man-made environment. So why not try something new?

Why not, for convenient example, do what SITE and certainly others do? And that is to educate the people who hire architects to expect something better than they ever dreamed possible. How else will architects show the world—and that means the public, George—how good they can be?
*William Houseman
Spring Valley, Wisconsin*

With regard to the Paz Building by SITE in your March 1984 issue [pages 138-139], I was particularly amused with the description: "The contrast of a seemingly ruinous shell and a

exterior is a vivid emblem for the reconciliation of dualities that shape Williamsburg's cultural identity: old and new, decay and rebirth, wordly and religious, parochial and ecumenical." Is this supposed to mean something?

I believe strongly that we, as architects, are charged with protecting the health, safety and welfare of the public. It would seem that the architects at SITE (as well as some of the other currently "fashionable" architects) have lost touch with these basic principles.

Visual pollution also affects the public's health and welfare, and until that is recognized by so-called designers who masquerade as professional architects, we will continue to be exposed to trash such as this. It is equally unfortunate that a usually quality professional design magazine such as ARCHITECTURAL RECORD feels compelled to promote such nonsense.

*David H. Wulff, AIA
Webster, New York*

I wish to extend my thanks for bringing us Hugh Jacobsen's details [RECORD, February and March 1984]. We seldom have an opportunity of, so to speak, looking in one another's kitchens, and I can only wish you were doing more of this kind of technical journalism. (In addition to showing pretty pictures of buildings, of course.)

However, I do have a question. Unless Mr. Jacobsen is working on a different kind of fee schedule from the rest of us, I simply don't understand how he can find the time to render his details so lavishly without going broke. Could you ask him for me?

*Martin Holub, AIA
Martin Holub Architects &
Planners
New York City*

Architect Stephen Evanusa's laudable drawings were specially made for RECORD's presentation. The fee, not inconsequential, was the cost of doing journalistic business.—Ed.

Correction

RECORD's Design awards story about the Pennsylvania Design Awards program (April 1984, page 95) should also have shown the South Side Hospital in Pittsburgh, designed by IKM/SGE, Architects and Engineers, of Pittsburgh, which won a merit award.

July 2 to August 2

America's City Halls, a survey of civic architecture, on loan from the Smithsonian Institution Traveling Exhibition Service; at Gallery at the Old Post Office, Dayton, Ohio.

July 25-27

CALICON 2, the California Contract Show, with a symposium on "The Art & Science of Interior Decoration," at the Western Merchandise Mart, 1355 Market St., San Francisco, Calif. 94103 (415/552-2311).

August 5-10

Annual conference, Illuminating Engineering Society, at the Clarion Hotel, St. Louis. For information: Ethel M. Sweeney, IES, 345 E. 47th St., New York, N.Y. 10017 (212/705-7915).

August 15-19

Annual convention, American Society of Interior Designers, in Chicago. For information: Edward Gips, Executive Director, ASID, 1430 Broadway, New York, N.Y. 10018 (212/944-9220).

August 21-24

Infrared Scanning Course, for certification in using infrared scanners to detect building energy losses and roof moisture, in Burlington, Vt.; sponsored by the Infraspection Institute. For information: Paul Grover, Director, The Infraspection Institute, Juniper Ridge, P.O. Box 2643, Shelburne, Vt. 05482 (802/985-2500).

September 1-22

Italy Inside: Interiors, Furnishings and the Fair, a tour including visits to Italian designers, houses and the Milan Furniture Fair, to be followed by Color Texture Form: Greece and the Islands, a tour of Greece, September 23 through October 6. For information: Travel By Design, 2260 Market St., San Francisco, Calif. 94114 (415/864-6604).

September 13

Seminar on waterfront development, based on case study cities chosen by American City Corp., sponsored by the Waterfront Center in cooperation with American City Corp. and George Washington University, at the Hotel Washington, Washington, D.C. For information: Ann Breen, The Waterfront Center, 1536 44th St., N.W., Washington, D.C. 20007 (202/337-0356).

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Getting started (or getting going) with computers— you've got to think about where you want to get

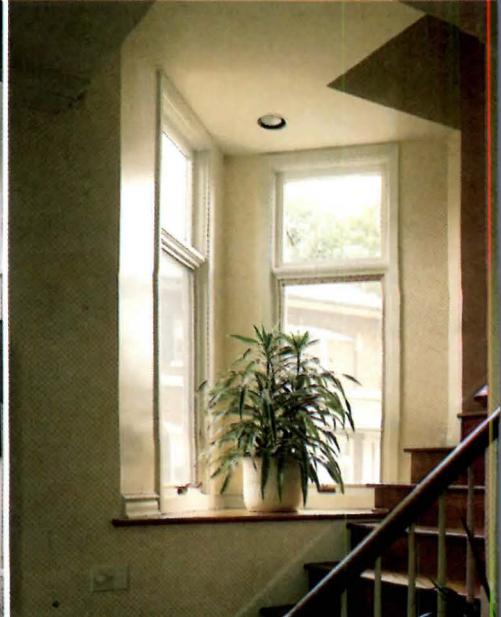
Last month, along with well over 10,000 architects and engineers, I spent some days at A/E Systems '84, by far the largest conference/exhibition on computer use and reprographics for design firms. It was awesome.

For one thing (if my count was anywhere near right), there were more than 100 corporations offering software and/or hardware systems specifically for architects, with a major emphasis on computer-aided design and drafting—all of their displays winking and blinking at you in multicolors and variously producing those fantastic wire-line drawings in three dimensions, or massing and modeling sketches, or incredibly complex, many-layered working drawings, or adjacency studies, or furniture layouts—et cetera. Then there were the less glamorous but essential systems for specification writing, cost analyses, quantity takeoffs, daylight and energy analyses, cost control and scheduling, et cetera et cetera. Not to mention the scores of displays of reprographic systems, automatic lettering systems, drafting workstation furniture, films and papers, plotters and input devices, et cetera et cetera et cetera. There were 19 "tutorials"—three-hour sessions on, for example, Introduction to Small Computers; Computer Graphics; a Primer for Architects...for Engineers...for Civil Engineers...for Interior Design and Space Planning; Advanced Small Computer Applications for Architects; Implementing and Managing an Architectural CAD System—and those tutorials were jammed at \$95 per attendee. Attendance was similarly heavy at over 60 seminars and a series of half-day and day-long conferences sponsored by various professional societies (PSMA, Facility Management Institute, American Consulting Engineers Council, Society for Marketing Professional Services, and the Maryland Society of the AIA). It was, I repeat, awesome.

I don't think it was my imagination that a lot of the attendees looked, well, stunned. If you are an architect (or engineer, or facilities manager, or interior designer) not yet into computer use, how do you sort it all out? Of all those systems so enticingly on display, how do you choose one, or even narrow down the field? Especially if you are a small firm, without a lot of money to invest, how do you decide how much money you can afford and/or need to spend—given that there are CAD systems (to pick the glamorous example) ranging in price from \$10,000 to the better part of a quarter of a million dollars?

Myself, I came away from Systems '84, if a little stunned like most of the others, with my convictions reinforced that the way to get started is simply to get started. If I were a small firm anxious about becoming computer-literate, I would start with one of the at-least-a-dozen combinations of software and personal (micro) computers that are available on the market for less than \$15,000. And just start using it. I'd soon know whether I wanted to upgrade—and had a need to upgrade. The conventional wisdom is that you should start with nongraphic systems and graduate to CAD systems—but I'm no longer sure of that since the graphic systems relate more directly to what architects do (and like to do), and since they no longer seem nearly as formidable as they did only a year ago.

And there doesn't seem to be much sense in putting it off. For one thing, as Tulsa architect Chief Boyd said at RECORD's recent Round Table on "Computer Use in the Small Architectural Firm" (RECORD, May 1984, page 39): "If anyone spends more than 90 days making a decision in the CAD area, he needs to start over, because every 90 days the situation is going to change enough that he probably needs to do a bit of reevaluation." At the Round Table, Jim Mitchell of Jordan/Mitchell, who heads a 12-person firm and is head of the National AIA Task Force on Computer Use, stressed a most sensible point: "You must be able to run a successful firm without the machine before you can be successful with it. It's not going to do your marketing for you. It's not going to make basic decisions about what kinds of buildings you want to build. It's not going to do anything that's the guts of architecture for you. But getting a computer in the office can really help." It seems, as you might have learned at Systems '84, or from reading RECORD's May Round Table, or from making, in fact, very modest efforts to find out what computers can do for you, that they really can help. One more time: The way to get started is simply to get started. *W. W.*



New program seeks to humanize the automated workplace

The Chicago Regional Chapter of the Institute of Business Designers has adopted a community outreach program called PROBE to emphasize the human element in today's increasingly automated workplace.

"So much has been said and done towards automating today's business environment," notes chapter president Rosemary Corriere, "but what we have not yet tackled is how the business and its employees live with computers once they are brought on board."

"We hope to deal with issues like insuring correct wiring and placement of the machines, planning for their future updating and maintaining the comfort and sanity of those people who use them," Corriere added.

Engineering excellence awards given

The American Consulting Engineers Council has announced its 1984 awards. The "Grand Conceptor" award goes to Greiner Engineering Sciences for widening and deck replacement on the Woodrow Wilson Memorial Bridge in Washington, D.C. The Council cited the ability to use the bridge during construction and the cost, which came in \$6 million under budget. Six "Grand Awards" and 11 honor awards were also given from among 102 entries. Cited projects ranged from a nuclear fusion test reactor to a remote Alaskan salmon hatchery. For a list of all 1984 winners, contact Engineering Excellence Coordinator Andrea Heid at American Consulting Engineers Council, 1015 Fifteenth Street, NW, Washington, D.C. 20005 (202/347-7474).

Design studies of compact housing available

The program is intended as an umbrella under which the association will focus on a variety of individual projects. The initial projects will include:

- A speakers' bureau to assist organizations in having a full understanding of how to most effectively integrate the computer into their offices;
- An ongoing internal program of training in computers for business as well as computer-assisted design, and;
- Coordination and approval of furniture for business—with special attention to ergonomic problems—with the furniture manufacturers' associations.
- Working with high-school students to develop an understanding of space design in the workplace.

For more information, contact Gail Cowan, 312/337-7400.

Desire for downtown housing studied

According to the American Planning Association, a study of six medium-size American cities reveals that the desire to live in center cities is growing nationwide, particularly among people in their mid-forties to fifties and where new downtown jobs are appearing as a result of new development. Specific questions on the quality of such housing to residents of Milwaukee and Grand Rapids produced preferences for townhouse units and quality rather than quantity of space. Fifty-three and 40 per cent respectively of the respondents in these cities expressed an interest in living downtown.

A new book published by HUD, *Designing Affordable Houses* by Steven Winter Associates, studies a wide range of plan options derived from component relationships of bedrooms, baths, living rooms, kitchens, etc. This and an earlier book, *Cost Effective/Energy Conserving Homes* are available from HUD USER, P.O. Box 280, Germantown, Md. 20874.

Commercial and industrial construction up, home building and public works down

Contracting for new construction reached a new high during 1984's opening quarter, but lost some of its momentum in March, it was reported at the beginning of May by the F.W. Dodge Division of McGraw-Hill Information Systems Company. The March reversal, a seasonally adjusted setback of four per cent, was due to declines in home-building and public-works construction that were only partly offset by a solid gain in commercial and industrial building.

March construction contracts totaled \$17.6 billion, bringing the seasonally adjusted Dodge Index of construction contract value down to 144 after two prior months at 150 against a 1977 value of 100, according to George A. Christie, vice president and chief economist for Dodge. Christie said, "Rising interest rates are likely to dampen home building in 1984's second half, but we're looking for a strong volume of nonresidential building throughout the balance of the year."

Contracts for residential building totaled \$8.8 billion in March, as the housing market showed a seasonally adjusted decline of seven per cent. According to Christie, "Multifamily building has been the source of most of the recent volatility in housing starts, and was the reason for March's decline. By contrast," said Christie, "single-family starts have been holding steady at just over a million units ever since interest rates leveled off early in 1983. Now that rates are rising again, this will be the part of the housing market to watch."

March contracts for nonresidential building totaled \$5.8 billion. After adjustment for seasonality, the latest month's newly started commercial, industrial and institutional building activity advanced eight per cent from February's rate.

In March, a strong gain in contracting for stores and warehouses paced the month's 11 per cent increase in commercial and industrial building while institutional building (schools, hospitals, etc.) remained unchanged.

"The closely watched office building market gave no indication in March that its collapse was imminent," Christie pointed out. Newly started office projects in 1984's first quarter were holding very close to last year's high volume. "In 1983, the office boom moved out of the Southwest and spread to the rest of the country. This is where the office action still is in 1984."

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Management: Gauge your office space to your needs

A leasing consultant explains how to anticipate and, when necessary, negotiate leases

By Paul Suzman

In consulting with and representing architectural and engineering firms, I am struck by the diversity of their respective space requirements and by the fact that there is no typical design office.

Such offices can range from many thousands of square feet in a new structure to a few in an historic building. Some designers are diversifying into subdisciplines and wish their divisions to be as autonomous as possible—often in separate locations. Other firms are reversing this trend and consolidating their operations under one roof.

Architects and space planners should be *more* aware than other professions of the importance of forward planning and programming. I describe forward planning as “a realistic anticipation of the inevitable.”

Of the factors listed below, architects generally place a very high priority on appearance—perhaps, because more than with other professionals, an architect’s environment is often a reflection of what and how he does things. But the esthetic, because of its subjectivity, is the most difficult of the factors to define and evaluate, so at the start of a search process it is wise not to allow it to hobble the initial review process. Keep an open mind.

There are six basic factors to consider when reviewing space needs

These are quantity/quality, appearance, location, cost, timing and availability. Let’s discuss *timing* because of its importance. Whether one is a 3,000- or 30,000-square-foot space user, timing is of prime consideration, assuming new or additional space will be needed. Will the space your firm wants be available at the time it needs it?

The following considerations should govern the decisions of every architectural firm that is growing:

- How fast is the firm growing?
- How much growth does it expect in the next five to 10 years?
- Can the present lease accommodate the firm’s present expansion-space needs?
- Is there the option of contiguous office space?

It is not easy to determine all of the above accurately, for long-range planning is not an exact science. The first question, in fact, is “What is long range?” I have been startled by the number of highly professional seasoned executives who approach their

building owner or manager six months before expiration of a lease to find out what the renewal rate will be.

A lease for 15,000 square feet for five years at \$13.33 per square foot totals \$100,000. Very few people or companies will buy even a \$10,000 automobile without shopping the market.

You must know what your choices are! If you do not have the time, retain a specialist in this field to educate you. Depending on your size, do this at least a year to 18 months before lease expiration. Negotiations done under the pressure of *having* to find space or *having* to move will never be as effective as those done at your own pace. After determining space needs, there are four basic viable courses of action. You can:

1. Stay where you are and expand.
2. Move to another building as a tenant.
3. Buy a building and remodel, if necessary.
4. Buy a piece of land and develop a building.

We are dealing with leasing in this article so I shall not dwell on the last two choices

To explore the first two:

- Staying where you are can be best and certainly the least costly. Moving is an expensive process, so if your present location is suitable geographically, spatially, esthetically and economically, see if you can negotiate a lease renewal.

Do your homework *before* the negotiation—know all the other buildings that might accommodate you, their lease rates, tenant improvement packages, load factors (difference between net-useable and net-rentable square footage on which you are billed) and, in most locations, parking rates and availability. With this information you can effectively evaluate the cost of staying where you are.

- Moving to another building as a tenant is your alternative if your landlord cannot renew your lease or you do not wish to renew it. In some cases your landlord has to accommodate the expansion of a larger tenant in the building—in which case he might even assist in your move. In choosing an alternative building, again, be aware of all your choices. Give yourself plenty of time. Most building owners will provide an accurate estimate of how many square feet you will need in their building, as some buildings are more efficient.

When we look at space in a building, what are we actually looking at?

Factors to be considered in addition to cost are the existence of neighborhood amenities, availability of transportation and parking, as well as specific factors such as the quality of management and maintenance, mechanical systems (heating, ventilation and air conditioning, elevators, and fire- and life-safety systems), and the ratio of public areas to rentable space. Bearing in mind how all these factors affect a final decision, examine the more important aspects:

- *Net rentable space* (square feet) is the area on which a tenant will pay rent. This is not the same as “usable area,” which designates the total area minus space used for heating, ventilation and air-conditioning systems, corridors, elevator lobbies and restrooms. On a multi-tenant floor one should be quite clear as to the proportion of common facilities, such as corridors, one is actually being billed for. Multistory buildings generally have an eight per cent to 12 per cent load factor.

- *Management and maintenance* are difficult to size up in a new project—especially if it is still under construction. The way in which an existing building is currently maintained should give one a good idea about the quality of management one can expect as a tenant. For buildings under construction, visit other projects maintained by your prospective landlord. Ask tenants whether they are satisfied.

- *Stairwells and other life-safety facilities* should be well-lit and easily accessible. Access should be well marked and maintained. One should know where stairs lead to, both up and down, and whether they are pressurized. Find out whether stairwell doors are locked and where fire alarms are located.

- *Security* can mean benefits and hindrances: How do you gain access after hours or on a weekend? What procedures does the management have for dealing with power outages, bomb threats, etc., as well as fire-related emergencies. Are the parking areas well secured?

- *Heating, ventilation and air conditioning* should be checked for age. Learn about operating costs, as many leases will have an escalation clause based, in part, on these costs. The efficiency of a building will affect your pocket directly. One should know the scheduled operating hours and whether it is possible

to have air conditioning in a particular zone after-hours or weekends. With increasing computer use, can the system cope with the heat load of additional or future CADs, CRTs, etc.?

- *Neighborhood amenities* such as transportation, parking and shopping all affect the value of the space you are looking at.

- *Parking* is usually allotted on the basis of how many square feet you are leasing. Neighborhood parking lots are leased on a monthly basis, and with the present pace of development, cannot be relied upon in the long term.

- *Elevators* in an existing building can be checked by asking tenants if they are satisfied. Time lost waiting for the elevator is money out of your pocket.

- Appearance of the building is important because if the leases are carefully thought out and negotiated, it should be your home for the next 10 to 20 years.

In the search, negotiation and closing you can get help from consultants

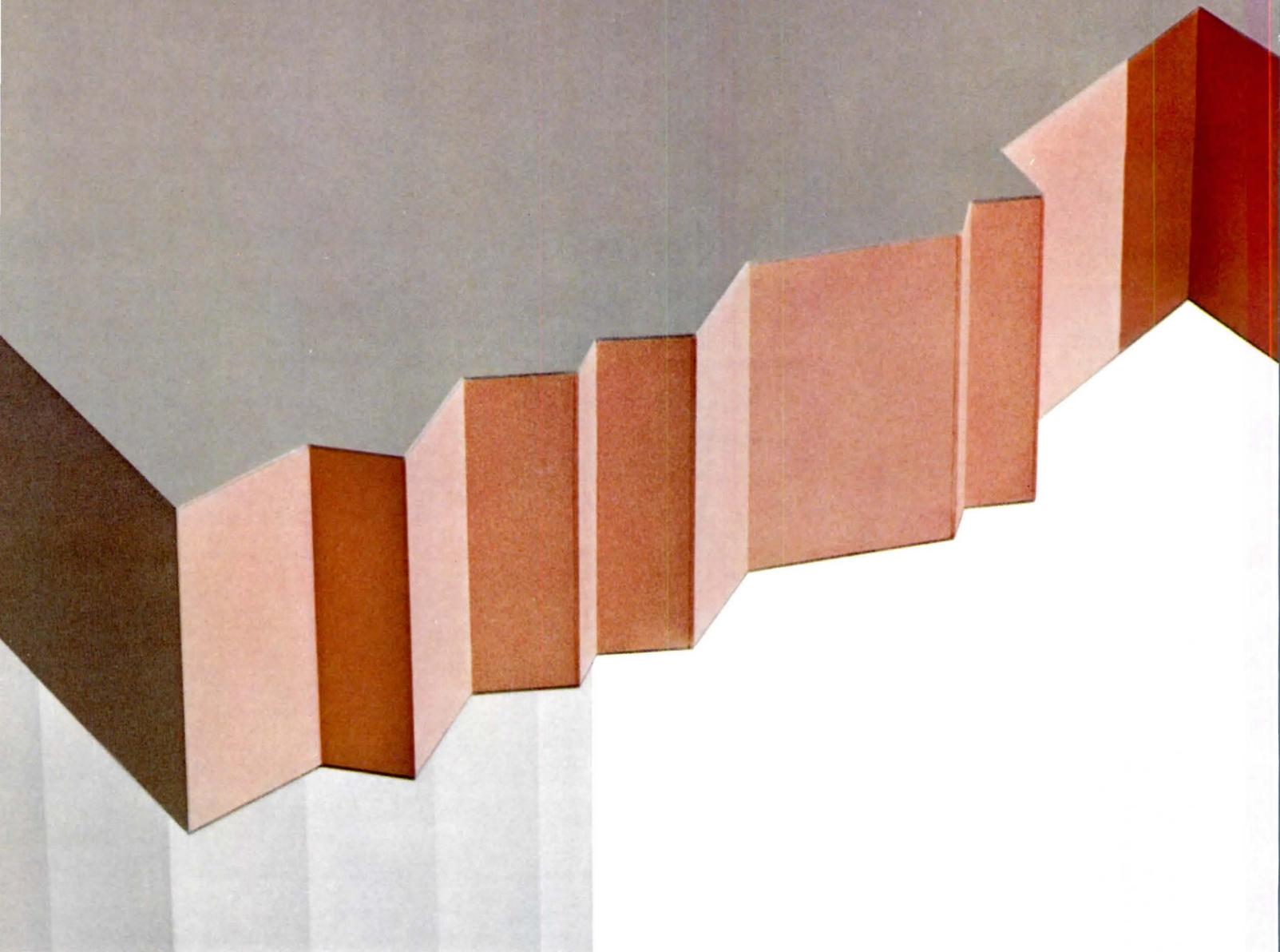
Identification of all the suitable buildings and spaces and the collating of the information pertaining to them is time-consuming. One has the choice of doing it all oneself or retaining the appropriate professional. Choosing such a firm is similar to choosing an architect. Always check out references, be aware of alternatives and make sure you feel comfortable with the individual you’ll be working with.

Maintaining a healthy distance from the initial basic investigative work can strengthen negotiating stance when the time comes for a potential tenant to meet with a developer. Representation by the appropriate professional will enhance the firm’s ability to manipulate the available options to its best advantage. It’s simply a matter of turning a complicated, time-consuming and potentially expensive foray into a strange world over to a person who deals with the matter on a daily basis.

Mr. Suzman is managing director of Business Space Resources located in Seattle. The firm helps identify and locate suitable offices for all kinds of businesses throughout the country.

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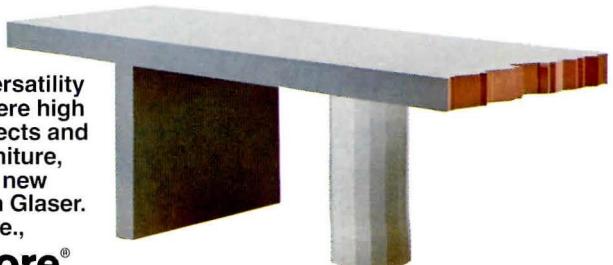
"Broken Length" Designers: Massimo and Lella Vignelli, 1983.

One side of the Vignelli's table is rooted in modernism. The other side is steeped in classicism with its ornamental column that supports the tabletop's fragmented edge. In short, a somewhat surreal concept that sets up a tension between the past and present. Something that could only have been executed in COLORCORE® brand surfacing material. In this piece, COLORCORE is used to create a quality of stone. The Vignellis emphasized the monolithic characteristic of COLORCORE as well as its technical capability. The seamless edge finish of COLORCORE is an essential aspect of the design.

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In this second of a series, a survey reports on the next steps of being selected after making it into companies' credential files

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

When a specific project is to be awarded to a professional firm, forming the short list may be assigned to the client's project manager; it may be handled as an administrative staff function; or in the case of a large, high-visibility assignment, may be handled by the facilities director himself. At this point, "The File," being the collection of architects' credentials that almost all companies keep, discussed in the first part of this article (see RECORD, June 1984, page 45), will be augmented in several ways.

The facilities staff may have recommendations drawn from their contacts in the professions and past experience. Similarly, their counterparts in other companies in the industry may be asked for suggestions, especially if they have had recent experience with the specialized project type at hand. The operating groups may have a larger voice when local conditions or operating considerations are of special concern.

Do corporate executives influence the selection?

Yes, but...

"You have to remember that the chairman of the board and I both work for the same company and report to the same shareholders," says one interviewee. "We both accept this as a central fact of our careers. Sure, I'll talk to an executive's brother-in-law and his golfing buddy. I occasionally get a letter from above. But it has clues for how to handle it. And it is eventually going to get formalized in our process. No one who isn't qualified, by our terms, is going to be selected." Another respondent was more succinct: "Sure, it can open a door that is already gaping wide. We'll take any referral or suggestion that is consistent with the mission of the company." One architect we talked to said: "You might win a job that way. But you can't build a firm that way, not in corporate work."

The visibility and quality of current work can be a large influence on selection

Three inventive approaches were used to identify candidates recently. Undertaking a large and unique research-center project, one corporation formed a team to cull a four-year collection of professional journals, including

ARCHITECTURAL RECORD, for likely candidates. They eventually awarded the project to an up-and-coming firm they had never

heard of before. In another selection, for a corporate headquarters, the facilities vice president toured the city where the company was relocating and got recommendations from the owners of buildings that captured his interest. A third respondent periodically visits projects under construction in his industry. The architect whose name is on the sign may end up in his file as a result.

There is no better calling card than quality work. And, to be certain, most short lists are headed by firms that have served the client well in the past. In a few instances, the company rarely goes to firms other than those that respond to their methods and standards.

At the same time, one director noted that he liked to introduce new firms periodically: "They are motivated, they keep us fresh, and going to them keeps our other consultants from becoming complacent. The list of firms asking for work is longer than the list of firms that get it. We don't want to abuse that, but we do take advantage of it."

Other criteria for the short list are fairly predictable, but their priority may not be
Geography is of great importance. Certainly, a firm's proximity helps it to be familiar with the project location, but other aspects of a client company's philosophy may influence this consideration. Proximity to the user versus the corporate facilities staff can affect which has greater influence over the project. In one instance, firms located near the corporation's headquarters are routinely engaged so that the operating group cannot hardly inflate the program, and therefore the budget, or significantly deviate from corporate standards. Another company analyzes its internal travel costs for both the operating and facilities staffs in addition to the design firm's reimbursables. They will rarely consider a firm whose address would introduce a third location.

Firm size is another "instant qualifier." A firm that is too small may not have the depth to proceed in the face of staff attrition, or the onset of significant additional work, or heavy demands for service. On the other hand: "Unless you need some very sophisticated specialties, the really big guys won't give you the attention," says one interviewee. "Our big job is starved by somebody else's bigger job. We want control, and

we want attention. We want our project to be the most important job in the place."

The candidate firm's experience is usually measured by past work in the project type. Most respondents were receptive to "comparable experience," of similar complexity and levels of technology. However, two factors can render "comparable experience" irrelevant:

First is the reasoning in the quote: "Our recommendation must be sold up the chain of command, and that means proven experience." The quote suggests that a firm cannot reach very far in extending the credibility of its past work by means of related construction. More pointedly, one facilities director simply advised: "The direct experience is always available, so the odds are always in my favor. Besides, I'm not a gambler, especially when it isn't necessary."

Finally, human chemistry will be a factor. The personal contact a company has with a firm sets expectations for the future working relationship and the design professional's ability to respond to the company's attitudes and requirements. These factors will become increasingly important as the selection process unfolds, and it is only reasonable to acknowledge them as the list is developed.

It does not hurt to push, if it's not too hard a sell

As many as 40 or 50 firms may be considered to create a list of three to 10 firms for final consideration before a request for a proposal or interview is issued. Of course, there is no shortage of firms expressing interest in a specific project during this initial screening process, and this expression by a firm can have some bearing on its inclusion in the short list.

But almost every facilities director interviewed greeted this subject with amusement: "Architects call me about projects I never heard of; the rumor mill grinds faster than our paper mill," was one comment.

Professional and social contacts with the operating groups, real-estate brokers and developers, and the corporation's own publications are the most common sources of intelligence for upcoming projects. There are indications that if a project is so immediate it has become public knowledge, it may be too late for consideration if a design firm has

not already been prequalified. "We don't like to have to react to a firm overnight," said one facilities administrator. "We want to have time to evaluate it and get acquainted with its work and its operations." Another comment, offered with some exasperation: "I understand that firms need to keep the boards busy and that our company is a desirable client, but they are often not discriminating. They approach us for work without any reasonable experience for the project."

Once the contact is made, it requires renewing and nourishment

The final determination of the short list and the beginning of direct discussions about the project signals an important difference between the large corporate client and other owners. The corporate short list is for this single project. There will be another list, next week, next month, in the third quarter, after this acquisition, as a result of that merger.

This aspect of enduring relationships in the corporate sector was dramatized by a director recalling a new product announced as a joint venture between his company and another multinational: "The phone started ringing with inquiries about the manufacturing facility for the program. In the end, my company sold an existing plant to the joint venture, which in turn commissioned a renovation. Sometimes we develop new projects; other times we create new clients."

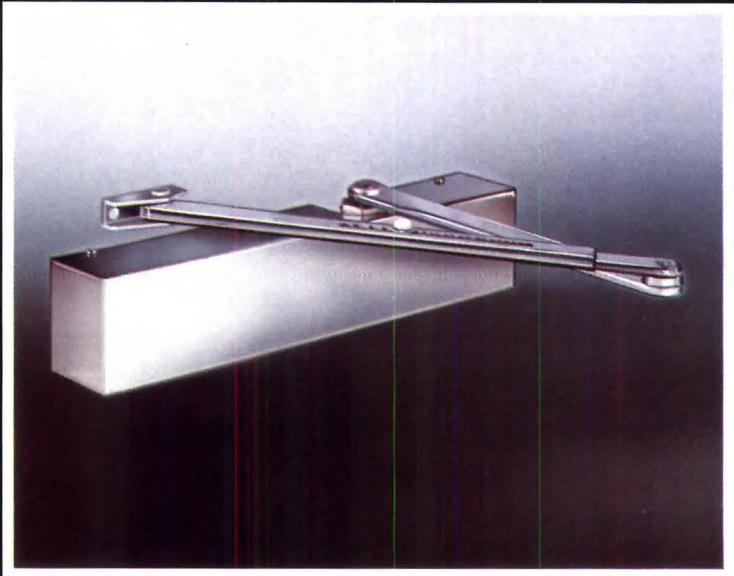
The door of the corporate client is "gaping wide." The preferred approach and the screening criteria are abundantly clear. It is also obvious that it is a buyer's market, controlled largely by experienced professionals whose broader concerns need exploration.

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The next part of this series will develop the detailed process of how professional firms are evaluated and selected for individual projects.

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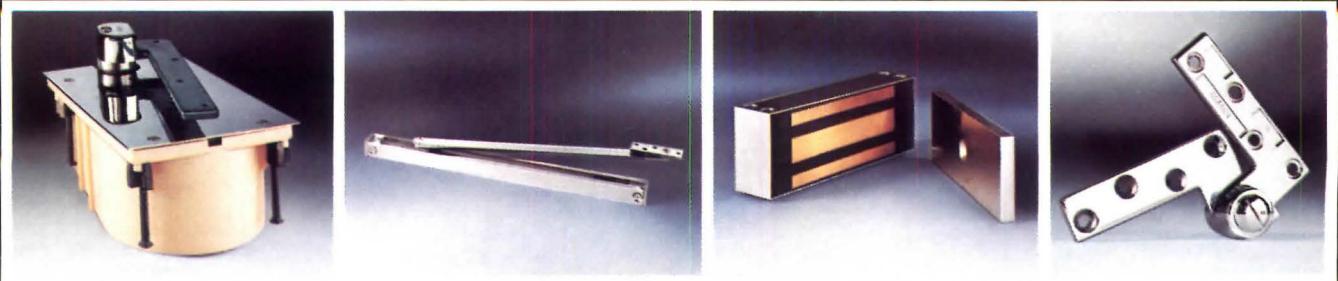
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The profitable professional: A performance bond primer

While many architects are familiar with performance bonds, every architect should be

By Barry B. LePatner, Esq. and Ronald B. Feingold, Esq.

Design professionals retained by owners often face the problem of a contractor who defaults and abandons a project before completion of construction. The hiring of a new contractor in the middle of a construction project usually results in extra costs to the owner.

Unfortunately, owners tend to see the architect or designer as the one responsible for the contractor's default, and often commence lawsuits naming as defendants the architects as well as the defaulting contractor. In such lawsuits, owners seek recovery of damages sustained by virtue of the project's delay and the extra construction costs.

Since the architect generally recommends to the owner those contractors who appear on the bid list, and often gratuitously inquires into the financial resources of the contractors on that list, the owner believes that the design professional should bear responsibility in the event of a contractor default.

The architect should not be hit by a lawsuit for reasons that are beyond his control
The contractor's financial standing may have taken a turn for the worse since the architect's earlier investigation. And the design professional is not paid to keep abreast of the financial operations of the contractor.

Prior to bidding and the award of the contract, it is recommended that the design professional discuss with his owner-client the advisability of obtaining a performance bond from a prospective contractor. A performance bond is a contract indemnifying the owner against loss resulting from the failure of the contractor to perform the construction contract in accordance with the plans and specifications. It is the instrument by which a surety company (the guarantor) guarantees to the owner of a construction project (the obligee) that the contractor to whom a construction contract has been awarded (the principal) will complete the job.

In essence, the performance bond tells the owner that if the contractor should default and abandon the project, the surety company that issues the bond will either (1) complete the project, (2) obtain another contractor to complete the project, or (3) pay the owner for the cost of completion.

It is recommended that design professionals send a letter advising consideration of a

performance bond on all projects involving construction costs in excess of \$100,000. The General Conditions to the Construction Contract recommended by the American Institute of Architects (AIA form A201/CM) at Article 7.5, provides that the owner may require the contractor to furnish a performance bond.

While the performance bond is solely for the use of the owner and the owner's responsibility, the architect will benefit since he will be assured that the project will be completed at no extra cost to the owner.

The liability of the surety is the cost of completion in excess of the contract price
Such excess cost must have been incurred for the purpose of completing the work under the original contract. The obligee on a contractor's performance bond (the owner) has a duty to minimize the damages to the surety as much as possible when a contractor defaults. Thus, if the surety declines to complete the contract after the contractor defaults, the obligee in awarding the contract is under a duty to obtain the lowest price possible.

Interest is allowable against a surety guaranteeing the performance of a construction contract, since interest is treated as damages for failure to pay promptly upon the receipt of notice of the completion of the contract.

The premium is basically a fee for prequalifying the contractor

The premium charged is a percentage of the amount of the contract. The premiums generally cost less than one per cent depending on the size of the contract and the type of construction involved. The larger the contract size, the smaller the percentage. In theory, no losses should be paid by sureties, because the contractors for whom bonds have been executed have been prequalified and found fully capable of completing their contracts. In fact, surety-bond rates do not contemplate losses or contractor defaults. The fee is a service charge for contractor prequalification services, plus the lending of surety credit to the contractor.

A performance bond is not available to all contractors. Initial inquiry should be made of a contractor as to whether he is "bondable." Generally, a contractor must start out in business performing work on which bonds are not required until a record has been

established of several successfully completed jobs.

Before a surety will issue performance bonds to a contractor, the contractor must be able to convince the surety that he is qualified.

- **Character.** Does the contractor's past over-all record indicate good character and responsibility in fulfilling all obligations and contracts?

- **Capacity.** Does the contractor have the skills, experience, knowledge and equipment essential to perform the work in question?

- **Capital.** Does the contractor have the necessary cash, or assured access to the necessary cash, to finance the projects?

The contractor must demonstrate to the surety that he is qualified in all three respects to perform the job successfully. He should contact an experienced bonding agent who knows what information is needed in order to submit a bonding case to a surety. The agent must determine which of the surety companies that he represents is the most likely market for the bond being applied for, considering the size of the contract, the type of construction involved, the geographic location and the size and experience of the contractor. The agent will need to know what type and size of construction the contractor has previously performed; what other jobs he now has on hand and uncompleted, whether bonded or not; what his future development plans are; and his detailed financial condition.

After the agent is satisfied that the contractor is qualified for the project, he submits a detailed description of the case to the surety company.

The information for submission to a surety includes: details relative to the contractor's finances; the names of the officers and principal owners of the construction company along with their construction experience; the amount of construction the company has performed, including the type and size of the projects and the location of previous projects; the nature of the job the contractor wants to bid on at this time, including the type of construction, the size of project(s), and the number of projects to be under way concurrently; the kind of reputation the contractor has with suppliers, subcontractors, architects and other contractors and owners for whom he has performed work; and his past

credit or payment record to suppliers and subcontractors.

Most bonding agents and surety companies require the contractor's last three years' fiscal year-end financial statements, including balance sheets and profit-and-loss statements. Detailed financial statements will be required for the length of time the contractor has been in business if for less than three years.

An architect should encourage the owner to carefully review a performance bond's terms

The right to call on the surety to complete construction may be filled with technicalities. Most bonds require that the contractor first be held formally in default. There can be substantial battles between the contractor and owner over the propriety of the termination. Most surety companies will support the contractor in these fights. In addition, before the owner can go out and complete the work himself, many bonds require the owner to give the surety the option to complete construction.

The bond usually contains a provision requiring the commencement of action under it within a prescribed period of time. It is important that the action be instituted within the bond's limit.

As may often be the case, owners may choose not to seek the protection of a performance bond or desire to incur the additional cost of requiring one. If the owner then seeks to place the responsibility for ensuring the financial integrity of the contractor upon the architect, all of his precautions noted above should protect him. The risk of not advising the client to require such a bond far exceeds the time it takes to educate your client and potentially avoid a lawsuit.

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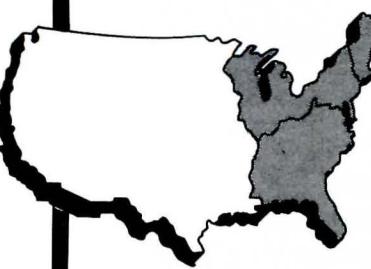
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Summary of Building Construction Costs



Districts Eastern U.S.				
	Number of metro areas	10/83 to 1/84	1/83 to 1/84	1977* to 1/84
Metro NY-NJ	18	1.65	5.25	1606.03
New England States.....	33	0.89	4.43	1568.06
Northeastern and North Central States.....	120	0.76	2.26	1592.62
Southeastern States	106	1.57	3.28	1648.47
Average Eastern U.S.	277	1.14	3.11	1611.94



Western U.S.				
	Number of metro areas	10/83 to 1/84	1/83 to 1/84	1977* to 1/84
Mississippi River and West Central States.....	122	0.81	3.73	1609.48
Pacific Coast and Rocky Mountain States.....	106	0.59	3.78	1700.78
Average Western U.S.	228	0.71	3.76	1651.93

United States: Average.....	505	0.94	3.40	1630.00
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* Using only cities with base year of 1977

The balance between the first-quarter strong residential construction market and the slow commercial-industrial construction market continued to keep over-all construction costs in check. Based on a survey by the McGraw-Hill Cost Information Systems division for the period January through March 1984, the following cost trends were noted: concrete was stable; block was up 3.4 per cent; lumber up 3.8 per cent; gypsum board up 5 per cent; asphalt shingles down 1 per cent; steel and reinforcing steel stable; copper pipe down 3 per cent.

Some spot shortages of construction materials still exist; however, supply and demand balance is coming into play, and this should be reflected in overall moderate increases in the first half of 1984. Steel products continue to experience pressure from imports resulting in the stable first-quarter prices.

Labor wage changes in the first quarter of 1984 were only fractionally higher reflecting the timing of labor-contract negotiations. With most 1983 labor contracts negotiated on a one-year basis and new contracts scheduled for the second and third quarters of 1984, labor rate increases can be anticipated to be somewhat higher than experienced in 1983 due to improving conditions in the construction industry.

Analysis of project starts, labor and material costs and the mix between housing and commercial construction reveals a current state of stability rather

than expansion in the building industry. Upward changes in interest rates could have a dampening effect and delay 1984 expansion of commercial construction, which had not, by March, been reflected in the residential construction momentum.

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

Historical Building Costs Indexes

Metropolitan area	Average of all Nonresidential Building Types, 21 Cities										1977 average for each city = 1000.0			
	1977	1978	1979	1980	1981	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1984 1st
Atlanta	1171.5	1712.6	1925.6	2098.6	2078.0	2208.8	2212.2	2302.0	2360.6	2503.5	2421.4	2478.5	2456.7	2506.6
Baltimore	1018.4	1107.7	1304.5	1446.5	1544.9	1567.8	1603.3	1615.9	1639.5	1683.8	1702.4	1705.0	1689.7	1673.3
Birmingham	1029.7	1142.4	1329.9	1407.2	1469.9	1502.5	1490.1	1478.2	1468.1	1491.0	1518.9	1540.0	1535.7	1570.6
Boston	1028.4	0998.6	1236.0	1283.7	1432.5	1463.5	1508.3	1495.3	1502.0	1553.7	1547.7	1557.1	1569.9	1607.1
Chicago	1007.7	1032.8	1199.7	1323.6	1344.7	1343.0	1376.5	1413.9	1425.8	1415.6	1433.3	1459.0	1439.5	1459.7
Cincinnati	0848.9	0991.0	1323.9	1385.2	1350.4	1353.5	1349.9	1361.5	1362.6	1376.8	1445.3	1459.1	1430.8	1444.9
Cleveland	1034.4	1040.8	1287.5	1388.2	1459.5	1449.4	1469.9	1511.4	1511.4	1462.1	1523.2	1521.0	1475.9	1451.9
Dallas	1042.4	1130.6	1431.9	1481.9	1750.6	1740.8	1765.0	1777.3	1834.3	1816.9	1847.8	1892.8	1925.9	1962.8
Denver	1038.8	1100.4	1495.6	1487.4	1692.2	1709.7	1724.0	1715.2	1679.1	1684.6	1745.9	1755.7	1800.1	1819.5
Detroit	1018.1	1087.3	1275.3	1447.4	1580.3	1589.8	1604.6	1627.1	1638.0	1649.5	1654.4	1652.9	1672.1	1665.1
Kansas City	1023.5	0951.5	1125.8	1233.2	1233.4	1284.3	1336.9	1384.5	1381.8	1347.4	1390.8	1400.6	1407.5	1418.8
Los Angeles	1022.5	1111.0	1255.3	1387.5	1474.3	1491.6	1507.0	1500.9	1503.3	1506.0	1506.1	1501.4	1523.9	1548.7
Miami	1004.5	1080.9	1330.1	1380.6	1369.1	1350.7	1357.5	1375.1	1392.1	1429.6	1458.9	1473.5	1467.6	1491.1
Minneapolis	1060.2	1196.8	1286.9	1327.7	1442.6	1450.8	1540.8	1572.8	1576.8	1586.2	1631.8	1632.5	1624.6	1635.0
New Orleans	1001.3	1138.8	1291.9	1505.7	1572.7	1573.2	1626.4	1631.3	1616.9	1618.0	1624.8	1631.0	1650.5	1682.4
New York	1005.4	1043.0	1247.1	1319.4	1419.2	1417.8	1472.6	1497.7	1491.8	1563.7	1623.1	1622.3	1672.5	1677.3
Philadelphia	1013.8	1074.2	1487.5	1589.5	1660.7	1676.9	1755.7	1762.5	1769.4	1754.9	1759.7	1815.9	1819.5	1860.5
Pittsburgh	1016.1	1015.0	1227.0	1341.7	1493.2	1526.7	1487.4	1458.4	1479.5	1486.7	1491.6	1488.8	1497.2	1506.7
St. Louis	1039.1	1198.8	1275.9	1320.0	1397.3	1399.5	1436.3	1433.8	1451.2	1453.5	1498.1	1508.6	1524.9	1552.5
San Francisco	1083.2	1326.8	1473.4	1644.8	1776.4	1777.0	1804.5	1813.8	1810.1	1814.1	1851.9	1856.8	1856.8	1855.7
Seattle	1142.5	1137.9	1373.4	1616.8	1814.9	1905.5	1968.8	1940.9	1962.7	1986.6	1982.7	1974.5	1979.0	1934.2

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

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Practice: Test marketing comes to housing

At a time when architects are being asked increasingly about project feasibilities, their advice could well be to do test marketing

By Stanley Thea

Thoughtfully planned residential building containing the traditional measures of quality often remain unsold. When this happens, the stigma, if not the financial loss, is shared by the architects. A project that does not sell, regardless of how good its design, represents at best an architectural question mark.

Traditionally, developers have ordered feasibility surveys to "prove" the viability of a proposed project. Census figures, local building department data, the pace of new family formations, local sales history and the plans and amenities offered by current competition in a general area were considered relevant. A reasonable projected absorption rate was often sufficient to prompt a go-ahead and to help generate financing. Both developer and architect used the past as a predictor and drew ideas from "comparables" offered by others.

Today, history alone no longer works to predict what will sell

Different people are buying housing than in the past, and they are doing so for different reasons. The speed of this change is increasing, as conditions today will not prove a safe predictor of tomorrow. Examples of change include:

- *Major shifts in basic demographics.* Household size in general is shrinking, and the household size among condominium buyers is shrinking even faster.

The emergence of the two-income family has changed the way an entire market segment thinks about housing. These people can afford higher prices, and are interested in building equity and tax advantages.

- *The nation's gyrating financial scene.* Residential real estate has rebounded from troughs principally because of its adaptation to the new conditions. But developer costs for land, money, labor and materials required to build new units have soared.

For the home buyer, this has meant that absolute purchase costs and mortgage interest rates have risen in lock-step. Costs have thereby become a far more sensitive issue for prospective home buyers. Periods of perceived high interest rates carry with them built-in home-purchase delays.

Mr. Thea heads his own market-research and sales firm, Stanley Thea Associates. He has a background in both marketing and real estate.

Developers are required to target their products to ever-higher income-level groups, and even to provide financing to help insure a purchase. In one instance, our survey of prospective buyers for a suburban high-rise showed that if interest rates rose from 11 per cent to 14 per cent, fully 65 per cent of interested prospects would delay *any* home purchase.

But these same would-be buyers told us that if the sponsor made available a 30-year fixed-rate mortgage under 14 per cent, half of them would still consider purchasing units.

The developer did that and maintained prices well above those of the surrounding area.

- *Condominium purchasers finding that swelling interest rates and prices prevent them from readily selling their existing residences.* This can mow down a formerly key market for many new housing units. Empty-nester home-owner prospects that were expected to account for a major portion of sales in one Manhattan high-rise told us that if interest rates exceeded 13½ per cent, they would have to drop out of the market because they could not sell their existing homes. The rate rose, those prospects did drop out and the marketing forces had to shift to foreign buyers, investors and transferees.

A project will not sell when its would-be buyers don't see it as matching their needs

Given the changed circumstances of residential real estate, architects and developers need to learn about what their prospective buyers expect. Questions worth answering for any substantial development include:

- How many *qualified* prospective buyers exist for a specific housing product at a specific site and within a specific time frame? The site itself and its location restrict the number of potential buyers—as does design and price.
- When might they buy? Timing becomes important when buyers move in waves based on interest rates, the stock market and their perception of the economy as discussed before.
- How much demand exists for varied unit type among these qualified prospects? This includes number of rooms, size of rooms and absolute price of units.
- What design attributes do qualified prospects feel add value to a project? This includes siting, style, finishes and unit layouts. It would also include common

areas, services, amenities and "unknowables."

As an example of unknowables, our market research for a suburban low-rise condominium development found that—while it did interest local house owners—these prospects did not want what they considered an "attached town home." Suburban town houses traditionally borrow from urban architecture, placing units side-by-side with entrances in front.

When options were shown graphically to qualified prospects, the would-be buyers said they overwhelmingly preferred a much broader and less deep unit, more closely resembling a single-family house.

Knowing preferences like these will allow the architect-developer team to invest available resources in those areas that will yield the greatest possible return.

Some trends are general and they are valid throughout the country

• *Changes in unit distribution.*

Today's buyers require a nontraditional mix of units. For instance, larger-unit prospects, having to lay out larger amounts of money in any case, may well prefer to be located on the higher floors.

• *Down-sizing of all units.*

Americans may prefer larger residences in theory, but when it actually comes time to buy, the high cost per square foot means smaller units, even when selling for higher square-foot prices, sell faster.

- *Changes in use.* To offset smaller unit sizes, the addition of such features as communal lounges may, depending on the users, heighten the sales appeal of a particular project by allowing residents to entertain and socialize in roomy surroundings.

Buyers often expect new residential developments to include on-site parking, health and fitness facilities, electronic and manual security, and kitchens and baths with windows.

- *Energy consciousness.* Over 90 per cent of qualified prospects for one suburban low-rise project indicated they wanted passive solar heating. They were specific in asking for homes that incorporated a Trombe wall, and they told us just how much extra they were willing to pay for this.

- *Unusual preferences.* During one survey, a high percentage of prospects for a suburban high-rise complex said they wanted an optional interior courtyard view. This surprised the developer; he

had expected that area, which was faced by lower-floor units, to be the least popular view.

Test marketing for housing has roots in other product promotion

Test market research has been refined to a science by consumer products companies such as Procter & Gamble and General Foods. They will not risk pursuing a new product effort without knowing what potential consumers will buy. They routinely identify the package types, sizes, colors, prices and marketing that trigger a sense of product value in consumers.

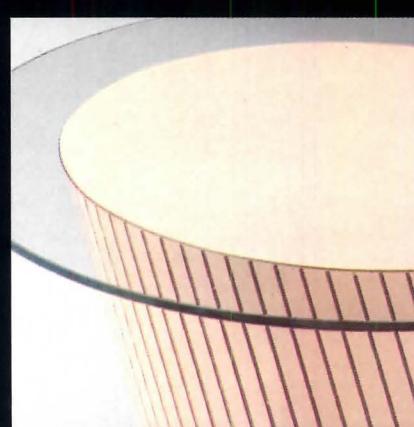
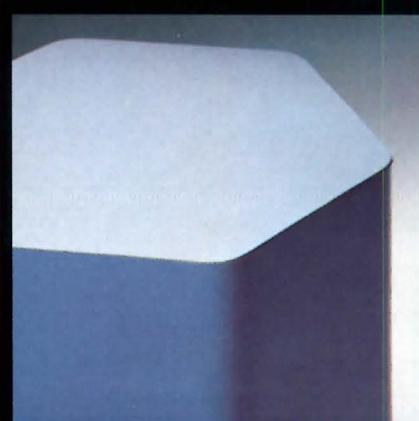
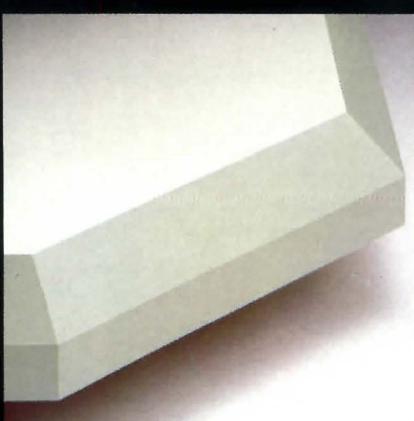
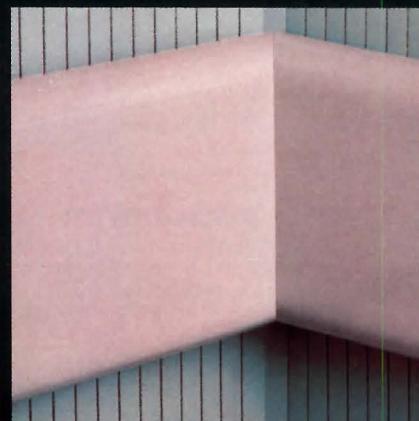
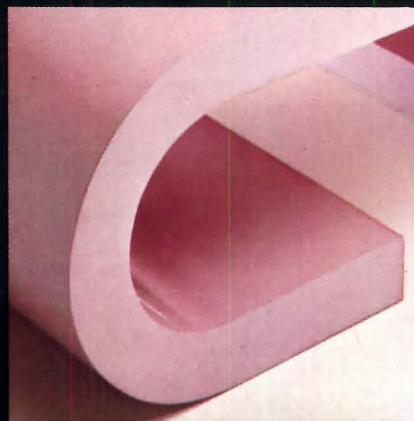
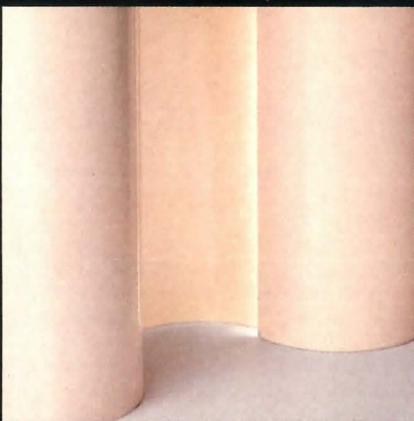
Residential housing, the highest priced of consumer products, can benefit from these same techniques, although there are crucial differences. First, while most households regularly buy soap, we must find the few interested and qualified prospective buyers for a specific residential project at a specific price and at a specific time. It usually requires a few thousand random intercepts to find and interview 100 or more such prospects.

A second difference is in the use of graphics to represent exterior and interior layouts, views, amenities and services, and options. This form of survey provides architect and developer with prospect demographics and psychographics—who the would-be buyers are, and what they value.

In addition to helping design an optimum product, this information can enable a developer to target his advertising less expensively. It has also allowed us as a marketing and sales agent, to develop alternate strategies to deal with economic changes.

Prospective buyers for a proposed high-rise recently said that they would be eager to purchase, and pay top dollar for, units in a complex that offered a radical departure from conventional exterior appearance. This strong interest shown in something new demonstrates to us how ready Americans are for concepts in housing to go with their new demographics and changed economy. Listening to today's home buyers can help architects and developers to create the successful housing of tomorrow.

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Computers: Are personal computers ready for the big firms?

*The president of one large firm tells
why he likes them so much*

By Charles Thomsen and Ronald Schappaugh

The term "personal computer" is misleading. It implies a device used for private purpose. Yet there is every indication that personal computers will have as great an impact on business as the typewriter and the photocopy machine. Both the hardware and the software are cheap and easy to use. A computer generation has emerged, and these computers are not separated from the users by a systems staff. Applications are designed by users. Most important, benefits go to the clients when their architects, engineers and construction managers use personal computers to their fullest. C.T.

Computers are no longer high-priced, high-maintenance, custom-produced products used only by a few of the most advanced firms. They even no longer have a prominent position in marketing appeals; now most large competition uses them.

The demand for micros grows faster than for mainframes. The smaller the computer, the faster the market is growing—24 per cent per year for computers costing more than \$30,000, 40 per cent for systems costing less than \$10,000, and 53 per cent for systems under \$3,000.

Personal computers are cheap because a growing market has spread the costs
And with them have come powerful yet inexpensive software. How cheap are personal computers? An average system with 128K of memory, two double-sided disk drives, and a letter-quality printer costs about \$5,000. At 3D/I, our average system runs about \$6,000. But we add plotters, hard disks, modems and graphic screens here and there. If you choose to depreciate that on a straight-line basis over five years, the accrual cost is \$83.33 per month, equivalent to about an hour of professional time.

For that you don't get a toy—it is powerful. In 1976, the Rice University mainframe computer had 256K of core memory. That's what we use as standard in each of our personal computers, and it cost about \$64 for each additional 64K of memory.

The development cost of software as well is now spread out over many users, and most canned programs cost only a few hundred dollars, rather than the tens of thousands that they cost

Mr. Thomsen is president of 3D International, architects headquartered in Houston. Mr. Shappaugh is an associate in the firm.

in the '60s and '70s. The software market is growing faster than the hardware market—about 60 per cent annually.

Micros are portable, and 1984 will see more progress there. They can be transported to a negotiation, an on-site design charrette, or a construction trailer. Two of our experiences where portability was important stand out: We were once preparing to finalize a contract in a small, Midwestern town. The basic terms had been decided, but we knew that when the negotiations were completed, we would not have time to have the 30-page document retyped. And we wanted to return home with a signed contract.

We put the draft on a disk and took a portable computer to the meeting and set the rig in the middle of the conference table. Changes were made on the spot as we reviewed the contract. When everyone agreed with the wording we pushed "print," signed it and went home.

In another instance, we were in a crash negotiation with a government client. They wanted a study completed in 60 days. We had 24 hours to write the proposal and negotiate the contract. Again, with resumes and other draft material on a disk, we took a portable computer to the client's office. We reviewed the RFP, wrote the proposal overnight, calculated the fee on an electronic spread sheet, negotiated the level of effort and the rates, and printed the result on the spot.

Being "personal" means they are accessible and become second nature to users

Personal computers need not be locked behind glass walls in air-conditioned, environmentally controlled spaces, guarded by white-smocked acolytes. The computers are at the fingertips of architects, engineers, managers, technicians, accountants and secretaries. They are *personal computers*.

The fact that they are cheap and portable did not transform microcomputers into a consumer product. They had to be easy for everyone to use, including executives whose time is too valuable to spend learning complex programs. There would never have been a consumer market for computers if the software industry had not produced a raft of truly useful programs that can be learned easily. Most people can learn to use a word processor, an electronic spread sheet or a database manager in four to six

hours and can become proficient in about that many more.

There is a culture gap in that some people like high-tech—and some don't

You see the former not only with computers, but with sophisticated cameras and audiophile hi-fi equipment. But there are other people who are uncomfortable with this microchip technology and irritated by the need to relearn how to use what they always believed to be simple devices like their telephone. We are all bright enough to learn. But fortunately, if we are in this anti-tech category, we can have secretaries who will pick up the slack for us.

Anti-tech, anti-system, (sometimes anti-discipline) is a classic problem in all companies, and it has always been the greatest problem for the director of computer systems. We constantly have to admonish managers to provide proper input for the management information systems and coax some of our architects and engineers to use the CAD system. Mainframe systems invariably require lengthy installation and start-up periods resulting in long working hours and frustration for everyone. Long after the bugs are out of the hardware and the software, the people systems continue to break down.

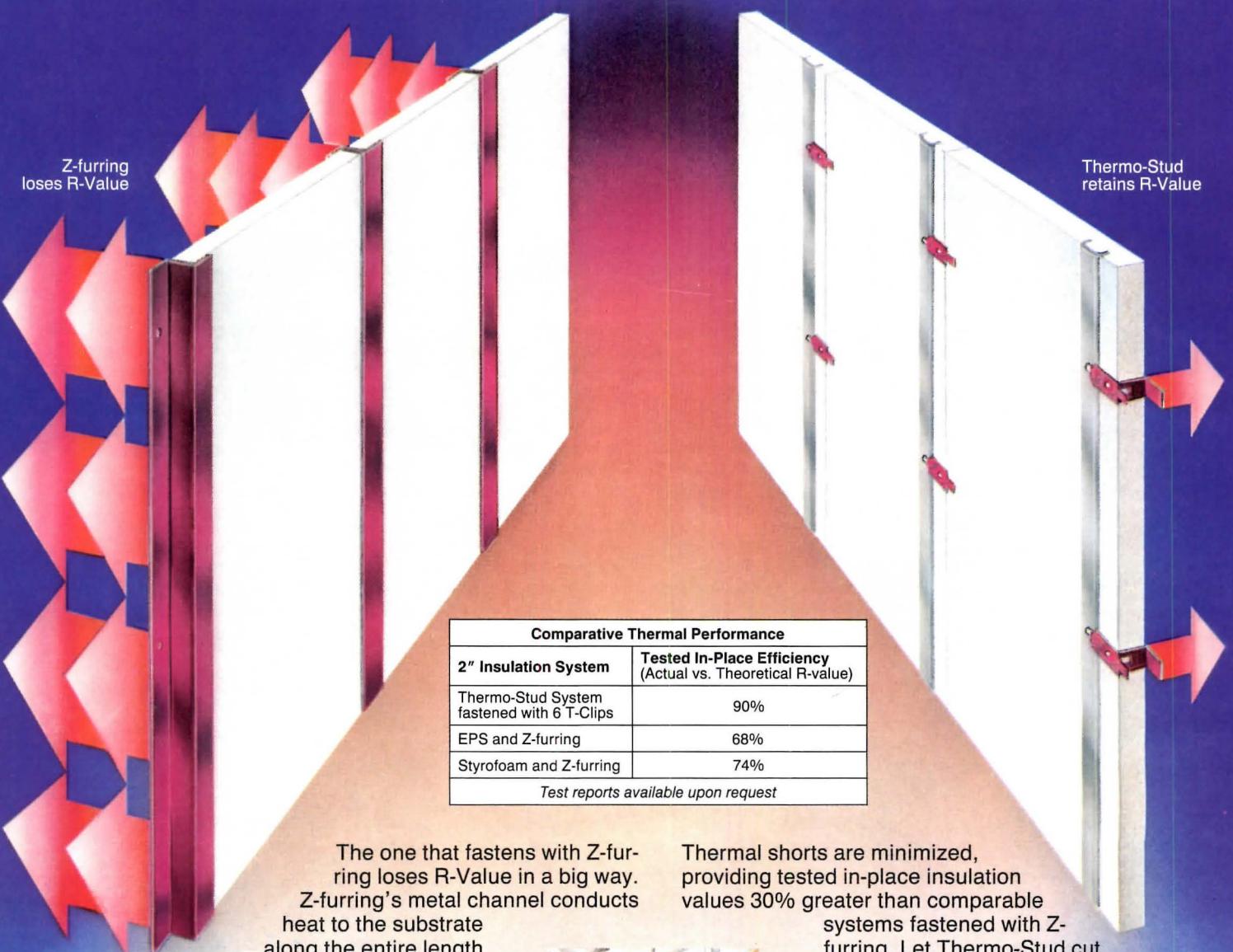
Not true with the micros. The user-friendly factor seems to take care of both the start-up problem and the resistance to new technology. Once exposed to the personal computer, most of the staff wants one whether they have a good use or not. *And that can be a problem.*

Personal computers make you realize that the real cost is the people cost

Hardware and software is a small part of the total cost of computing. The people using the machines are the largest cost. Theoretically, there should be economies there too. Micros are used directly by architects, engineers and managers, and the software is user-friendly. That results in quicker turnaround, a manpower savings and better understanding of the operation being carried out on the computer. All these things add up to a savings in cost.

But the unacceptable cost is that of writing a program when there is no need, calculating with infinite precision when the proper conclusion is conceptually clear, or producing "interesting" management reports that waste everyone's time and cover up

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vital facts. Some people enjoy using computers so much that they will use them when there is no need. The compulsive, high-tech aficionados in search of intellectual elegance in information management can waste large quantities of corporate time and money.

With centralized mainframes, there can be centralized control. Policies can be established and applications approved before they are implemented. The cost of the machine is high, so applications must be assigned priorities.

With large numbers of personal computers distributed throughout the firm, control is more difficult. It is not the relatively insignificant machine cost (less than \$.50 per hour) that needs control, it is the people cost.

The only sensible approach is to forget about controlling the machines and control the users through the normal organizational structure of the company. It is not necessary for the company's managers to understand computers to judge the value of people's end output.

One for every user?

How personal should personal computers be?

The concept is that of a personal tool under the control of an individual, not a central data-processing staff. Those who cling to mainframe concepts point out that with centralized computing, resource leveling is easy and the machine can be utilized constantly, while personal computers are frequently idle. But mainframe advocates have attitudes conditioned by \$50-per-hour costs, not \$.50 per hour.

Like telephones, micros are cheap enough to be left idle part of the time for the convenience of having them available. When the monthly cost of a microcomputer is roughly the same as an hour of professional time, it does not take much productivity increase to justify having it readily accessible, even if it isn't used continuously. Only 20 years ago it was common to have only one phone in each area of a drafting room. Now that relative cost is less, we see phones on every desk, even if they aren't used all the time.

Maybe a computer on every desk is in our future, but we are not there yet and will not be there soon. Many effective and important people are not in the least interested in learning even the most friendly programs and never will be. At \$5,000 a unit, personal computers are cheap

only in terms of the traditional cost of computing. It still makes sense to place micros where they can be used by more than one person.

Maintenance is still another advantage not often considered

Microcomputers are consumer products like TVs, washing machines and trash mashers. And like these products, there are a variety of places to get them repaired. No more bluesuited, white-shirted repairman with his tools in a briefcase. The microcomputer repairman fits the whole microchip generation: He wears jeans, and his cost matches his pants. Although we have had problems with our microcomputers, our maintenance costs are a fraction of those for our two mainframes. Our maintenance cost for our 22 PCs has run \$21 per year for each \$1,000 in capital cost. It runs \$74 for our CAD systems, and \$106 for our MIS mainframe.

There are three generic uses for microcomputers that span most of the applications:

1. *Word processing.* The most common use of microcomputers is for the simple business of typing things. The number of personal computers used for word processing now exceeds the number of dedicated word processors. (We replaced nine dedicated word processors with 22 microcomputers for about 40 per cent of the cost of the word processors and gained the use of the microcomputers for a host of other applications.)

Yes, a micro still costs more than a typewriter, but the ability to manipulate, store and retrieve alphanumeric data is so useful that the cost is insignificant compared to the productivity increase—if the needs for those abilities exist.

There is also an improvement in the quality of the message. All of us are reluctant to ask a secretary to retype a letter for a minor improvement, yet when the effort required is insignificant, one's standard inevitably rises.

Word processing is so easy to learn that many of the professionals in our office have trotted out their high school Typing 101 skills and write or edit proposals or articles themselves.

2. *Electronic spread sheets.* The number of times that we build two-dimensional spread sheets for programming, financial analysis, income and expense projections, or what have you,

must be in the thousands. The spread sheet is a common tool of all people who deal with figures.

The simple idea that a spread sheet can be automated is a concept that has had as much effect on the popularity of computers as did the invention of the transistor and the development of the first Englishlike programming languages (e.g., Fortran).

In 1972 we spent approximately \$20,000 developing a project accounting system to enable us to report to our clients on the financial status of their projects (contract expenditures, cash flow, current working estimates, etc.). It was written in Fortran, took three months to program, and was inflexible. If we had a client who wanted a different format, it would take another week of programming. The same thing can now be set up on an electronic spread sheet in an hour and modified for a new client in about 20 minutes.

3. *Database management.* One of the things that computers do well is store information so that it can be sorted, compared, manipulated and retrieved in various combinations that are appropriate for the moment. The simplest example is an address list that would allow the user to sort and retrieve everybody whose last name begins with A, or everybody who is an architect, or everybody who is a contractor in New York City with a wife named Sue.

We currently have our DD 254, 255 project data on a disk. We can retrieve those projects that fit the criteria at hand and structure the information appropriately for each proposal.

The basic categories of use aside, here is how you may actually want to use them

The applications of personal computers at 3D/International are not planned centrally by executive management or by a systems group. Instead people throughout the firm who understand their own jobs see useful things to do. Each of us has the chance to innovate and to improve our productivity.

The generic programs ease our day-to-day business operations. We process correspondence, proposals and contracts; spread sheets are used for financial matters; and database management assists with personnel records and property inventories.

Our accounting department uses the PCs for many of the classic functions of accounting, plus some of the more inventive

management information reports. Recently, they have performed buy-and-lease studies that have saved many thousands of dollars.

The marketing division has all of our project information on a database management program. Resumes are on disks so they may be edited for each proposal, as are standard descriptions of our services.

The legal division uses the microcomputers for the inevitable contract production, to maintain most of our library science management data (resource information, check out/in, periodical routing, etc.), and to manage the indexing of our records in central files. In our central files, we replaced 17 binders of information with three disks.

All of these microcomputer uses increase the efficiencies and quality of our operations. But microcomputers benefit the technical aspects of our practice more dramatically. Here are some of the applications:

- The architecture planning division analyzes projects with a program that evaluates the effects of design on the developer's return on investment. Volumetric configuration, construction costs, land cost, energy costs, maintenance costs of materials, orientation, skin-to-floor-area ratios and structural cost are all considered. Pro forma feasibility studies forecast return on investment given varying costs for financing, construction and operation. The program can be run "forward" to show revenue or "backward" to generate project budgets.

Microcomputers are used to prepare blocks of text and schedules (doors, finishes, etc.) for construction drawings. Information is easily revised and transferred electronically to our CAD system. Using electronic spread sheets or word processing programs, data are prepared at \$.50 per hour instead of \$50 per hour for the CAD system. Master specifications for all disciplines are stored on diskettes and processed into custom specifications for individual projects.

- The engineering division uses microcomputers for design calculations and complex "number crunching" operations which were previously done using a large mainframe. Heat loads, duct sizes, equipment capacities and electrical loads are routinely calculated. Microcomputers not only speed up the design process, but also allow the engineer to

Continued on page 41

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polish designs through an iterative process that was prohibitively slow and expensive with a mainframe.

- The construction management division uses of our microcomputers include estimating, scheduling, decision management and project reporting. Our portable microcomputers allow entire project control systems to be transported to the job site.

Our estimating system is designed to connect several microcomputers to a hard disk drive that maintains the cost database. The system allows multiple estimates to be prepared simultaneously by sharing the unit cost database. The system reduces the time required to prepare estimates as well as the likelihood of mathematical errors. Our estimators can then concentrate on the complex aspects of the project.

Budget estimates are quickly prepared using both historic and analytic data. A database management program stores historic information on all of our projects. The data can be sorted by project type, size, quality, location and year of construction. Subroutines containing construction and economic indices convert past costs to today's or future dollar values.

A separate analytical program produces budget estimates using unit cost data stored for building systems. The estimator inputs the project parameters (location, footprint, square footage, number of floors, parking requirements, etc.) and the program calculates the construction cost.

3D/I's CPM scheduling system handles construction schedules with networks of up to 5,000 activities. Tabulated activity reports as well as full network plots and summary bar charts can be produced. Resources can be allocated to activities and used to generate additional reports such as cash-flow projections and manpower requirements by trade.

Both the estimating and scheduling program are used to track and report the status of key decisions. This program is primarily used during the planning and design phases of projects. The program monitors what decisions are required, when they are needed, who makes them, what information is required, and its status. Reports are organized by projections for items requiring action.

- The interior architecture division uses a space-planning program to manage data about our client's needs. The program stores and manipulates data allowing more time to review and verify that all requirements are documented and correct. Reports can be generated for current data, growth projections and adjacency requirements.

A furniture and equipment inventory program is used to collect and sort the client's requirements and existing inventory. With the data stored on disk, we can take a portable

microcomputer to the client's office and use it when we interview his staff. As the design is developed, the program is used to record each item by location, type, inventory number, color, material and manufacturer's model number.

- The graphics division uses a program to interface our microcomputers with typesetters. The text's position, style, size, line weight and tone shading will be input by the designer. Output is transferred by modem to the typesetter's office.

- The purchasing division uses a database management program to record the client's requirements and the detailed status of each item. Bid activity, purchasing, manufacturing and delivery data are all tracked.

Complete cost reports are prepared as are expediting reports in order to highlight

items that require special attention.

The fact is simple. The part of our business that relates to manipulating information in alphanumeric form is rapidly being supported by microcomputers. They are assuming the function of typewriters, calculators and filing systems.

The real beneficiary of our use of microcomputers is our client

Our business is information: collecting information on our client's needs, adding wisdom, acting on it and producing more information for others to act on, usually in the form of documents for construction or some other kind of fabrication or assembly. Information technology is improving our work on every front. The result is greater

understanding of our client's needs, better programming, better analysis, better design, better construction documents and better management of the design and construction process.

In most cases, microcomputers are not replacing labor. They are amplifying what might be done. It is conceivable to run through the economics of a design and produce a pro forma with a calculator. It's probably a two- or three-hour job. The same routine on a spread sheet program is a two- or three-minute job. The sophistication is greater; more alternatives are examined; rules of thumb give way to greater precision. We may take the same two or three hours studying the problem.

But with microcomputers we look at more alternatives. There is more accuracy. The answers are better.

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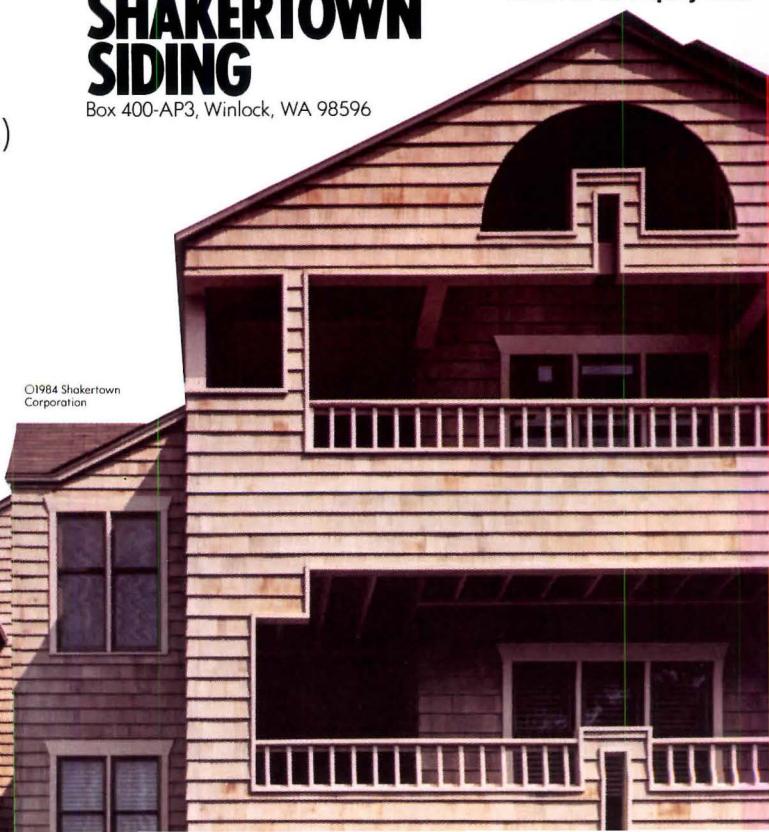
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Architectural education: Should behavioral studies be integrated into the design studio?

By Dr. Sharon E. Sutton, AIA



The year 1984 marks a renewed interest among architectural practitioners and educators in the humanistic aspects of design. This interest is, of course, not new. However, a number of relatively recent circumstances and events have generated more specific studies of the relationship between design and human perception and behavior in buildings.

Among them was the social consciousness of the 1960s, which sought to remove obstacles to equal access to the physical environment and built spaces. Then there was the availability of research data from the infant field of environmental psychology, which underscored the need to accommodate different individual and cultural responses to built form. There also were the activities of the postmodernists, who were attempting to define a new architectural esthetic by rethinking the Bauhaus philosophies that had dominated the profession for so long. Under this scrutiny, the Bauhaus conviction that architects could literally bring about a better society by designing ideal physical containers was revealed as an overly deterministic approach to human/environment interaction. And, above all, there were the spectacular photographs of the dynamiting of the 33-building award-winning St. Louis public housing project—Pruitt-Igoe—for whose special problems only complete physical eradication was felt to be the cure. The repeated publication of these photographs served as an impressive reminder to professionals and students alike that the quality of a building depends not only on its formal attributes, but on the subjective experiences of people using the building. This recognition brought about an impetus for architects to acquire a better understanding of human needs in relation to the built environment.

A primary objective of design education is the manipulation of

Sharon E. Sutton, an architect, psychologist, and artist, is associate professor of architecture at the University of Michigan. Her courses include a design studio based on person/environment relations and lectures in the esthetics of architecture. Dr. Sutton serves on the editorial board of the Journal of Architectural and Planning Research, and has written a book called Learning Through the Built Environment which describes her experiences in teaching architectural design to low-income elementary school children.

Dr. Sutton brings a background of architectural practice, teaching and strong interest in humanistic problems to explore and challenge how best to enhance that elusive quality of "commodity" in design—by a scientific study of behavior, or by intuitive, subjective decisions

formal patterns, and that objective is often fueled by professional publications that tend to glorify the visual aspects of buildings and minimize the human activities they are intended to facilitate. However, criteria recently formulated by the National Architectural Accrediting Board reflect the profession's awareness of the need to pay greater attention to behavioral issues in design (see ARCHITECTURAL RECORD, March 1984, page 51). The ability to gather and synthesize information about user needs when formulating design criteria and to evaluate a built environment in terms of its behavioral intentions are basic skills now required for all graduating students. Nonetheless, a meaningful integration of behavioral concepts into the traditional educational process of the design studio may be difficult to achieve.

Today, few doubt that meaningful design must be socially responsive

Until now, despite centuries of humanistic commitment, behavioral studies have remained curiously divorced from the formal principles that serve as the basis for decision-making in design studios of architectural schools.

Frequently the study of human behavior is treated as a distinct area of specialization rather than as a fundamental design skill. Frequently, too, the architectural program that accompanies an assignment is viewed only as the basis for determining a pattern of human activities within a space. Frequently, behavioral needs are addressed rhetorically by students who rely on intuition rather than information in order to invent an ideal world for an imagined client. Frequently humanistically oriented students abandon their commitment to the practice of architecture because they are disappointed with the role architects play in improving the quality of life. If future architects are to assume a viable role in society, educators must ensure that students have the ability to make socially responsive decisions.

The purpose of this article is to suggest some specific steps that will better enable architectural students to engage in decision-making processes that will result in built environments appropriate for contemporary needs.

In order to see how curricula might be modified to encourage

more in-depth attention to behavioral issues, I will look briefly at the history of humanism in architecture to see what is unique about today's educational challenge and then analyze the obstacles that are encountered in attempting to integrate behavioral concepts into the form-giving process of design. Finally, I will suggest how these obstacles might be overcome.

Integrating "commodity, firmness and delight" remains the challenge

A theory of the art of architecture first put forth in the 1st century B.C. by Vitruvius, and then restated in the 17th century by Sir Henry Wotton, recognized a concurrence of three complex phenomena in architecture. First are its technological aspects for, as a science, architecture is governed by the laws of physics, statics, and dynamics. Second are its esthetic aspects for, as an art, architecture seeks to express ideal concepts of beauty, proportion, and form. Third are its functional aspects for, as containers of diverse human purposefulness, buildings house activities that strongly influence how people live and societies operate. Each of these phenomena has an interdependent relationship with the other two, and it is the balance of these interdependences that is a continuing challenge. However, it is in the area of purposefulness that contemporary designers find a growing confusion. Historically, the most outstanding architecture occurred when there were clearly defined social patterns that could be given functional space and symbolic meaning through the organization of physical form. In the words of Pond, an architectural theorist writing in the early 20th century, "It may be well to state here . . . that the expression of an ideal is possible because and when and only when that ideal dominates the race."

In earlier periods of history, society was homogeneous enough so that designers could adapt a discrete set of physical forms to limited functional needs. Prior to the Industrial Revolution, cities and public squares, as well as business halls, baths, palaces, and churches, were based on universally accepted formal prototypes endorsed by the aristocracy. After the Industrial Revolution, the collective will that produced the Greek temples and the Gothic cathedrals was supplanted with a greater variety

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of values and lifestyles. However, even though the architect of the early 20th century was faced with finding a new industrial esthetic, social norms during that period were more stable than they are today. The values, social needs, and aspirations that were common to the users were shared by the designer. Intuition could serve as the basis for translating needs into physical form even though the rules had become more open-ended.

Today no such continuity of values is discernible. Ours is a highly pluralistic society in which the needs of various subcultures are different from and often in competition with one another. In addition to differences because of ethnicity, religious beliefs, or familial structure, there are differences caused by sharp economic discontinuities between segments of the population. The designer may have no personal acquaintance with the tastes, means, limitations, and social needs of the users of a particular project. Today there are some 270 "distinct" building types found in America, according to some sources. Means other than intuition must be utilized in order to respond to the requirements of workers in a high-technology industry, developmentally disabled children, high-security-prison inmates, and senior citizens. Familiarity with the science of human perception and behavior is essential, but for several reasons it has been difficult to integrate this area of study into the architectural design studio.

Why are behavior studies unpopular in the design studio?

In the early 1960s, when the collaboration between social scientists and architects became more prevalent, it was soon recognized that several barriers interfered with the introduction of social science concepts in the architectural studio. One problem was the differences in their respective modes of problem-solving and the different tools that each group utilizes in the investigative process. The scientific study of perception and behavior utilizes systematic, analytical methods of investigation. Social scientists are trained discursively. Questions are formulated in a logical manner, then used as an intellectual basis for constructing theory. For example, Susan Saegert, an environmental psychologist, has been conducting research over a period of years into the effects of residential

density on psychological well-being. She has systematically collected data on various populations, especially low-income urban children, using multiple techniques including observations, interviews, and questionnaires. The outcomes of her work are published in nonvisual articles that require an understanding of statistical methods and psychological theories of cognition and perception.

Architectural design, on the other hand, is only partially systematic. Information about the requirements of a particular design problem are collected and categorized throughout the design process. The data that are eventually incorporated into a design solution include sociocultural, historical, climatic, and technological factors, as well as an array of specific functional needs. The breadth of this information requires an integrative rather than analytical process. Furthermore, solutions cannot be arrived at in a purely logical, linear manner because design choices are, by nature, expressions of subjective preferences. The designer ultimately must assess a battery of disconnected information, take an intuitive stance about a set of conditions, and utilize informed but personal priorities in order to construct a solution from virtually unlimited design choices.

A second problem is that the language found in behavioral science articles makes understanding difficult for architectural students, who may have had only an introductory sociology or psychology course. However, it is the nonvisual aspect of this literature that literally blocks students from incorporating the information into a set of design priorities. Designers are trained to make formal choices primarily by studying and evaluating visual evidence. A student's journal becomes filled with visual fragments about a problem during the course of an assignment, and those fragments serve to shape her or his particular solution. Because social science literature does not provide these fragments, it frequently is ignored during the integrative, value-forming design process in favor of other, more accessible insights.

Thirdly, the presentation problems of the social science literature are magnified by its content, which is focused on culturally based macro-concerns such as psychological distance,

perception of safety, and personal control. While the physical features of the environment may influence these factors, there is an immediate frustration in realizing that the satisfaction of the user is dependent on a host of variables within the social, political, and economic environment that are beyond the architect's power to address. Saegert, for example, concludes that higher density environments can have adverse effects on interpersonal relationships and that there are significant cultural and gender differences in reacting to density. While her conclusions contain powerful messages for planners and politicians, these issues cannot be addressed by architectural design, per se, since the architect is limited to finding formal solutions for established policies.

Post-occupancy evaluations of buildings may help bridge the gap

While Pruitt-Igoe may have been criticized as a failure in design because of the manner in which the architects organized public space and circulation in the project—a system that is reputed to have encouraged crime and destroyed the sense of community among residents—an investigation of the sociopolitical factors surrounding the construction of Pruitt-Igoe reveals that the politics in the 1950s and 1960s created a set of circumstances that could not have been erased by any building design no matter how ingenious. In reading the behavioral literature, the architectural student is left with a sense of diminished importance about the physical features of buildings.

A nontheoretical behavioral literature is emerging that is referred to as "building" or "post-occupancy" evaluation. These evaluations have two purposes: first, to determine the degree to which built environments support the intentions of users and thereby predict the success of future similar projects; second, to suggest modifications to problematic projects. The second type of evaluation focuses on those aspects of the built environment that allow specific activities to be performed within buildings or in small parks and plazas. An example would be an evaluation of how well the interior of an open-plan office functions in order to provide privacy and adequate work space. Since interiors and small exterior

Continued on page 46

spaces can be modified relatively easily with nonstructural changes, this type of evaluation is becoming the most popular. Many architectural schools have begun to place a greater emphasis on the functioning of interior spaces and on designing buildings from the inside out—as well as vice versa. But the use of nonstructural elements to fine-tune a building to specific activities is not yet a major consideration in the typical studio. The micro-behavioral literature, therefore, seems peripheral to the more monumental focus of architectural education.

But behavioral literature fails to say how or if architectural design matters
In short, the behavioral literature offers few guidelines for changes in architectural education. It either focuses on macro-systemic issues that are beyond the architect's power to affect, or it focuses on micro-issues that have traditionally been the detailed purview of, say, interior design. The question of the behavioral and psychological effect of established architectural principles specifying the esthetic disposition of mass, void, plane, line, closure, openness, horizontality, verticality, rhythm, progression, repetition,

etc., remains unaddressed.

Some behaviorists believe that the esthetic concepts are, in fact, outmoded and inappropriate to "contemporary" tastes. Taking a nihilistic approach to the professional practice of architecture, this group suggests that a new vernacular style be developed through participatory design techniques with users. This view ignores the realities of architectural education, which evaluates students on their ability to translate a given architectural program into an esthetic, well-conceived solution.

Yet concentration on the art of architecture has served to limit the social accountability of the prospective architect. By allowing students to isolate the visual from the purposeful and to view quality as a finite characteristic—as style—we have limited their ability to provide a service in society that balances the three basic aspects of architecture in the manner so astutely prescribed by Vitruvius.

What can, or should, be done about addressing humanistic issues?

Because of the nature of the behavioral literature and the conflicting messages between it and the visually oriented, the task of integrating a behavioral perspective into the design studio is not an easy one. Indeed, it

would seem that the student must make a choice between pursuing either behavioral goals or design skills and creativity. Because the latter have long been universally conceded as the primary route to recognition in architecture, the formal orientation continues to supersede the behavioral one.

However, several changes in the implicit values and explicit content of architectural curricula might serve to reduce the apparent conflict and better prepare students for addressing humanistic issues. One change would involve a greater emphasis on the scientific study of behavior—an emphasis that is equivalent to that given to formal and technological training. Although there is frequent dissatisfaction among studio critics with the lack of integration between studio courses and those in construction, structures, and mechanical services, the emphasis placed on these latter courses throughout the program of study implies to students that they are important. Behavioral studies, on the other hand, are treated as a specialty rather than as a full-fledged part of the triumvirate. A behavioral curriculum could begin in the early years with introductory concepts of behavior, continue with training in how to cull out

the architectonic concepts, synthesize these concepts into spatial relationships and experimental effects, and culminate with training in collecting and analyzing systematic data about the programmatic needs of the many building types and user groups found in this country.

Another change would be a more concentrated approach to the relationship between built forms and the social systems that give rise to these forms. While architects cannot invent a social order, we can provide creative leadership in clarifying how individuals and institutions organize themselves in specific places in the physical world. This leadership is currently more likely to be provided by financiers or politicians than by architects. As Mary Comerio points out, architects typically serve in the role of technocrats who carry out predetermined policies. However, it is the architect who is trained to have a special vision and sensitivity to relationships of activities in buildings. If we would require students to base their decisions on real clients and teach them to collect and organize data about specific people, places, and events, they could then play a more effective role in the organization of the physical environment. If the theory and

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methodology of programming were a major element within the behavioral sequence in architectural education, it would serve to broaden the impact that architects have in society.

A third change that would facilitate the integration of a behavioral perspective into the form-giving process involves introducing students to a participatory, interactive design process. Since ours is such a pluralistic society, assignments should specify *particular* clients and/or user groups, and techniques should be developed to allow representatives of those groups to participate in the design studio process. Training should be provided in collecting systematic information from the target group via behavioral observations and mapping, interviewing, and gaming techniques. Local exemplar buildings that house functions similar to those desired by the target group should be systematically observed and evaluated. This approach would serve to anchor the visionary process of design to a real-world foundation and to overlay a service perspective onto the prevailing notions of individualistic self-expression. Wolfgang Prieser utilized such an approach in the classes he taught at the Sydney University School of Architecture in

Australia. Based on this experience, he recommends that only highly committed graduate students who have a background in behavioral concepts and who are adept designers be admitted to such courses. I disagree. Because the participatory method requires an open-mindness to the meaning and purpose of architecture, students should encounter this approach as a required course early on in their education while their attitudes about design are still being formulated.

An "equal partnership" of skills and tools must be developed

Finally, because the existing literature is not entirely appropriate to the needs of architectural students, the behavioral sequence should be designed to generate its own "library" that can serve as a problem-solving tool in the studio. For example, a class might select a local institution such as a nearby facility for senior citizens as the subject of its investigation. A theoretical context for understanding the facility's activities might be developed using the literature on geriatrics and gerontology and interviewing the staff about their approach to caring for the elderly. This portion of the class's work would end with a set

of activity goals for this particular facility. Then half the class might conduct a systematic evaluation of the existing building to assess the degree to which the building supports the program's intentions. The other half of the class might write an ideal program for the facility, generating a set of spatial requirements and experimental qualities. These evaluations and programs could then serve as the basis for a design studio. Solutions would be evaluated in terms of the degree to which they realistically address the theoretical concepts, eliminate the problems found in the existing building, and improve on its positive features. A critical written analysis of exemplar solutions would be kept on file along with the evaluations and programs as an illustration of possible approaches to designing for the elderly. Such a library would minimize the risk in predicting the appropriateness of any given formal solution.

While there are probably many other avenues for making the study of perception and behavior more relevant to the formal decision-making process of the design studio, the particular course of action chosen hinges on giving greater value to this area of learning. By recognizing that this is a fundamental skill, not a specialty that can be condensed

into one or two courses, students would be enabled to develop skills for utilizing scientific information in the evaluation, programming, and design of buildings. Only when behavioral studies are placed in an equal partnership with the technological and formal aspects of design will students acquire the decision-making skills that will allow them to address the diversity of contemporary human needs and values in more than a rhetorical, intuitive fashion.

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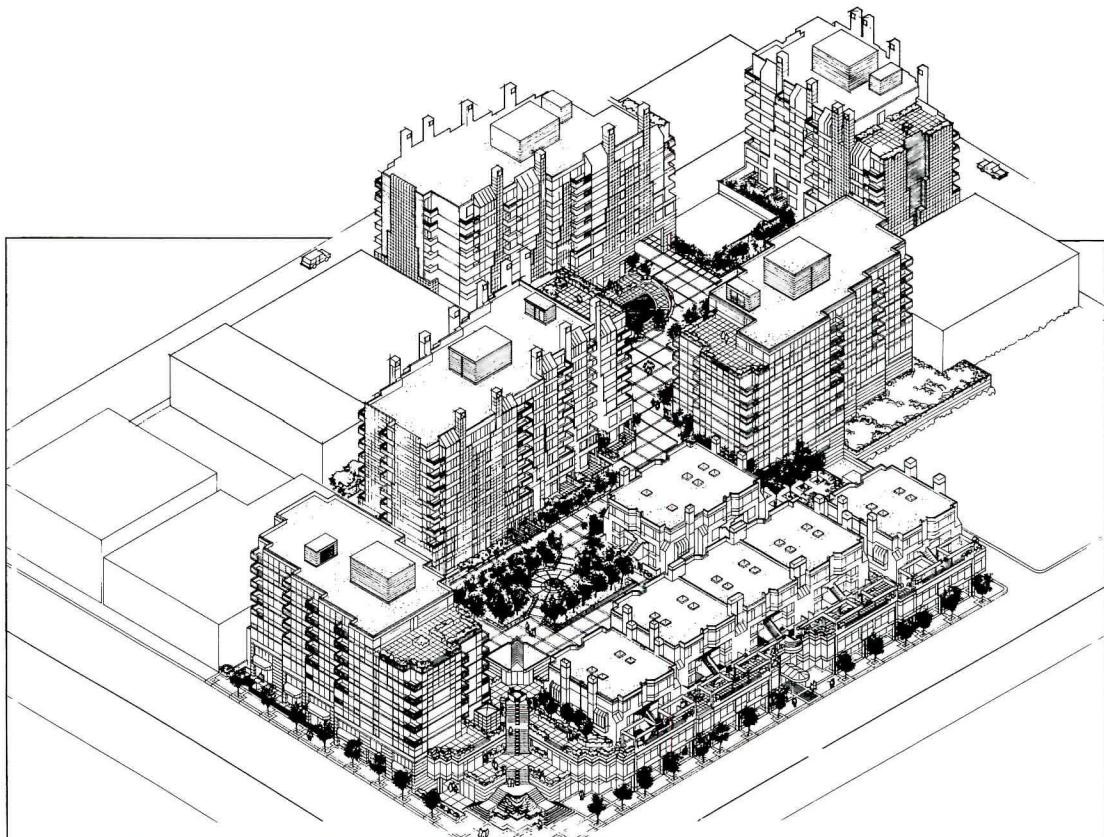
as easy access to overhead lighting and wiring. Even aluminum-louver solar control systems on windows to help control heat gain and reduce costs of cooling.

For more information write the Aluminum Association, Inc., Dept. B, 818 Connecticut Avenue, N.W., Washington, D.C. 20006.

Building owner: Devonshire Associates, New York; architect: Steffian/Bradley Associates, Inc., Boston; curtain wall fabricator and erector: Maddison Associates, Revere, Mass.



Redevelopment renascent in the City by the Bay



Two mixed-use projects have added momentum to the revitalization of San Francisco's South of Market district. Yerba Buena Gardens, the larger of the two ventures, is a 24-acre complex estimated to cost between \$750 million and \$1 billion. The product of a long-term public/private partnership initiated by the San Francisco Redevelopment Agency, Yerba Buena is ambitious in scope. Mayor Dianne Feinstein and the Agency conceive it as "a place of such character and quality that it embraces the diversity of all its citizens and enhances San Francisco's reputation as everyone's favorite city." (Yerba Buena—"good grass" in Spanish—is the name of a mission founded here in 1776.) In addition to landscaped terraces above the existing Moscone

Center convention hall, the proposed gardens would offer public plazas and esplanades, an ice skating rink, art galleries, indoor and outdoor performance areas, 160,000 to 200,000 square feet of retail space, a 1,500-room hotel, and twin towers housing over one million square feet of offices. Renderings of the project (photo below) depict an eclectic assemblage of buildings and grounds reminiscent of Copenhagen's Tivoli Gardens, Barcelona's Park Guell, the courtyards of Suchow, and the Villa D'Este.

The developers of Yerba Buena are Olympia & York California Equities Corporation, The Marriott Corporation, The Rouse Company, and Beverly A. Willis, a San Francisco architect. Her firm, Willis and Associates, and Zeidler Roberts Partnership

Architects of Toronto, are the project architects.

Across the street from the Moscone Center, St. Francis Place, a \$36-million housing development designed by the San Francisco firm of Kaplan/McLaughlin/Diaz, is now under construction (photo above). The largest market-rate rental housing project undertaken in the Bay City since the early 1960s, St. Francis Place comprises five midrise apartment buildings and 52 town houses, providing 410 residential units in all. A cascading waterfall and grand staircase form the centerpiece of a plaza mounted above a 496-car garage and 31,000 square feet of street-level retail space. Completion is scheduled for June 1985.





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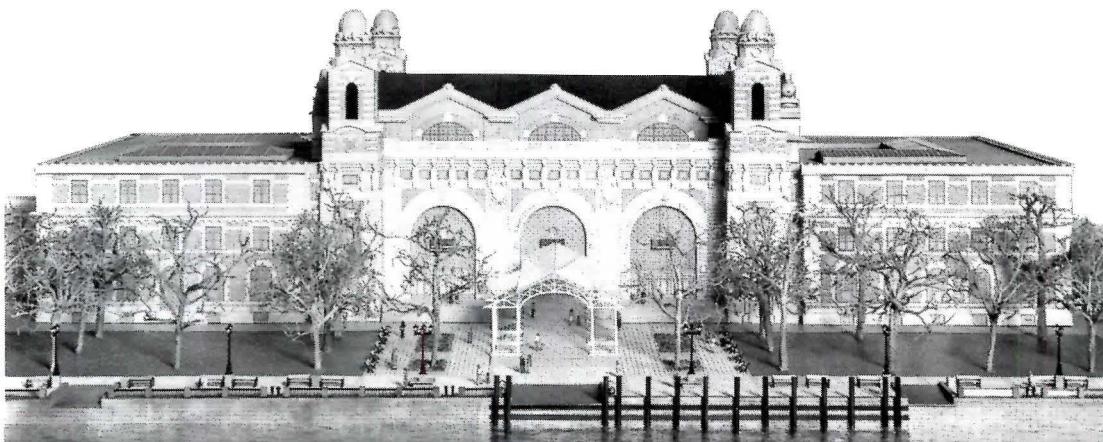
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Plans unveiled for Ellis Island restoration



With restorative work on the Statue of Liberty proceeding toward a 1986 completion (see pages 128-135), attention is now being directed to nearby Ellis Island and the \$40-million rehabilitation of the Main Building at the former immigration center. Designed in 1898 by architects Boring & Tilton in the French Renaissance style, the imposing structure served as processing center for 17 million immigrants from 1892 until its closing in 1954. After lying vacant for 11 years, the island was taken over by the National Park Service in 1965 and partially reopened in 1976 as part of the Statue of Liberty National Monument.

Although much of the building's red brick, granite, and limestone exterior is in surprisingly good condition,



restoration architects Beyer Blinder Belle and Anderson Notter Finegold face the task of incorporating contemporary museum functions into historic interiors while retaining the "eerie vibrancy," in John Belle's words, of the spaces. The focal point of the project is the cavernous Great Hall, a 170-foot-long, Guastavino-vaulted registry room that will be restored to its 1918-1924 appearance (photo left). Other highlights of the reworked facility include a new computer genealogy center for visitors who wish to trace the history of relatives passing through Ellis Island; an oral history center for the preservation of immigrants' spoken legacy on audio tape; a library and reading room; and a variety of theaters and food service areas.

Post-Mediterraneanism on the Texas plain

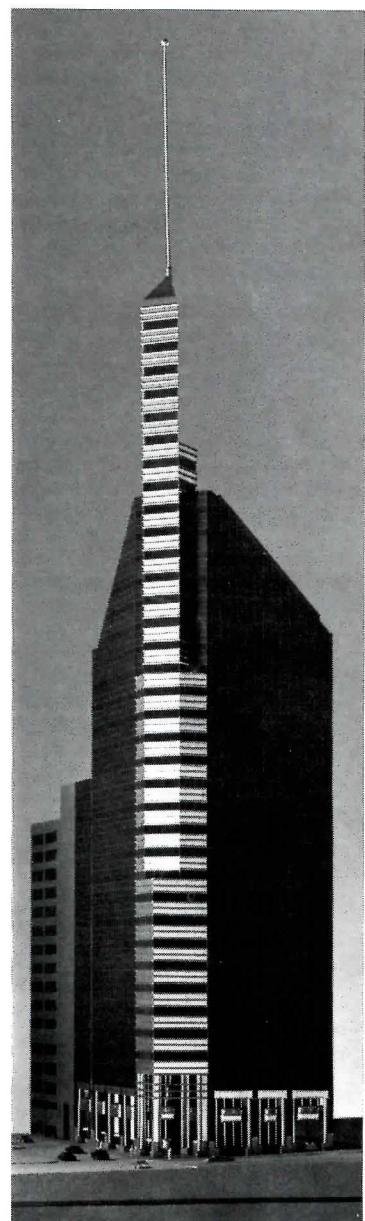


The San Antonio Art Institute expects to break ground this fall for a 50,000-square-foot complex designed by architects Moore Ruble Yudell. Organized as a series of interconnecting pavilions, adjacent to the existing McNay Art Museum, the new facilities will comprise a library, cafe, auditorium and outdoor amphitheater in one cluster; three wings of skylighted

studios and classrooms; a communications wing; and a sculpture center with its own foundry. Arches, loggias, and broad roofs reflect the "Mediterranean" style of the McNay Museum. Courtyards and landscaped grounds will define the 4.5-acre site as an entire campus, befitting the importance of the project: when construction is completed in 1986, the Art

Institute will become the first independent college of art in the Southwest. Replying to local criticism of the decision to hire an architect from another region of the country, SAAI director George Parrino observed: "To refer to Charles Moore [as] an 'out-of-town architect' is ludicrous. It's like calling Picasso, Matisse or Van Gogh an 'out-of-town artist'."

A new symbol for downtown Baltimore



"Merritt Tower was designed to be clearly identifiable on the Baltimore skyline," according to architect John Pearce of The Hillier Group. And sure enough, with its lighted mast rising above an eight-story pyramidal shaft, it will be. The main volume of the 29-story office structure is to be conventionally clad in dark tinted glass; a seemingly freestanding shaft placed on the building's chamfered corner, by contrast, will be embellished with copper-colored spandrel panels. The corner unit will soar through several setbacks beyond the prow of a truncated penthouse roof that was inspired by the glass pyramids of the nearby National Aquarium. At an over-all height of 625 feet, including the mast, the building will be the tallest structure in Baltimore.

Computers cut costs in Los Angeles building. ELEVATORS BY DOVER

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Competition calendar

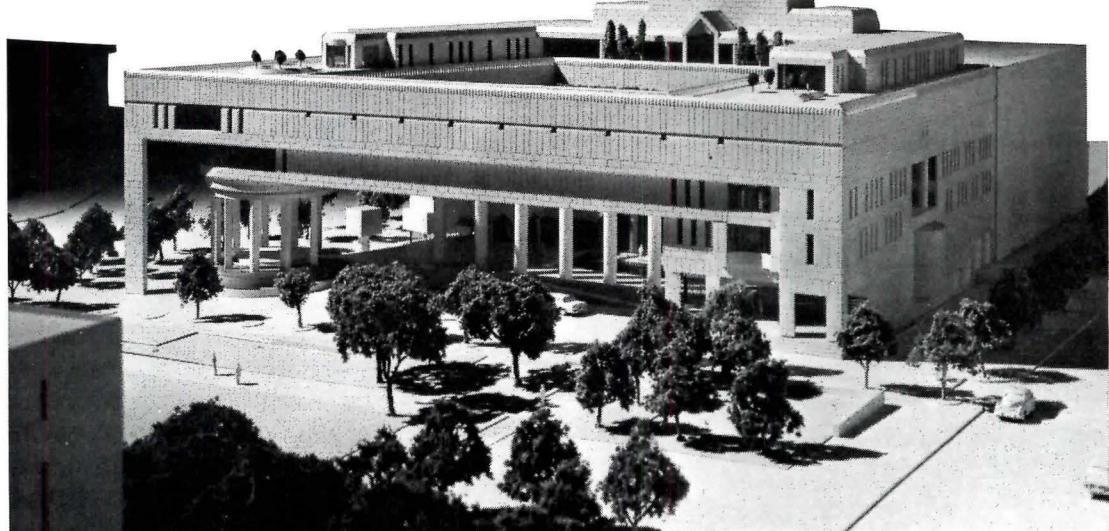
The Portland Cement Association welcomes submissions for the 1984 Concrete Building Awards Program. Entries must be concrete-frame buildings completed since September 1982, or projects sufficiently advanced in construction for the basic design to be evident. Entry deadline is September 14. For information write Glen Simon, Portland Cement Association, 5420 Old Orchard Road, Skokie, Ill. 60077.

An infill building in New York City's historic Schermerhorn Row Block is the design problem set for this year's Society of American Registered Architects National Student Design Competition. Entrants must not have completed their degree work before October 10, when the final jury review begins. SARA will award a \$2,000 first prize, a \$1,500 second prize, and a \$500 third prize. For further information contact Ray E. Studer, 1984 Student Design Competition Chairman, 3049 16th Street N.W., Canton, Ohio 44708 (216/455-0074).

Professional architects and designers from all nations are invited to submit entries for the International Interior Design Award 1985. Sponsored by AGB Westbourne Ltd., organizers of the Interior Design International Exhibition in England, the new program offers an award of £10,000 for the best interior completed between January 1, 1984 and January 1, 1985. Deadline for entry is January 1, 1985. For further information contact The Secretariat, International Interior Design Award, Audit House, Field End Road, Eastcote, Ruislip, Middlesex HA4 9XE, England.

The American Library Association and the AIA are seeking entries to the 12th Library Buildings Award Program for structures completed since December 1, 1977. Open to registered American architects, the program includes all library types—academic, public, state, Federal, and private—in the categories of new buildings, additions, renovations, conversions, and interior redesign. For further information contact the 1985 Library Buildings Award Program, AIA, 1735 New York Avenue N.W. Washington, D.C. 20006.

Entente cordiale



Canada's Department of External Affairs has unveiled a conceptual scheme for the Canadian Chancery in Washington, D.C., designed by Arthur Erickson Architects. Consolidating embassy offices now housed in three separate buildings, the new structure will front on Pennsylvania Avenue, diagonally across from the East Building of the National Gallery

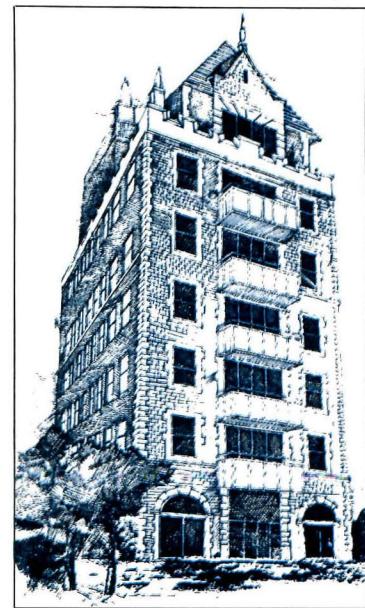
of Art and two blocks from the foot of Capitol Hill. In its general configuration, Erickson's proposal follows the guidelines of the Pennsylvania Avenue Development Corporation master plan, while details such as monumental colonnades, a tempietto-like rotunda, and the suggestion of rustication and dentil courses imply an *entente cordiale* between modernism and

Washington's neoclassical tradition. Historians have noted another link to local precedent. As the first major building on Pennsylvania Avenue to be owned by a foreign nation, the Chancery will belatedly realize a fragment of the 1791 city plan of Pierre L'Enfant, who envisioned the axis from the Capitol to the White House as a grand boulevard lined with embassies.

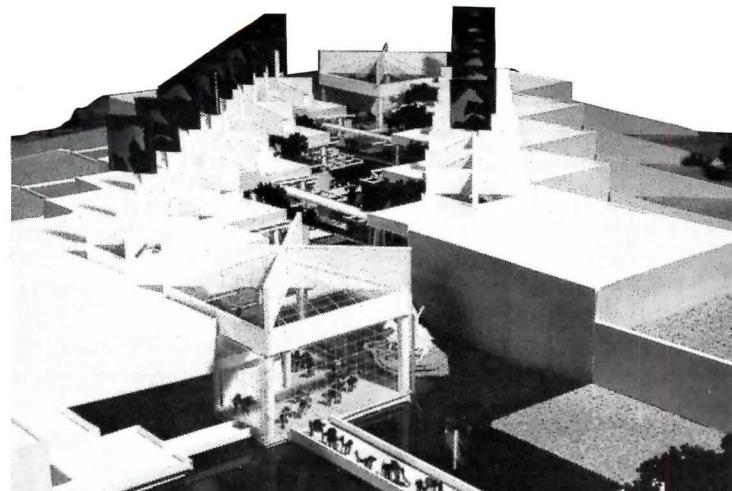
Splendor in the dunes

Among the architectural curiosities of eastern Long Island, there is nothing quite like the neo-Jacobean tower that stands in lonely majesty among the motels, shops, and cottages of downtown Montauk. Built in 1927 by Carl Fisher, developer of the Indianapolis Speedway and Miami Beach, the seven-story structure (a high-rise by local standards) was to be the focal

point of a Montauk transformed from sleepy seaside fishing village into the "Miami Beach of the North." A victim of the Great Depression, this urban metamorphosis never came about, although the tower itself has finally acquired its intended luxe. Atco Property Services Corporation, which purchased the property in 1980 and dubbed it "The Tower at Montauk," has converted it into 21 condominiums, ranging in price from \$135,000 for studios to \$1.65 million for the penthouse. The apartments command ocean views and a panorama of architectural follies in the dunes erected by later generations of would-be master builders.



Home on the range



Founded in Oklahoma City 30 years ago, the National Cowboy Hall of Fame and Western Heritage Center has long since outgrown its original home. A local insurance company recently donated a 31-acre site to ensure that this repository of frontier culture would not have to relocate to the greener pastures of another state. Cambridge Seven Associates have designed a 130,000-square-foot complex that will encompass galleries of Western art, a Hall of Western films, and exhibits contrasting sagebrush mythology with the reality of cowboy life. The architects are also responsible for planning a contiguous development of hotel/retail facilities and an amusement park. The new hall is expected to open in time for the Oklahoma Centennial in 1989.

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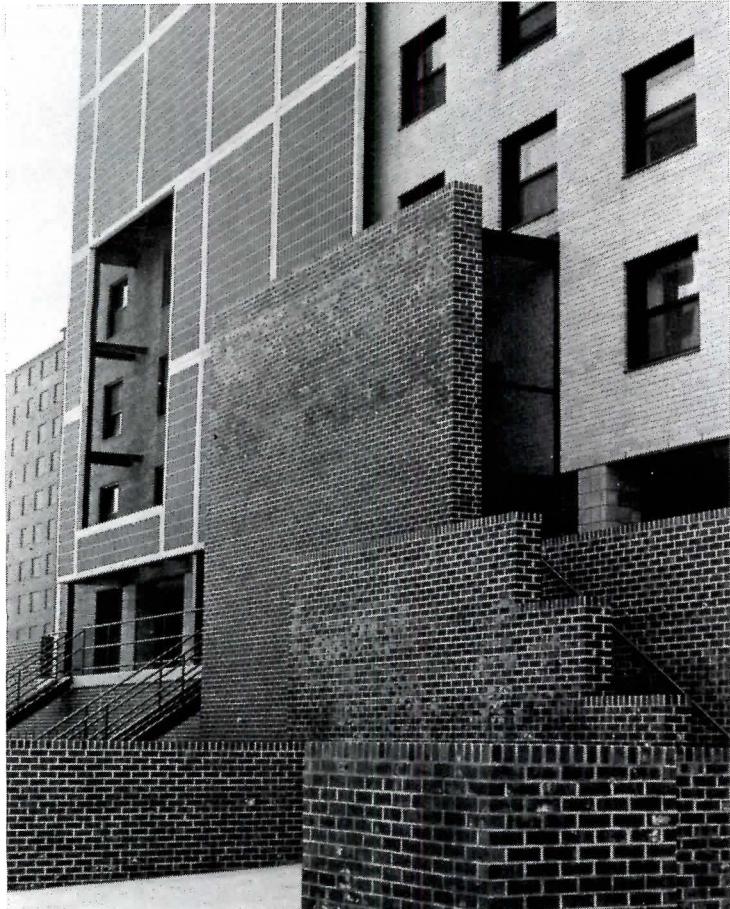
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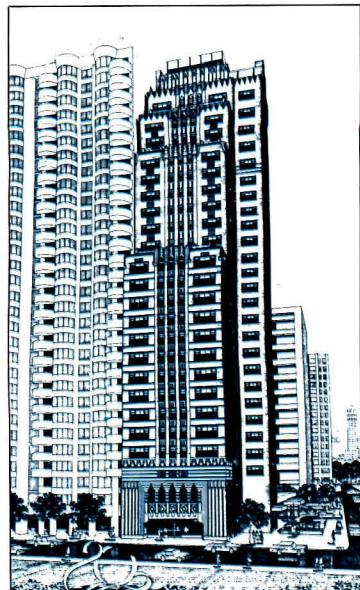
Readdressing the design of low-income housing



Thacher Homes in Albany before (small photo left) and after (large photo) rehabilitation by architects Crozier Philippi Associates. Members of the project team included J. Gregory Crozier, Thomas C. Glynn, Stephen R. Griffing, Charles G. Siconolfi, and Gerald W. Spillane.



Deco warehouse goes condo



There are still new twists to the oft-told tale of urban warehouses recycled into "upscale" dwellings—witness the Sofia, a 26-story tower built in 1930 as a parking garage, used for many years as storage lofts, and recently converted into condominiums. Located in view of New York City's Lincoln Center, this most glamorous of utilitarian structures was encrusted with Art Deco splendor by its original architects, Jardine, Hill & Murdock. Last year the building became an official city landmark, an honor that has been respected by Alan Lapidus, architect for the conversion; Rothzeid, Kaiserman, Thomson and Bee, restoration architects; and Abraham Rothenberg Associates, design consultants. Besides creating lobby decor that reflects motifs and colors of the brick and terra-cotta-trimmed facades, the present-day architects have installed bathrooms modeled on the sybaritic opulence of the silver screen. Beneath the 94 residential units, which are priced from \$175,000 to \$1.5 million, the base of the tower houses a nine-story commercial condominium.

One of the most ubiquitous (and some might say unfortunate) legacies of postwar housing subsidies by the Federal government is the red-brick cluster of low-income apartment towers that has become the dominant feature of many urban neighborhoods. Generally considered an expedient, if woefully unesthetic, solution to the problem of sheltering the poor, projects have perpetuated an atmosphere of neglect and deterioration that has often encouraged the crime, vandalism, and abandonment that they were initially intended to stem—conditions that the Albany, New York Housing Authority sought to reverse when it hired architects Crozier Philippi Associates to redesign the Thacher Homes, a typical 525-unit project of five 12-story towers built in 1954 that by 1977 had a vacancy rate approaching 50 per cent.

Working with funds from HUD's Urban Initiative Program, the architects and the city sought to lower the number of living units on the South End site to 325 and eliminate the housing of families with children in units requiring the use of elevators, stairways, and corridors. Toward that end the architects created

one-bedroom apartments for adults on floors four through 12 situated off a new single-loaded, balconylike corridor that acts as a buffer against noise from a nearby expressway. Families with children are housed in duplex "town houses" on the second and third stories, while the ground floors are given over to space for stores and social service agencies. In order to soften the "project look" of the complex (and to meet current codes) the architects placed a new fire stair, clad in precast, tile-faced concrete panels, that cascades down the side of each building. Large areas of the tower corners and ground floors, moreover, have been carved away to lessen apparent bulk and to provide balconies and walkways.

Scheduled to be fully occupied by the end of this year, the development has been renamed Steamboat Square in honor of the ferries that once plied the waters of the Hudson between Albany and Rensselaer. While it is too soon to determine the success of this seemingly ingenious scheme, authorities in Schenectady, Poughkeepsie, and Newark seem convinced to the point of engaging the architects' services to address troubled projects in their cities.

New England Buddhists and the temple against doom



On a pastoral hilltop in central Massachusetts—"where the earth, trees, and air seem to speak of a special serenity, purity, and joy"—an order of Buddhist monks dedicated to general and nuclear disarmament is erecting a peace pagoda that has been designed by architect Louis Mackall in the form of a traditional Indian stupa. Said to be the first such building in the

United States, the 80-foot-wide concrete dome housing the order's sacred relics will be crowned by fiery gold-leaved aluminum ornament. If the temple's idyllic site seems appropriate to the Buddhists' pacifist tendencies, its location in Leverett, one of the first towns in New England to declare itself a "nuclear-free zone," is positively copacetic.



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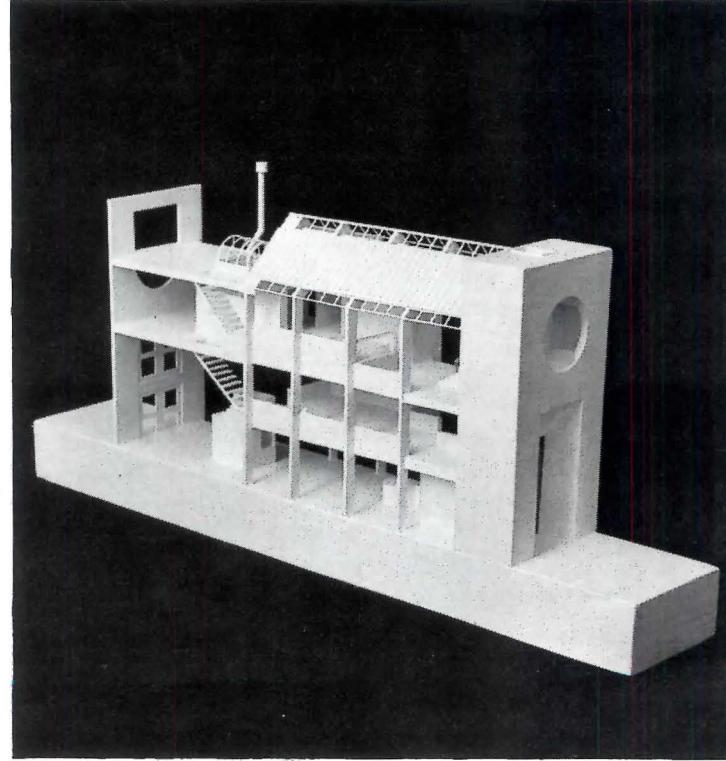
Design awards/competitions: R.S. Reynolds Memorial Award and Reynolds Aluminum Prize for Architectural Students

The 28th annual international R.S. Reynolds Memorial Award for distinguished architecture using aluminum has been presented to Austrian architect Hans Hollein for his design of the Municipal Museum in Mönchengladbach, West Germany.

Sponsored by the Reynolds Metal Company and administered by the American Institute of Architects, the 1984 award consists of a \$25,000 honorarium and an aluminum sculpture by artist Jack Youngerman. Along with Hollein's premiated design we show the three projects honored with the Reynolds Aluminum Prize for



1



2



3

Architectural Students, which conferred \$5,000 on the first place winner and \$1,000 on two honorable mention submissions. The prizes for all student winners are shared with their schools.

The members of the 1984 R.S. Reynolds Memorial jury were Robert Broshar, FAIA, of Thorson/Brom/Broshar/Snyder, in Waterloo, Iowa; John Burgee, FAIA, of John Burgee Architects with Philip Johnson, in New York City; and George Candilis, Hon. FAIA, of Paris and Athens.

The jurors reviewing entries for student awards were chairman Ralph Rapson, FAIA, dean of the University of Minnesota School of Architecture; John Q. Lawson, AIA, of Philadelphia; C. Timothy Fish, a student at the Georgia Institute of Technology; Eric McRoberts, a student at Temple University; and Jeffrey D. Brown, a student at Drury College.

1. The Municipal Museum, Abteiberg Mönchengladbach, West Germany; Hans Hollein, Architect (International Award, see RECORD, February 1983, pages 79-91). Situated at the crest of a hill in Mönchengladbach, an old Rhenish textile city of 240,000 people in northern Germany, the Municipal Museum was commissioned in 1972, designed in 1973, and opened in 1982 to house an important collection of contemporary European and American art. In order to link the town's historic commercial center at the top of the hill with the newer city below, Hollein designed the museum around an elaborate system of pedestrian pathways and terraces that form the roof of major exhibition spaces buried in the hillside. The dominant building in the complex is a tower that contains administrative offices and support functions. The museum's main facades are sheathed in extruded aluminum section panels with an anodized natural finish—specified, according to Hollein, because "functionally and esthetically it was the appropriate material to use." The jury called the museum "a wonderful study in contrast: creative, vibrant, and new while at the same time blending well with the medieval and baroque buildings in its neighborhood. The use of aluminum in the design is both imaginative and varied."

This is Hollein's second R.S. Reynolds award. His first, in 1966, was for the design of a candle shop in Vienna.

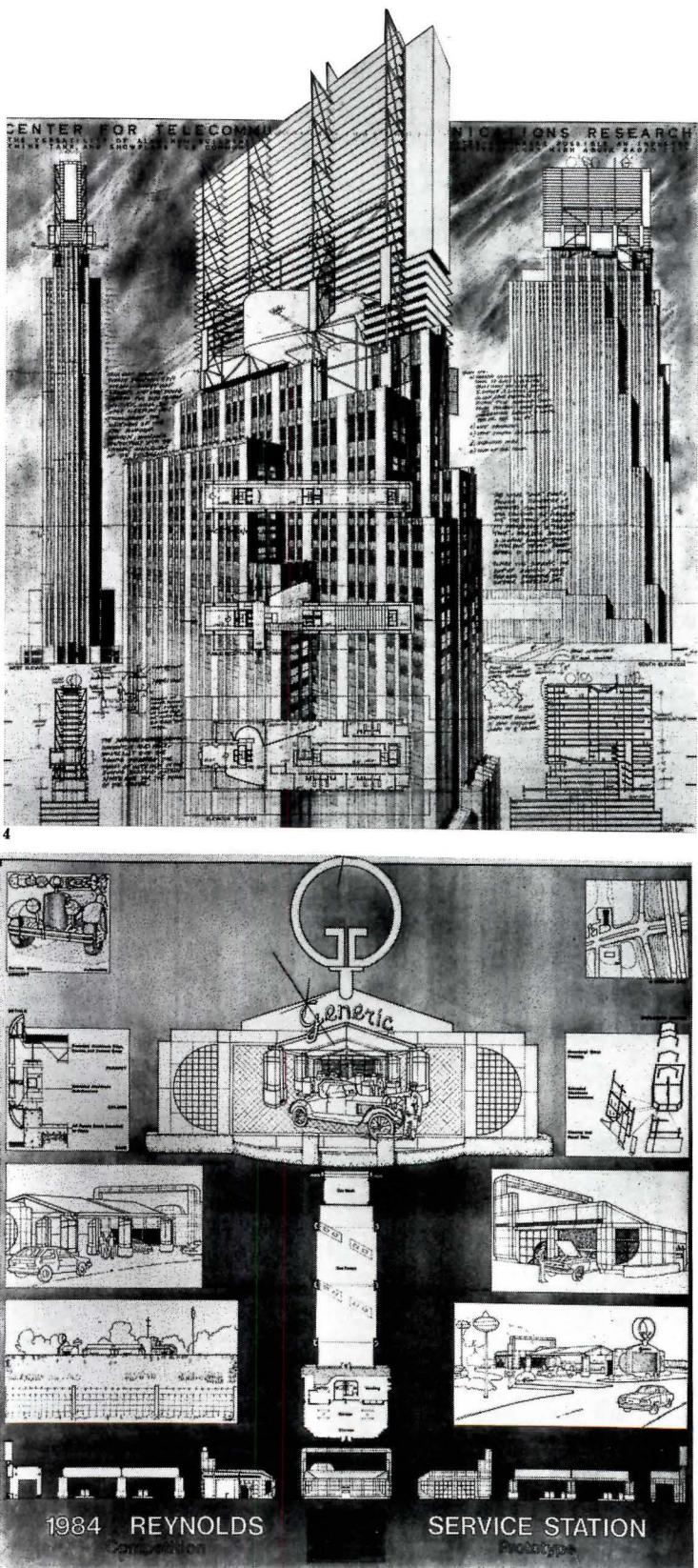
2,3. "Alumnacosm" (National Prize, Architectural Students); Michael Solari, designer (University of Southwestern Louisiana). Conceived as a prototypical study of how an industrial material can be used

in an urban setting, this aluminum town house exhibits a five-by-five-foot angle grid to which foam core aluminum panels are attached. A second structural zone incorporates floors spanning between beams that are left unattached to walls to allow for the passage of light and air. A third structural zone has 10- by 30-foot load-bearing panels supporting a rooftop terrace. Calling the student's solution "sophisticated and admirable," the jury praised the scheme for its "unity of architectural estheticism."

4. A Telecommunications Research Center (Honorable Mention, Architectural Students); Peter Pfau, designer (Columbia University). "The versatility of aluminum building materials," noted the designer, "makes possible an industry think tank and showplace for communications technology" proposed for the top of the RCA Building in New York. "The lightness of the new aluminum addition," added Pfau, "contrasts respectfully with the apparent massiveness of the existing building."

5. A Service Station (Honorable Mention, Architectural Students); Mark S. Klancic, designer (University of Wisconsin at Milwaukee). A prototype for an aluminum service station draws on the nostalgic associations of the classic American automobile for imagery. Included in the elongated tripartite scheme—which echoes the hood-passenger compartment-trunk division of an automobile—are provisions for garage services, a cashier's office, restrooms, gas pumps, and a car wash.

In addition to the projects illustrated, certificates of excellence were awarded to Perry M. Gauthier, Farazan Kholousi, and Stephen Podelis, of the University of Nebraska, for the design of "Qualumiform," an aluminum statue; and to Sven K. Govaars, Jr., of the University of New Mexico, for "A Sacred Place ... Aluminum Taken a Step Beyond," a study of the passage between two dimensions.





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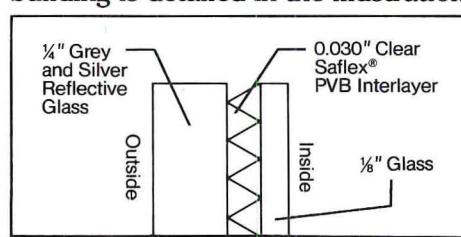
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Report from Paris: “Images et Imaginaires d’Architecture”

By Barry Bergdoll

One of the major architectural events in Europe this spring was the exhibition “Images et Imaginaires d’Architecture” held at the Centre Georges Pompidou in Paris. Presented by the Centre de Crédit Industriel, the show was a survey of 19th- and 20th-century European architecture and architectural thought as seen through the eyes of the draftsman, artist, and photographer. Although there are no plans for the exhibit to travel, a profusely illustrated, 436-page catalog is now available in the United States. The following review of the exhibition was written by Barry Bergdoll, an American art historian currently living in Paris who writes frequently about architecture.

Notwithstanding their ever-increasing popularity, architectural exhibitions are inevitably paradoxical. “Images et Imaginaires d’Architecture,” the sweeping panorama of architecture from 1826 to the present seen in 600 paintings, photographs, drawings, and stage designs at Paris’s Centre Beaubourg, marks the coming of age of architectural drawings in the world of populist mega-exhibitions. In many respects the exhibition is but a haphazard selection of 600 of the most fetching and engaging architectural images culled from across the continent; but it also presents an underlying polemic which is subtly enforced by the very installation of the show.

Midway through this decade-by-decade survey the visitor encounters an empty frame. Neither an oversight nor a mere designer’s conceit, it affords a momentary glimpse of the Paris skyline itself, the only view through Beaubourg’s glass skin that architect Jean Dethier, the exhibition designer, has permitted in the handsome sequence of marbelized rooms adroitly arranged in Piano and Rogers’s void. This lapse in the march of iconography is an historically didactic gesture, occurring as it does at 1914, but more essentially it is a subtle reminder of the fundamental paradox that underlines Dethier’s choices.

Architecture—it seems almost too evident to point out—cannot in fact be exhibited in a museum. The real subject of any architectural exhibition is absent, outside on the horizon; it is represented in the gallery through two-dimensional substitutes. Dethier’s exhibition, then, is the first major show to confront us directly with the very

dilemma of architectural representation not simply as a transcription of a building but as a stance, a vision, and an interpretation of the nature and meaning of architecture and our environment. The show is a stimulating and often highly personal juxtaposition of the most diverse images, from architects’ own drawings to painters’ and photographers’ records of particular buildings, to works of art that use imaginary architecture as an invitation to more distant reveries. Thus Schinkel’s fantastic stage sets confront a plan and elevation of Charles Fowler’s metal roof of Hungerford Market in London (1835), and the planar dissections of De Stijl are side by side with paintings by Moholy-Nagy and German Expressionist film sets.

Many of these unexpected juxtapositions are undeniably provocative, but for the most part this cross-media free-for-all obscures rather than elucidates the very themes that should be the show’s essence. Nowhere are we invited to contemplate the conventions and possibilities of different media depicting the same subject. Moreover there is a set of didactic historical premises organizing this potpourri which demands reflection. Inevitably

the proposition of a “revolution in seeing” invites resistance. The survey begins in 1826, Dethier explains, because the birth of photography suddenly afforded “a radically new way of looking at architecture.” While Niepce’s well-known photography of that year is certainly an incunabulum of architectural photography—the shadowy image of the village of Saint-Loup de Varennes—this naive early essay in reproducing nature on tin hardly challenged the 1820s vision of architecture as much as the photograph’s neighbors in the exhibition’s first gallery. Indeed, both an 1824 Ecole des Beaux-Arts project by Henri Labrouste and the famous engraving of the stair of Schinkel’s Altes Museum were far more challenging images to contemporaries, and had much profounder reverberations in later architecture and architectural representation, than Niepce’s “innocent” view. Lost in this vast panorama, the potent compositional and urbanistic principles in those didactic depictions go unperceived.

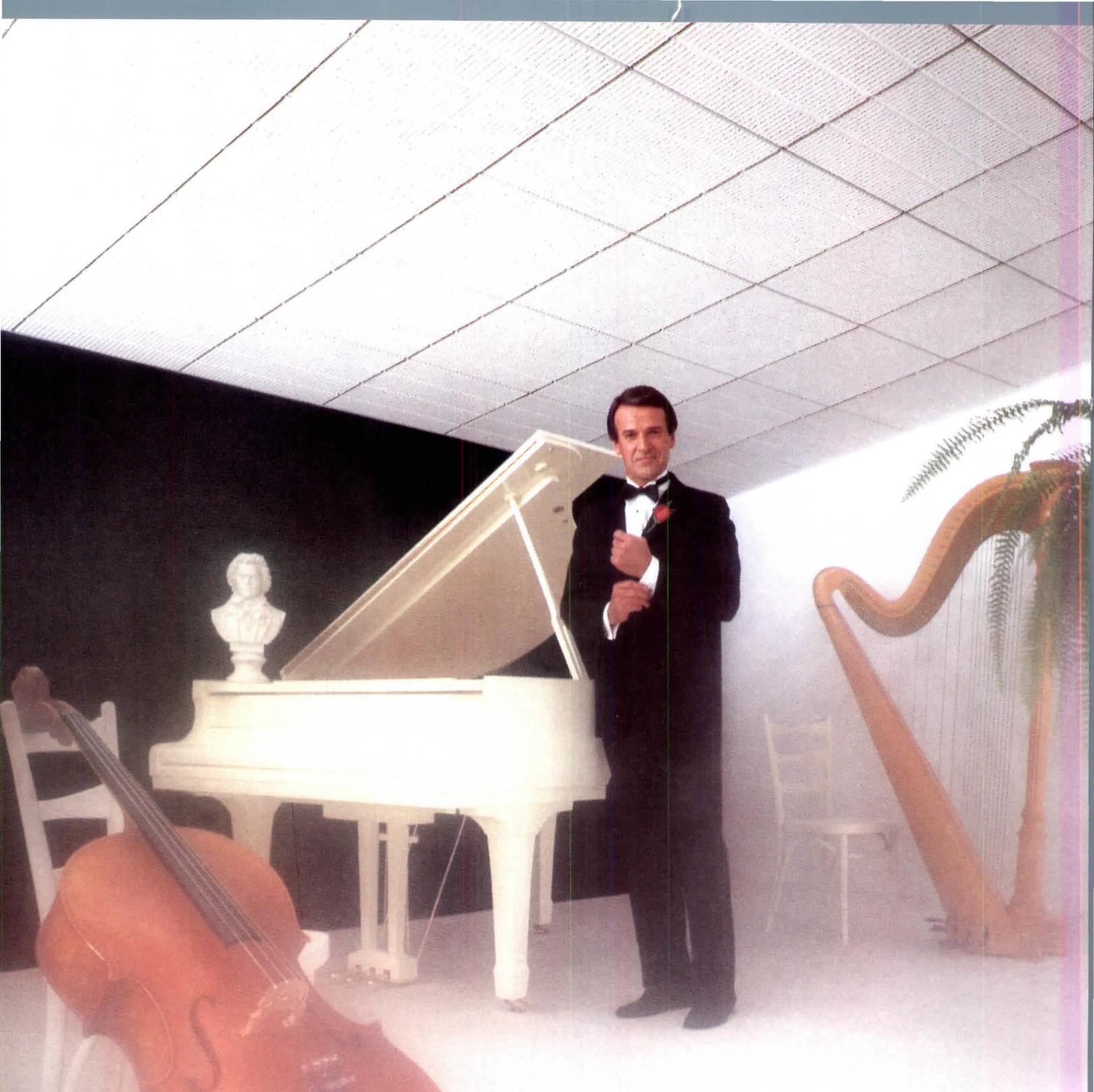
This insistence on critical moments of change underlies the concept of architectural history presented in Dethier’s installation. The corridor that

serves as the central spine of the exhibition neatly divides the 19th from the 20th century and reinforces the conviction that nothing was the same after World War I. Aligned with the central corridor, the empty frame provokes a momentary pause before we embrace modernity’s “new vision” of architecture. Despite the eclecticism of objects selected, the 19th-century galleries focus on “revolutionary” moments that are none other than those exceptional metal structures that have so long been considered privileged historical road marks. In fact, the only buildings in the exhibition represented in the whole range of media are those popular icons, the Crystal Palace and the Eiffel Tower, both of which were immediately so symbolically charged that their artistic representation is highly atypical and arguably far less revealing of the dynamics of architectural representation than a set of views of a more representative building.

The experiments in new spatial relationships afforded by Futurist, Cubist, and De Stijl canvases punctuate the architectural drawings and photographs of the decades 1910–1930 and enforce a vision of



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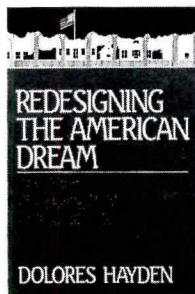
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rupture that is as melodramatic as the huge crack Dethier has carved through the central panel of this gallery. How unfortunate that in this all-inclusive exhibition the rich tradition of architectural book and magazine illustration, one of the most influential and suggestive forms of architectural representation, is ignored. Would, for instance, that Choisy's extraordinary reduction of the entire history of architecture to axonometric patterns had prepared us for those drawings of Le Corbusier and Rietveld which so evidently pay homage to that vision.

Across the corridor, Dethier's 20th-century galleries are no less polemical. As the century progresses we are gradually prepared for that "événement" which is to close the exhibition on a note of optimism: the "renaissance" of architectural drawing after 1970. The refusal to include architectural models, as well as the exclusion of American architects, certainly helps exaggerate the bleakness of architectural representation in the late 1950s and 1960s; but one can hardly overlook the impact of Archigram's vibrant graphics in the reintroduction of drawing to the center of architectural theorizing. Certainly if the cartoon strip was to take up architectural imagery with increasing bravura during this period—as one of the exhibition's most amusing galleries reveals—Ron Herron and Peter Cook merit some kudos. Nor can one naively pretend, as Dethier insists, that the recent phenomenon of architectural drawings across ideological lines, from Rossi and Krier to Piano and Rogers, represents simply a return to the honorable tradition of architectural rendering woven through the earlier galleries like a gilt thread.

It is in this final 1970-1984 gallery that the selection's coherence finally emerges. The taste for the Beaux-Arts rendering, for the 19th-century lithograph and for the 1960s cartoon strip, is part of the same phenomenon that has opened Beaubourg's fifth-floor galleries to an architectural show. Architectural imagery has entered the mass market, and architects now produce directly for sale in galleries drawings that have never been stained by the process of building design. The architectural drawing of the 1980s—admittedly often a fertile field for theoretic speculation—is not a rediscovered document that the new taste for architecture has taught a larger public to appreciate, but often an image of architecture prepared specifically for that public. The Beaubourg show, then, leans dangerously close to bypassing the very questions it invites us to ponder in an empty frame, and to representing instead a sort of supermarket for chic in the new mode of architectural imagery.

Books



Redesigning the American Dream: The Future of Housing, Work, and Family Life, by Dolores Hayden. New York: W.W. Norton & Co., 1984, \$17.95

Reviewed by Sarah Williams

You've heard the statistics: We have fewer children and we have them later, mothers usually work, close to half of all marriages end in divorce within five years, 25 per cent of the population lives alone. Since the family has changed, asks Dolores Hayden, why do our houses look the same? We build and live in spaces developed for a different type of life, yet we blame ourselves for the friction that results. "Americans," Hayden writes, "often say 'there aren't enough hours in the day' rather than 'I'm frantic because the distance between my home and my workplace is too great.'"

Our problems aren't always our fault. The truth is, while the good old American Dream House is tenaciously supported by the government's tax structure, a wide variety of corporate interests, and a socialized nostalgia for rural living, it accommodates the new family's needs badly indeed. Houses are located far away from day-care, shopping, and health-care facilities; the working mother's life is a saga of constant exhaustion and "driving triangles." Meanwhile, ethnic minorities live in urban ghettos; singles and divorcees live alone in tiny apartments and eat fast food. The elderly are shuttled off to nursing homes located on highways, away from children and friends.

Reconstructing the history of the suburban home reveals its political foundations. In the late 19th century middle classes fled the disease and poverty of the inner cities to settle in "country" homes made suddenly accessible by train. After World War I, union leaders and industrialists joined forces to promote the "sacred hut." Unions fought for a male worker's "family wage," partly to keep women out of the labor market, while industrialists

encouraged their employees to buy property in the belief that homeowners would be less quick to strike. And finally, after World War II, weapon-making industries like General Electric switched back to consumer products and promoted the suburban home as a sure market for their wares. The government colluded, with the Federal Housing Authority granting a disproportionate number of mortgages for the American dream home (while routinely denying applications for houses located in racially integrated neighborhoods). The result: by 1949, William Levitt was building one house every 16 minutes, and AM radio was playing "I'll Buy That Dream."

Today, nostalgia as much as economics makes us cling to the one-family, one-home ideal. America is a country addicted to the notion of unlimited space, and today's suburban home is yesterday's rural farm. But, Hayden sharply reminds us, "When any culture clings to a rural housing type rather than devising a successful urban housing type, it remains a culture of people trying to be farmers and rejecting city life."

By the year 2000 we will build 20 million more units of housing. Need they be as unaccommodating as the ones going up now? No, Hayden writes, what politics and habit have wrought can be rewrought. Basing her vision largely on foreign examples, Hayden posits neighborhood clusters of small, kitchenless houses containing one or several separate living units arranged around a communal space that contains eating, day-care, and laundry facilities. Public transportation would take inhabitants to workplaces and shopping facilities close by.

In addition to "reconstructing domestic space," Hayden urges a "domestication of urban space," which includes providing child-care facilities in corporate and public buildings, and designing public facilities with rape- and crime-prevention in mind.

Redesigning the American Dream is an important, carefully conceived, much-needed indictment of current American housing trends, and criticisms should be regarded in light of the book's over-all excellence. But it's not perfect. Hayden writes extremely well but has organized her material poorly, and often one has to extract her message from a pastiche of seemingly unrelated subchapters.

More seriously, she minimizes the grip of nostalgia for the

"sacred hut." The suburban ideal has held a powerful position in the American imagination from Thomas Jefferson all the way up to *Good Housekeeping*, but Hayden stresses instead the rather limited, however inspiring, tradition of radical housing which she documented in her last book, *The Grand Domestic Revolution*. And she dismisses altogether the suburban home's power as a cultural archetype, writing only that "consumer choices of mass-produced, machine-made goods cannot carry the same esthetic meaning as houses and household objects made by inhabitants of a pre-industrial/folk culture who have not experienced the commodification of land, house, and household goods." Assuming, perhaps, that we all know our Marxist theory, Hayden never explains why the commodification of the dream house necessarily drains out its symbolic meaning.

So building Hayden's ideal "city of faithful friends" will be harder than she admits, but it is essential nonetheless. And architects should lead the way, encouraging modifications in the programs given them, planning for the pooling of communal resources, insisting on equitable housing policies. More than any other group, architects have a special responsibility to follow the advice of one of Hayden's feminist heroines: "Make the whole world homelike. Do everything."



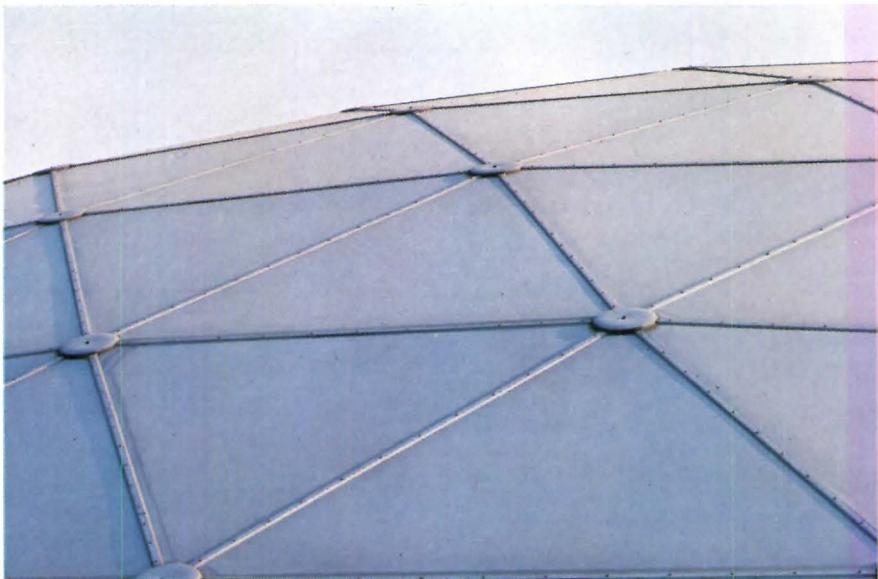
A proud family in front of their new house in Levittown, New York, 1948. "This housing represents the haven strategy of building homes as retreats for male workers and as workplaces for their wives," according to Dolores Hayden. From *Redesigning the American Dream*.

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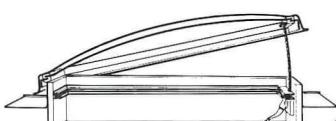
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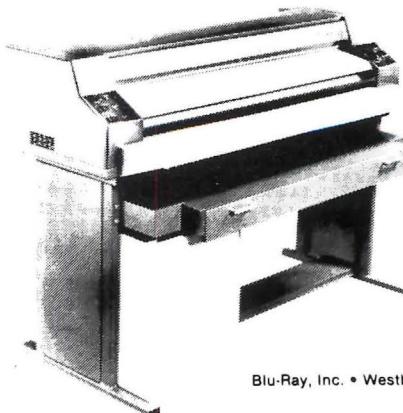
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Office notes

Offices opened

David Serrurier announces the formation of Serrurier Architects & Associates at 1655 North Cherokee Avenue, Suite 410, Los Angeles, Calif. 90028.

California Architectural Group has set up its offices providing a full range of architectural services. They are located at 12 South 1st Street, Suite 520, San Jose, Calif. 95113-2401.

Burton W. Berger has assumed the presidency of Gruzen/Berger, Architects & Planners, P.C., a new firm. They are located at Gateway One, Newark, N.J. 07102.

Firm changes

3D/International announces the promotion of Edward A. Tufts to vice president.

Langdon & Wilson has a name change adding partner Hans Mumper to the firm's title.

Hellmuth, Obata & Kassabaum (HOK) announces that Roslyn Singer Brandt, Velpeau E. Hawes, Jr. and Larry D. Self have been appointed to the board of directors. Kristin M. Smith has been appointed director of marketing for the HOK Interiors Group, Washington, D.C. office.

House Reh Associates, Inc., Architects announces the following promotions: Oscar Hernandez, senior associate; Roger L. Spears, Robert E. Reeder, Jr., David R. Herring, Victor L. Joe, associates. In addition, Kim Kimmey has joined the firm as marketing coordinator.

N. Kent Zerkel has joined Chumney/Urrutia.

Michael T. Starr has joined the architectural firm of SHWC, Inc. as a project manager.

William A. Kendrick has joined Morgan Kendrick Ritter Spross, formerly known as Morgan Associates.

New addresses

Chumney/Urrutia have moved to new offices located at 1023 Avenue B, San Antonio, Tex.

Edward Galanyk Architects have moved to 2388 Bloor Street West, Toronto, Ontario M6S 1P5.

McLean and MacPhadyen Architects have moved to 222 Somerset W., Ottawa K2P 2G3.

McCleary/German Associates have moved to new offices located at 3323 Richmond Avenue, Houston, Tex. 77098.

The Becket Group announces the move of their corporate headquarters to Colorado Place, 2501 Colorado Avenue, Santa Monica, Calif. 90404-3585.

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The New Orleans fair: post-mod confron ts hi-tech

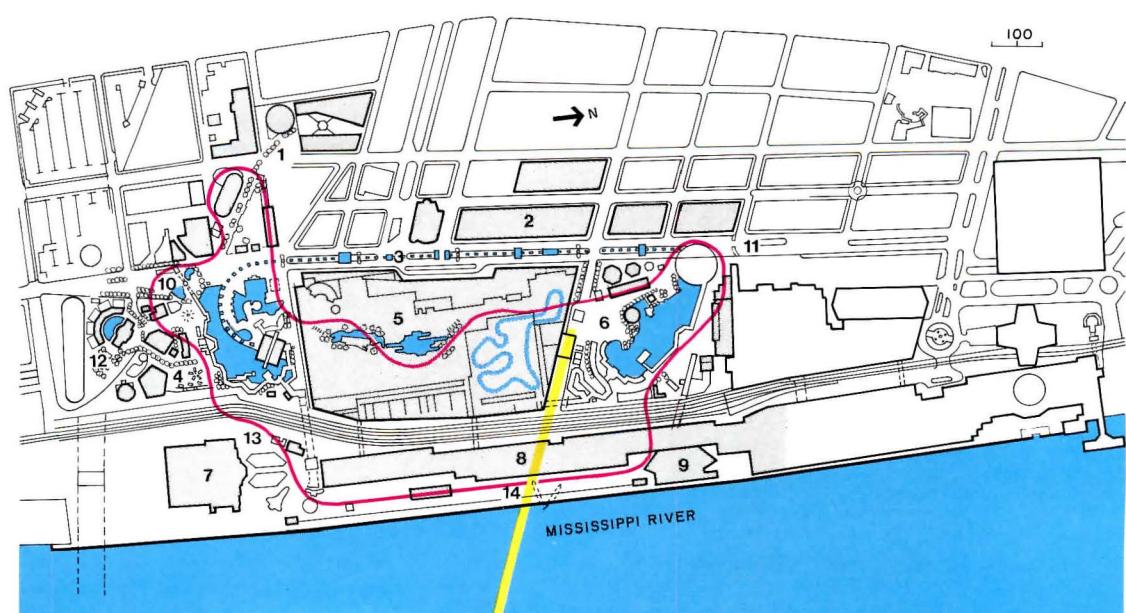
Intermittent fairs and festivals have been, through the ages, a prime form of release and "recreation" for most people. Add the ilks of such current permanent "fairs" as Disneyland, and they still rank pretty high as magnets for interest, diversion and, possibly, new insights.

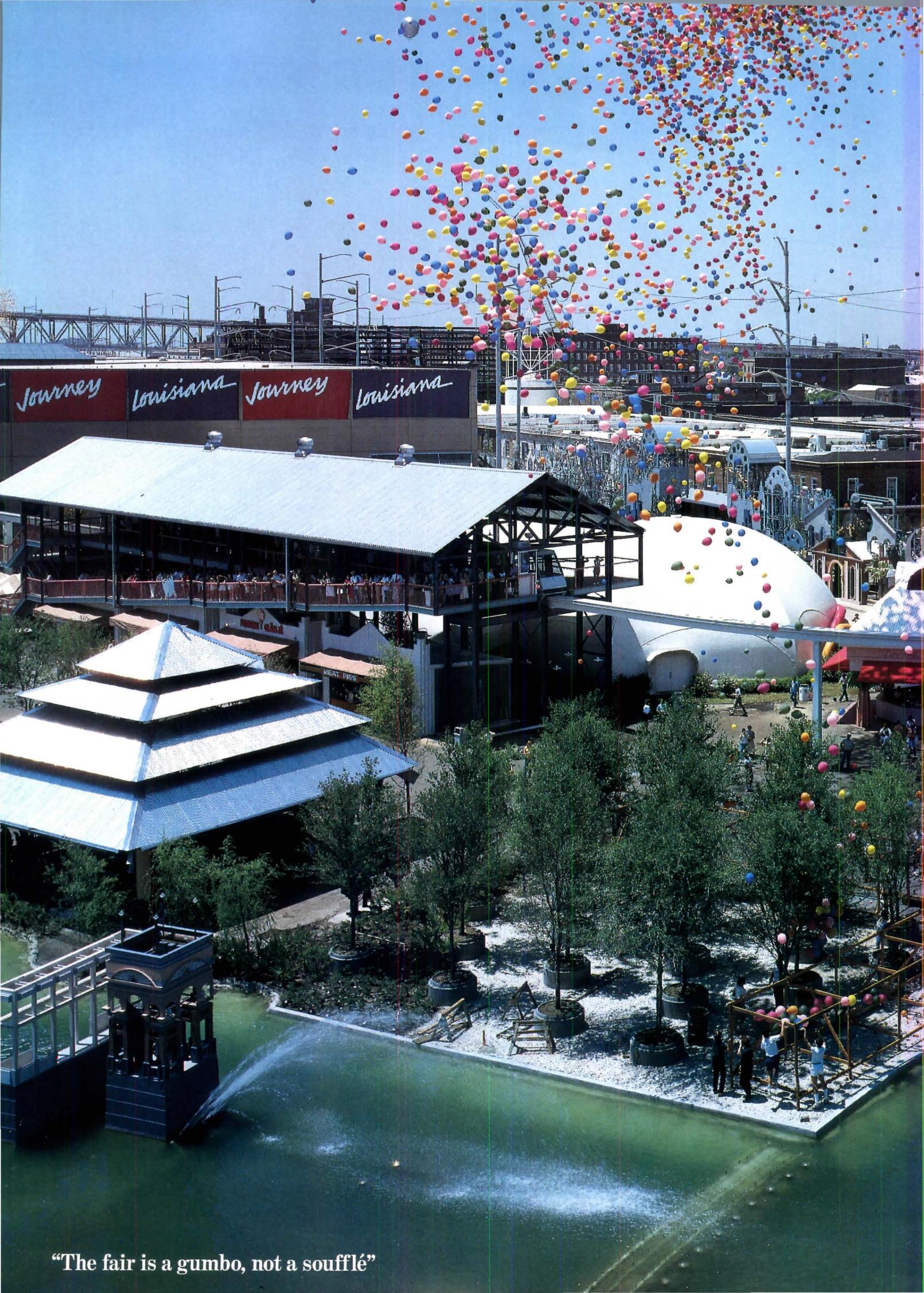
New Orleans has, of course, been home for the most famous festival in the United States—its Mardi Gras, which annually revels through the many weeks from Twelfth Night to Ash Wednesday. This year, and in much the same spirit, the city is celebrating with a World's Fair—officially known as the Louisiana World Exposition. It is the first time they have held such a big bash since the 1884 New Orleans Cotton Exposition. The theme of the new fair is "The world of rivers: fresh water as a source of life"—which, in various ways, it explores as benefit, delight and peril. And Ole Man River is omnipresent, with excursion boats to float you downstream or into the swamps if you want to experience the real thing.

Some of the great World's Fairs of the past have had enormous impact on the course of architectural history, and on the enduring fabric of the cities that held them: Paris and Chicago leap immediately to mind. The New Orleans Fair is not going to change any history, but Perez Associates, as master planners and master architects of the fair, along with a bevy of design consultants (notably Charles Moore and William Turnbull, who also teamed up with Perez for the earlier and nearby Piazza d'Italia), have taken a site with a lot of liabilities and turned it into a long-term civic asset. The area was one of outmoded, decaying warehouses and docks, split on the one side by a still-working railroad and a levee, on the other by high-tension wire standards leading into the distance. And looming overhead were an older Mississippi River bridge, and partial spans of a new one. These unavoidable, industrial images were simply tidied up and augmented as an enduring concept and confronted with a boisterous lot of postmodernisms to create a vital fair. The fair, in turn, has spurred and speeded up the redevelopment of the whole downtown and waterfront.

Herbert L. Smith, Jr.

- 1. Festival Park
- 2. Fulton Street Mall
- 3. Wonderwall
- 4. Bayou Plaza
- 5. Great Hall
- 6. Centennial Plaza
- 7. United States Pavilion
- 8. International Pavilion
- 9. Amphitheater
- 10. Bridge Gate
- 11. City Gate
- 12. Aquacade
- 13. Monorail
- 14. Aerial tramway





"The fair is a gumbo, not a soufflé"



Centennial Plaza sets the tone

The opening of the New Orleans fair on May 12 was a cacophony of bands, balloons, blimps, fireworks, riverboats, parades—and had an enormous air of festive relief. Circuslike, it had finally been pulled together overnight.

Only the day before there was an equivalently noisy jumble of construction workers, materials, and trucks involved in the finishing-up. Even the architects joined in the effort—members of Perez Associates were seen gilding the studs of the great entrance gates, adding bits to the Wonderwall; and William Turnbull with his small daughter were spotted completing some little floats in a lagoon in the Great Hall. The exuberant care that went into the fair's planning was carried through to the finish.

For all of its riotously chaotic first impression, the fair is a meticulously thought-out series of allusions, illusions, allegories and calculated architectural confrontations. As Allen Eskew, Perez Associates' project director for the fair, commented, "It's a gumbo, not a soufflé."

Gumbo, that spicy, murky Louisiana soup is a heartily tasty concoction that indeed sums up the essence of the fair. Restored 19th-century warehouses abut the industrial hi-tech structures and are stitched together by postmodernist high camp. Though there is little in the fair that seems likely to alter the course of architectural history, perhaps it all does add up to a suggestive summary of where that history stands at the present moment. At any rate, it's lots of fun, and an amusing intellectual challenge to anyone who cares to ferret out its allegories and conflicts.

The grandiose main entrance to the fair is the "City Gate" (photo top right). It introduces the "water" theme of the exposition with huge, realistic figures of alligators, sea gods, a pelican and a pair of bare-breasted mermaids that (even in hedonistic New Orleans) have raised some local eyebrows.

The first architectural "event" is Centennial Plaza, seen in the other three photos at right. From the gate, seven pavilions in a reflecting lagoon merge to echo an old engraving of the Main Hall of the 1884 New Orleans Cotton Exposition; done in currently fashionable soft colors, the pavilions "disintegrate" into separate units as one goes along the covered timber Empress Walk ("inspired" by Peking's Summer Palace) and across the bridge over the railroad.

All photos ©Jane Lidz 1984 except as noted







NEW ORLEAM



"The Wonderwall—a stationary Mardi Gras parade"

A spine of basic bits is a riot of revelry

If the New Orleans fair could be said to have a "theme structure," it is certainly the Wonderwall. This 12-foot-wide, extraordinary fantasy (see previous page) stretches a half-mile between Centennial Plaza and Bayou Plaza at the other end of the fair.

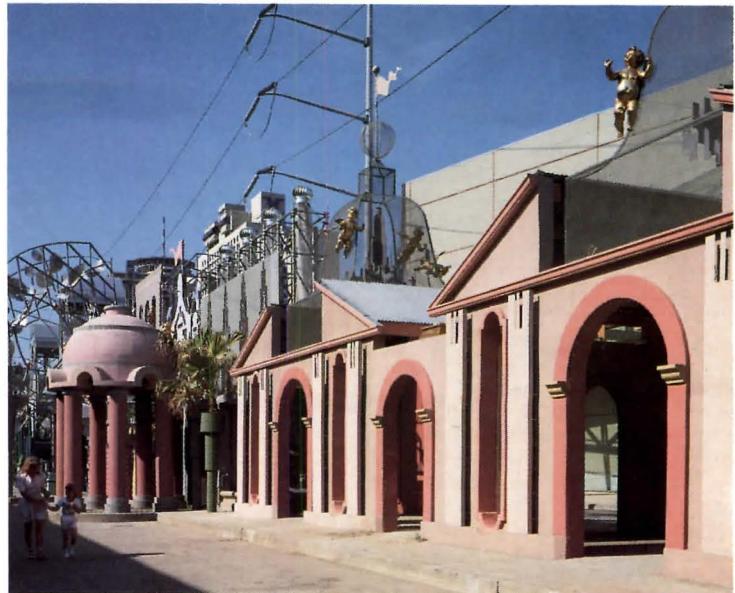
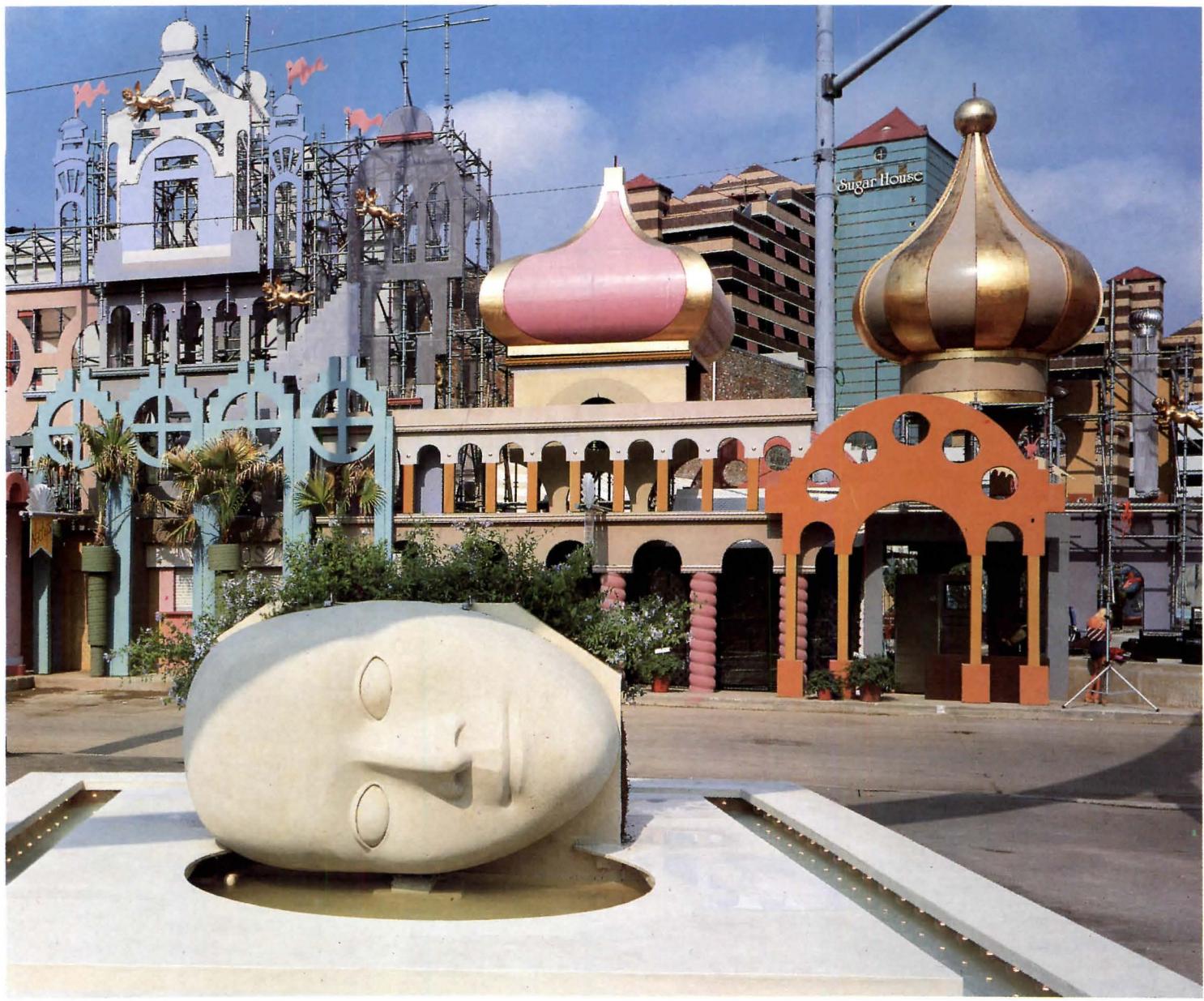
While Centennial Plaza echoes some old and genteel traditions—here, traditions of all sorts run riot. Parodies of the gamut of architectural history push "allusion" to some heady limits in a postmodern potpourri. The design team for Centennial Plaza included Charles Moore, William Turnbull and Arthur Anderson of Perez Associates. Wonderwall was designed by the same group plus Leonard Salvato of Perez.

The wall was conceived as a strong visual diversion from the high-tension lines that emphatically march along the length of the site—which it succeeds in doing reasonably well. To give it a New Orleans "reference," it was designed as a seemingly endless spine of Mardi Gras floats permanently parked between the trimly designed, but fairly blank bulk of the convention exhibition center (used for the fair as the "Great Hall" for exhibits of the various states) and the pleasantly nostalgic, but a bit "plain Jane" warehouse restorations housing restaurants, shops and jazz.

For all its seeming variety, the wall is composed of only 30-odd repeated shapes, brightly and differently painted, plus a limited number of duplicated ornaments (urns, busts, Buddhas, peacocks, sphinx and a profusion of gilt putti). The basic shapes include stylized miniatures of Maybeck's San Francisco pavilion, the Villa Borghese, and a variety of cupolas, arches and columns—all periodically punctuated by tall metal "Tree of Life" sculptures by Kent Bloomer, and fountains (to continue the water theme) filled with artful arrangements of architectural fragments.

So that the wall would be active and "peopled" like the floats it represents, in its regular bays it tucks in lots of concessions for foods and crafts, shaded sitting areas, and little stages for music, magic and mime—all in all, a sort of compressed midway. Though temporary, the wall is solidly built to withstand potential hurricanes. Near its beginning is one of three winners of an international water sculpture competition, "The Source" by Claude and Francois-Xavier Lalanne of France (foreground, top photo far right).





Industrial images corset the backbone

In spite of the fanciful embroidery of colorful postmodern, the real fabric of the fair is a hard-edged, industrial hi-tech one.

Starting with those immutable givens of the site (railroads, levee, high-tension wires and Mississippi River bridges) plus a couple of dozen or so latter-day industrial warehouses that were retained and restored, three big permanent structures were added and adapted for the fair—all designed by Perez Associates.

Strung out along the river, "as long as the Empire State Building is high," is a building used to house the fair's international exhibits (visible across background of top photo, far right). This structure is designed to be readily converted into a local version of Harbor Place, by The Rouse Company, to revitalize the riverfront.

Close by is the huge, 15-acre Great Hall of the fair (glimpsed in photos on the previous pages) which will become a Convention Center exhibition hall.

And towering above all this is the aerial tramway system, called MART, whose gondolas serve the fair both as a ride for the views and to transport visitors to additional parking areas across the river. After the fair it becomes a regular commuter service.

Built expressly for the fair, a big, 5,500-seat steel amphitheater was designed by Frank Gehry, with Chuck Sanders of Perez Associates, in much the same industrial spirit (visible at top left in the big photo opposite and the two below it). Its dramatic use of the river itself as a stage backdrop has reportedly caused a local movement to save it.

At the other end of the fair is a steel-framed, 3,500-seat aqua-arena (bottom photo, near right), designed by Dennis Brady and Hank Liu—both of Perez Associates. At the opening, a wag quipped that Esther Williams should be there. She was.

And weaving through all this (including the Great Hall) is the sinewy steel of the monorail. Appropriately, the central bridge across tracks and levee to the international exhibits is designed in a strong industrial style to fit under the aerial tramway (photo top right). Even the Wonderwall starts in this vein, with a working, offshore oil rig, and ends with the spokes of a giant Ferris wheel.

About 85 per cent of the fair's exhibits are said to be in air-conditioned spaces, and covered walks and trees abound to help shade the rest.





Watery ways end in a fun fair finale

For its last act, the Wonderwall becomes more intense and primary in its colors, curves and soars into the hub of the huge Ferris wheel (see photo top right). The curve is followed by a "bayou" with native plants, from which big wire-mesh and fiberglass alligators emerge, while others atop the wall chase abstract pelicans into the spokes of the wheel.

Embraced within the curve is a two-acre "Watergarden" containing an assortment of water toys including a "kid wash," which sprays and dries the kids much like a car wash, and a jukebox fountain. Designed by Herb Rosenthal Associates, the playful area was inspired by the famous 18th-century water garden in Salzburg.

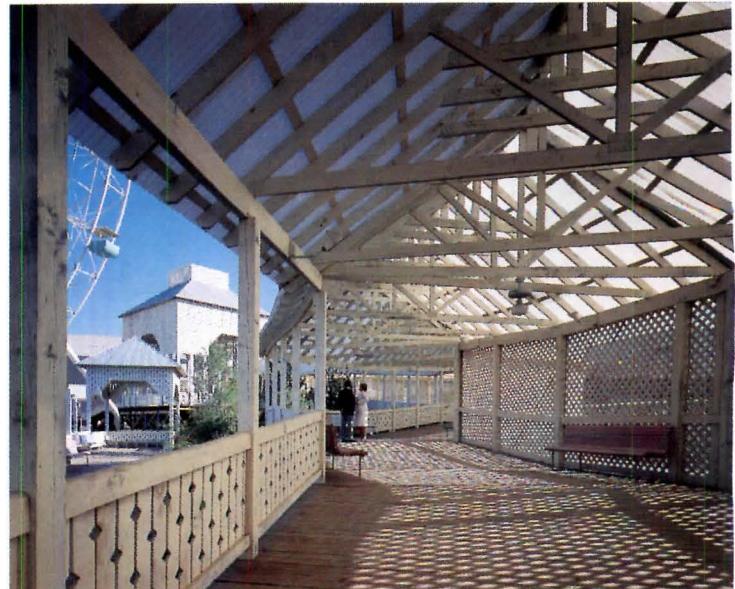
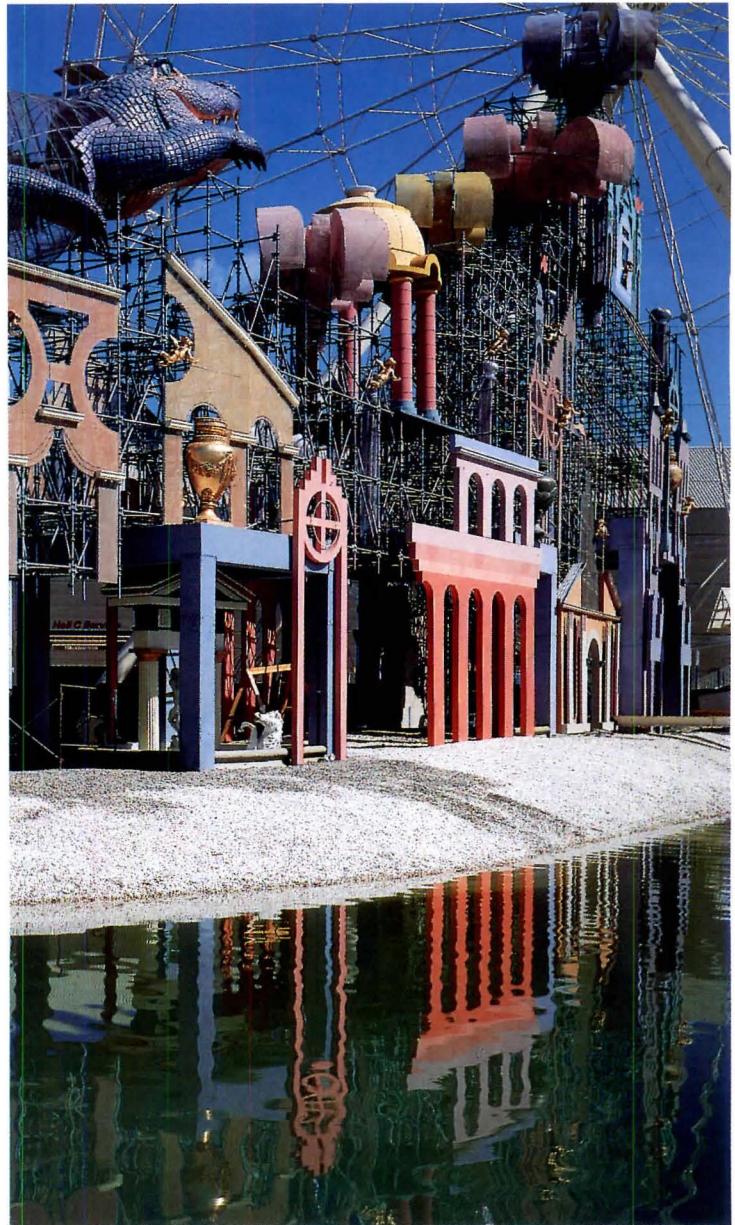
Snaking around all this is a 1,500-foot "Cajun Walk" (photo bottom right) whose covered ways and ramps recall Louisiana fishing piers, and again lead across the tracks to the international exhibits.

Nearby are the amusement park and the "Bridge Gate" to the fair—a technicolor parody of the main gate with enormous sea gods and goddesses cavorting with alligators.

By night the fair takes on an even more brilliant and festive character. Constantly changing, the lighting was designed by Richard C. Peters, and operates on a computerized system. Describing illumination for the Wonderwall, Peters becomes intensely poetic and points out three easily overlooked "layers of allusion" in the wall, which his lights focus on in varying combinations: "the murk, the city and the celestial." Fireworks every night cap all this.

A great portion of the exhibits at the fair focus on water. The oil derrick foundation contains tanks of offshore fish; the Niger, Nile and Amazon rivers crop up in the international exhibits; and a 3-D film in the U.S. Pavilion (a bland building with a huge flag) transports one along America's *waterways*.

In the Great Hall, the central feature is a "Water Course," with five little moving barges, and "finger lakes" down the hall—one of which has a riverboat replica. Louisiana has a 14-minute boat ride through the swamps. The best exhibit was possibly the State of Mississippi (photo far right), designed by the Mississippi Exhibit Group (Samuel Mockbee, architect, Communication Arts Co., 3D/International), which plays postmodern against steel trusses—as does the whole fair.





Good neighbor policy

500 Park Tower
New York City
James Stewart Polshek and Partners, Architects

By Carter Wiseman

The most pressing architectural question in New York at the moment is not about new buildings. Even in an age of raised preservationist consciousness, it is not about old buildings. It is about how to bring new buildings together with old. Soaring demand for a dwindling number of sites, coupled with an excessively permissive zoning policy, has put even the finest of the city's vintage architecture in danger of demolition. The struggle to replace a portion of the landmark St. Bartholomew's Church complex (by Bertram Grosvenor Goodhue) with a 56-story office tower is only the most grotesque recent example.

But coexistence should not be out of the question in all cases. And by far the best example so far of how it can be done to everyone's advantage is 500 Park Tower, designed by James Stewart Polshek and Partners, on the southwest corner of Park Avenue and 59th Street in Manhattan.

Since 1960, the highly desirable site has been occupied by the 11-story aluminum-and-glass gem designed by Gordon Bunshaft of Skidmore, Owings & Merrill. Originally built for Pepsi-Cola, it was sold to Olivetti and, later, to a partnership headed by Charles and Randall Atkins. (They have since sold the property to the Equitable Life Assurance Society, with Tishman Speyer as developer.) Aware that the building occupied far less airspace than the zoning code allowed, the Atkinses were nevertheless eager to preserve it if possible.

Polshek and Partners were originally called on to renovate the existing building, but as plans for expanding it moved forward they were selected to do the entire project. As a result, the Nassau Hotel, an undistinguished building just to the west of Olivetti, was taken down and its site used for the base of a 40-story tower, a portion of which was cantilevered over the older building. The original interior space was retained for office use and was augmented by space in the lower section of the tower. The remainder of the new structure was devoted to 56 luxury condominiums.

Rather than emphasize the differences between the old and the new buildings, Polshek chose the far riskier course of trying to integrate them, using an aluminum-and-glass variation on the Olivetti palette and expanses of stone that would blend with the many masonry apartment buildings nearby. He accomplished the mix with extraordinary skill, anchoring the lightness of Olivetti with the gray-green granite of the tower, whose mass in turn was mitigated by the delicacy of the incumbent. What might nevertheless have been a static combination was animated by varying the relative amounts of the contrasting materials on the tower's four facades. Polshek amplified the play of materials by variations in their treatment. For example, the metal corner members used where glass meets glass are black anodized aluminum to make them less visible from the street and encourage a sense of the glass as a continuous membrane. At the same time, the windows in the stone portions of the facades are recessed by a foot to accentuate the contrasting thickness of the surrounding granite. (Above the 12th floor, the windows are notched at the lower right corner, to help distinguish the beginning of the residential floors and to further the visual variety of the shadows cast by the recesses.)

Polshek says that he was trying for a constantly changing, "chameleon" effect, but feared that the building might instead appear as "a metal tower in danger of losing its stone overcoat." The ultimate impression—to further complicate the imagery—is more like one of those Chinese wooden puzzles made of interpenetrating parts, all of which seem about to collapse until the last one is inserted, locking them tight.

On the interior of the building, the architect had considerably different constraints because of the distinct requirements on the space made by the commercial and residential uses, which include a bank. The public areas are, however, given a design unity by the use of related horizontals that echo the banding on the exterior. In the bank's public room, facing north and east on the ground floor, the banding is rendered in white marble separated by thin strips of red metal. An austere staircase clad in black glass and black chrome leads up to the second floor, where executive offices and conference rooms face out onto Park Avenue and 59th Street. To reinforce the existing window module of the 1960 building, the architect designed uniform light fixtures. Thus, regardless of changes in tenancy, the original integrity of the low building is retained, particularly when the building is seen from the outside at night.

Polshek's interest in banding takes another form higher up in the commercial portion of the building. Here, a staircase is housed entirely in glass panels set into a metal grid. While the grid remains constant, the glass ranges from clear to translucent, to opaque and reflective, creating a slightly disorienting, but nevertheless entertaining, play of solid and void with echoes of Vienna and, even more, Japan (where Polshek did much of his early work).

Yet another variation on the theme appears in the lobby of the residential portion of the tower. It is entered through a deliberately inconspicuous door on 59th Street. (The owners of the apartments are *extremely* well off and the architect was asked not to draw attention to the fact.) And it is remarkably small. But what space there is is given maximum effect by a cheery, salmon-colored marble applied in strips set off by bands of gray granite intended as a reminder of the exterior stone. If the lobby seems cramped, there is compensation in the apartments to which it leads. They are spacious by the standards of new buildings in midtown Manhattan, and made to feel more so by the clever inclusion of an all-but-vanished design amenity—sinfully large foyers.

Relatively few people will get to savor the comfortable interiors of 500 Park Tower. But no matter. The building's major contribution to urban architecture in the 1980s is its skillfully deferential treatment of its surroundings. The sensitive mix of mass and materials remains the foremost evidence of that on a scale of pure design. Far more important is the example it sets for refreshing a piece of a vital city without abusing its heritage in the process.

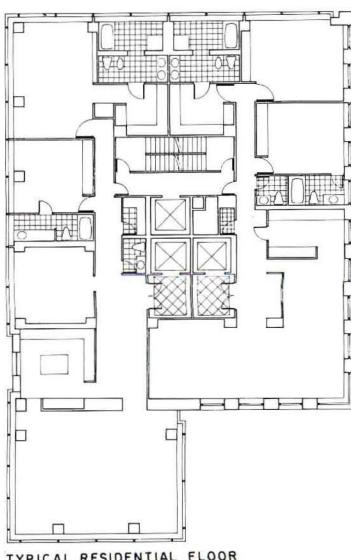
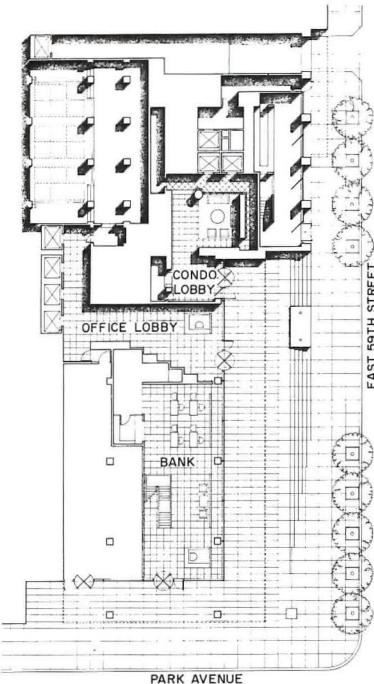
When 500 Park Avenue first became a focus for development, nearly a score of schemes were put forward for how to deal with it. Demolition was always a possibility. But even the attempts to "shoehorn" or "piggyback" another building onto the existing structure tended toward the simplistic. Most were slabs touted as "background" buildings in the manner of the dreadful hotel addition to the landmark McKim, Mead and White Villard Houses nearby, or tours de force intended to demonstrate the virtuosity of a new design team unwilling to acknowledge a predecessor. The solution found by Polshek and Partners has all the marks of a mature architecture, one that recognizes the inevitable state of change that characterizes cities worthy of the name, yet honors the best of the past. This building manages the neat trick of being authentically new while looking as if it has been there all along—or should have been.

Carter Wiseman is the architecture critic for New York magazine and a Loeb Fellow at the Harvard University Graduate School of Design.





Although 40 stories high, the bulk of the addition by James Stewart Polshek and Partners to 500 Park Avenue is reduced visually by variations in mass and materials (elevations overleaf). The 11-story Olivetti building, by Gordon Bunshaft of Skidmore, Owings & Merrill (bottom right), is "locked" into the over-all composition by an extension in matching metal and glass that appears to pass through the masonry of the tower (above right). New and regularly spaced lighting installed in the 1960 building maintains the pace of the original fenestration. Stepped wall planes guide visitors toward office elevators in the 59th Street lobby directly behind the ground-floor banking area (plan below). The adjoining lobby for the condominium tower, with a separate set of elevators, also opens onto 59th Street (photo page 92). The apartments include unusually large foyers intended to evoke the greater spaces of prewar layouts (residential floor plan below).



TYPICAL RESIDENTIAL FLOOR

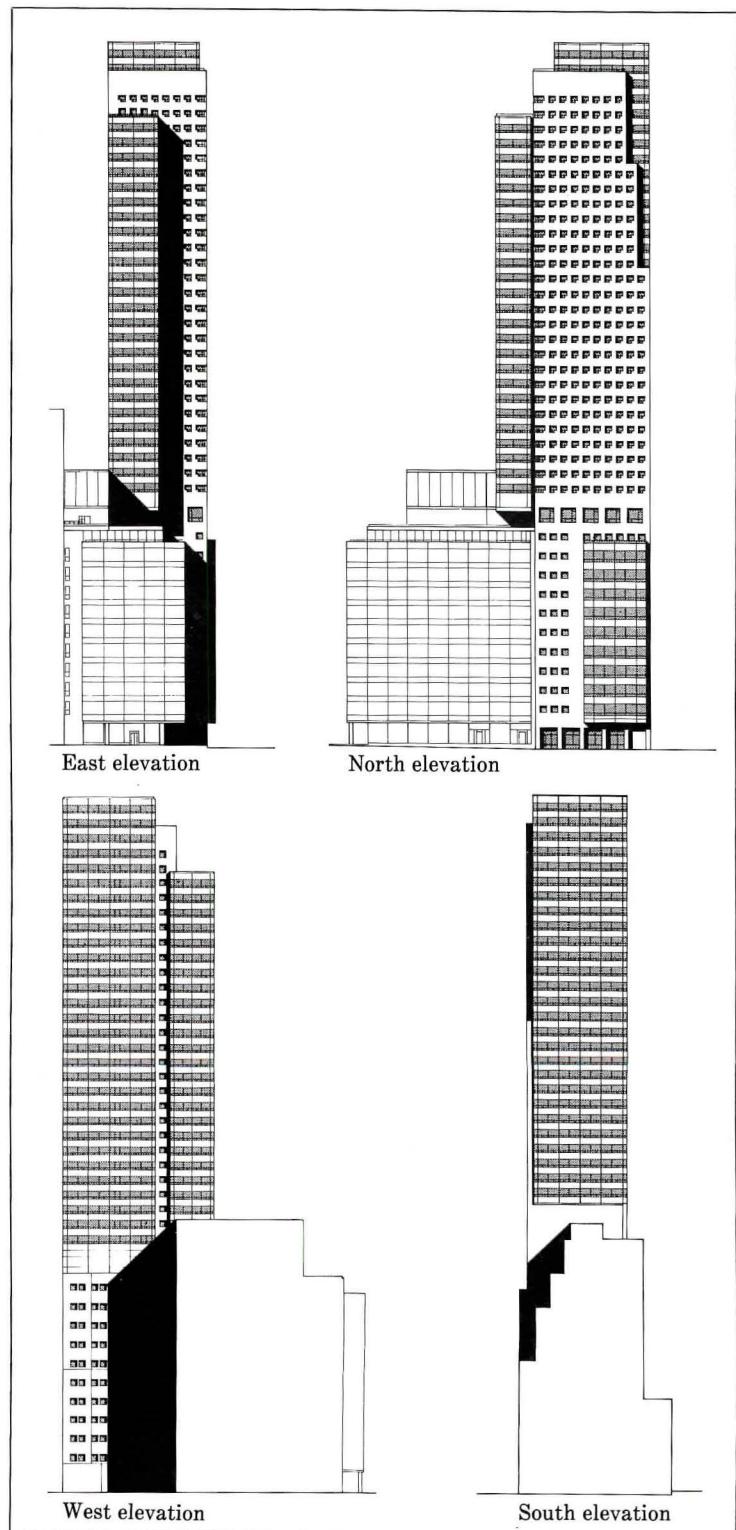
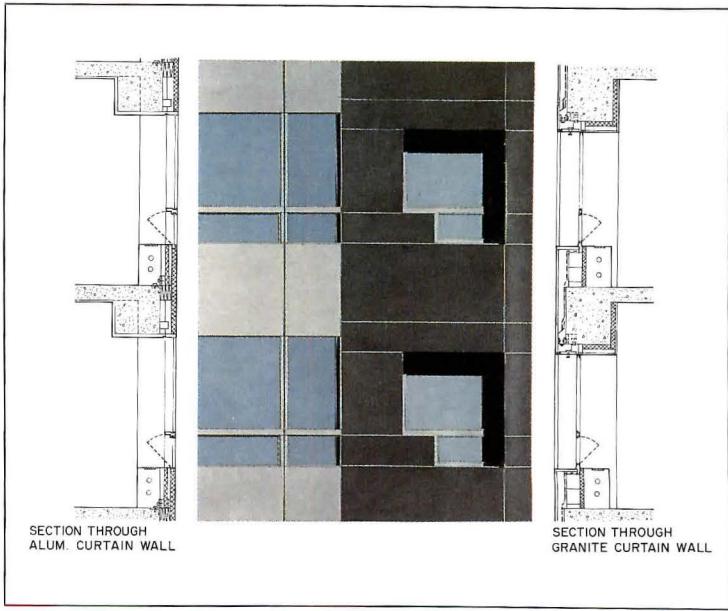


Timothy Hursley photos



What might have been a blandly regular shaft above 500 Park is instead a rich assemblage of interpenetrating forms accentuated by shifts in the cladding from the aluminum-and-glass palette of the original building to a thermal-finish gray-green granite. Windows in the stone facade on 59th Street are squared up to a transitional floor at the Olivetti roofline, then asymmetrically notched for the residential portion to mark the change in function. (The notch contains an operable panel; see elevation detail and section.

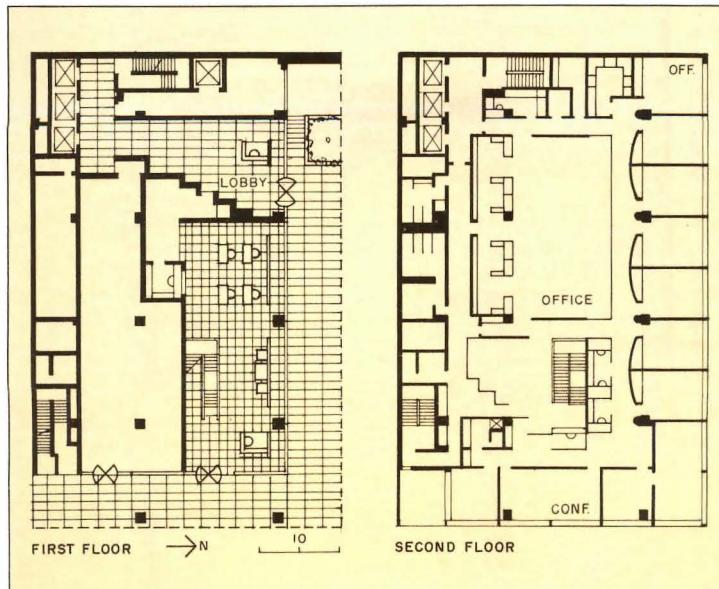
Windows in the aluminum curtain wall have tilting hoppers seven feet long.) The shadows cast by the deep recesses are a decorative device intended to exploit the contrast with the glass skin, although unbroken horizontals maintain continuity between the new and existing sections of the building. Black metal corner joints extend the sleek lines of ribbon windows, while avoiding the awkwardness of butt-glazed thermal panes.





The horizontals of 500 Park Tower's exterior reappear on the inside. In the banking room on the first floor (upper photo this page), they are expressed in bands of white marble separated by thin red metal strips and set against the black fabric on the rear wall and the black glass and black chrome of the staircase. On the second floor, the theme is picked up in translucent sandblasted glass

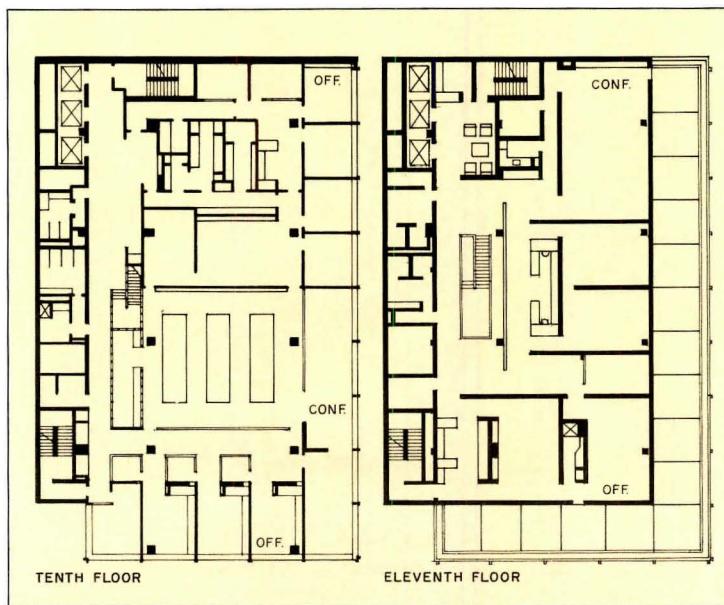
screens (lower photo). The lobby of the condominium tower (opposite), sheathed in pink marble with strips of gray granite echoing the exterior, is calculatedly unobtrusive. "The luxe is upstairs," explains the architect.



The centerpiece of the upper office floors is a staircase housed in glass panels within a painted aluminum grid. The glass varies from transparent to reflective according to its function as window or wall. Polshek's shimmering geometry incorporates a marble screen wall from the 1960 International Style interior (below).



© Paul Warchol photos



500 Park Tower
New York City
Owner:
The Equitable Life Assurance Society of the United States
Developer:
Tishman Speyer Development Corporation
Architects:
James Stewart Polshek and Partners—James Stewart Polshek, design partner; Paul S. Byard, partner-in-charge; James Garrison, design associate; Richard Olcott, Manuel Baez, designers; Marla Appelbaum, management associate; Dan Bernstein, project architect; Anton Martinez, technical systems designer

Associated architects:
Schuman • Lichtenstein • Claman • Efron
Engineers:
The Office of Irwin G. Cantor, P.C. (structural); Cosentini Associates, Consulting Engineers (mechanical)
Construction manager:
Turner Construction Company/ Lehrer-McGovern Inc., A Joint Venture



Neo-eclecticism on the Potomac



Recent projects
David M. Schwarz/
Architectural Services



In a city whose heritage of fine old buildings has been sadly diluted by not-so-fine newer ones, the young firm David M. Schwarz/Architectural Services has built a reputation on producing highly individual commercial buildings that hint at both old and new... but above all are reassuringly familiar. And that is as Schwarz would have it: "I try to do friendly buildings that people will like and feel comfortable with."

Graduated from Yale, where his favored mentor was Charles Moore, Schwarz pursued "postgraduate studies" in the offices of Paul Rudolph, Edward Larrabee Barnes, and Cesar Pelli before opening his own practice in 1976 and giving himself a year "to make it work." On the 364th day, he landed his first commission.

In the lean early years the practice grew slowly, fed principally by the three R's—restoration, renovation, and remodeling—that are still the firm's bread and butter. But in 1982, with the completion of a Connecticut Avenue office structure that Washingtonians promptly dubbed the "cuckoo-clock building" (photo opposite), Schwarz's unique brand of revivalism arrived with full force on the District's mixed architectural scene. Other large commissions promptly followed, including the projects shown here: an infill office building (pages 102-103) and a mixed commercial/residential development (pages 104-107). Today the firm employs 20 people, has \$350 million in projects on the boards or in construction, and recently opened a Texas office.

Not the least remarkable facet of Schwarz's burgeoning practice is his success in working with developer clients to produce architecture of a quality more commonly associated with projects undertaken for owner-users. "I don't do strip windows," Schwarz says. "And I'm too slow, too cantankerous, and too expensive to just make buildings. The people who hire me want architecture, an image, buildings everyone will talk about."

Schwarz suggests that his eclectic approach to design springs in part from a near-phobia against "being bored" and a consequent proclivity for variety and experiment. Consistently, the work comprises studies of differing styles overlaid—and often colliding—and Schwarz is gleefully willing to point out his historic sources, element by disparate element. The resulting buildings, however, are neither period rip-offs nor lacking in unity. Each, rather, is "an assemblage of distinct pieces integrated into a coherent whole... a complex combination of notions drawn from a complex series of sources."

Despite the deliberately created tension between modern and derivative elements, Schwarz's architecture belongs unmistakably to its time and place—well-made and carefully thought-out in plan and volume. Noting that "God is not in the details alone" but also in massing and materials, he strives to compose in such a way that the building as a whole can stand in the face of changes in any one of the three without losing integrity.

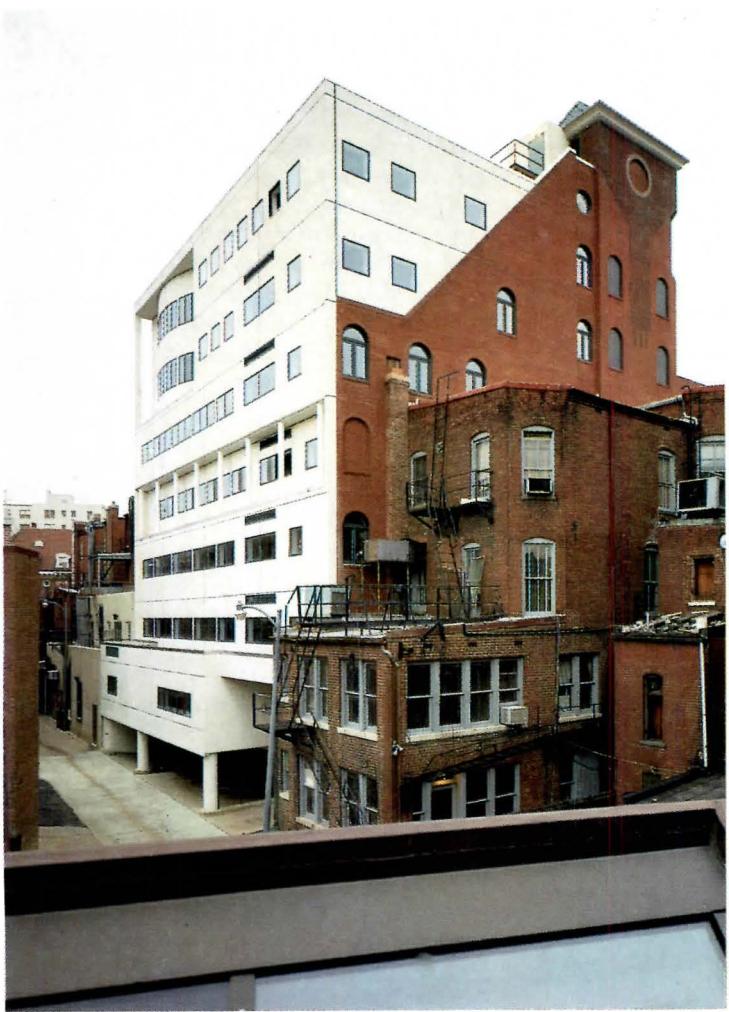
Even so, his fondness for detail and ornament has led inevitably to the label "postmodernist"—an appellation he rejects on the ground that allusionist detail should not obscure an almost fanatic attention to appropriate scale and proportion. "It is rare for us to incorrectly scale any element. Our doors and windows, cornices and brickwork, are people-sized and straightforward, with very little exaggeration or distortion; columns and arches are working elements—or they're not there."

In fact, it is massing, not detail, that most distinguishes Schwarz's work. Partly because so many are located in or near historic districts jealously guarded by a newly preservation-conscious citizenry, the buildings are typically highly articulated and rich in setbacks that help to bring them into scale with older neighbors. Though insisting on a distinction between building preservation and neighborhood preservation, Schwarz is equally insistent that his contributions reflect and illuminate their surroundings and so far as possible also enrich the over-all architectural vocabulary of the city.

Pointing out that for every person who actually uses a building thousands of others see it as they walk or drive past, Schwarz believes strongly that even the casual observer can be affected—if only subliminally—by building design. "I try to address these passive users by arousing their interest, entertaining them, and making them aware of architecture. People need to understand that there is a choice. The built environment is built by people; it doesn't just happen." *Margaret Gaskie*

1718 Connecticut Avenue, N.W.
Washington, D.C.

Richardson meets Corbu



Walter Smalling Jr. photos except as noted

Quick quiz: What famous structure did the building on the preceding page bring to mind? If your answer was H.H.

Richardson's Trinity Church in Boston, you pull an A. If you also recognized the shallow arch breaking the upper cornice as a reference to the movie house in *The Last Picture Show*, your grade is A+.

His delight in playful allusion notwithstanding, David Schwarz's design for this speculative office building in the heart of the Dupont Circle historic district is a sober effort to capture—and even contribute to—the spirit of free 19th-century eclecticism that characterizes the district while placing on the site the full volume allowed.

The architectural solution was to recess the upper two stories behind a sixth-floor terrace and dormered mansard roof so that the building appears from the sidewalk to be the same height as the restored town houses on either side, which also inspired the related details of the building's street facade.

The town house on the south (left in elevation below) contributed the limestone trim and entry surrounds; the house on the north its brick facing, gabled dormers, arched openings, and the parapet height continued in the main cornice of the office building. In addition, the rhythm

and scale of the town houses are maintained by the projecting bays of the much wider office building facade.

Despite these local references, however, Schwarz points out that the massing is a direct borrowing from that of Trinity Church, differing only as required to follow the building code. The fenestration too, he says, is almost a repeat, with its ordering of pairs, triplets, and single elements, as is the relation of the towers on the upper and lower building levels. The upper towers, perhaps the building's most distinctive feature, are in fact a clever disguise for rooftop mechanical equipment: the taller clock tower houses the elevator machine room; the tower opposite, pumps and heat exchangers.

For all the wit of the street facade, Schwarz has saved his best quip for the rear of the building, though it is visible only in glimpses from surrounding streets. Rendered in gleaming white stucco, the facade facing the back alley is a meticulous rendition of the classic International style. Why? Because, says Schwarz, Washington had no example of the style for his architectural classes to study. Less ingeniously, the inexpensive treatment offset the high cost of the brick-and-limestone street front.









*1718 Connecticut Avenue, N. W.
Washington, D.C.*

Owner:

Property Company of America

Architects:

David M. Schwarz/Architectural Services—David M. Schwarz, project architect; Thomas H. Greene, project manager; Richard Borneman, job captain; Brad Cary, model builder

Engineers:

James M. Cutts, Consulting Engineers (structural); Vincent Lee-Thorp (mechanical)

Consultants:

Everett Spurling, Jr. (specifications)

General contractor:

Sigal Construction Corporation



Thomas Greene photos

1818 N Street, N.W.
Washington, D.C.

Revivalism rampant



Arnold Kramer photos

Described by architect Schwarz as "a cross between Charles Rennie Mackintosh's Glasgow School of Art, 1890s Egyptian Revival, and Art Deco," the eight-story infill office structure nearing completion at 1818 N Street is to many knowledgeable Washingtonians his most successful contribution to the District's cityscape to date.

Even so, the design aroused debate engendered by the building's sensitive location at the edge of the Dupont Circle historic district, on a corner site occupied by a row of five diverse but compatible 19th-century town houses. On the west the site adjoins an imposing red-brick neo-Georgian mansion. On the south and east it is hedged by looming office blocks most charitably characterized as "neutral." Not surprisingly, those (Schwarz and his client among them) concerned with preserving the remnants of the historic district's piquant flavor subjected the plans for development of the site to scrutiny intense even for Washington, where preservationists enjoy the convert's zeal.

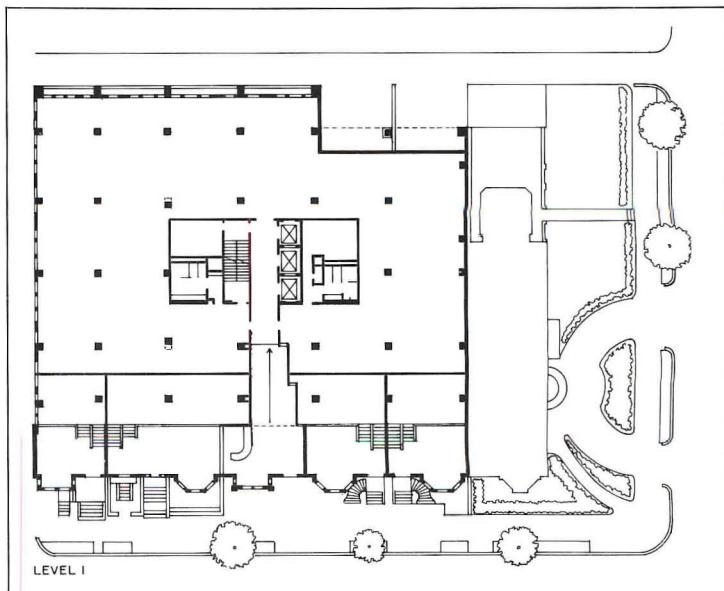
As approved, the plan employed a compromise increasingly used in the District to reconcile the conflicting demands of conservation and commerce: saving large portions of the old town houses and linking the space to the office floors of a new building behind the row. In this case, at least, the design also promised to allay the inherent unease of such a partnership by sympathetic massing, materials, and detailing.

Nonetheless, the discovery that

the party walls of the row houses were unsound and had to be removed was greeted with murmurings unstillled by assurances that the facades would be kept intact and scrupulously restored, the side walls reproduced, and the original spaces retained over as much of the buildings' depth as feasible.

In the end, however, even purists must be persuaded by the eminent "rightness" of the new building for its setting. As Schwarz intended, the office structure acts as a transitional element between the modest scale of the town houses and the immodest bulk of the surrounding commercial blocks, stepping back and up in a series of terraces that follow carefully studied sight lines so that little of the new building is visible from street level.

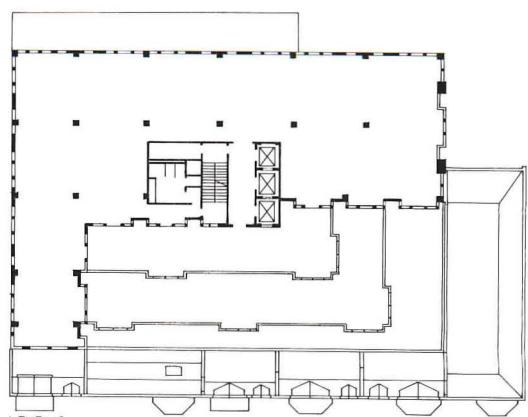
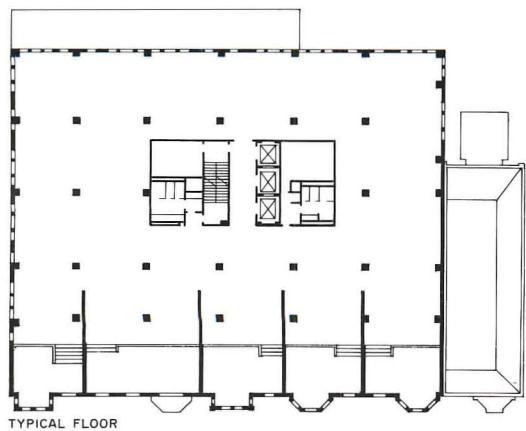
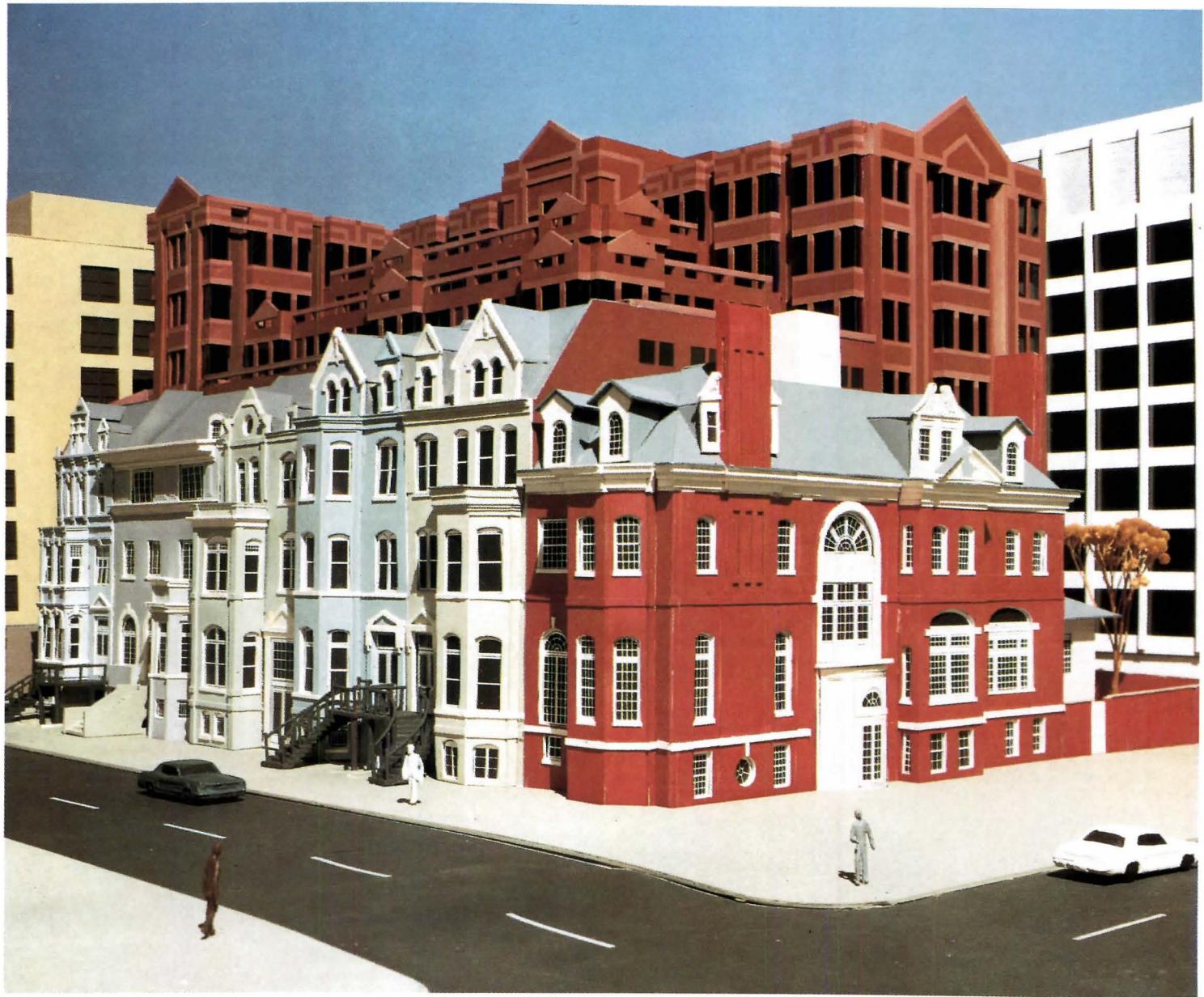
From a slight distance, though, the exuberance of the massing becomes evident: an array of mock pediments, gables, and dormers that echoes the lively variety of the town-house rooftops. Around the terraces, the building ends are brought forward in an L-shape to hide the backs of the adjacent office blocks and give the structure street identity.



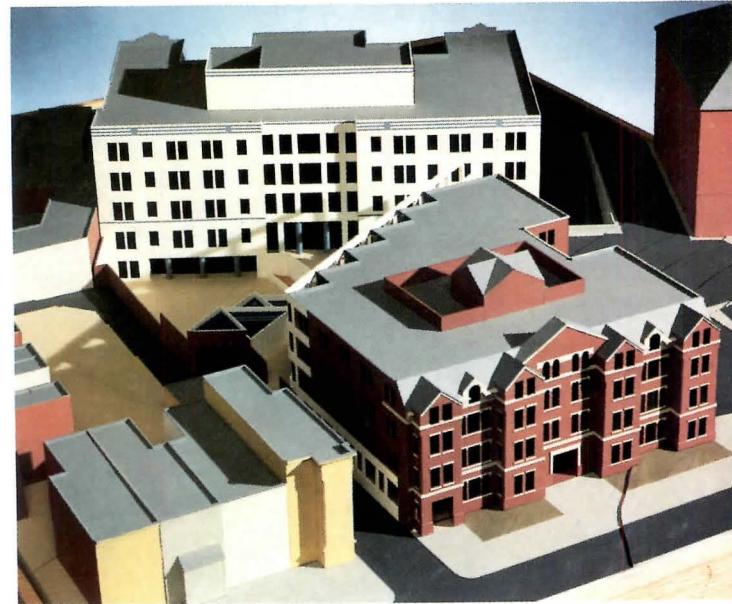
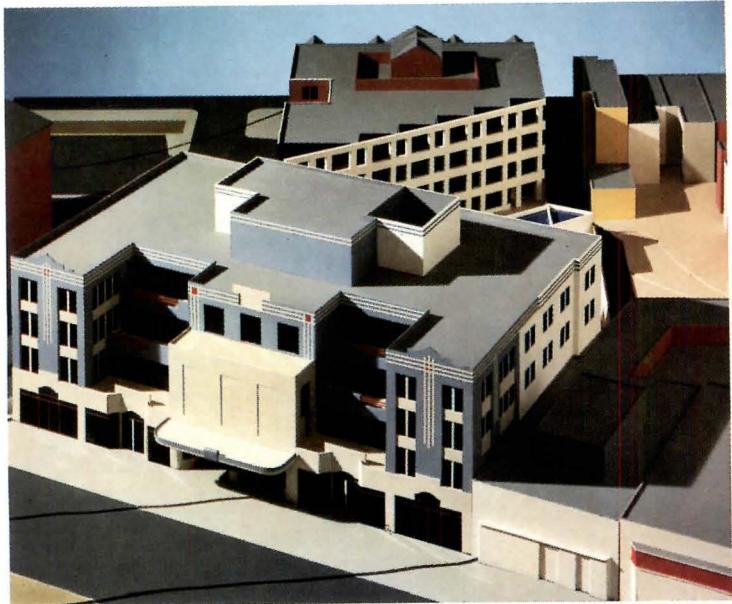
In addition to the stepped-back massing that diminishes its apparent size and smooths the transition from the town houses on the street facades to the neighboring commercial blocks behind, the N Street office building is reticent (but far from dull) in choice of materials. Its deep rust-red brick surfaces, with details picked out in a lighter precast concrete molded to mimic the shale-like striations of a

rare sandstone, are a fitting foil for the muted pastels of the town houses and the rosy brick of the corner mansion. Several restaurant tenants plan to occupy the "under-the-stairs" ground-floor units of the town houses, each with its own entry, while shops and small "walk-in" businesses are planned for the parlor floors. The lively and richly varied town-house facades are being restored intact, except at the

central entrance to the office building lobby, where the original door surround has been expanded to a pilaster-framed, entablature-topped entrance more suggestive of the scale of the building to which it gives access.



Deco redux



Arnold Kramer photos

David Schwarz's chance to add Art Deco to his expanding revivalist repertoire came with the commission to design an office-retail building and 35-unit condominium on a site fortuitously occupied by the Penn Theater, a 1933 deco movie house. Though not an official landmark (or a particularly distinguished building), the theater was a familiar and fondly regarded fixture in its Capitol Hill neighborhood. It was also one of Washington's few examples of the deco style. Which was reason enough for Schwarz to preserve its best elements as the centerpiece of the commercial building fronting on Pennsylvania Avenue.

Accordingly, the theater's limestone facade—incised marquee, curving canopy, even the ticket booth—was used to introduce an entry allée framed by the original adjoining limestone-faced store fronts, and the period ensemble was wrapped in a sleek new structure clad in blue-glazed brick that vividly captures the spirit of Art Deco.

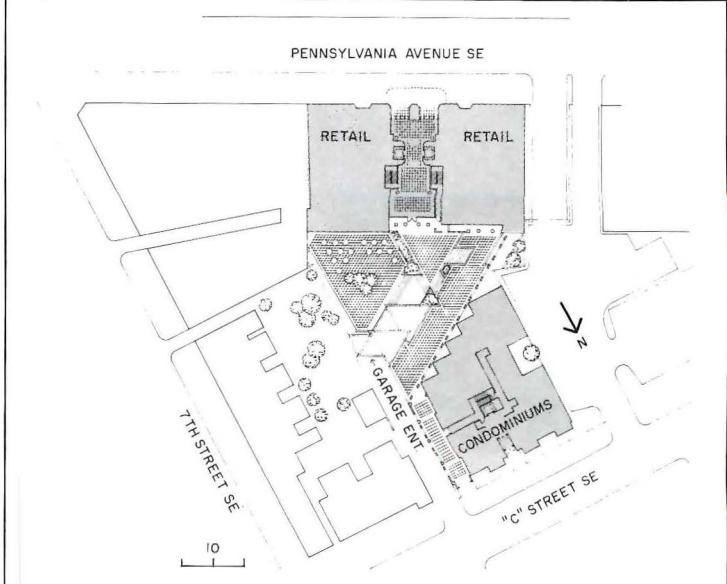
For the condominium, however, Schwarz, taking perhaps an Emersonian view of foolish consistency and certainly a close view of the surrounding area, shifted from deco to the city's cozy red-brick vernacular. Unmistakably "residential," the building evokes both apartment house and row house, its street face lightened by projecting gabled bays, an attic mansard, and crisp limestone trim.

The most troublesome aspect of the project was reconciling the very different styles and uses of the two buildings and making the transition from Art Deco to the small-scale Victoriana of the

shops and houses on the streets neighboring the site—a problem compounded by the conflicting grids of avenue and streets.

Schwarz's answer was to turn the awkward leftover wedge between the two buildings (and the no-less-awkward shifts in grade between streets) to advantage by slicing the rear of the condominium structure on a diagonal that expands the slim wedge to a generous multilevel pie-slice plaza where stairs and terraces and fountain-fed waterfalls follow the changing grade levels.

Typically, the stylistic dichotomy of the buildings walling the plaza was resolved by introducing yet another style: an heroic neo-International-style white stuccoed grid screens the balconies at the rear of the apartment house and is echoed—though in lower key—in the fenestration of the plaza facade of the office block.



To provide the commercial building with a coherent base in keeping with the scale of the neighborhood, the limestone storefronts on either side of the focal Penn Theater facade are extended along the entire Pennsylvania Avenue frontage. The upper floors of the block—despite the misgivings of some local preservationists who argued that gray would be more seemly—will be faced with deco-

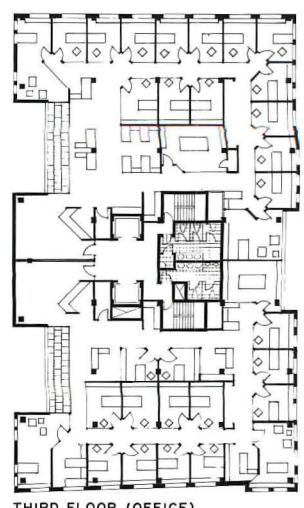
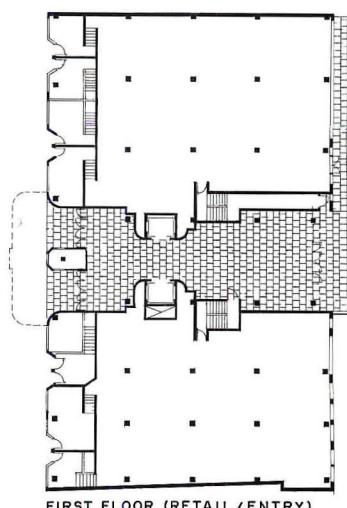
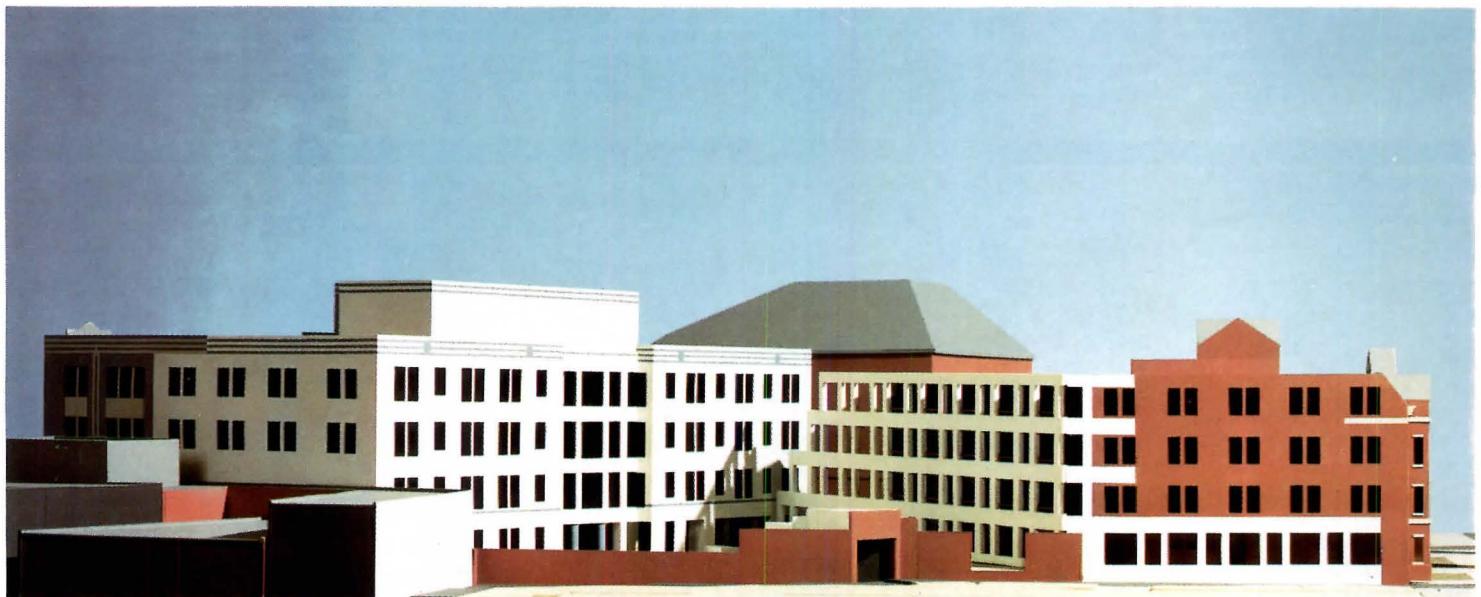
blue glazed brick ornamented by terra cotta trim in two colors and five shapes. Too symmetrical, according to Schwarz, to be truly Art Deco, the building's mass is broken by balconied setbacks on either side of the entrance and by projecting end wings capped, like the central element over the theater facade, with perky parapets. The composition is topped off by elaborating the homely (and usually

ignored) bulk of the elevator penthouse and cooling tower to the status of a grand sculptural finale to the building silhouette.



Because of the disparity of style between the apartment and office buildings, particular attention was given to using the side elevations to achieve a smooth transition between the facades that front on public spaces and the facades that front on the plaza. In the case of the commercial block, the blue facing of the street wall is simply carried around the corner, where it shifts without ado to the white

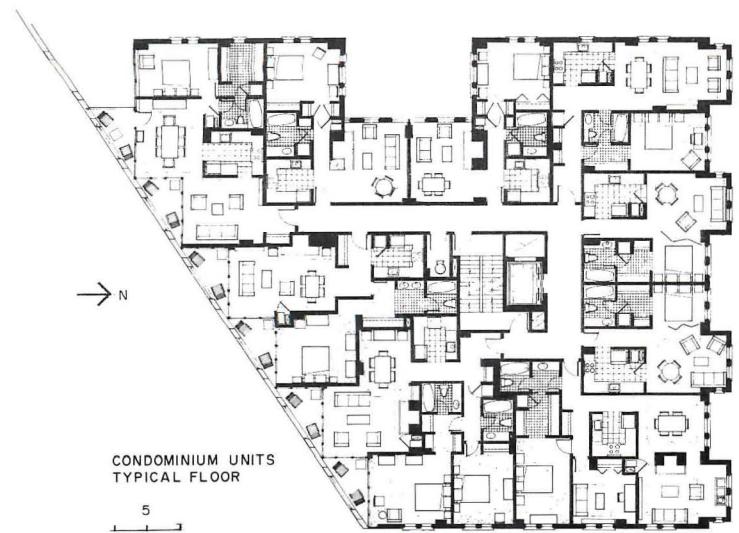
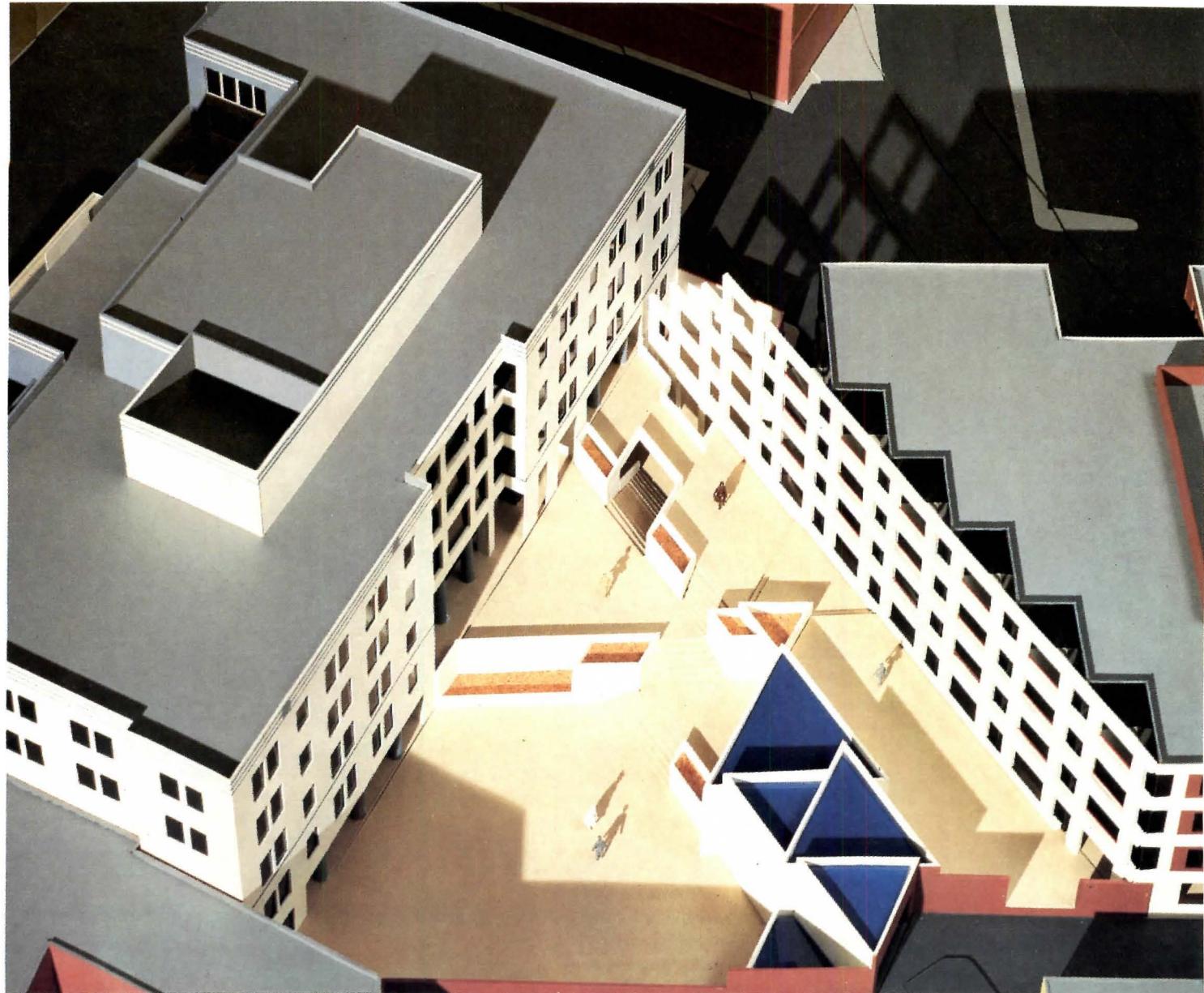
stucco of the plaza face. More ceremoniously, the limestone-trimmed brick of the apartment building's street facade is continued on the side elevations, modulating to a reprise of the screen grid: on the east a setback, on the west an extension of the grid base.



The gridded screen wall that forms the parapet of the balconies at the rear of the residential building is not merely a stylistic tour de force. In addition to providing the occupants of the units with privacy and a sense of distance from the project's commercial element while preserving their balcony views, it is the structural support for the curtain wall behind and a solar screen against south sun. As the

screen continues past the building edge, it becomes the structural support for the upper level retail plaza. Nor is the plaza merely a transitional device turned amenity. It also covers an underground garage and makes a central landscape feature of the series of triangular fountain-fed pools that disguise the entry ramp. The multiple levels needed to mediate grade changes serve as "rooms": the

lowest level as an outdoor cafe; the middle level as relaxation space for office workers and shoppers; the upper level as a forecourt to the residential building. Not least, the plaza as a whole links a nearby Metro stop with the commercial district to the north.



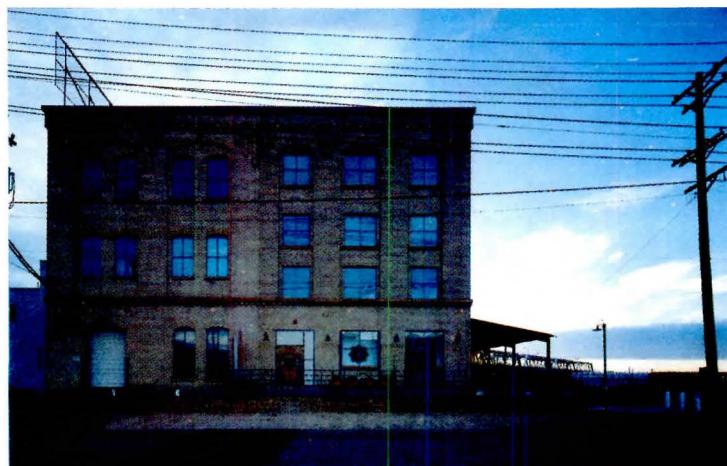
Corporate baroque

Corporate Interiors Show Room
Denver, Colorado
Cabell Childress Architects

Though Denver was dubbed the “mile-high city” because of its altitude, a decade of wildfire high-rise construction might just as easily have inspired the sobriquet. And though some may rue the proliferation of Manhattan-scale skyscrapers here in the Colorado capital, others—for example, the local purveyors of contract furniture and systems—do not. Case in point: Corporate Interiors Inc.

With an eye toward the soaring Denver skyline, the management of Corporate Interiors determined that their 10,000-square-foot show room was appreciably short of the marketing task at hand. To avoid the rents being charged in the buildings they hoped to furnish, they looked to the western edge of town for more commodious accommodations—to a fringe area known locally as the “red brick district,” in honor of an impressive stock of turn-of-the-century warehouses and light-industrial buildings. Although the company was a few years too late for the first wave of revitalization that swept the formerly blue-collar neighborhood in the late ’70s, it found the old McFarland Paint and Varnish Company Building (which was, as of two years ago, six blocks shy of the renovated district) amenable not only to the purpose but to the pocketbook. And although the 44,000-square-foot building had been called into service as an aviary by Denver’s considerable pigeon population, it was, thanks to solid steel and masonry construction, none the worse for wear. The task of transforming the building fell to Denver architect Cabell Childress, who opted to break with his own distinctly “modern” tradition and “do contemporary.”

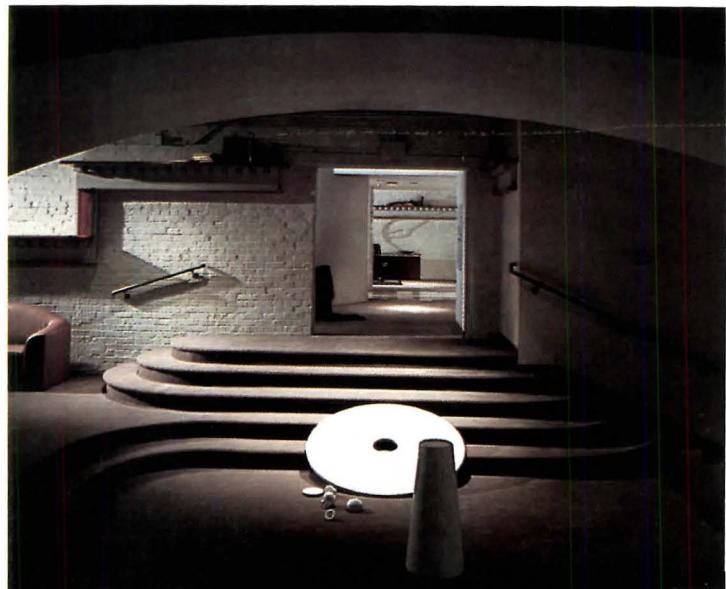
Since it is 1984, and we now understand that “contemporary” actually means “historical,” we are not surprised when Childress reveals that his inspiration for the \$23-per-square-foot renovation came from 17th-century Rome—from Francesco Borromini to be precise. If the allusion eludes all but the most perspicacious furniture specifier, no matter; for whether or not the ornately patterned stone runway (photo right) bisecting the northern half of the top-floor show room (where Corporate Interiors displays its premier furniture lines) is a direct or oblique descendent of Borromini, is of less concern than how successfully the gentle scallops and graceful geometry of the gray and white marble axis guide us through what is essentially a warehouse. By leaving the paired structural columns intermittently exposed along the central axis, Childress effectively framed cross-axial bays that not only break the potential bowling-alley effect, but allow for typical seating and office arrangements as well. Reinforcing the axis, and adroitly taming a ceiling plane that drops from 13 to seven feet, is a sky full of drywall “clouds.”



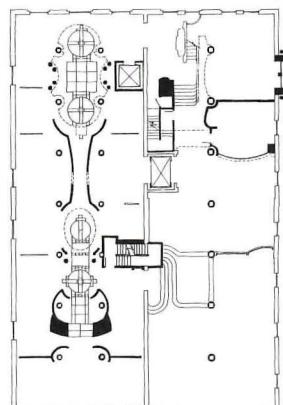
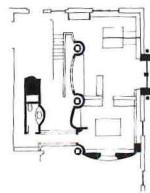
Timothy Hursley photos

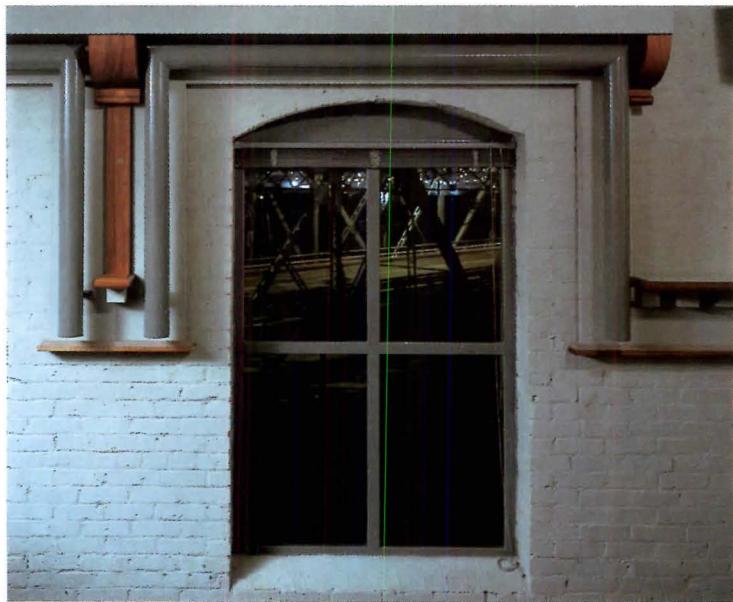






The oversized oculus looking out from the mezzanine-level library above the presentation room (photo left) offers a bird's-eye view of Corporate Interiors' expansive south show room, which is almost entirely given over to office systems. The cascading steps spilling into the south show room acknowledge the fact that the old McFarland Paint and Varnish Company Building is actually two structures—a four-story north building and a three-story south building.





Although the bulk of Corporate Interiors' budget went to mechanical and electrical work, architect Cabell Childress displayed great dexterity with the relatively small portion allocated for "architecture." The show room bottom line was \$102,000 for drywall, \$16,000 for marble, and \$60,000 for cabinetry and trim. (The last went almost entirely to a decorative cornice that rises and falls relative to window and ceiling heights.)

Corporate Interiors
Denver, Colorado
Owner:
Apple Peddlers
Architects:
Cabell Childress Architects—Cabell Childress, FAIA, and Jeff Burleson
Engineers:
Anderson and Hastings (structural);
McFall, Konkel and Kimball
(mechanical); Garland D. Cox
Associates (electrical)
Consultants:
Maryann Kipp (interiors); Thrim
Paulsen (lighting)



A city to be seen and read

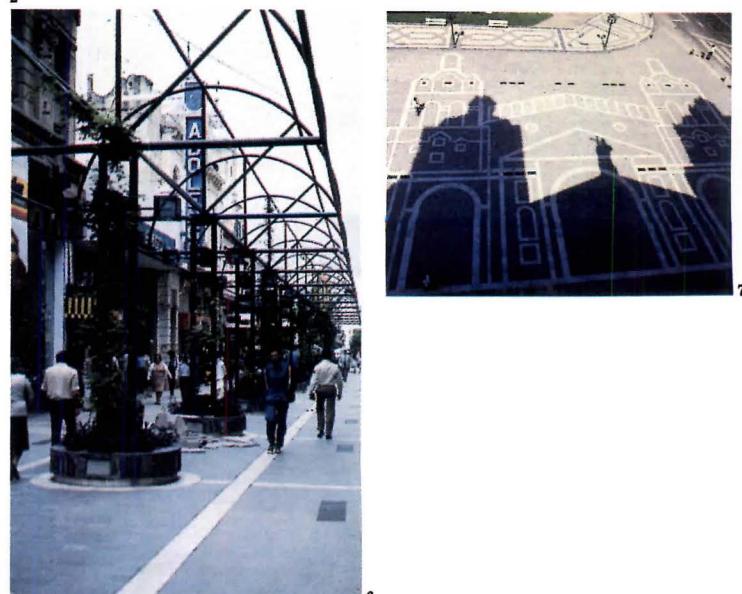
The historic core and
two neighborhood centers,
Córdoba, Argentina
Miguel Angel Roca, Architect

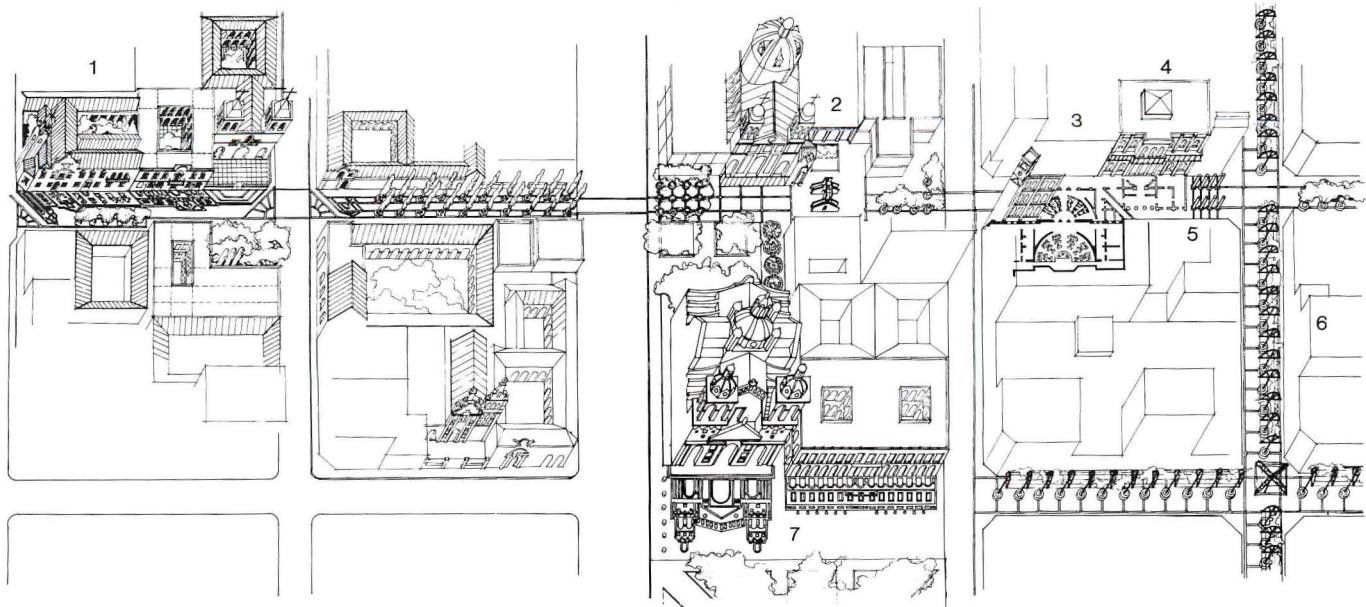
Miguel Angel Roca has a very special vision of the city. It is much more than an urban-planning vision—though that is part of it. It is much more than a vision of restoring and giving new life to important old buildings, of dropping into that historic background bright ornaments of contemporary design, of creating pedestrian malls to create a lively mix of shoppers and business people and passers-by—though all those things are part of it.

Architect Roca's vision of his native city of Córdoba, a colonial city in north-central Argentina, asks (indeed, almost insists) that his fellow citizens be constantly aware of where they are; that they see and understand each neighborhood as part of a society centered around the historic core, which taken together makes a city. He asks the Córdobeses to see the history and cultural heritage all around them while at the same time providing facilities for today's way of living; he asks them to "read the city" not as a disjointed collection of landmarks and open spaces connected by a grid of streets, but as a continuous and closely woven fabric of public space (including most importantly the streets) and buildings old and new.

Roca's thinking is well expressed in the drawing at right of the historic core of Córdoba, reclaimed as a pedestrian zone during his term (1979-1981) as secretary of public works to the city council. It is made up of colonial and 19th-century buildings woven together with contemporary interventions. Roca learned from his most important teacher, Louis Kahn, that "the street is the first being of the city, a gift to the neighbors, whose facades are its own face having the sky as a roof." The drawing expresses Roca's agreement about the importance of the street by showing how in many different ways he designs the street as a series of (as he puts it) "rooms" relating all of the important buildings. In front of the university, which is the third oldest college in the hemisphere, he created a shadow image of the buildings (see 1 on drawing and photo 1) as it would be on the longest day of the year, December 21st. The materials used are dark granite and gray slate, while the lines of the drawing are picked out in marble. To link this room with the most important space a block away, he created a "room" of poplar trees. The third room, between the domed convent buildings and the rear of the cathedral, is marked by a number of elements—a "marquee" of 12 ornamental trees, a grid of marble belts set in granite and slate directly in front of the convent, and a contemporary gate (2) as a "threshold" to the area of colonial buildings—and perhaps suggesting a remnant of a long-gone wall. In the next block, or room, the floor plan of the chambers of the provincial legislature is picked out in white marble on the pavement (3) as a symbol and reminder of the important government functions taking place just inside. Beyond that, also "drawn" on the pavement in marble, is the plan of the Ministry of Economy (4). Still farther along, a series of eight freestanding columns (5) acts as another gateway—a roofless contemporary temple placed between the government buildings and the shopping street beyond. The five-block-long, cross-shaped shopping area is tied together into another "room" by a vaultlike pergola of metal arches or "instant trees"(6), grown with vines that provide colorful flowers and shade during the summer but let in the winter sun. As the shopping bazaar turns back (bottom of drawing) towards the cathedral, the symbolism changes back—a mirror image of the facade of the cathedral is drawn on the pavement with marble (7).

And so Roca's vision is expressed—not just by a cohesive urban plan for the city's core, but by "creating a text where the city can read itself." W.W.

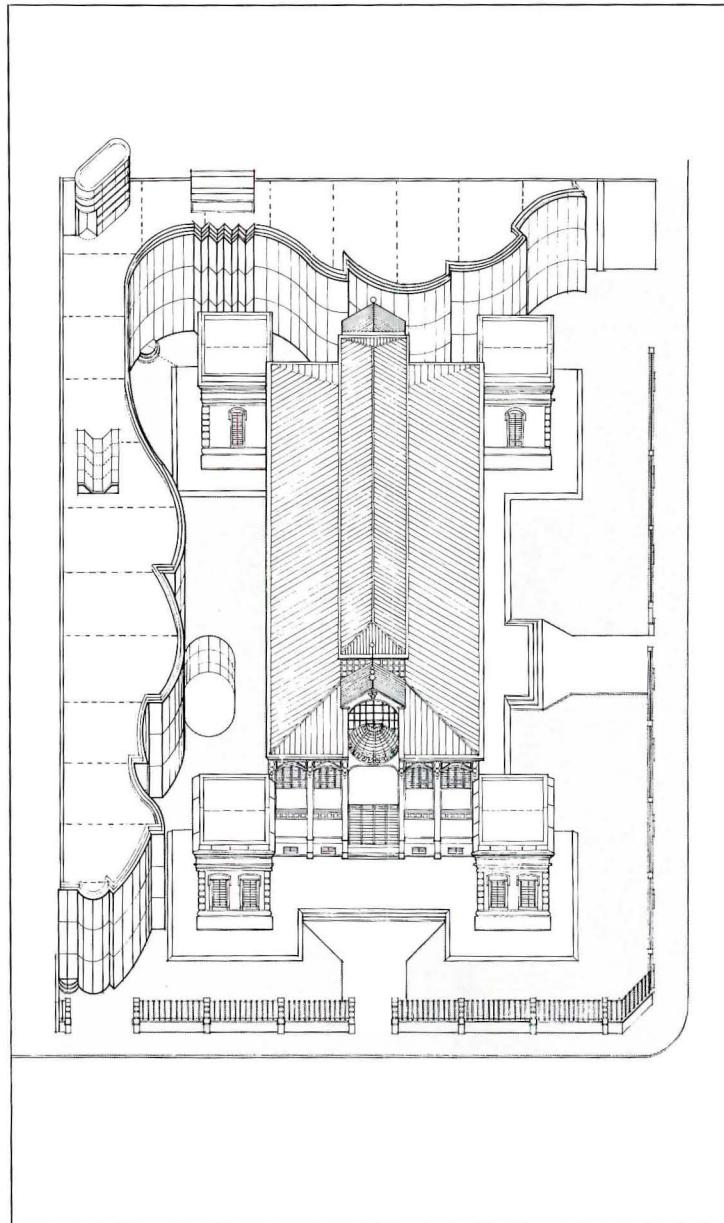




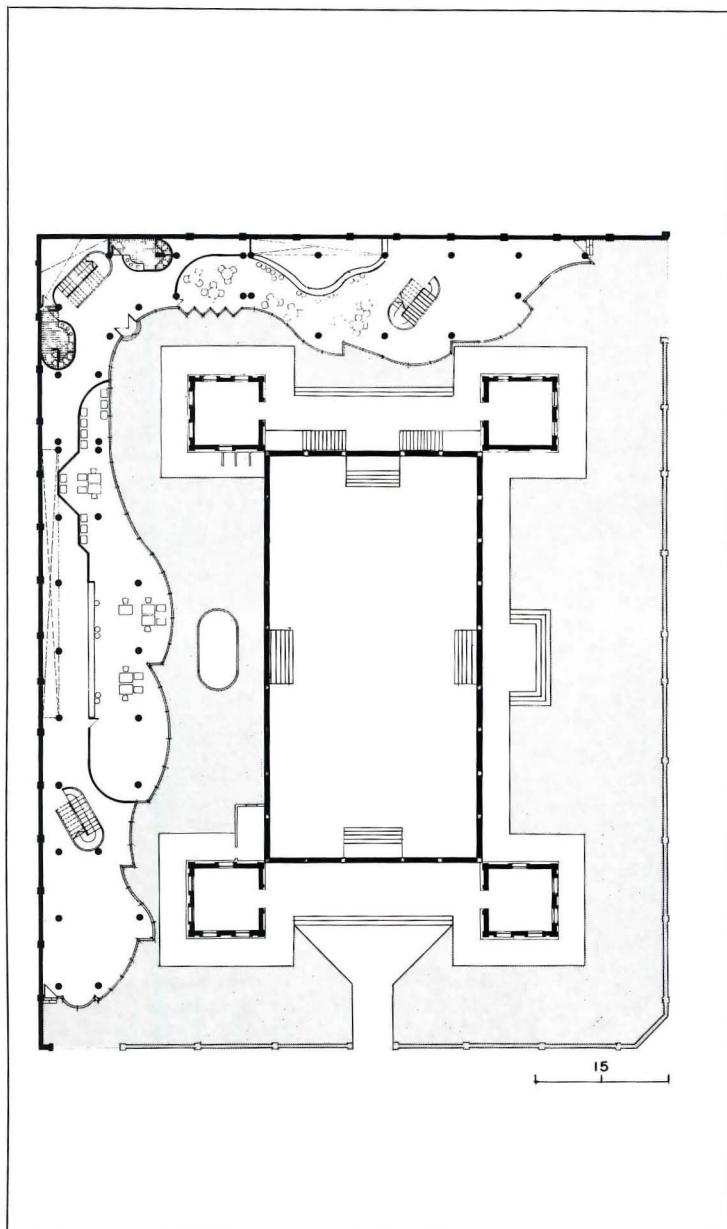
As Córdoba has its historic core, the neighborhoods each have a center

While Roca was part of Córdoba's city government, a social/political policy was established to strengthen the deeply rooted identity of neighborhoods around the historic core with highly visible community centers. In each case, important older buildings that had lost their functional importance but not their symbolic importance were chosen for the center. One such building was the General Paz market, built in the late 1800s of cast-iron sections imported from Europe, long abandoned, and now given new life by Roca's redesign. Because of the historic and architectural interest of the building, with its highly decorative ironwork set off by beautifully detailed masonry service pavilions at each corner, architect Roca left the grand central space open (see photo below right) for use as a community meeting place, for lectures, movies and shows. The basement of the great hall is used as a youth center.

To create space for other needed activities—neighborhood administration offices and a busy coffee shop on the first floor, a municipal museum and a library on the second floor—Roca designed a freeform reflective glass building that wraps around the old market on two sides with open space of about 30 feet between. Thus, the new building is part of the old, but separated from it; the new building reflects, and thus reinforces, the image of the old; the shape of the new buildings is a “free and autonomous shape” that takes nothing away from the old market but, by contrast, adds to its importance.



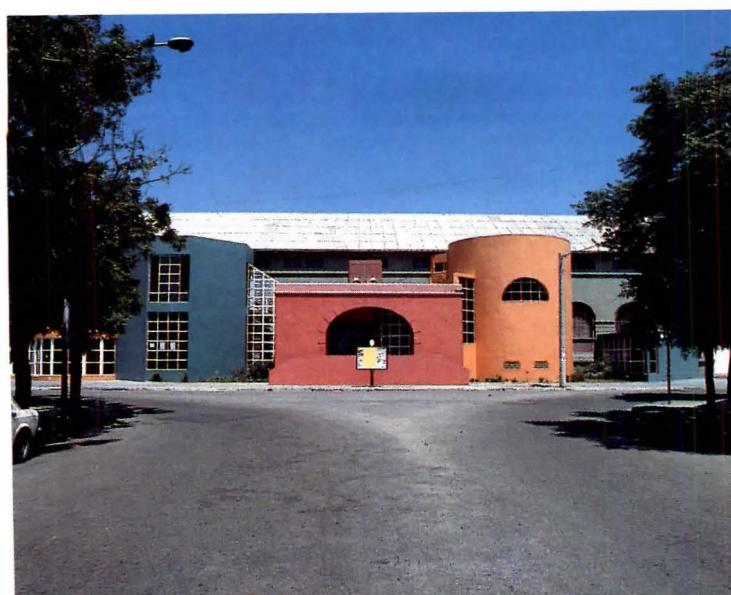
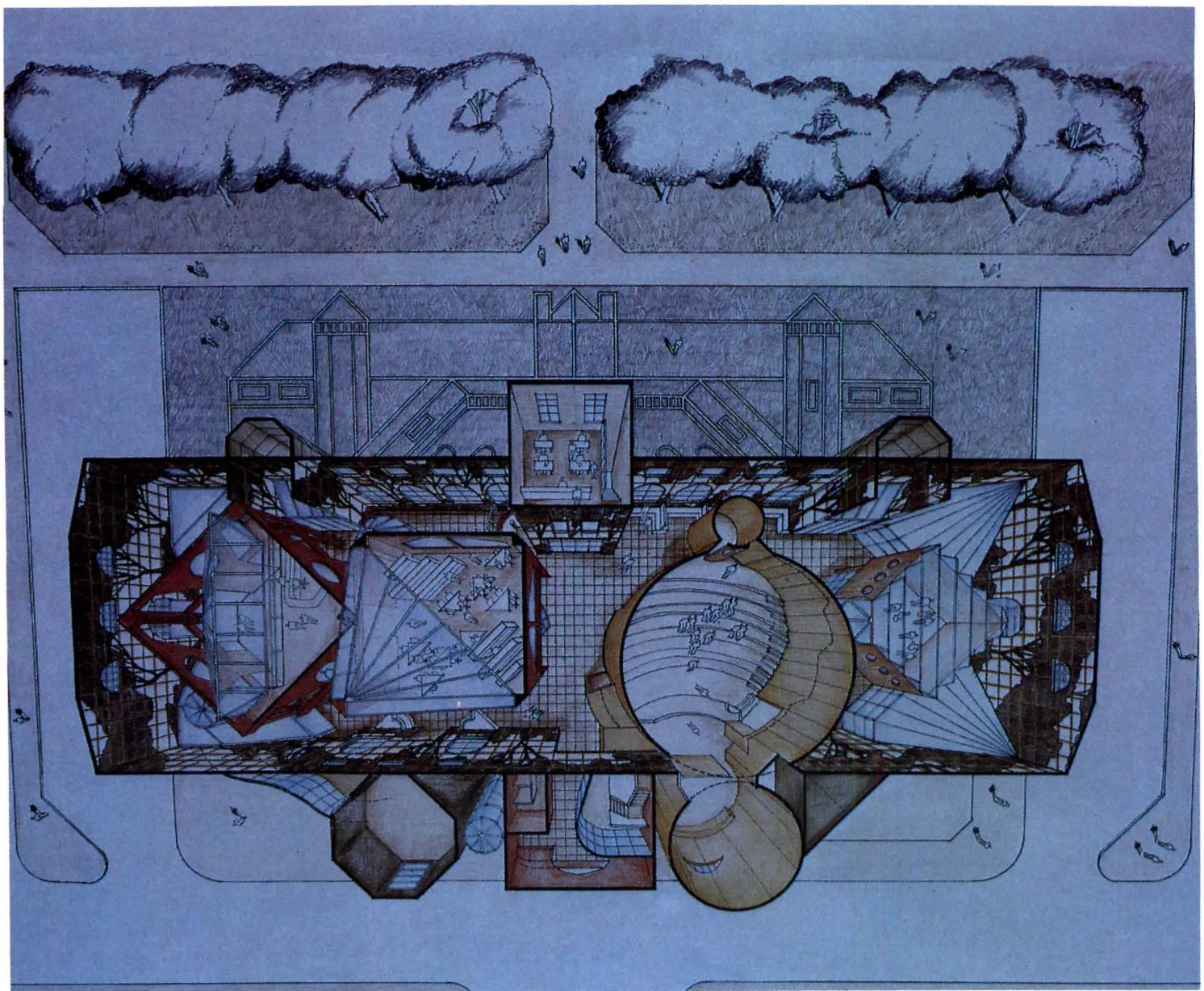
The new “wrap-around” addition to the General Paz neighborhood center consists mostly of flexible space that can be used and reused as community needs change. The building is concrete-framed, with reflective glass walls in a tight metal framing grid meant to recall the gridiron layout of the streets. As the photos on this page show, visitors to the new pavilion look across the courtyard and are made to recall that the new building is part of the neighborhood’s culture and history. Yet everything in the new building is deliberately contemporary—furniture, forms, skylights, stairwell shapes and colors—as a reminder that this building is intended to meet today’s community needs.

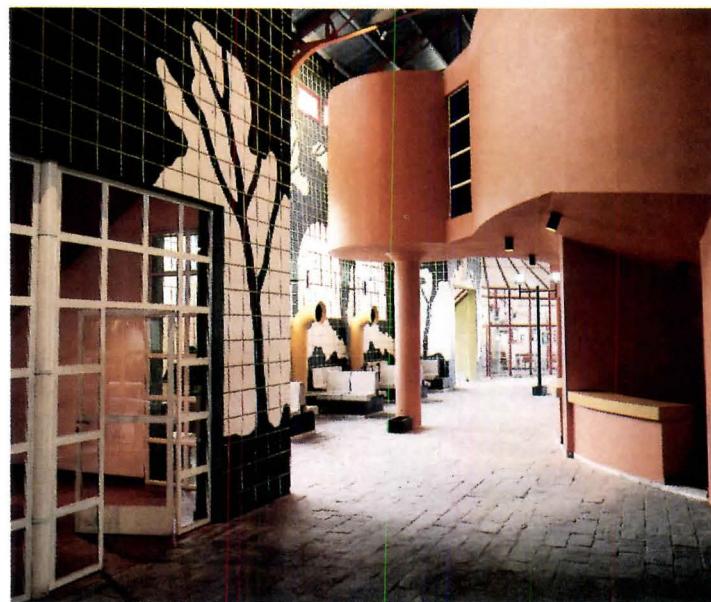


The colorful neighborhood of San Vincente has an especially colorful center

The second of the centers intended to reinforce community identity is this lively building, the center of a heavily populated neighborhood so tightly knit that it calls itself the Republic of San Vincente. (It once seceded from the city of Córdoba in a disagreement about running its own carnival in competition with the city carnival.) Architect Roca's design for this neighborhood center reflects in its fanciful shapes and carnival colors the particular spirit of the community. This too was a market building, though much more recent and less distinguished in design than the General Paz market. Here, Roca chose to create spaces for community activity—a youth center, administrative offices, a restaurant-snack bar, a library and a movie theater/auditorium (see photos next spread)—as a variety of freestanding pavilions both inside and outside the main space of the old market building. In the public square facing the building, the same kind of pavement treatment used in the historic core is echoed. The facade is “drawn” in white marble lines against black slate pavement (see plan drawing)—intended to “read” as a statement that this center is to the neighborhood what the university or the cathedral is to the city. And inside the San Vincente market (again see photos next spread), the plaza paving is continued as streets between the pavilions, a device that reinforces the intentionally complex inside-outside relationships of the spaces. It is all very purposeful—once again, a part of Roca’s very special image of Córdoba.







Inside, the San Vincente market is a series of pavilions, intended by architect Roca to read as a village in a forest clearing. The fanciful trees in green or white are overlaid with a grid to express the city taking over the forest; the ceilings are painted in sky blue with "clouds that ignore the wind." In the large photo opposite, the red pavilion is the library under its own "skylight," with a coffee shop on the

first floor. The photo just above shows the column supporting the rear of the circular auditorium/theater/meeting hall which slopes up from the plaza level. The other pavilions house offices and shops.



Hisaka Residence
New Seabury, Massachusetts
Don M. Hisaka & Associates, Architects



Tradition with a twist



©Steve Rosenthal photos

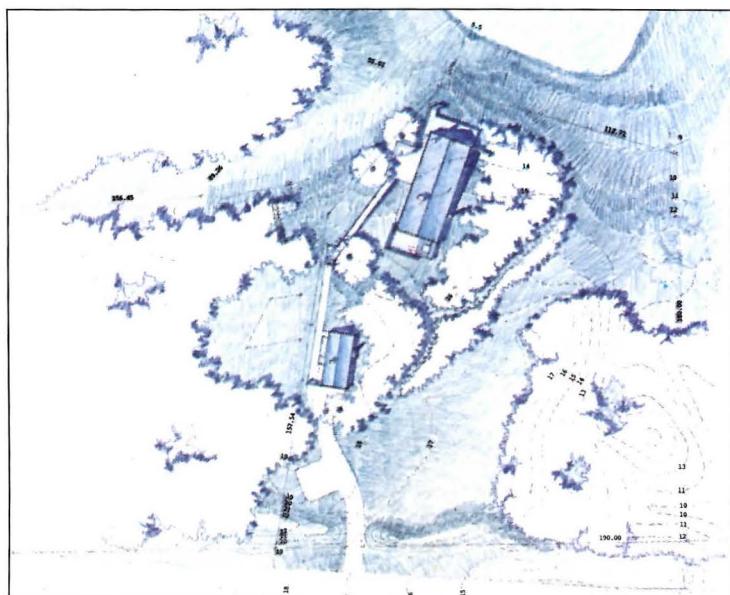
Like a no-nonsense trench coat that conceals, then unexpectedly reveals, the lush fall of a fur lining, the plain-Jane exterior of the vacation retreat built by architect Don Hisaka for himself and his wife gives little hint of the sprightly and witty space within. First glimpsed beyond a roadside garage-cum-guest-loft that recalls a skinny weathered-gray Monopoly house, the simple cottage might, like the surrounding trees, have "just grown" on its perch above a shallow sandy bluff overlooking a chocolate-colored pond.

But if the exterior was discreetly rendered, deferring in materials and massing to the traditional buildings of its Cape Cod setting, not so the interior. There, Hisaka says, "We did our own thing"—which proved to be an open loft dotted with playful "pavilions" and sparked by bursts of clear pastels against a background of Wedgwood lavender and crisp white.

For Hisaka, the house in both its indigenous and individualist aspects represents a pointed departure from the hard-edged style on which his successful Cleveland practice was built and which he now describes as "rigidly modernist." Having transplanted himself and his firm to the history-steeped Boston area, Hisaka saw the design of his own house as an opportunity to break away from minimalism and indulge a developing interest in the richer idioms of regionalism and the unbuttoned visual vocabulary of "postmodernism."

In a literal rather than stylistic sense, though, the house remains minimal: a single, conventionally framed, gabled room. Nor is the space exceptionally large—only 24 feet by 48 feet. But it gains both generosity and interest from the freestanding pavilions that suggest, without insisting on, "rooms" within its limited expanse: a one-step-high railed "mezzanine" for Hisaka's study, a kitchen whose rear wall also defines the bedroom area, and—most prominent—a tall "in-house" complete with window and gabled skylight.

To further amplify the simple rectangular space, this latter element and the fireplace opposite are set slightly askew, as is the floor tile, setting up a rotated grid in counterpoint to the structural module. Indeed, the dominating motif is one of grids—repeated in windows, screens, and relief ornament as well as in the floor pattern—whose angularity plays effectively against a soft palette of cool but vibrant pastels ranging from dusty rose to blueprint blue. The sum is a lively small house with few secrets—but many surprises. *M.F.G.*



Although architect Hisaka's concern with bringing the mini-compound of his vacation house into harmony with its site and larger surround is everywhere in evidence, equally evident are subtleties of detail and proportion that clearly distinguish the structures from "local produce." The distinctions are first asserted by the upstretched gabled facade and truncated eaves of the

latter-day "carriage house" that provides guest quarters in its upper story and garage below. A pergola to one side serves as a mock-ceremonial entry arch and introduces the ubiquitous grid theme, which is carried forward in the gridded balustrade of the side stair. From the pergola a flagged walk leads to a canted bridge giving onto the L-shaped deck that wraps the main house, punctuated by a



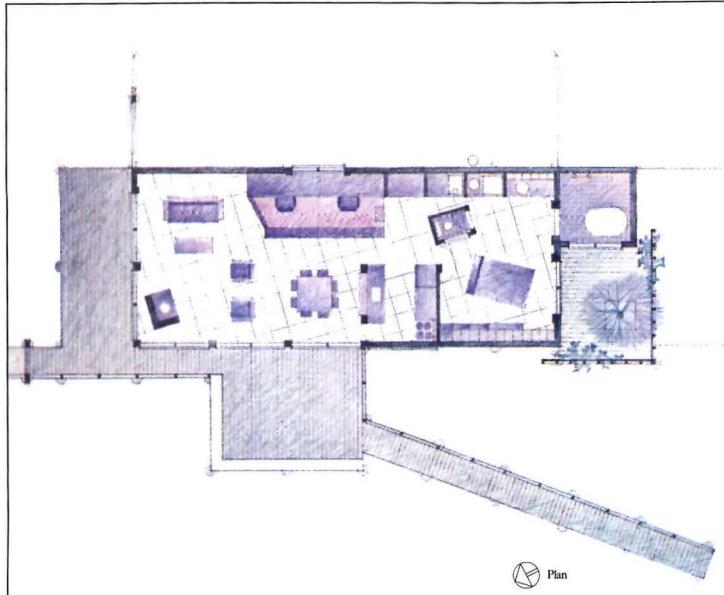
belvedere overlooking the pond. Just for fun, a small square window is overlaid by a larger decorative grid, while the skylight above is capped by a lowered construction (photo bottom left) that looks as though it should pivot as well as shade—but does neither. (In this context even the pedestrian television antenna takes on the jaunty air of a mobile sculpture.) As with the smaller structure, eaves

are chopped short and their role assumed by wire-glass awnings over the window walls. Throughout, the relaxed impression of improvisation marking the playful details that lend to this small house so much of its charm is heightened by their execution in stock lumber and in forms well within the skills of local workmen.

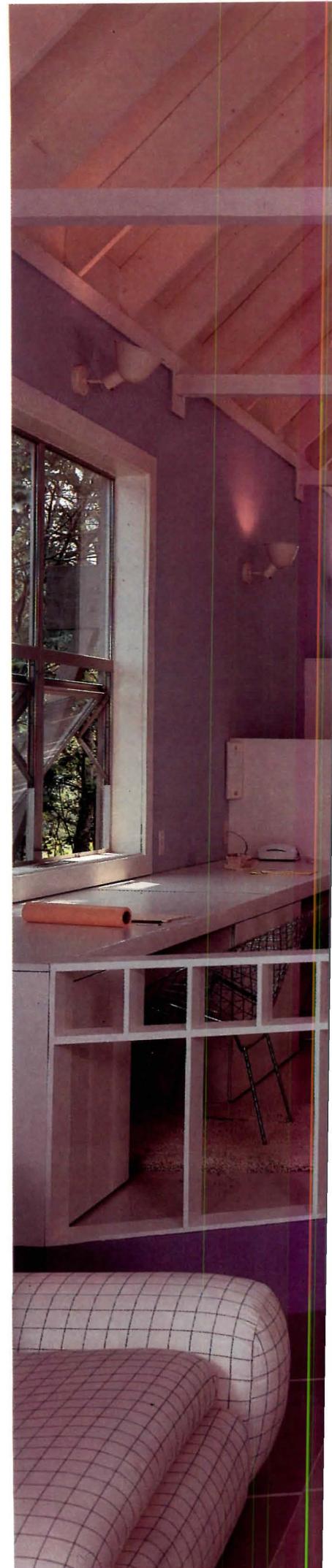


If a simple one-room cottage would seem to offer limited scope for architectural experiment, architect Don Hisaka has nonetheless contrived to make this modest house a virtual laboratory for play with ornament and pattern and, above all, color. The organizing spatial device is the insertion within the space of "rooms" implied by screens and dividers, culminating in the exaggerated

tower form of the "in-house" (photo bottom right). With the fireplace opposite, the tower establishes a secondary axis at an angle to the structure, visually broadening the space. In a room rich in surprises, the most surprising effect is a sense of uncluttered spaciousness and of controlled wit and whimsy that skirt a lapse into eccentricity or caprice.



Hisaka Residence
New Seabury, Massachusetts
Owner:
Don M. Hisaka
Architects:
Don M. Hisaka & Associates—Don M. Hisaka, partner-in-charge
Contractor:
Don M. Hisaka







Restoring the Statue of Liberty

Most Americans have grown all too accustomed to her face, and her physical beauty has all too often been trivialized in cheap souvenir paperweights. But Frédéric Auguste Bartholdi clearly understood the esthetic demands of monumental art when he sculptured the statue of "Liberty Enlightening the World." (Even in photographs, the statue looks smooth and bland. Photographer Michael George credits the remarkable clarity of these pictures, enlarged here from 35mm slides, to a superlative telephoto lens.)

Bartholdi also understood the technical demands of monumental art very well. Starting with a small terra cotta maquette, he increased the statue's size through three meticulously scaled, successively larger versions, finally erecting the statue in Paris, where after suitable celebration it was disassembled and shipped to New York. The red-copper skin, which at $\frac{3}{32}$ in. is proportionally as filmy as cloth drapery, consists of some 300 hand-hammered plates. The sculptured skin also has structural purpose: the hammering serves to rigidify the envelope, while the many folds in the drapery distribute stress and minimize sagging.

Moreover, the sculptor had the wit to commission a top-notch engineer, Alexandre-Gustave Eiffel, to design internal support for the 151-ft statue. Eiffel devised an iron skeleton, the chief support a central pylon tied to the ground through the stone pedestal. The skin itself is supported by an armature of vertical and horizontal bars, the ribs a series of 1,350 rippling sections that follow the drapery's folds. Loads are transferred from the ribs through flat bars to a secondary frame around the pylon.

After a century of standing in rain, wind and salt air, the statue, not surprisingly, begins to show its age. Serious concern arose when French engineer Jacques Moutard, restoring Bartholdi's statue of Vercingetorix in France, started to worry about the Statue of Liberty, a similar sculpture of about the same age. A French-American Committee for the Restoration of the Statue of Liberty, Inc., was formed, and in turn assembled an international team of architects and engineers to diagnose and treat the monument's infirmities: in France, architect Ph. G. Grandjean and engineer-advisers J. Levron, J. Moutard and P. Tissier, and in the United States, consulting architects Swanke Hayden Connell and associate consultant the Office of Thierry W. Desponts. The team submitted its report to the National Park Service, which manages the statue as a national monument for the American government.

Though the copper skin displays the effects of age and acid rain, laboratory tests showed these to be essentially normal as aging process, with the patina a natural shield against deterioration. Interior conditions, after exhaustive observations with chemical analyses and stress and wind tests, proved considerably worse. An assortment of warps, sags, leaks and failed joints threatened the safety of both the visiting public and the statue itself.

Like the original statue, the restored statue will be funded with private French and American donations. Legend makes much of American schoolchildren's pennies, but, as one might expect, the bulk of the money came from rich donors. The big gun for raising money this time is the Statue of Liberty-Ellis Island Centennial Commission, which hopes to raise \$230 million under the leadership of Lee Iacocca, \$40 million of it for the statue and improvements to Liberty Island, the rest committed to restoring Ellis Island and establishing a museum of immigration. A wing of the commission, the Statue of Liberty-Ellis Island Foundation, Inc., acts as owner's consultant for the NPS; its professional consultants include GSGSB, architects and engineers, and Lehrer/McGovern, Inc., construction managers. Grace Anderson

© Wolfgang Hoyt/ESTO



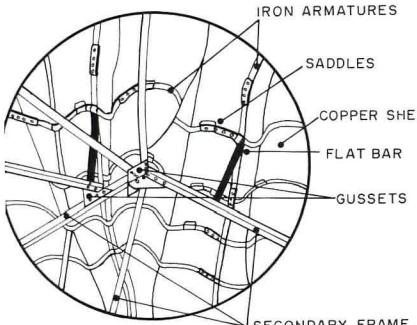
One of two maquettes built by architects Swanke Hayden Connell for the restoration of the Statue of Liberty, the 5-ft plastic model above includes both Eiffel's internal structure and the stone pedestal designed by American architect Richard Morris Hunt. The second maquette, of metal, incorporates only the statue's skeleton; it is 8 ft tall. Because Bartholdi's drawings were lost in a fire shortly after the statue was erected, the restoration architects had to rely on measured drawings constructed with such modern-day tools as computers and ultrasonic calipers.



While the outer copper skin of the Statue of Liberty has few damages visible to the naked eye, the scaffolding that now veils the entire statue will be used for closer looks and chemical tests. Coal-tar leaks at the seams will be cleaned and dents hammered out, but basically the skin will remain as is: the verdigris has both esthetic and technical value—the oxidation provides a chemical shield.

The inside of the skin presents a far different picture. The original skin support consisted of 1,350 ribs and verticals made of puddled iron, a contemporary material similar to cast iron. These were affixed to the copper skin with copper saddles and copper rivets (top right). Eiffel, recognizing the electrolytic incompatibility of iron and copper, interposed a barrier between the two. (Nobody any longer knows the composition of the barrier.) Moisture seeping into the saddles caused them to swell and buckle, in many cases pulling rivets right out of the skin (bottom right). The holes resulting admit more water, as well as daylight (center right). All armatures and saddles will be replaced, this time using stainless steel ribs with copper saddles and rivets. Though the materials are compatible, a Teflon sleeve on the stainless steel will insure against galvanic action. The flat bars that connect the ribs and secondary frame have bent and weakened and must be entirely replaced. Sequencing all this activity is essential: the statue will be divided into quadrants and levels, with only one armature in each quadrant level removed at a time.

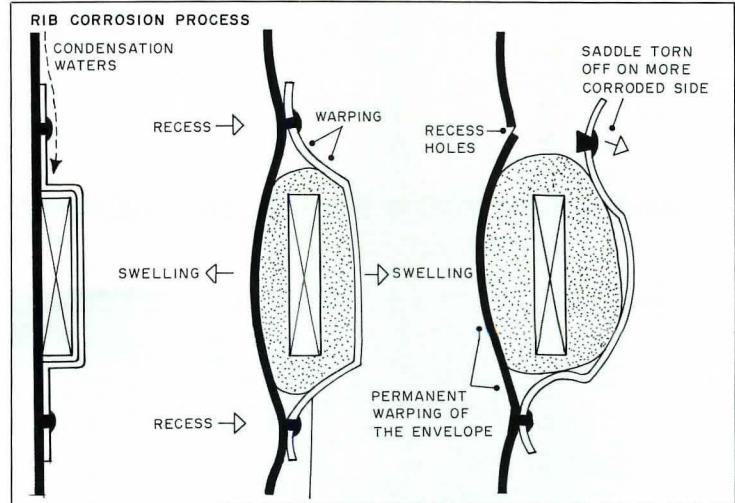
The central pylon and the secondary frame need only minor repairs, except at the juncture of neck and right shoulder. This joint, incorrectly installed in the first place, is now some 16 in. out of vertical alignment. At this writing, the restoration team still has the solution under consideration, but they think they will merely strengthen the structure rather than alter its configuration.

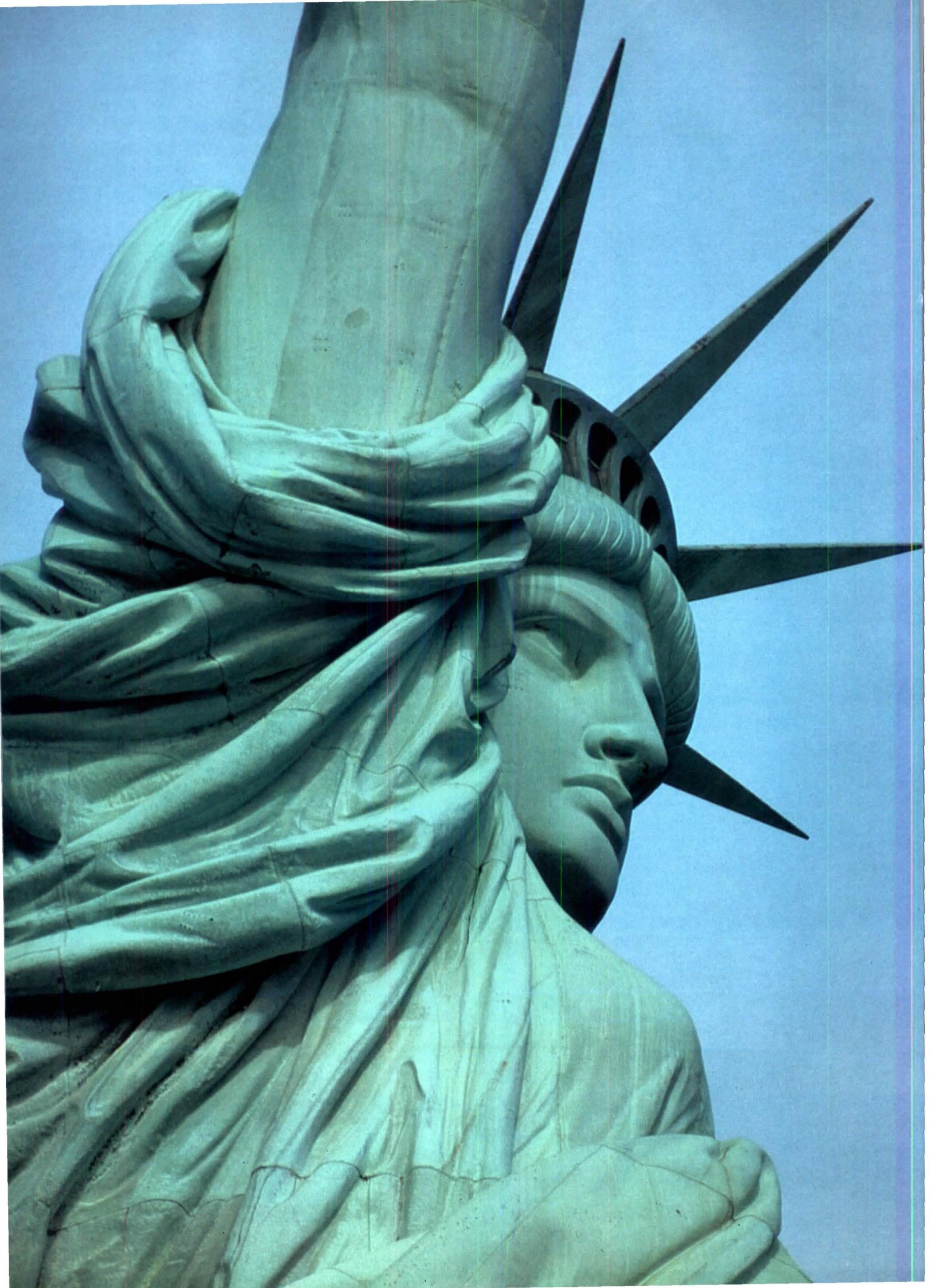


Don Cornish



Don Cornish





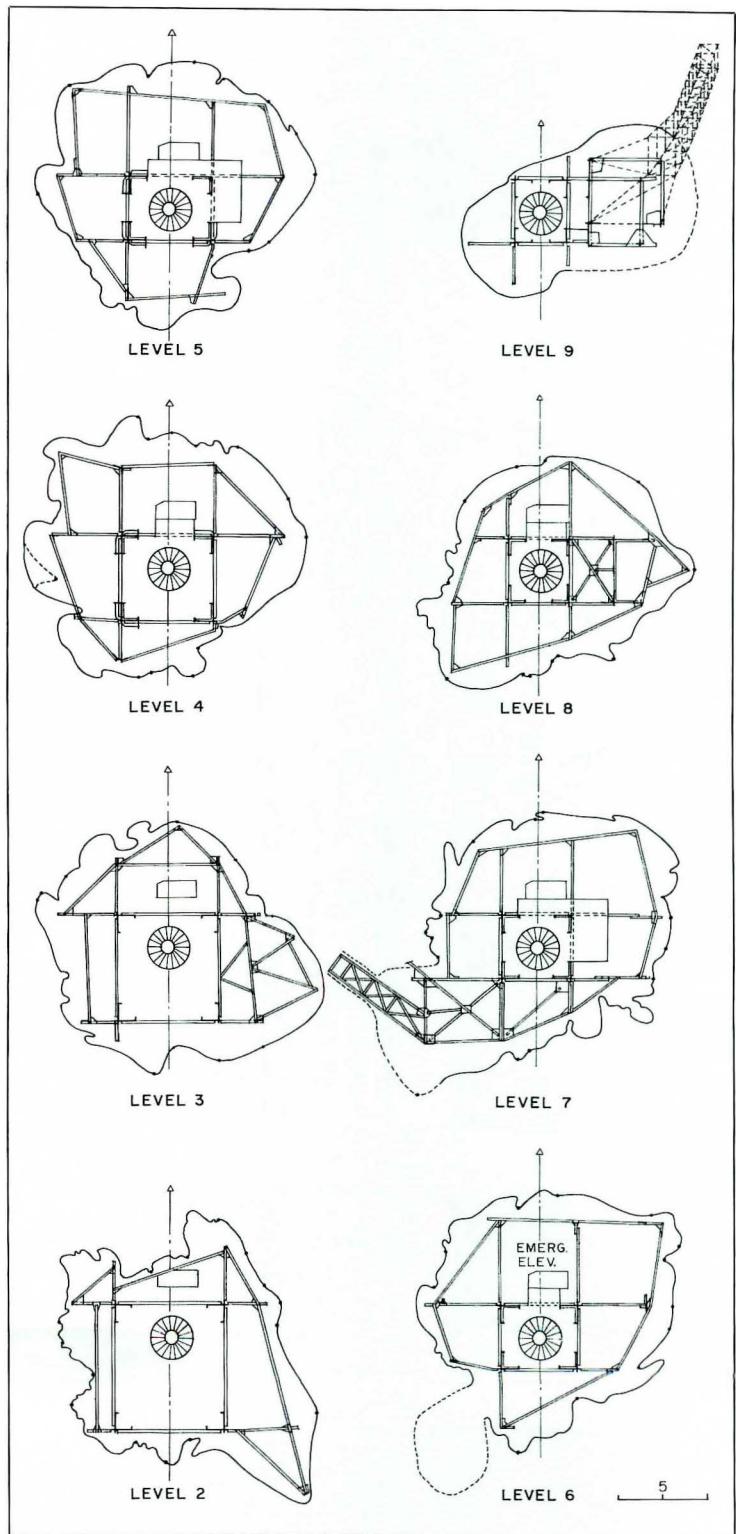
Bartholdi and Eiffel had no idea that any but the most curious would ever tour the inside of the statue. But people arrive in droves. Visitors pass first through a museum, thence via a too-small elevator to a gallery at the bottom of the statue itself, where they embark on a 154-step climb to the crown. About 8,500 people come to the statue daily, 2,500 of them making the climb—that's about 320 people going up those stairs every hour.

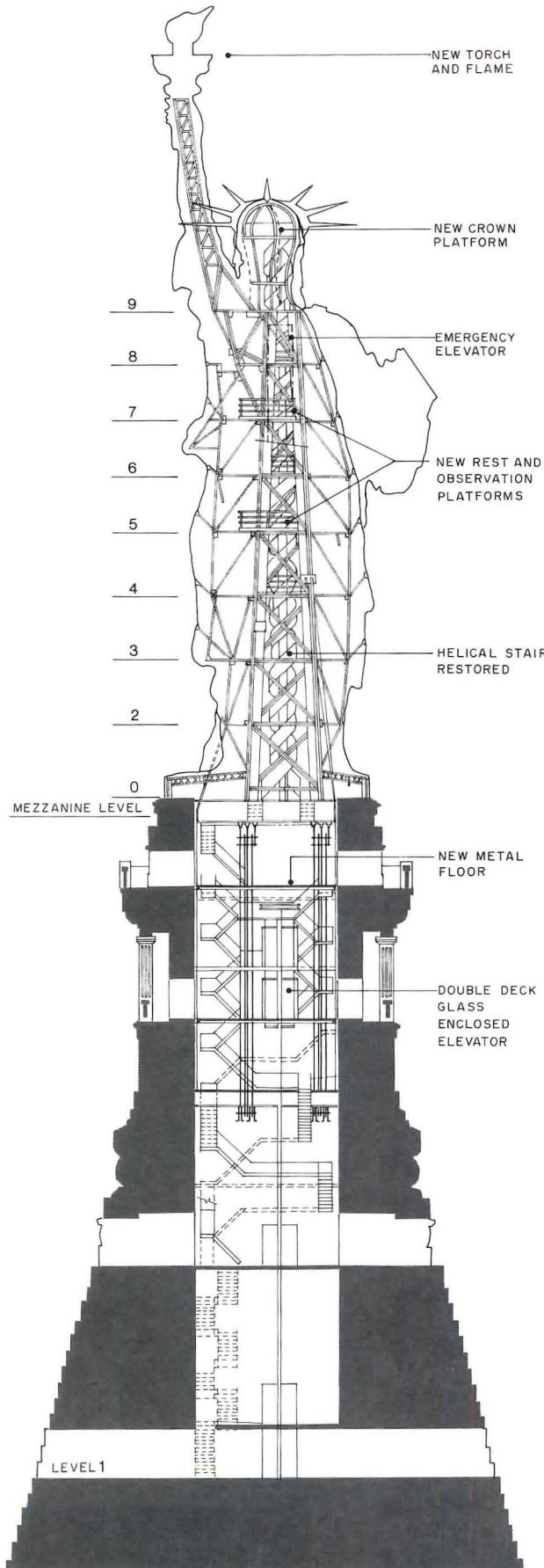
Believing that visitors get triumphant enjoyment from the arduous climb, Swanke Hayden Connell will retain the double helical stairway, which efficiently allows one-way traffic both up and down the narrow stairs. Old benches cantilevered outside the spiral will be removed and new rest platforms added.

In the pedestal, people prefer to take the elevator, even with long lines and a 10-cent fare. A new double-deck elevator will replace it. A small hoist in the body of the statue will provide for maintenance and emergencies.

The internal environment has high levels of carbon dioxide, unacceptable humidity, and temperatures above 100°F in the crown on sunny days. Air conditioning the copper statue proved impracticable, but the renovation calls for considerably greater movement of air, with air-handling equipment at the hem of the statue's toga and a duct rising through the spiral staircase to supply fresh air to the crown.

As matters stand now, tourists have little to occupy their minds during their climb: a metal mesh cylinder around the stairs obscures any view of the inner drapery and the rippling armatures. The copper will be stripped of seven layers of paint with liquid nitrogen: nitrogen sprayed at -350°F will freeze the accumulated paint, causing it to drop off in small pieces. A layer of asphalt sealant will then be removed. Finally, the mesh cylinder will disappear so that visitors can admire the artfully lighted copper.



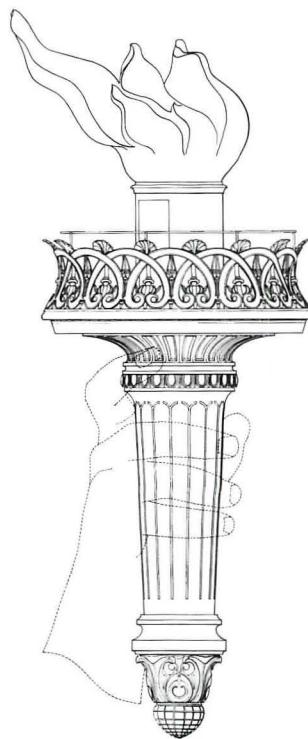


Liberty's torch carries a heavy symbolic burden, second only to the statue's siting at the gate of the New World. But the flame, thanks to tinkering and redesign, is also the weakest point of the structure's integrity. The flame sculptured by Bartholdi was solid copper with gold leaf. Later, somebody or other thought it would be nice if the flame were lighted from within, so it was fattened and pierced with portholes.

When that didn't work, sculptor Gutzon Borglum had a go at it, using copper bands to support thick glass (bottom right). This more or less worked as beacon, but leakage threatened the upraised arm: profuse moisture running down the torch spread corrosion in the interior and filled the pendant at the bottom of the torch with what Thierry Despont calls "primordial soup."

The restoration team considered reconstructing the entire right arm, but rejected the move as too difficult and too dangerous. The torch, except for the shaft in the statue's grasp, will therefore be entirely rebuilt. The new flame (center right) will take the form of the old, though Despont, in charge of this aspect of design, had considerable trouble envisioning the original: the drawings had burned and all photographs were taken from the front, so that the back of the flame was a mystery. The new solid copper flame will have a gilded finish, electroplated with a brush technique. Though the flame will be watertight, this pendant will have a weep hole. (Contrary to mythic memory, the torch balcony has always been closed to the public except for a very brief period many years ago.)

The island will remain open throughout the two years of construction, though the statue will be closed as briefly as possible. But virtually all the necessary fabrication—armatures, copper saddles, torch—will take place on the island in workshops open to tourists, as Bartholdi's workshop was a hundred years ago.

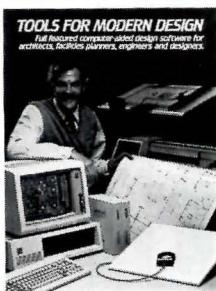


Don Cornish



Product literature

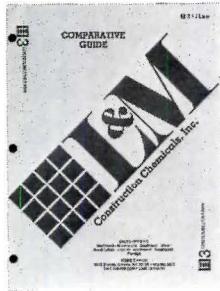
For more information, circle item numbers on Reader Service Card, pages 211-212



CAD software

An 8-page color brochure describes three CAD software systems. Features such as zoom commands, symbol libraries, and a cursor control device are discussed in the text. Diagrams and photographs illustrate multilayer drafting capabilities. Personal CAD Systems Inc., Los Gatos, Calif.

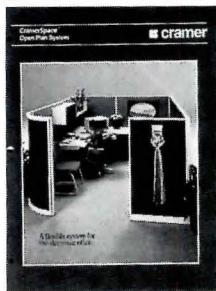
Circle 400 on reader service card



Construction chemicals

Major manufacturers of concrete chemicals, grouts, and moisture proofers are listed in an 8-page comparative guide. Tables include data for the use, specification, and costs of the sponsoring manufacturers' products. L&M Construction Chemicals, Inc., Omaha, Neb.

Circle 406 on reader service card



Office panel system

An open plan system of office furniture and standard or electrified panels is presented in a 19-page color brochure. Preassembled panels are available in melamine, fabric, and acoustical versions. Cabinetry and seating are also featured. Cramer Inc., Kansas City, Kansas.

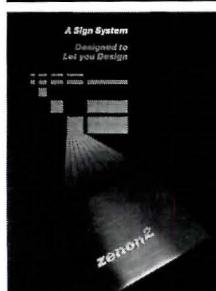
Circle 401 on reader service card



Cement mix

A 6-page brochure introduces polymer-modified *Five Star PTP* cement mix. Mixing proportions, coverage, and yield data are provided in the text. Photographs illustrate resurfacing, tile grouting, and finishing applications. U.S. Waterproofing, Inc., Fairfield, Conn.

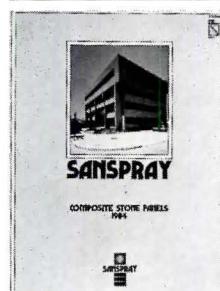
Circle 407 on reader service card



Sign system

A 14-page color brochure describes the *Zenon 2* signage system for building interiors. The system includes a selection of sign combinations in plastics and metals and 10 standard colors. Computer-generated typography and installation options are also featured. New Hermes, Inc., Decatur, Ga.

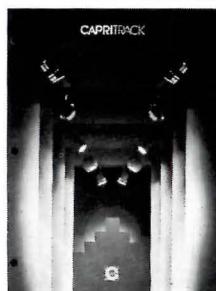
Circle 402 on reader service card



Composite stone panels

An 8-page color brochure describes composite stone panels available in 10 stone colors and four textures. Stones are bonded to plywood or fiberboard with the manufacturer's *Hycon 75* epoxy resin bonding agent. Sanspray Corp., Santa Clara, Calif.

Circle 408 on reader service card



Lighting

A 56-page color catalog describes a complete line of lighting fixtures and accessories. The company's 16 major track series are featured along with a miniature lampholder series, framing projectors, filters, and louvers. Installation options and a specifying chart are included. Capri Lighting, Los Angeles.

Circle 403 on reader service card



Floor system

An 8-page color brochure describes the *D-500* concrete-and-steel composite floor system. Technical data explain the use of composite joists as stiffeners, while photographs and drawings illustrate installation procedures. Load tables and capacity charts are included. Canam Hambro, Needham Heights, Mass.

Circle 409 on reader service card



Ceramic tile

A complete line of tile products including ceramic mosaic, glazed, and quarry tiles is described in a 40-page color catalog. Photographs and diagrams illustrate tile shapes, colors, and installation. A specification guide and trim charts are also featured. American Olean Tile Co., Lansdale, Pa.

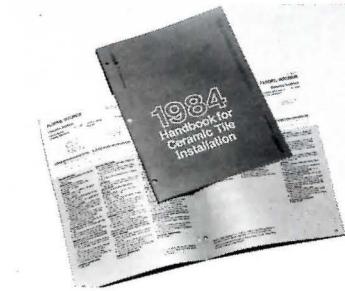
Circle 404 on reader service card



Automatic boilers

Boilers with capacities from 25 hp to 850 hp are described in a 16-page brochure. Photographs and diagrams illustrate construction and inspection procedures as well as standard features for boiler units. Maintenance instructions and specification tables are included. York-Shipley, Inc., York, Pa.

Circle 410 on reader service card



Tile installation

A 32-page handbook discusses methods and conditions for ceramic tile installation. Included are sections on setting materials, floors and walls, special products, and renovation. Reference details, outlines, and charts are supplied throughout the manual. Tile Council of America, Princeton, N.J.

Circle 405 on reader service card



Seating

A 28-page color brochure describes the complete line of *Concentrx/454* seating for the computerized office. Photographs and diagrams illustrate chair features and finish options. Specifications are listed in a comprehensive chart. Steelcase, Grand Rapids, Mich.

Circle 411 on reader service card

More literature on page 148

Product literature *continued*

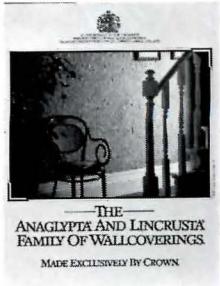
For more information, circle item numbers on Reader Service Card, pages 211-212



Insulation

Foamular extruded insulation is featured in a 16-page color mini-brochure. Included are product descriptions, applications, and available sizes. Installations in roofing systems, frame sheathing, cavity walls, and metal furring are described and illustrated. UC Industries, Parsippany, N.J.

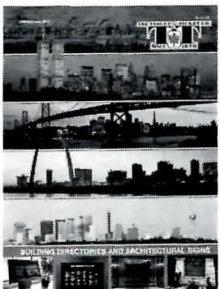
Circle 412 on reader service card



Decorative wallcoverings

Embossed English-made wallcoverings are featured in a 6-page color brochure. The literature contains a summary of wallcovering development and current applications. Descriptions of fiber content and available patterns are included. Crown Decorative Products, Ltd., Denver.

Circle 413 on reader service card



Directories and signs

A variety of building directories and architectural signs are featured in a 20-page color brochure. Each product group is outlined and then supplemented with examples of both standard and custom designs. Photos of letter styles and available graphics are also included. The Tablet & Ticket Co., Chicago.

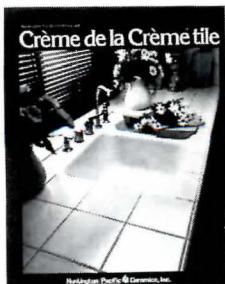
Circle 414 on reader service card



Cedar shakes and shingles

A kit of 10 inserts contains information on cedar shakes and shingles. Issues of application, specification, grades, care, and treatment are reviewed. The kit also includes drawings of sample installations and explanatory diagrams. Red Cedar Shingle & Handsplit Shake Bureau, Bellevue, Wash.

Circle 415 on reader service card



Tile

Crème de la Crème tile is featured in a 4-page color brochure. The tile is available in eight colors, each named for a popular ice cream flavor. Photos show how the tiles can be used together to create color combinations and geometric designs. Huntington/Pacific Ceramics, Inc., Corona, Calif.

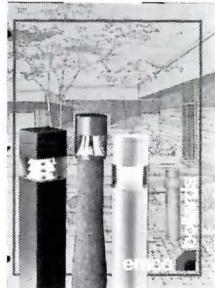
Circle 416 on reader service card



Shuttle transit systems

An 8-page packet contains color photos and descriptions of two automated transit systems. The literature explains the components and usage of the *Otis Network* and *Shuttle Transit*. Diagrams illustrate a system already in use. Otis Elevator Co., Div. of United Technologies, Denver.

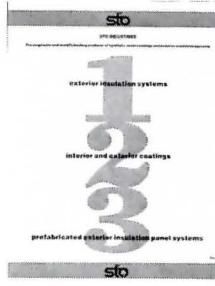
Circle 417 on reader service card



Bollards

A 6-page color brochure features 12 bollards. The pedestrian lamps are available in a square or round model with either a cone reflector, external or internal louvers, or a refractor to distribute the lighting. Also included are diagrams of dimensions and spacing suggestions. EMCO, Milan, Ill.

Circle 418 on reader service card



Insulation and coatings

A 20-page color brochure features three exterior insulation systems, interior/exterior coatings, and prefabricated exterior panel systems. Each product and its physical properties are described. Also included are photos of available colors and textures. STO Industries, Rutland, Vt.

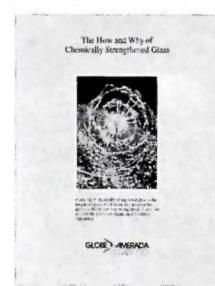
Circle 419 on reader service card



Ceiling design elements

Clipons are decorative aluminum fixtures that attach to suspended acoustical ceilings. A 10-page brochure describes each type and lists its particular features, including suggested applications, attachment method, and its relation to existing utilities. Integrated Ceilings, Inc., Los Angeles.

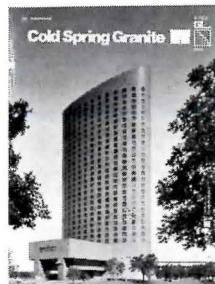
Circle 420 on reader service card



Strengthened glass

Chem-Tem chemically strengthened glass is featured in a 4-page fold-out brochure. Included is a description of processing, optical quality, and break patterns. Federal specifications for chemically strengthened glass are also reviewed. Globe Amerada Glass Co., Elk Grove Village, Ill.

Circle 421 on reader service card



Granite

A 20-page color brochure illustrates granite's uses for both exterior and interior applications. Photos of 17 colors, available in either a polished or thermal finish, are shown. Diagrams of assembly and installation techniques are included. Cold Spring Granite Co., Cold Spring, Minn.

Circle 422 on reader service card



Porcelain enamel finish

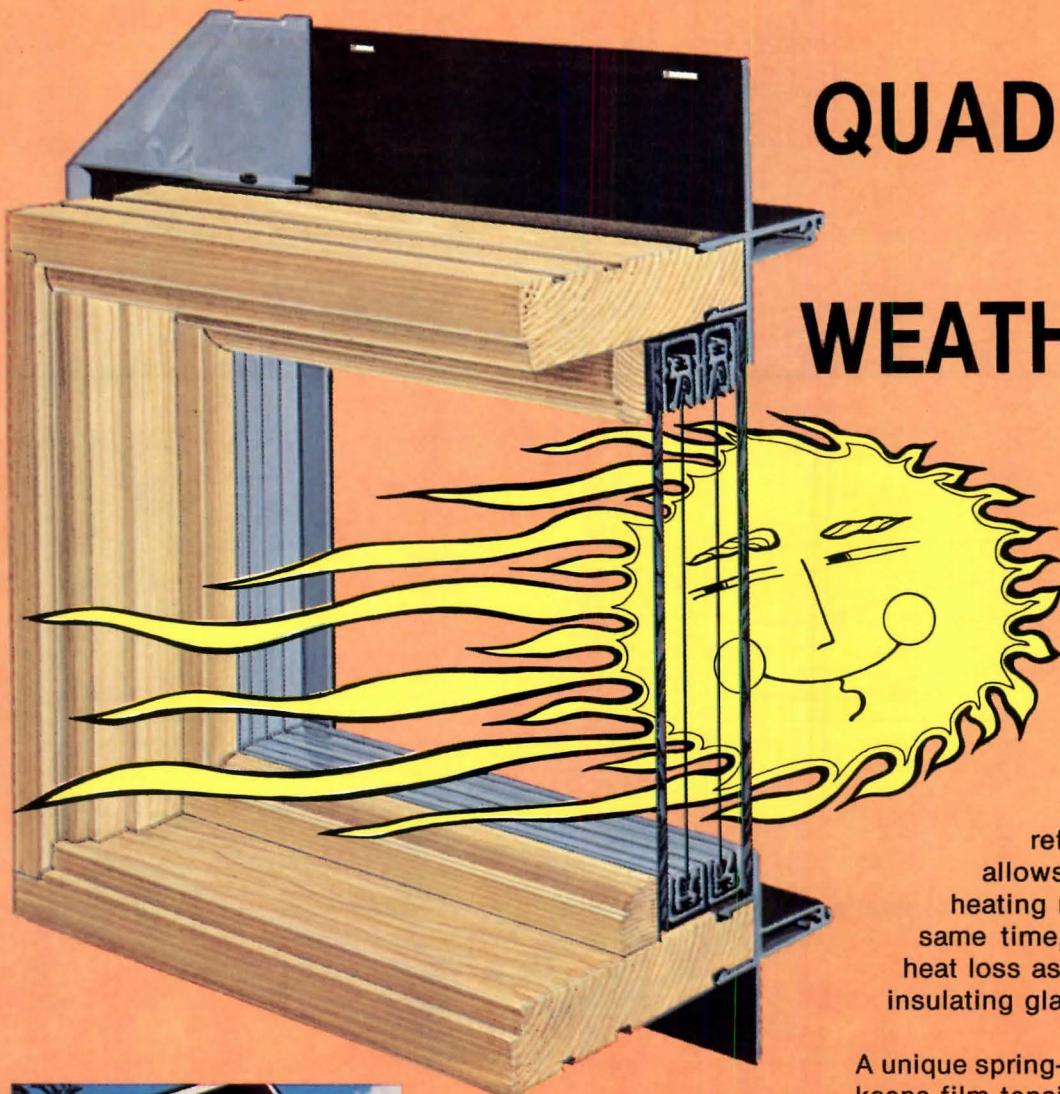
A 22-page color brochure describes both the history of and recent innovations in porcelain enamel finish. Included with the photos of exterior applications are diagrams and tables listing enamel's physical and chemical properties. H.H. Robertson Co., Pittsburgh.

Circle 423 on reader service card

More literature on page 187

Sunsational!...

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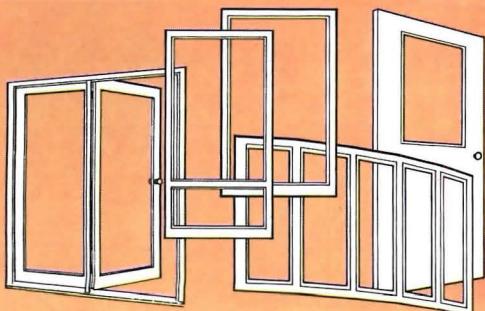
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A unique spring-mounted suspension system keeps film tension constant at all times.

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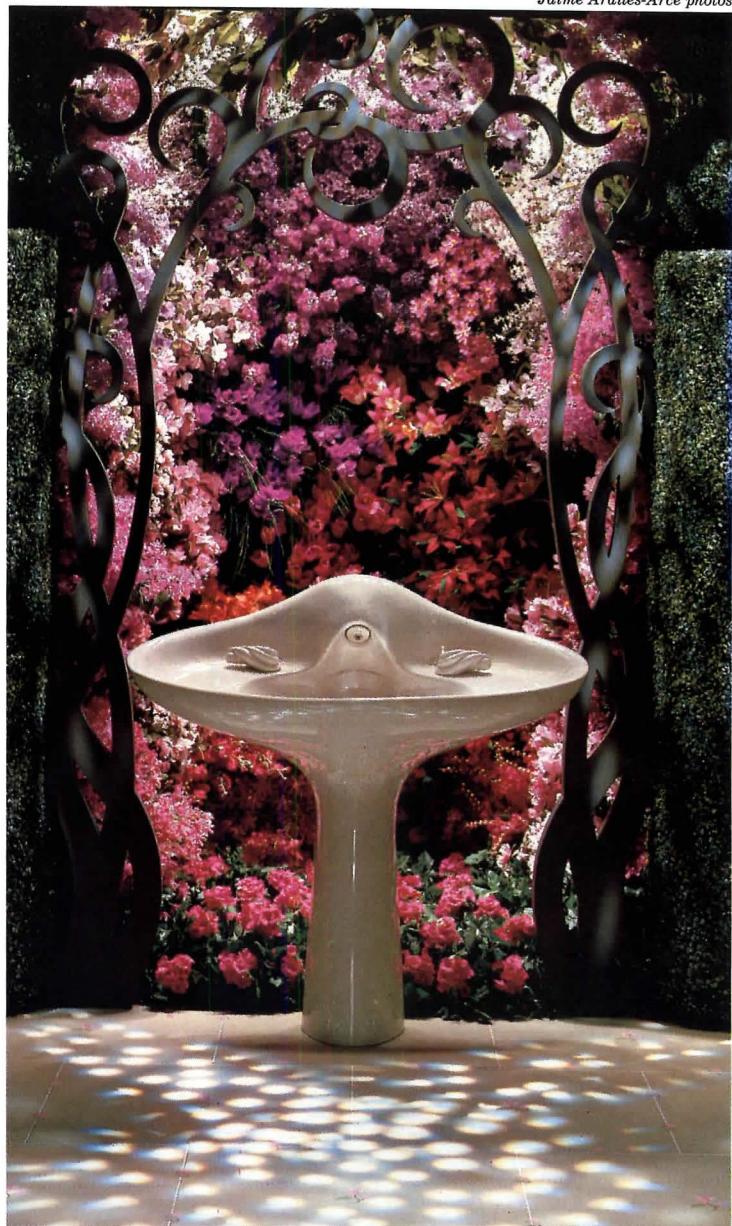


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New products

For more information, circle item numbers on Reader Service Card, pages 211-212



Forms follow functions

At the conclusion of a symposium on bathroom design held recently in Toronto, participants were led into a darkened room where, amid a dramatically lit stage setting of trellises, greenery, and silk flowers, architect Warren Platner unveiled his latest designs for a collection of bathroom fixtures commissioned by American-Standard "for people who demand and can afford an extraordinary environment." The four-piece line marks a radical departure both for the manufacturer, whose previous fixtures have reflected the general conservatism of American bathrooms, and for Platner who, like many other architects, has designed interior furnishings in the past but had never entered the once-taboo

private domain of bathroom fixtures. The Platner Collection comprises a pedestal lavatory, a drop-in lavatory, a bidet, and a toilet—conventional fixtures, to be sure, but unusual in their lavish proportions and voluptuous lines. Platner contends that in the design of the collection, he was inspired by images of fountains and, perhaps more significantly, by the soft

shapes of the human body—an effect that is heightened by the fixtures' bone color (other shades may be added in the future). References to the human anatomy aside, the fixtures exhibit some striking details. All fittings, including shell-shaped handles, bolt-hole covers, and push-button flush actuators, are made of vitreous china, with the result that there are no visible

metal parts. Trajectory spouts, moreover, are integrated into the ceramic bowl and feature laminar flow. Toilet seats are unusually elongated "for comfort and sanitation." According to a manufacturer's spokesman, the collection requires many more mold parts than other fixtures (the toilet, for example, has 32 parts versus as few as five for a conventional unit). Production time for each suite is 10 days, compared with three days for standard manufacturing. Each piece is hand-glazed and air-dried for three days. Finally, unlike regular molds, which are used between 70 and 100 times, the molds for the Platner Collection will be replaced after 30 uses. American-Standard, Inc., New Brunswick, N.J.

Circle 300 on reader service card

More products on page 147

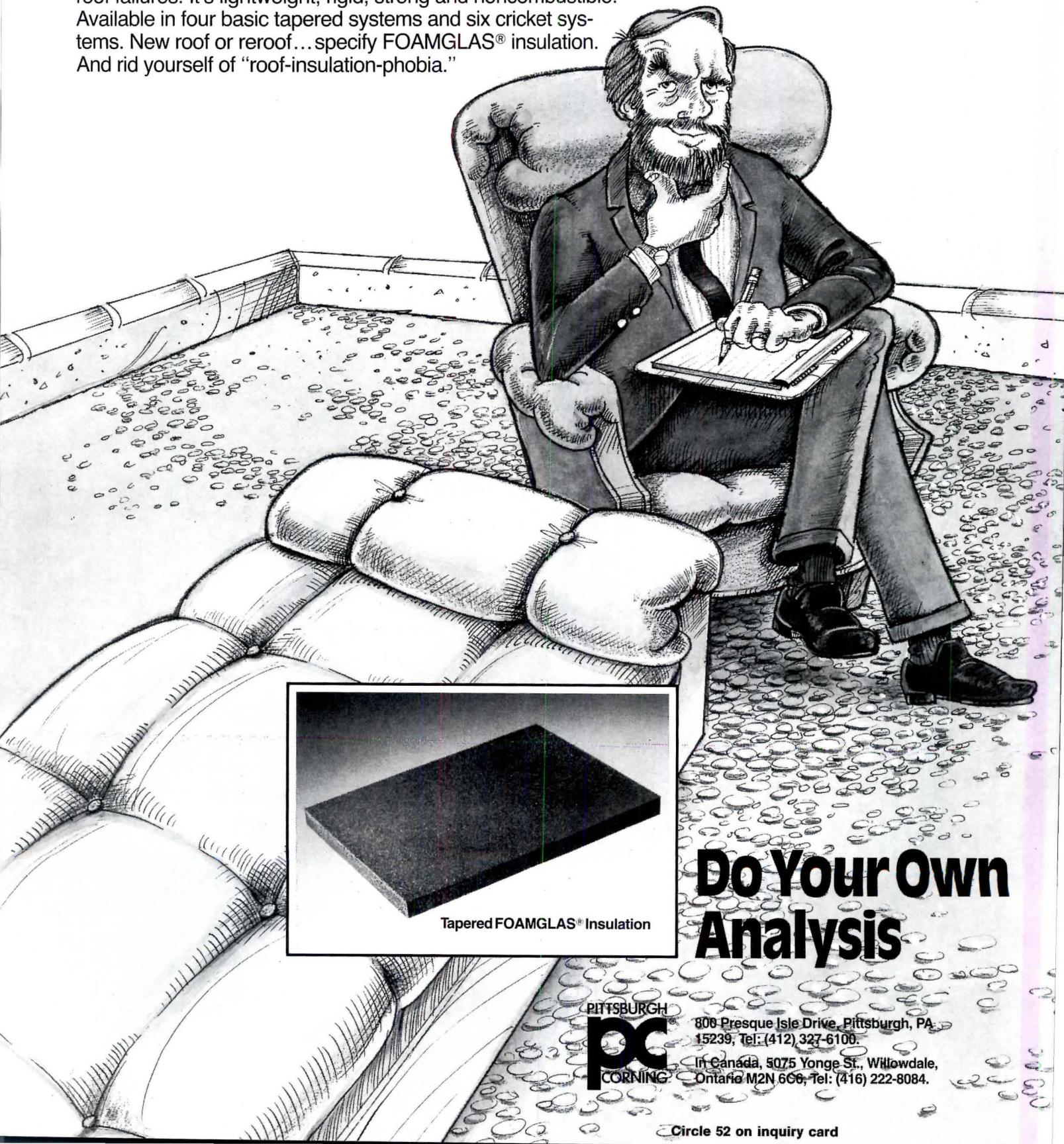


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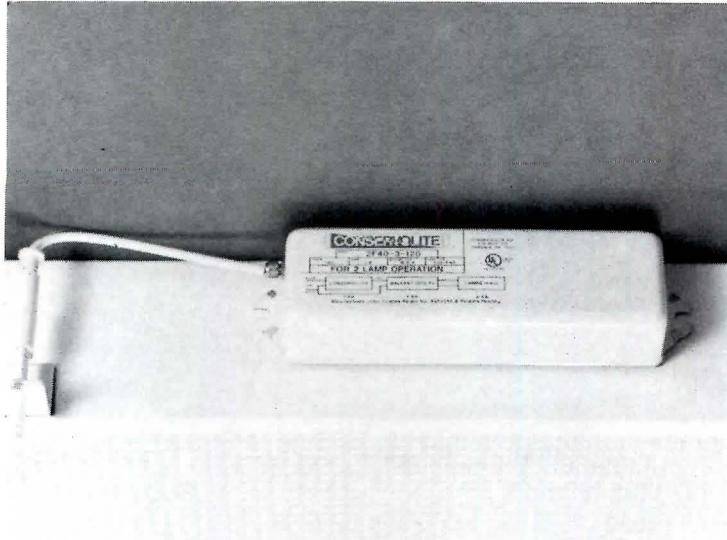
800 Presque Isle Drive, Pittsburgh, PA
15239, Tel: (412) 327-6100

In Canada, 5075 Yonge St., Willowdale,
Ontario M2N 6C6, Tel: (416) 222-8084.

Circle 52 on inquiry card

New products

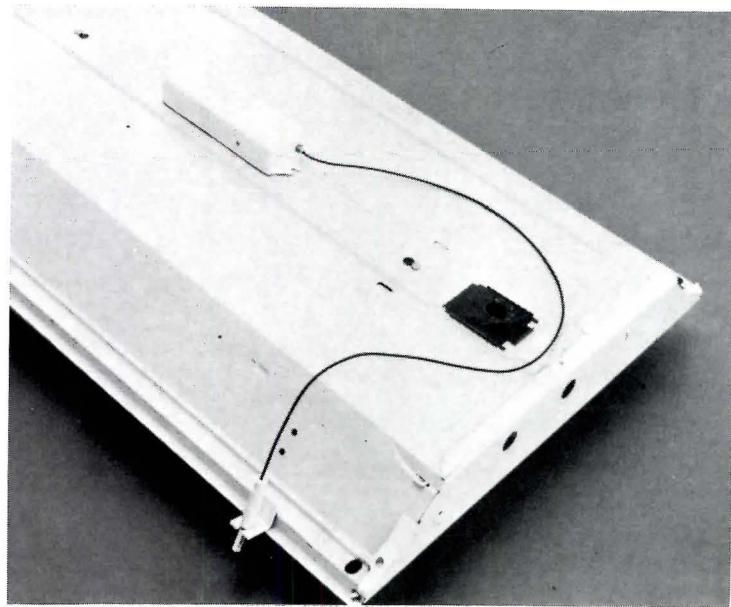
For more information, circle item numbers on Reader Service Card, pages 211-212



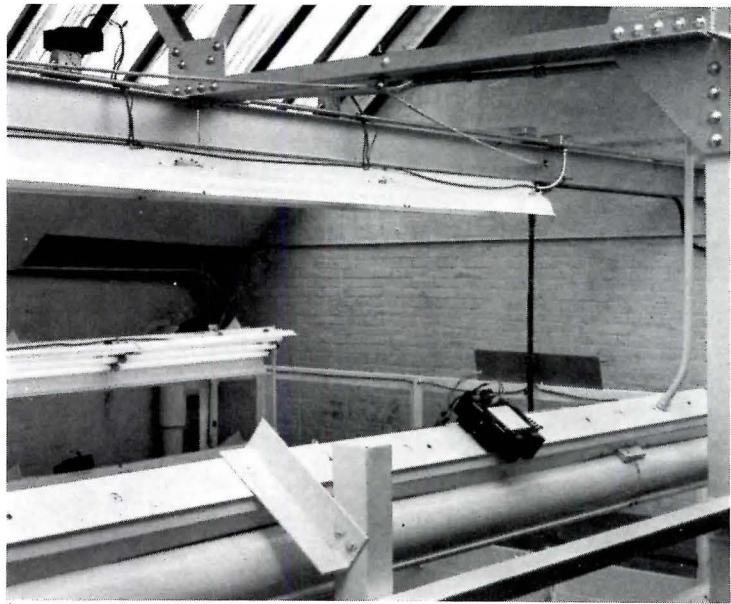
1



2



2



4

Letting the sun shine in
Over the past few years, the increasing reliance upon natural light to illuminate interior spaces has become one of the most effective ways for architects and engineers to reduce energy costs. While many architects utilize specific design elements—light shelves and broad expanses of treated glass, for example—in order to achieve a high level of daylighting, they have been assisted by manufacturers who have developed a variety of mechanical systems aimed at reading the amount of available natural light and adjusting artificial illumination accordingly. One of the more ingenious companies to produce energy-saving products during the last two years is Conservolite, a small firm based near Pittsburgh that has devised

an automatic dimming control designed for use with conventional fluorescent fixtures. The heart of the system is a small light-collecting sensor that can be mounted in a circular cutout of a ceiling tile or hung directly from the fixture. Basically a clear plastic cylinder with a pair of prisms at the lower end, the sensor receives ambient light in a given area and directs that light through a bundle of optical fibers to a photosensitive circuit in the controlling unit, which is located either on the side of, on top of, or inside a fixture ballast. Photos 1 and 2 show two possible configurations. Depending on the amount of light energy received, the controller can then dim the fluorescent illumination down to a level as low as 30 per cent of the lamp's normal output. If an

unusually high or low level of illumination is desired for task lighting or little-used areas, fixtures can be adjusted manually by turning the light sensors to the left or right as required (photo 3). In addition to reducing lighting costs, the system is said to lower ballast heat and thus contribute to reduced air-conditioning needs.

The Conservolite system has been incorporated into a number of commercial projects and, perhaps even more interestingly, it has been installed at a well-known Washington, D.C. art museum. In Washington the company's original black controlling units were mounted atop fixtures that hang from steel rafters above glass gallery skylights (photos 4 and 5). According to the manufacturer, the savings in energy costs at the

museum will result in a payback period of just over 29 months. Since the Washington installation, Conservolite has introduced its Series III, white controllers, which are more compact than the original units and more appropriate for installations where in-ceiling placement is not possible. Conservolite, Inc., Oakdale, Pa. Circle 301 on reader service card More products on page 153



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Table leveler

The Superlevel is designed to level tables and prevent wobble. It can accommodate floor variances and uneven furniture legs. The stainless-steel leveling mechanism is enclosed within a cylindrical, rustproof nylon body said to protect floor surfaces. On The Level Co., Inc., Elgin, Ill.

Circle 302 on reader service card



Ceiling heating system

Aztec Flexel is a roll-out carbon element that is used to produce radiant ceiling heat. The edges of the plastic-enclosed element are stapled to ceiling joists, backed with thermal insulation, and placed in contact with a gypsum-board ceiling. Aztech International, Ltd., Albuquerque, N.M.

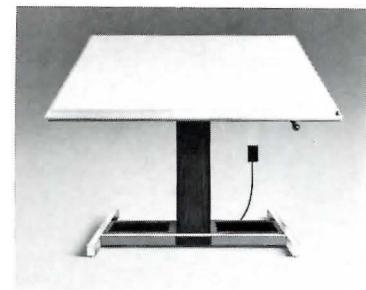
Circle 305 on reader service card



Bath enclosures

A line of Howmet bath enclosure products are custom-made from standard parts. Aluminum sliding, hinged, or pivot enclosures are available in frosted tempered glass or polystyrene and safety tempered clear or mirror glass panels. Alumax, Div. of Magnolia, Magnolia, Ark.

Circle 306 on reader service card



Drafting table

The VR20 is an electrically powered drafting table with either a foot or a hand control for height adjustment. Other features include a vinyl drawing surface, Dial-A-Torque tilt adjustment, and an aluminum pencil trough. Hamilton Industries, Two Rivers, Wis.

Circle 307 on reader service card
More products on page 159



CAD program

The CAD 10 program is designed for use on the Sumicomp System 830 microcomputer. The software package allows for editing and updating of drawings, while its parameter functions provide a selection of eight colors and four pen line sizes. The System 830 features a zoom function to enlarge a defined segment of the screen up to 100 times. Sumicomp, Inc., Tustin, Calif.

Circle 303 on reader service card



Indoor matting

Turfmat indoor matting was developed to trap dirt and moisture at noncarpeted entrances. The mats are made of vinyl/acrylic hinged sections with a choice of replaceable treads of nylon carpet or vinyl. The matting is available in a variety of sizes and tweedlike textures. Durable Mat Co., Norwalk, Ohio.

Circle 304 on reader service card

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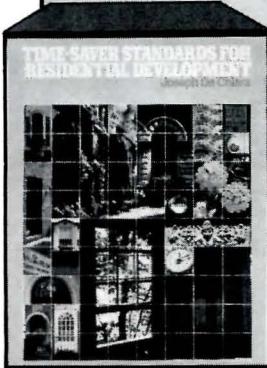
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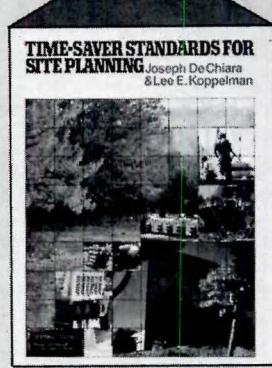
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Site furnishings

The *European Series* features benches, planters, and receptacles made of solid hardwoods and sculptured steel tubing. The products are available in red oak for interior applications and mahogany for exterior applications.

Woodcrafters of Florida, Inc., Jacksonville.

Circle 308 on reader service card



Terminal tables

A series of six terminal tables includes two adjustable models (shown) and four different heights of fixed tables. The adjustable models can be regulated by a seated user. The fixed table on casters is available in four heights. JG Furniture Systems, Div. of Burlington Industries, Quakertown, Pa.

Circle 311 on reader service card



Tables

A high-rise credenza and a conference table desk are additions to the manufacturer's *Magic* grouping of office furniture. The tables are available in oak, stained oak, mahogany, and walnut. The work surfaces can be specified with a selection of 11 leather colors. CI Designs, Medford, Mass.

Circle 312 on reader service card



Modular lounge seating

Emme is a lounge grouping of upholstered and cushioned units made of injection molded, flame-retardant polyurethane foam over a tubular steel frame, with an added layer of Dacron. A selection of Castelli textiles and leathers is available. Castelli Furniture, Inc., Bohemia, N.Y.

Circle 313 on reader service card

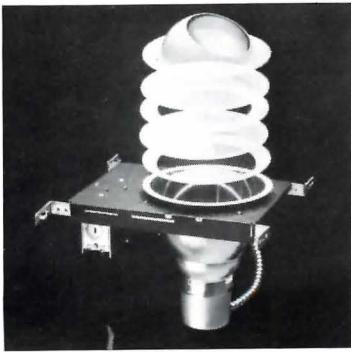
More products on page 165



Closet organizer

The *Closet Maid* organizer consists of a double-hung shelf-and-rod system, pole supports, and a shoe rack. The organizers are made of vinyl coated steel rods. Two sizes are available, one to fit closets up to 5 ft 10 in. wide, the other for closets up to 7 ft 10 in. wide. Clairson International, Ocala, Fla.

Circle 309 on reader service card



Downlights

Advantage is a series of incandescent downlights designed around the conventional A lamp. The series features a frame-in module that meets UL requirements for suspended, open insulated, and insulation-surrounded ceiling applications. Lithonia Lighting, Conyers, Ga.

Circle 310 on reader service card

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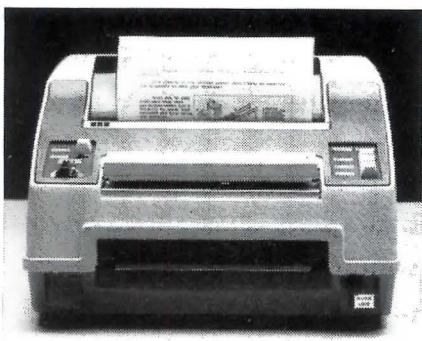
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Architectural ceramics

Brickplate tiles are suitable for exterior and interior applications. The colors of *Combi-Color*, a palette of 62 shades, are available in unglazed, glossy, soft matte, and brilliant finishes. The tiles come in six sizes. Gail Architectural Ceramics, Tustin, Calif.

Circle 314 on reader service card



Chair

The *Outline* chair has polished stainless-steel framing and features a flexible back mechanism. It is available in both armchair (21-in. width, 31-in. height) and armless (18½-in. width, 31-in. height) models. Scope Furniture, Ltd., New York City.

Circle 315 on reader service card



A lighting sconce is made in polished brass or steel and frosted. Dimensions of the unit are high by 6 in. wide by 4 in. Kevin Kluck, Chicago.

Circle 316 on reader service card



Flat wiring

The *Flexway* undercarpet power system was designed to permit easy installation. It uses one tool and one connector for all taps, splices, and ground-shield connections. A protective bottom shield is adhered to the system's flat cable, cutting roll-out time. Burndy Corp., Norwalk, Conn.

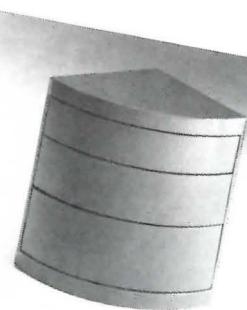
Circle 317 on reader service card



Carpet fiber

The 1110 denier is an addition to DuPont's line of *Antron Extra-Body* fibers. In addition to the high bulk of its continuous filament nylon fiber, the fiber features a subdued luster. DuPont Co., Wilmington, Del.

Circle 318 on reader service card



Corner table

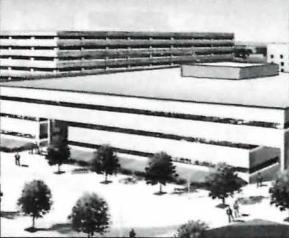
The three-drawer corner table is an addition to the manufacturer's *Omaha* line. The table is 29 in. high and 20 in. deep. It is available in 16 high-gloss colors and 13 woods. Intrex Inc., New York City.

Circle 319 on reader service card

More products on page 171

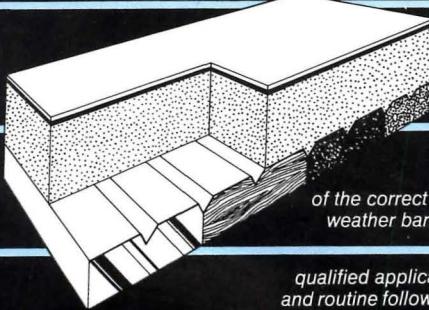
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2. MATL: 2 FIL
1 COM
3 MEM
3. EQPT: CRT/V

1. ACTV: READI
2. MATL: 2 FIL
1 COM
3 MEM
3. EQPT:

SURFACE REQUIRED LENGTH:
DEPTH:
AREA:

219

30

6

Equipment

- | DESCRIPTION | PLUG |
|--------------------|------|
| 1. CRT/VDT | |
| 2. CALCULATOR | |
| 3. DATE/TIME STAMP | |



Electronic refrigerator

The electronics of the 24-cu-ft *TFX24E* refrigerator monitor several areas, including the icemaker, defrost system, freezer temperature, power supply, fault detection, and door open position. The model is available in five colors. General Electric Co., Louisville, Ky.

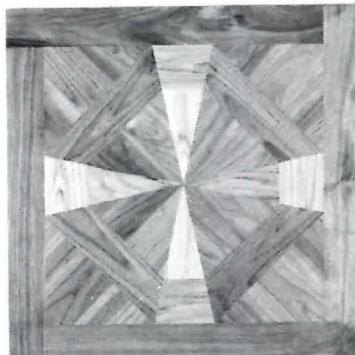
Circle 320 on reader service card



Seating

A single seater (30 in. wide, 32 in. deep) and a love seat (60 in. wide, 32 in. deep) are part of the *Jazz* seating collection. The series features a lacquered bentwood frame beneath leather cushioning. Dakota Jackson, Inc., New York City.

Circle 321 on reader service card



Flooring pattern

Chamonix hardwood flooring comes in $\frac{3}{4}$ in. by 28 in. by 28 in. preassembled modules. The design is available in a mixed species treatment, such as walnut with teak insets (shown). Kentucky Wood Floors, Inc., Louisville, Ky.

Circle 322 on reader service card



Bathroom fixtures

The *Camelia* series features fixtures for the sink, bathtub, shower, and bidet. The fittings are available in six colors or in a combination of polished chrome and lacquered polished brass finish. Watercolors, Inc., Garrison-on-Hudson, N.Y.

Circle 323 on reader service card



Frame tile

Deco 12-in.-square tiles are designed to frame architectural elements such as doors, windows, and fireplaces, or for use as moldings. The tiles are manufactured to order in a range of colors. They can be cut between the six ribs allowing for frame sizes in multiples of 2 in. Design-Technics, New York City.

Circle 324 on reader service card



Moveable file station

The swivel casters and full-width handle of the *Workstation Mobile* are intended to ease the moving of files from one area to another. The unit is constructed of steel and is available in a 28-in.- or 34-in.-high model. Wright Line, Inc., Worcester, Mass.

Circle 325 on reader service card

More products on page 177

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Indirect lighting

The freestanding round *Reflections* unit contains a one-piece hydroformed reflector that is contoured and mirrored for indirect lighting. The heavy gauge steel unit is 16½ in. round and has a suede acrylic enamel finish. Guth Lighting, St. Louis.

Circle 326 on reader service card



Fabrics, wallpapers

The *Le Jardin de Monet* collection of fabrics and wallpapers was inspired by Claude Monet's gardens at Giverny. Silks play a major role in this collection and are featured in such prints as "Silk Road" and "Hanging Baskets" (shown). This line also features several new textures and weaves. Scalamandre, New York City.

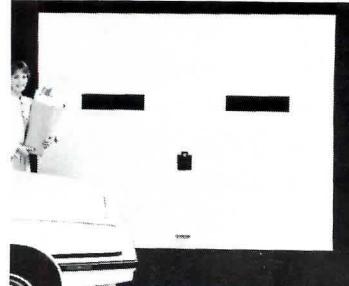
Circle 327 on reader service card



Glazing systems

Two factory-fabricated structural silicone glazing systems feature glass panels that can be joined edge-to-edge to hide mullions. The *EFG Glazing System 711* has single-glazed vision glass; the *712* (shown) has double-glazed insulating windows and either single- or double-glazed spandrel glass. PPG Industries, Pittsburgh.

Circle 328 on reader service card



Garage door

The *Thermowayne 34* garage door has an insulation system which consists of a polyurethane core sandwiched between steel skins with integral struts. The product also features a U-shaped door bottom-seal to keep air out. Wayne-Dalton Corp., Mt. Hope, Ohio.

Circle 329 on reader service card



Roof window

The 8/4 in. sash and 6/4 in. frame roof window is designed for new construction or remodeling projects where additional sunlight and ventilation are needed. The window has a metallic coating to trap radiant winter heat or deter summer sun. Marvin Windows, Warroad, Minn.

Circle 330 on reader service card



Sofa/sleeper

The arms of the *Sole* have three adjustable positions and, in the horizontal position, they can transform the sofa into a sleeper. Cotton covers with striped designs double as comforters. Regba-Diran, New York City.

Circle 331 on reader service card

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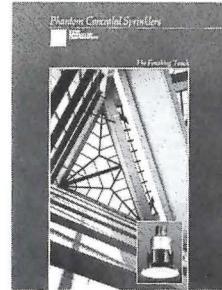


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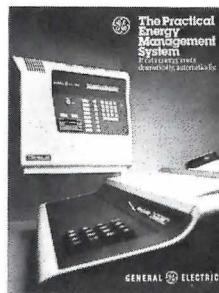
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Sprinklers

A 4-page color brochure describes *Phantom* concealed sprinklers. Drawings illustrate how the system's temperature-activated cover plates are designed to fit flush against the ceiling and fall away during a fire to reveal activated sprinkler heads. The plates are available in four standard and four deluxe finishes. Star Sprinkler Corp., Milwaukee.

Circle 424 on reader service card



Energy management

A 6-page foldout brochure describes an energy management system that monitors a building's electrical loads from a central controlling unit. Text outlines ways that the system is said to cut energy costs. General Electric, Warwick, R.I.

Circle 425 on reader service card



Signs

A 56-page catalog describes the manufacturer's line of exterior and interior signs. Photos, section drawings, and cutaway views illustrate each sign system, while charts outline available sizes and prices. A guide to colors and lettering styles is included. Spanjer Brothers, Inc., Chicago.

Circle 426 on reader service card

More literature on page 189

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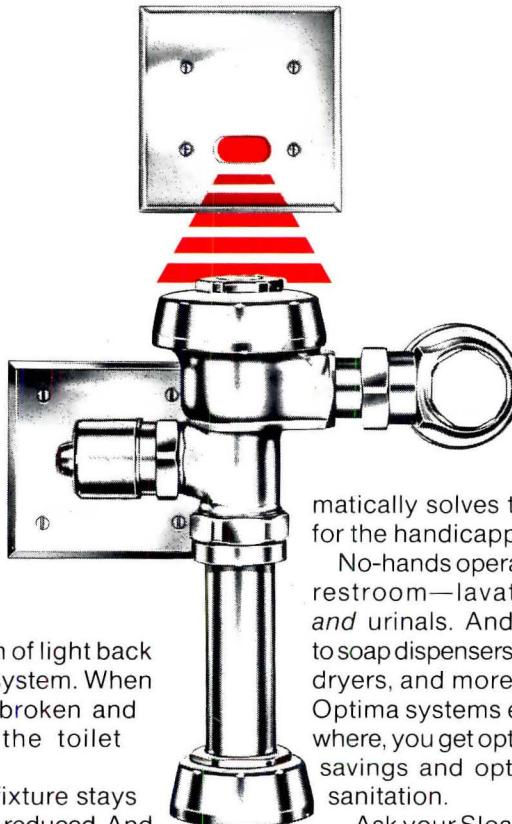


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That's the big idea from Sloan—the no-hands toilet, with no levers to flip, no buttons to push, no tank to get in the way. The Sloan Optima™ electronic sensor is in charge.

The user reflects an invisible beam of light back into the Optima sensor arming the system. When the user steps away, the beam is broken and the Sloan flushometer flushes the toilet automatically.

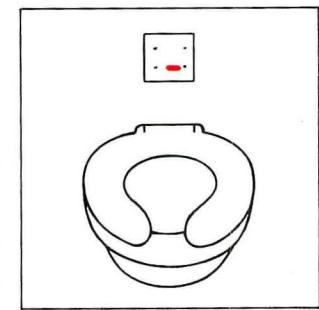
With no "forgotten" flushes, the fixture stays cleaner and bacterial contamination is reduced. And there's less water waste, because the system dispenses a measured amount of water only on demand.

No tank means fewer repair bills and easier cleaning. And there's no waste of costly floor space.

The no-hands toilet also automatically solves the problem of mandated access for the handicapped.

No-hands operation easily adapts to the rest of the restroom—lavatories and urinals. And even to soap dispensers, hand dryers, and more. With Optima systems everywhere, you get optimum savings and optimum sanitation.

Ask your Sloan representative about Optima systems today. Or write us.



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