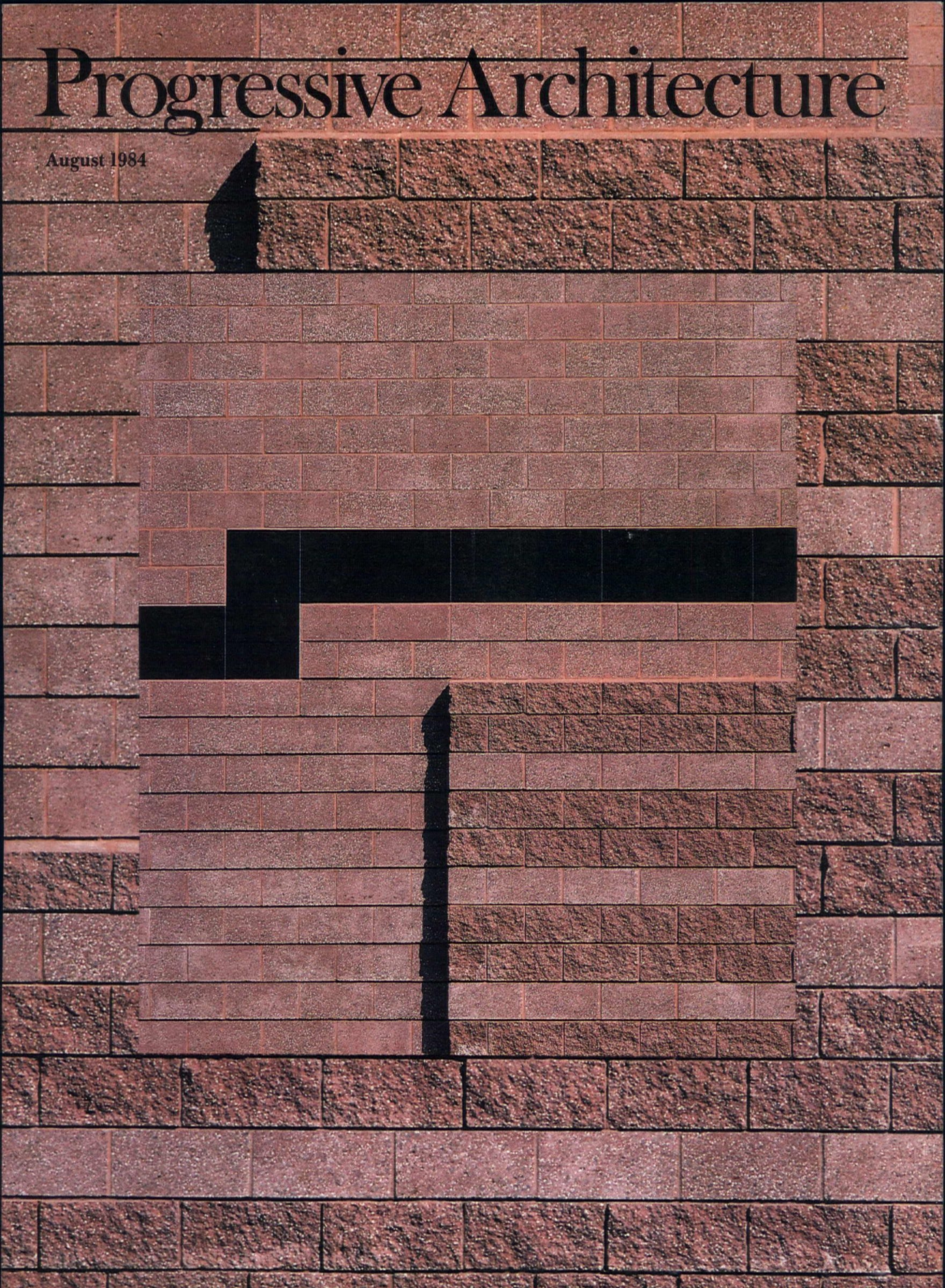
Progressive Architecture

August 1984



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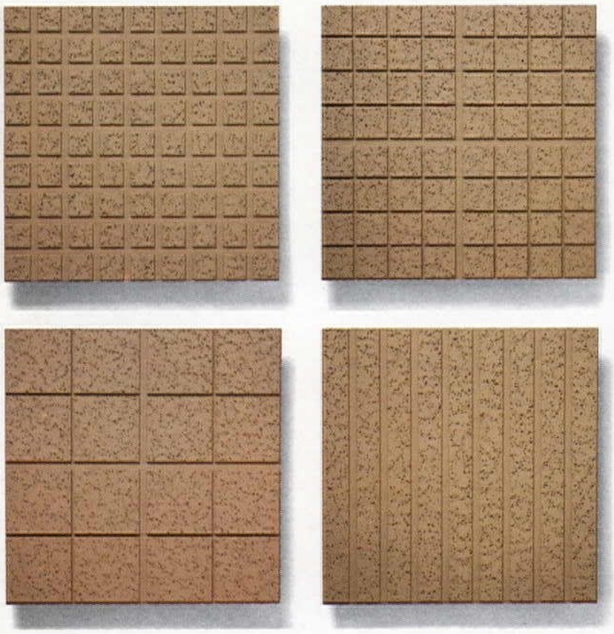

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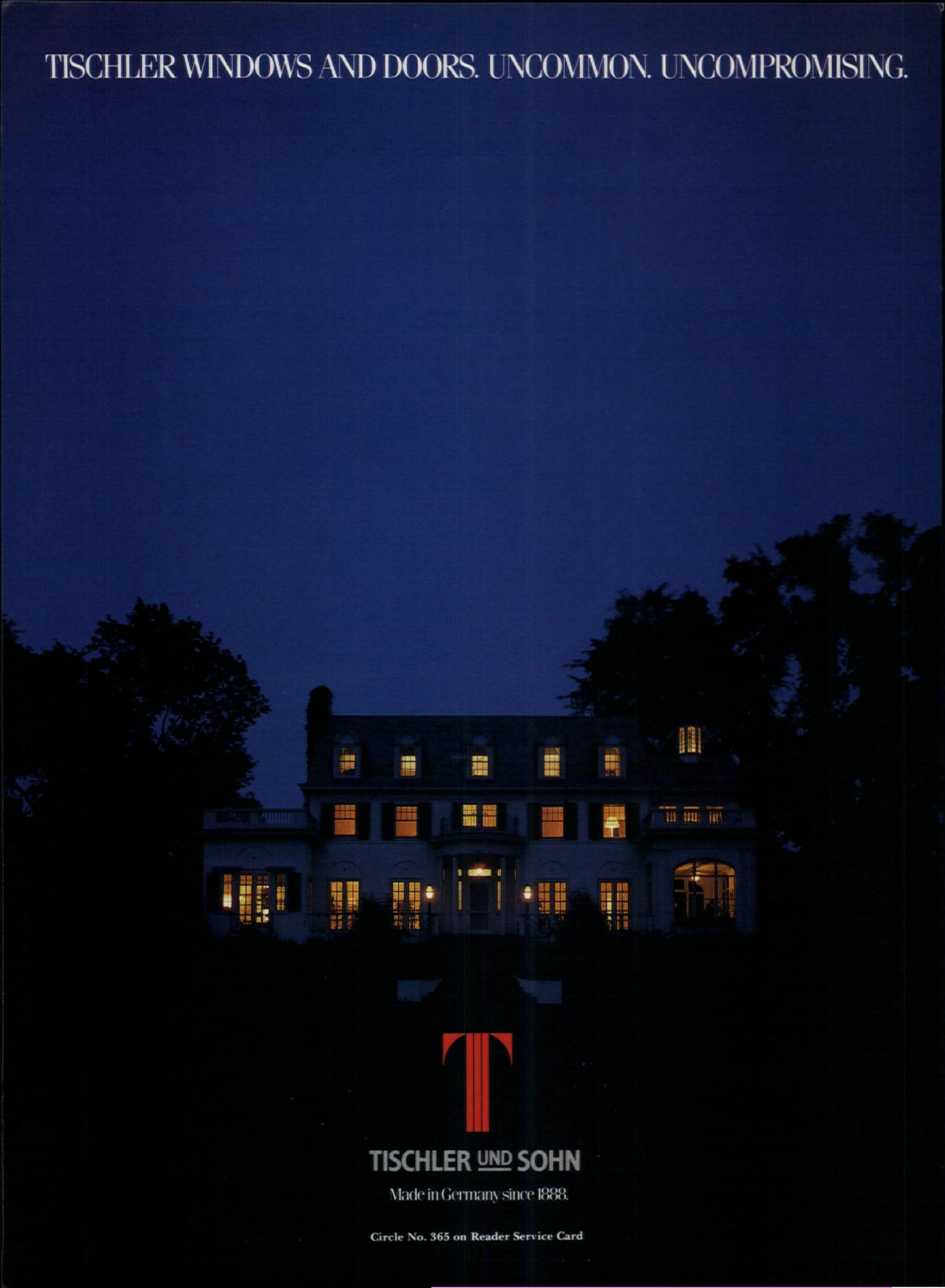
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ABP MPA

Architectural design

Technics


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Cover
Photo montage of façade, Pingry School, Bernards Township, N.J. (p. 65), by HHPA. Design by Ken Windsor. Photography by Norman McGrath.

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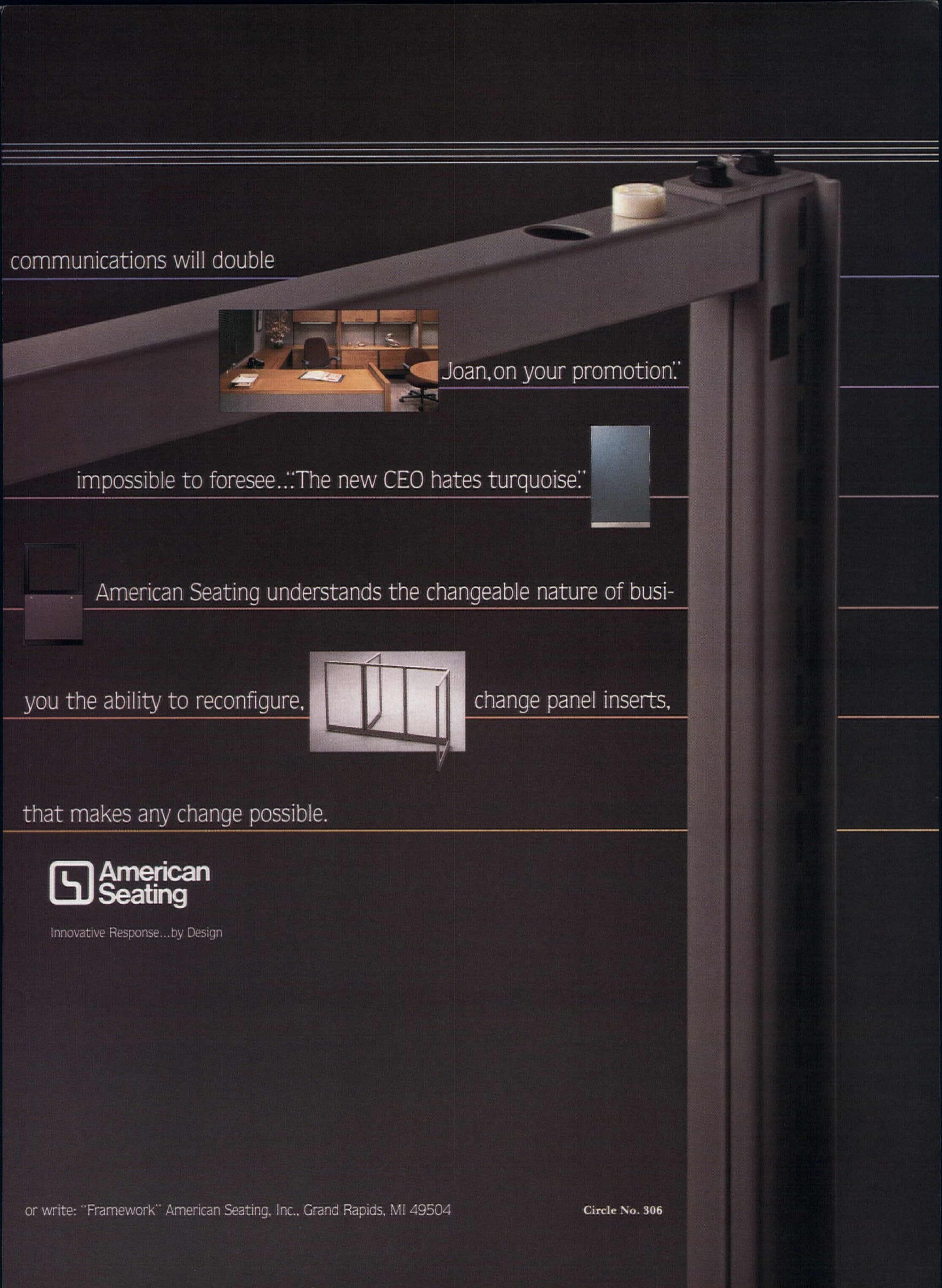
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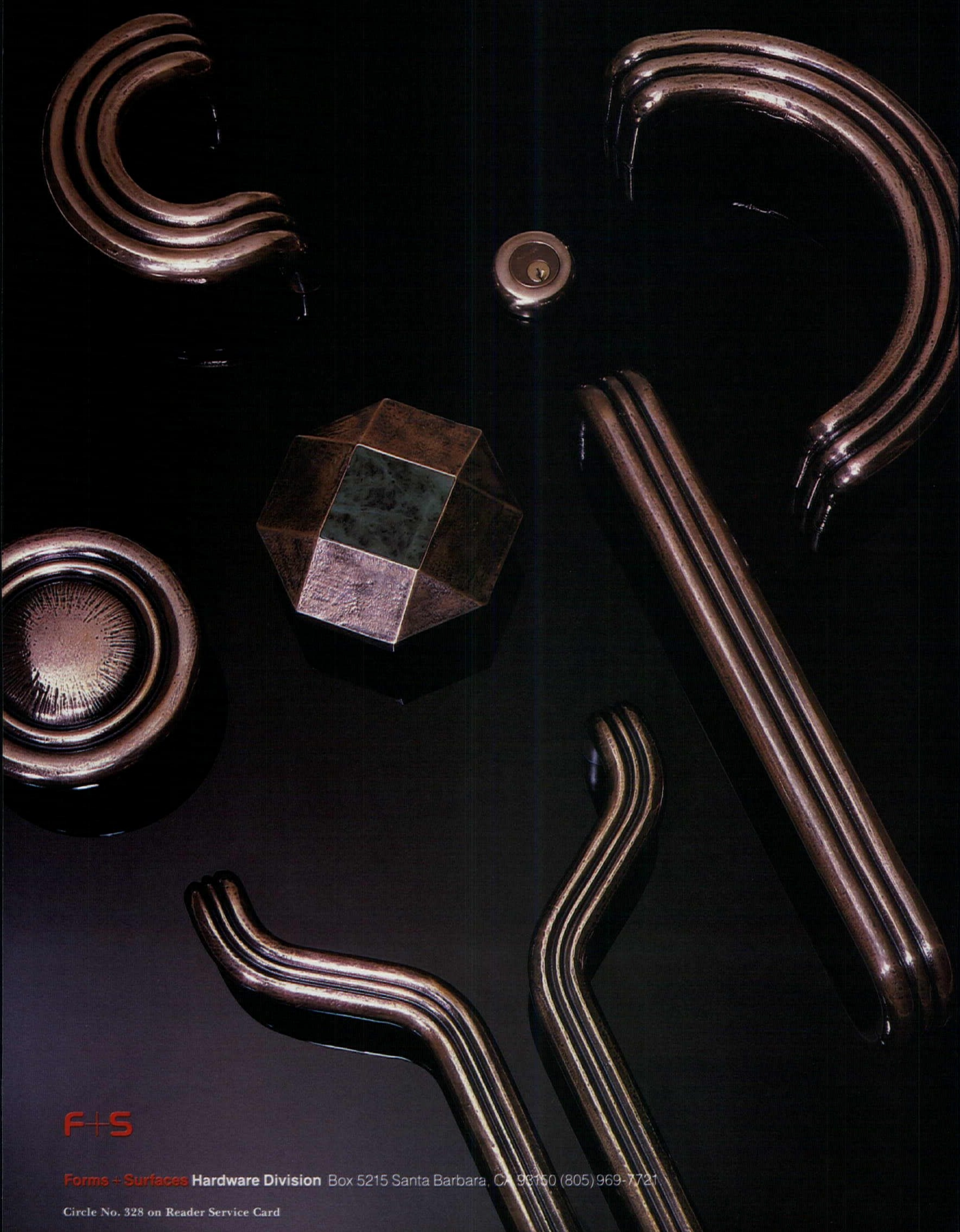


Editorials

The ways various publications use the pages reserved for the editors' opinions convey both direct and indirect messages.

Where there is an editor there is usually an Editorial page. Newspapers generally assemble the opinions of their editorial boards, presented anonymously, on established pages somewhere behind their main news items. In magazines, the Editorial page typically offers the by-lined opinion of the chief editor on a single subject, and it usually appears near the front of the publication.

This difference might appear to express the greater egotism of the top editors at magazines, but the situation is not that simple. Most magazines include in their articles the by-lined opinions of staff writers and outside authors. Among these pages of editorial opinion, that one up front is reserved for the chief editor, who is otherwise busy running an editorial department.

In subject matter, the editorial is usually confined to the magazine's designated field of coverage, yet it is not generally *representative* of the magazine's overall concerns. In the architecture and design press, for instance, editorial pages tend to take up issues of professional practice and economic or legislative matters, rather than design, technology, or building products. These subjects are chosen to some extent because they generate serious controversy, to some extent because they reflect the concerns of someone in a management position, and in part simply because they lend themselves to unillustrated pages of text. (I am not counting the editor's portrait as an illustration.)

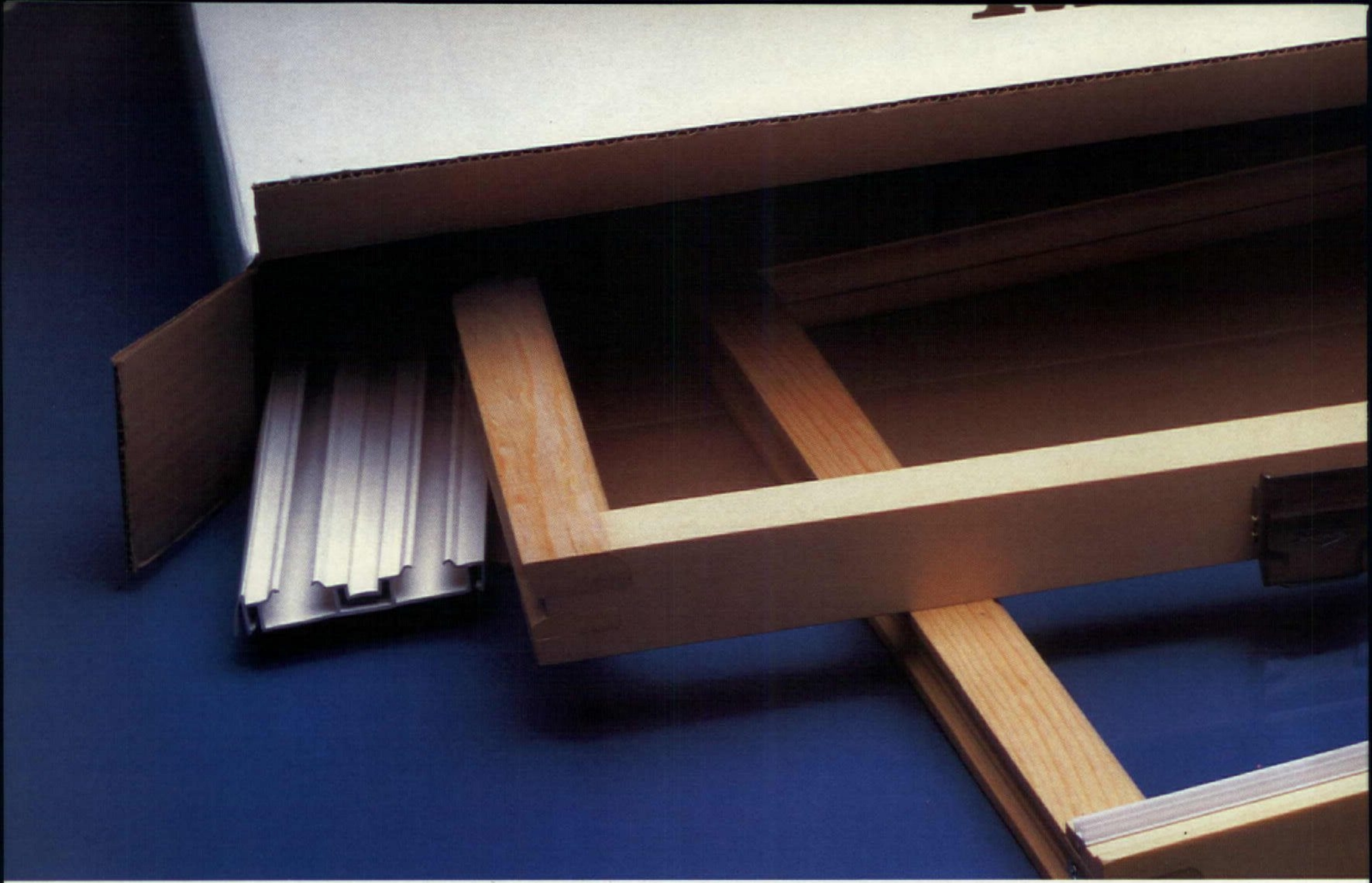
Quite often, the editorial page is about the magazine itself—what this issue contains and why, how the staff works, etc. The use of the editorial page for such introductory and promotional purposes varies widely from magazine to magazine. In one of our rival publications, the chief editor's page is at the opening of the main feature section and is used more often than not to introduce those features; it is not called an Editorial, but it is sometimes used to confront a subject larger than the issue in which it is printed.

When I became editor of P/A, its Editorial page was at the opening of the feature section, but in 1974 we moved it to the front of the magazine, so that it would neither be used as a mere introduction to the features nor compete with such an introduction. I wanted to stress, too, that all of P/A's pages, from the News Report on through to Books and Products departments, form a complementary whole, none of them less important than the features at the center of the magazine.

When I first wrote for P/A, back in 1960, its chief editor, Thomas Creighton, made this point about the magazine's editorial unity differently by putting his personal observations on the very last page, which he labeled "P.S." It has occurred to me often how appropriate this P.S. was, since the editor's page is usually the very last item in the issue to be written and often reflects what the editor was experiencing or thinking about while the issue was taking shape. In P.S., Creighton could—and did—write in a personal and discursive way, with no obligation to sound profound. He also felt less pressure to take a position on a weighty subject in every issue, something the architectural world does not always call for every month.

Over the long term, however, the editors of magazines in this field have an obligation to shed light on and take positions on issues that involve their readers—on matters that affect them and even more so on areas in which they can be effective. In the architectural press, it is essential for editors to have and to express opinions on—among other things—architectural design. Architects have many serious economic and social obligations, but ultimately it is their understanding of *design* that distinguishes them from the other professionals and business people with whom they work. I believe that architectural design must be more than just artless problem-solving: it must deal seriously with issues such as symbolism, order, and appropriateness to place and purpose. My editorials will continue to take up—among other topics—the general subject of design and its manifestation in specific works of architecture.

John Morris Dixon



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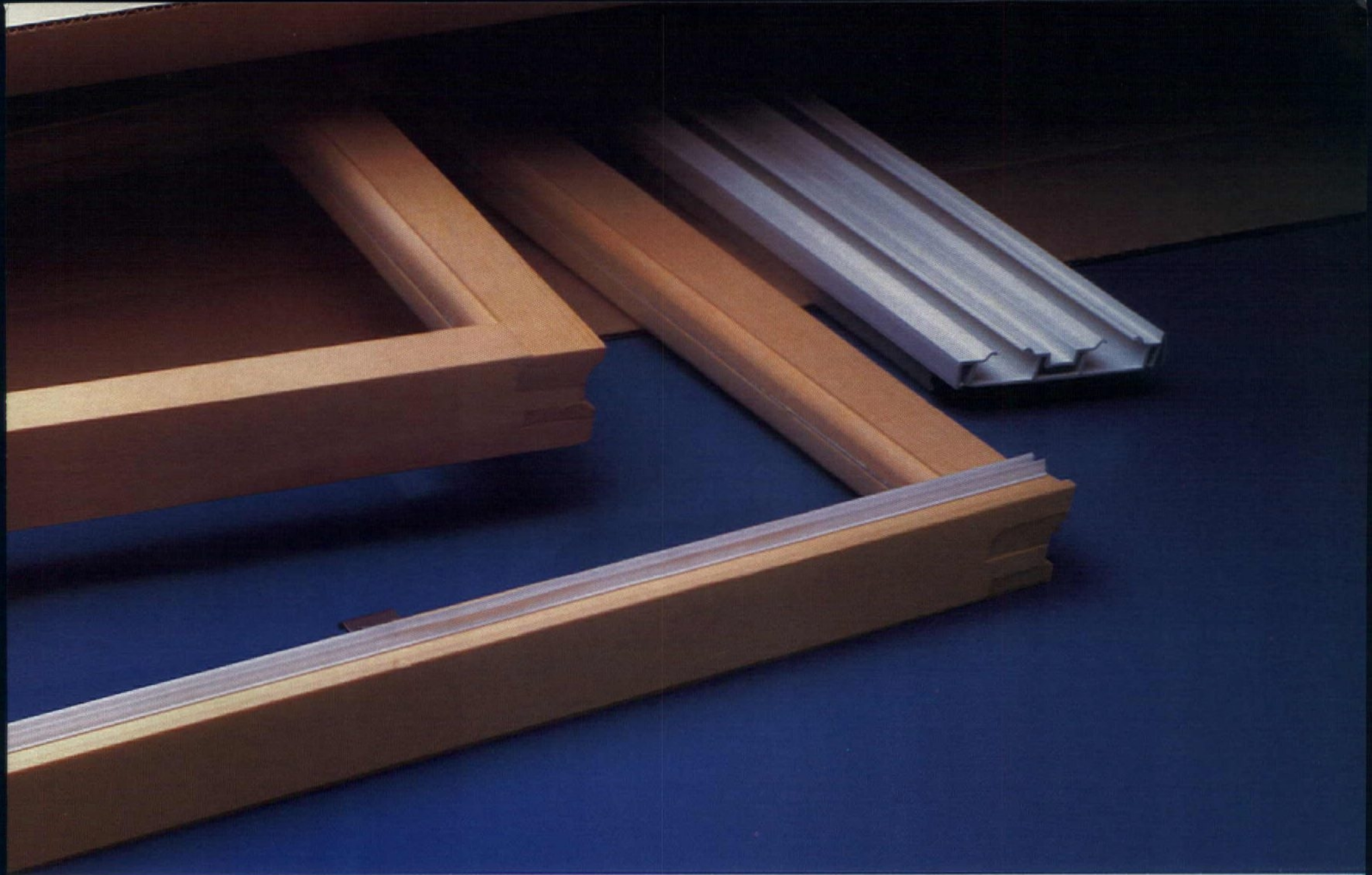

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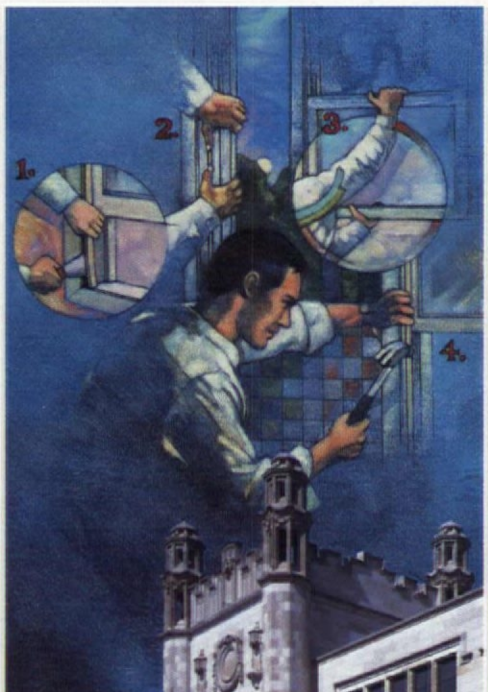

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Views

Times Square towers

In his editorial mentioning the plans for four new office towers in New York City's Times Square area (P/A, June), John Dixon tumbles nicely into a public relations trap dug by the developer, Park Tower Realty, and the current leadership of the New York State Urban Development Corporation.

Referring to the plan's critics, who are eager to preserve the bright-lights character of Times Square with the help of design guidelines now being ignored, Dixon asks rhetorically, "But what executive wants to look out through a Budweiser or Kirin sign? or at one?" A better question would be, "Who wants executives in Times Square?"

This part of New York has long been the anchor of the nation's entertainment industry, not to mention a tourist attraction with (despite, or because of, the sleaze) international appeal. Many of the people who are vital to the entertainment business—booking agents, costume makers, managers, performance coaches—have no need of the 30,000-square-foot floors the developer insists are necessary to lure tenants. But they do need space. And the perfect parcels would be the set-back floors described in the original design guidelines and since dubbed not feasible by the U.D.C.

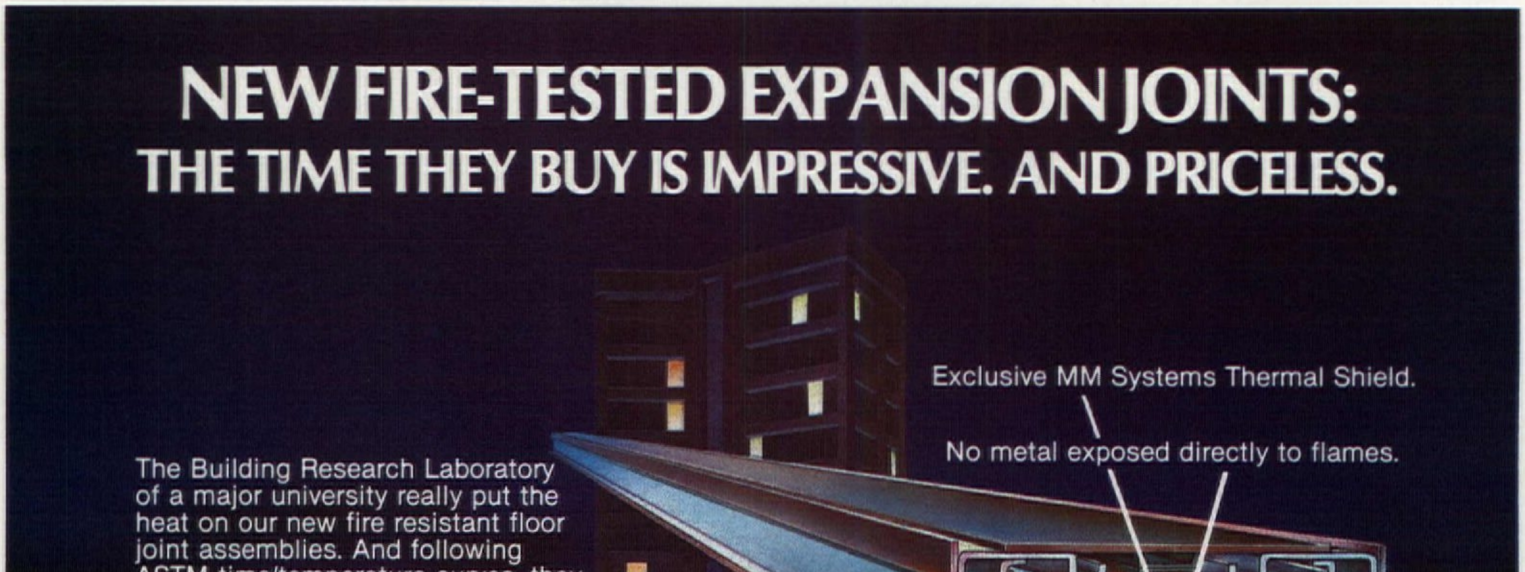
A study commissioned by Park Tower Realty itself predicts that the Times Square area will improve with or without the massive incentives of the present plan. But the city is so eager to stimulate the inevitable that it is threatening a fundamental, if tattered, urban resource.

To my eye, the sanitizing Burgee/Johnson designs for the proposed towers are a long way from the architectural "good taste" ascribed to them in the editorial. The short-sighted enthusiasm for a real estate coup is even farther off the mark. This is the most striking example yet of architecture being abused to sell bad urban planning.
Carter Wiseman
Architecture Critic
New York *Magazine*

[We considered the location of executives on Times Square an inevitable—if not very desirable—outcome of a plan to erect some four million square feet of office space there. Carter Wiseman's reminder that the "entertainment business" might be housed there is appealing, but the economics of such construction may make it mere wishful thinking. Wiseman's article in *New York* magazine, April 2 issue, covers the issues very well.—Editor]

Supply of architects

Mr. McReynolds' suggestion that architects, in order to prosper, should imitate what the doctors did in the 1920s is insulting nonsense (P/A, June 1984, p. 55). While it is true that sixty years ago doctors "made house calls and drove



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Dodges" (and subsequently engineered for themselves a variety of protective academic and legislative measures), it is also true that today the U.S.-health complex is one of the most hated "complexes" there are.

Any long-range amelioration of the "lowest paying of all professions" requires a substantial transfer of funds from the military-industrial complex to the civilian urban complex. The U.S. must rebuild its cities (physically and socially) and eventually comply with the 1949 legislation which called for decent housing located in livable neighborhoods.

Mr. McReynolds, who is presented as a human resources consultant, should join "Architects for Social Responsibility," or "The Environmental Designers and Planners for Social Responsibility," or "The Planners Network," or at least subscribe to *The Nation* or *The Progressive*. His "human resources" might gain a new dimension.
Jan Reiner, Architect
St. Petersburg, Fla.

C.W. McReynolds' article on the oversupply of architectural graduates and architects did a good job of examining how and why our profession lags behind the others in terms of pay. His suggestion that we emulate the medical profession and attempt in some way to cut down on the excessive competition in the field certainly deserves serious consideration.

However, I must disagree with his proposal that licensing exams be toughened to the point where "not one new license would be granted in a state until three others had retired." As a recent graduate of architectural school currently working as an apprentice, I find the idea of having my ability to become a licensed architect restricted in such a manner disturbing—particularly after reading his sympathetic portrayal of the apprentice's situation in the first part of the article. Certainly if we are going to reduce the number of those entering the profession, the place to do so is at the beginning—by restricting the number of students entering accredited programs in the schools, something the medical profession has done for years. To restrict it at any other point will only result in unfairly wasted years of hard work for many people.

Finally, while we now suffer from an oversupply of competition, a certain degree of it is healthy for the profession. We should remember this whatever course of action we take.
Thomas E. Hitchins
New York, N.Y.

Credit amplification
Developer of South Beach Properties, San Francisco (P/A, In progress, May 1984, p. 45) is Campeau Corporation California, Arthur Chapman Senior Director Commercial Development. Architects are IBI Group/Paul Zajfen, Architect.

In the article "Minding Your VDU's" (P/A, May 1984), the chart on p. 162 and the quotation on p. 166 by an architect in a federal survey were taken from the study "The Automated Office—An Environment for Productive Work, or an Information Factory?" by Arthur Rubin, sponsored by the Public Buildings Services, General Services Administration.

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The large photograph of a construction detail of Eric Moss's Petal House (P/A, June 1984, p. 104) was the work of Steven Rothfeld.

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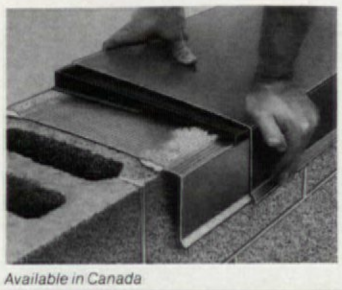

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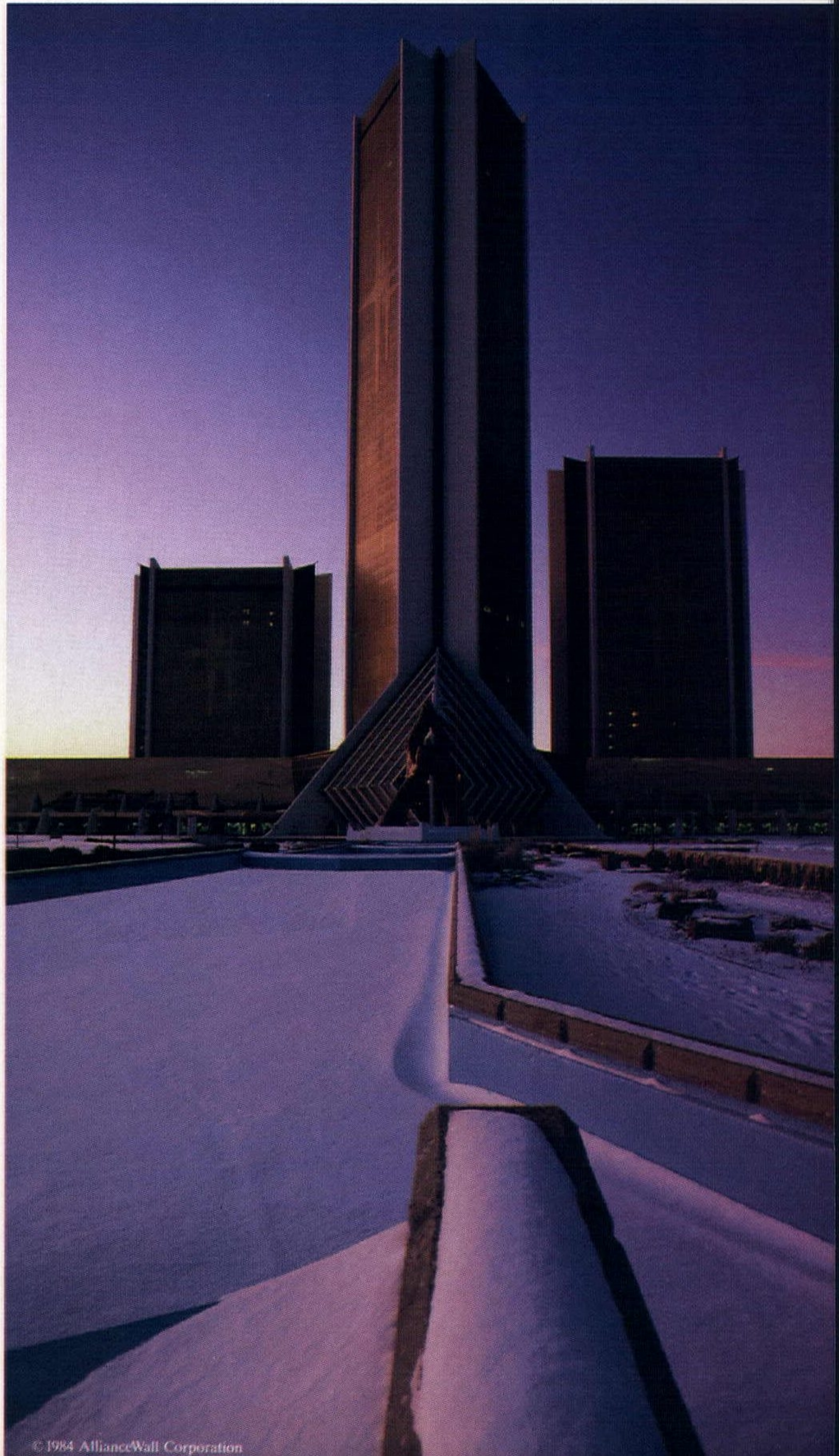

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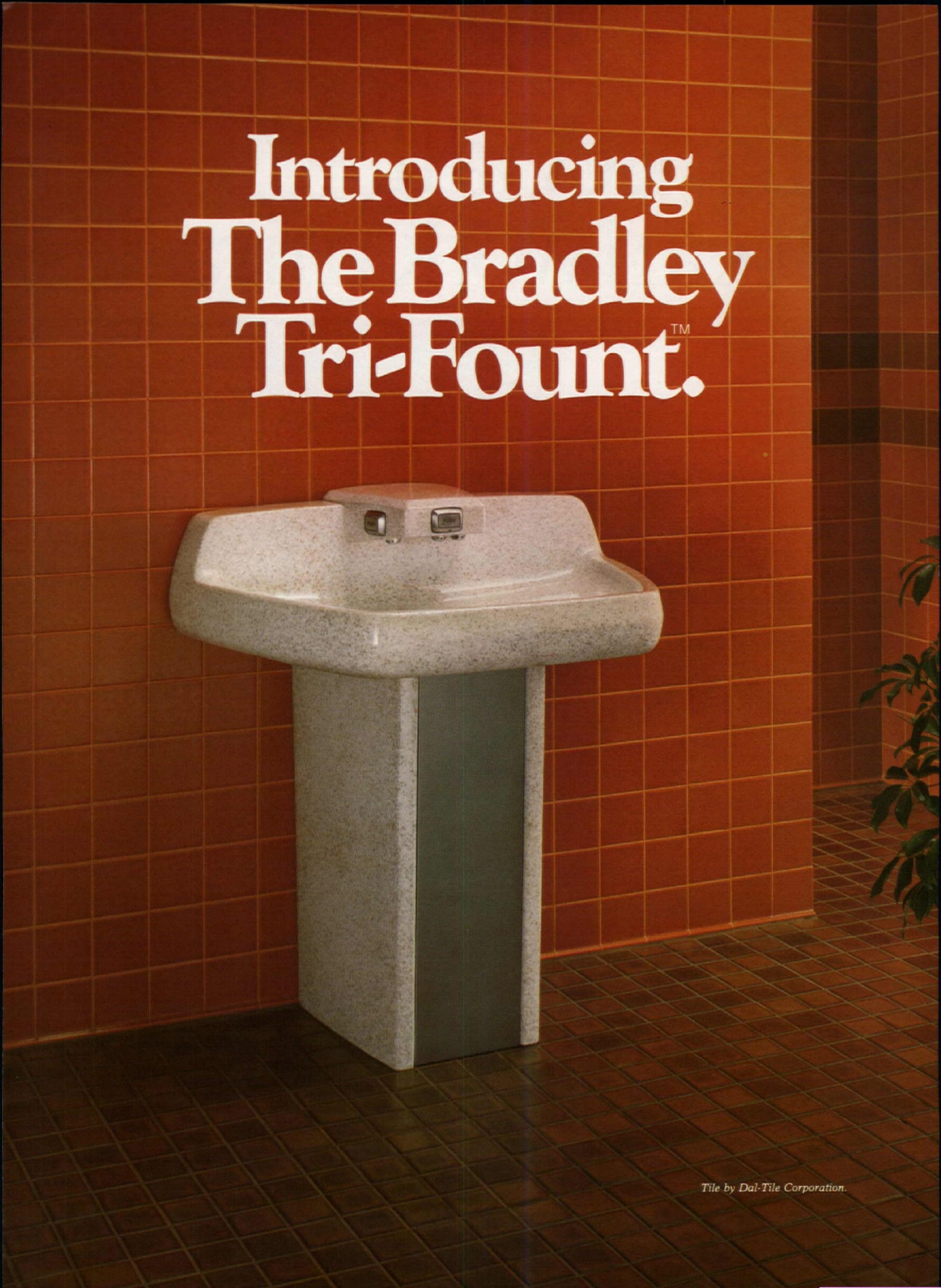
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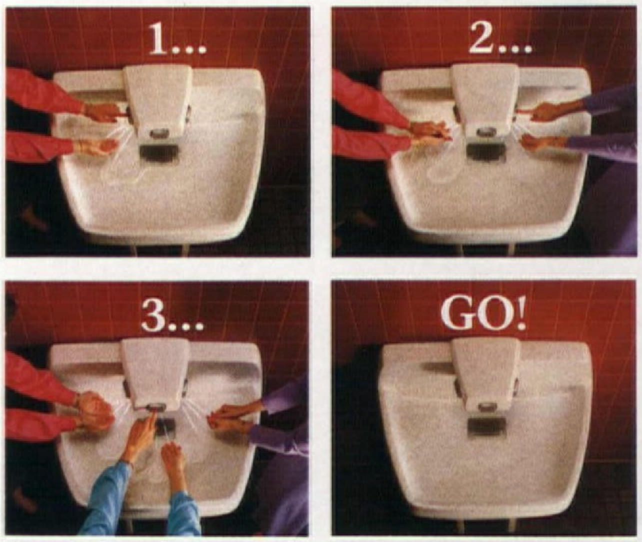

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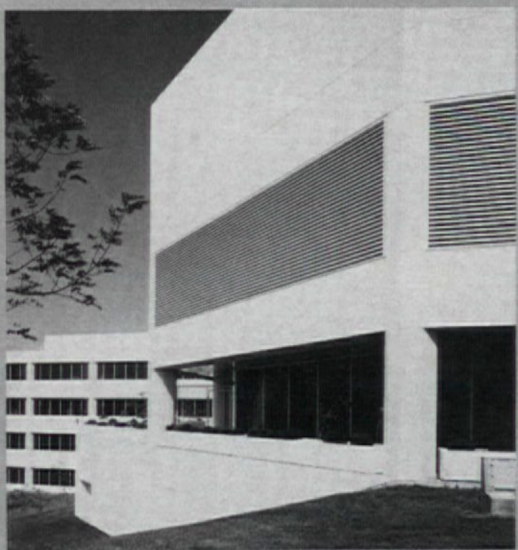

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P/A News report

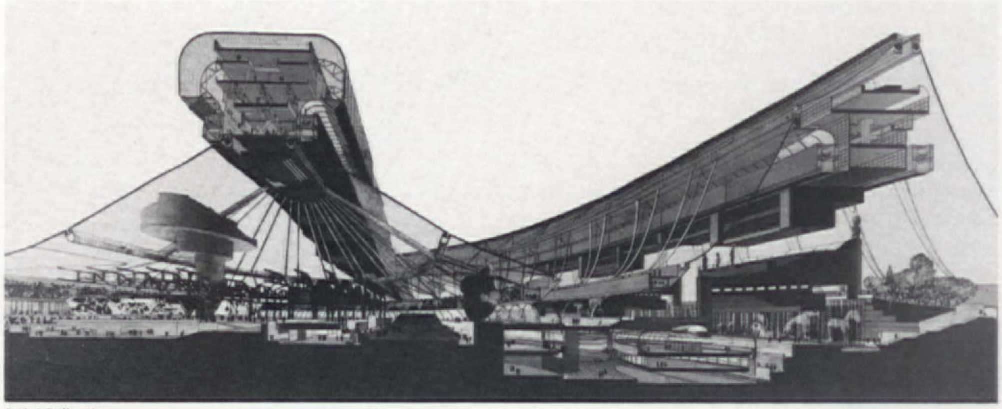
Two conference reviews send kudos to Cranbrook but boos to Aspen; Austin's competition for combined public/private development is reviewed, and plans for Milan's Piazza del Duomo considered in this month's News.

The future for Fiat-Lingotto

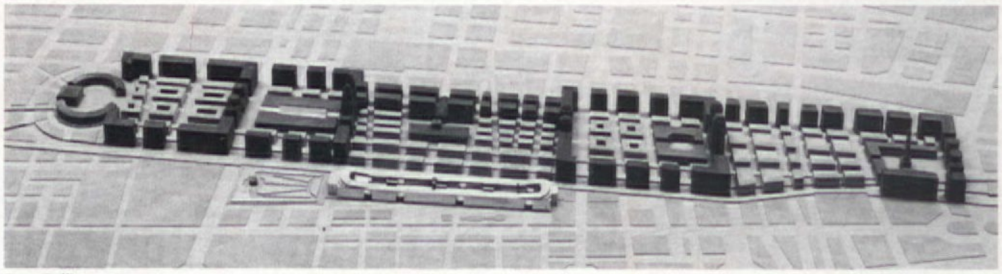
Turin is currently the scene of a most unusual act of patronage, focused on the famous Fiat factory complex (G. Mattè Tricco, 1919–23) in Lingotto. Fiat, employer of most of the city's population, was forced by developing technology to move in 1982 to new premises, leaving empty the famous headquarters. The question now: what to do with Lingotto?

The factory once stood in open country; but Turin has since engulfed it, and its future is now tied to the city's. Furthermore, the buildings have considerable architectural value, recognized long ago by Le Corbusier who praised the 1.5-km central workshops and roof-top car-testing track in *Vers une Architecture*.

Fiat, acknowledging the historic and urbanistic importance of its former home, organized not a competition but a "consultation," inviting 20 internationally known architects to make proposals, then submitting these to open discussion in Turin. The first such debate, between a majority of the 20 architects and a number of well-known critics, took place at the opening of an exhibition showing all the schemes. There are to be two further "encounters," one with historians, the other with business leaders, economists, and other local and regional authorities—all in front of a large audience, TV, and the press. The exhibition will then travel around Italy and overseas.



Luigi Pellegrin.



Cesar Pelli.

G. Mattè Tricco, Fiat-Lingotto, 1923.

Participating in the consultation were Gae Aulenti, Gaetano Pesce, Renzo Piano, Roberto Gabetti and Aimaro d'Isola, Vittorio Gregotti, Ettore Sottsass, Piero Sartogo, Luigi Pellegrin, and Aldo Loris Rossi from Italy; Lawrence Halprin, Richard Meier, John Johansen & Ashok Bhavnani, Cesar Pelli, and Kevin Roche from the U.S.A.; James Stirling & Michael Wilford, and Denys Lasdun from the U.K.; Ionel Schein from France; Hermann Fehling and Daniel Gogel, Gottfreid and Stefan Böhm from Germany; and Hans Hollein from Austria.

Many and varied were the suggestions they offered. There had been no pro-

Pencil points

The Chicago Art Institute's *Department of Architecture has received a $225,000 grant from the Graham Foundation to expand the department and build the Ernest R. Graham Study Center for Architectural Drawings.*

- *Six other Benefactors of Architecture have pledged a total of $300,000 to an endowment program initiated by Bruce J. Graham, partner at SOM, and Barry F. Sullivan, Chairman, First National Bank of Chicago.*

Arthur Erickson Architects, *associated with Loschky, Marquart & Nesholm, Seattle, and Deems Lewis & Partners, San Diego, will design San Diego's $95 million convention center.*

- *The team's concept for the 650,000-sq-ft bayfront complex beat out those of four competitors: Murphy Jahn, Chicago, with Martinez Wong, San Diego; Luckman Partnership, L.A., with SGPA, San Diego; Ellerbe Associates, Minneapolis; and Welton Becket Associates, Santa Monica, with Hendrick & Mock, San Diego.*

Louis Sullivan *will be the subject of a major exhibition at the St. Louis Art Museum. Architectural historian David Van Zanten of Northwestern University will coordinate the show, which opens December 1985.*

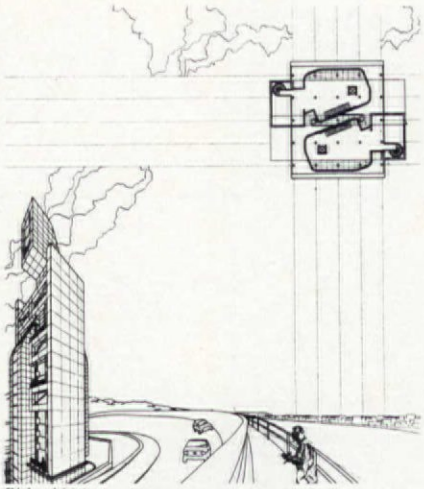
The fabled cable cars *of San Francisco are running again after a major overhaul. The historic Car Barn, too, has been restored and its antiquated machinery replaced to make for a smoother but no less nostalgic ride.*

Greetings *to* Eupalino: City and House Culture. *The new quarterly Italian magazine (with English translations) is edited by Paolo Portoghesi. The first issue tackles Bruno Taut, Aldo Rossi, and the whole of New York City.*

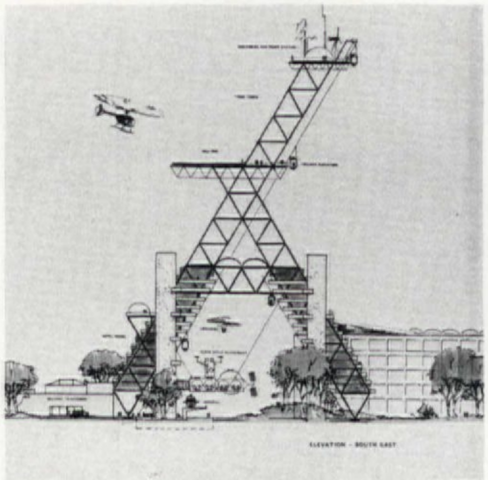
Also new *(to the States) is* Designers Journal, *a British quarterly that debuted overseas last fall and goes to eight issues per year this January. The no-nonsense news and reviews are edited by Lance Knobel.*

Michael L. Ainslie, *president of the National Trust for Historic Preservation, has left his post to become president and chief executive officer of Sotheby's Holdings, Inc. The search is on for his successor.*

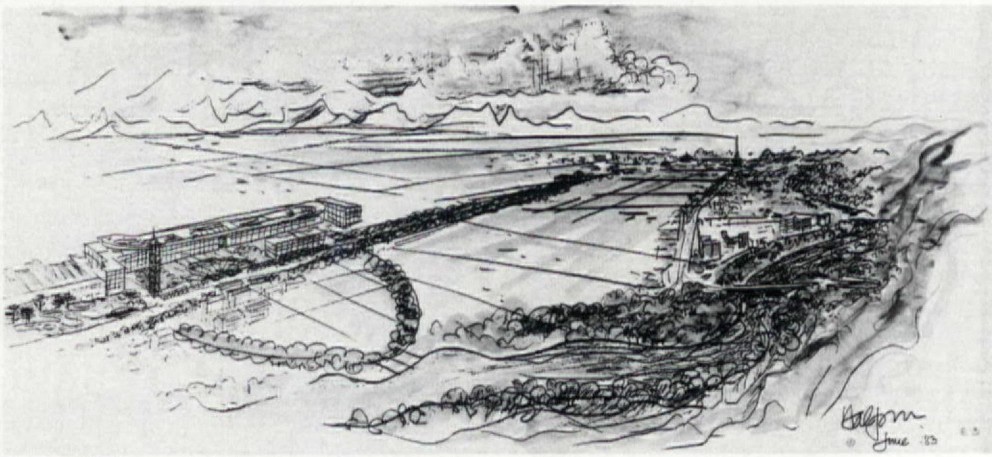
Charles R. Ince, Jr. *has resigned as president of the American Institute of Architects Foundation.*



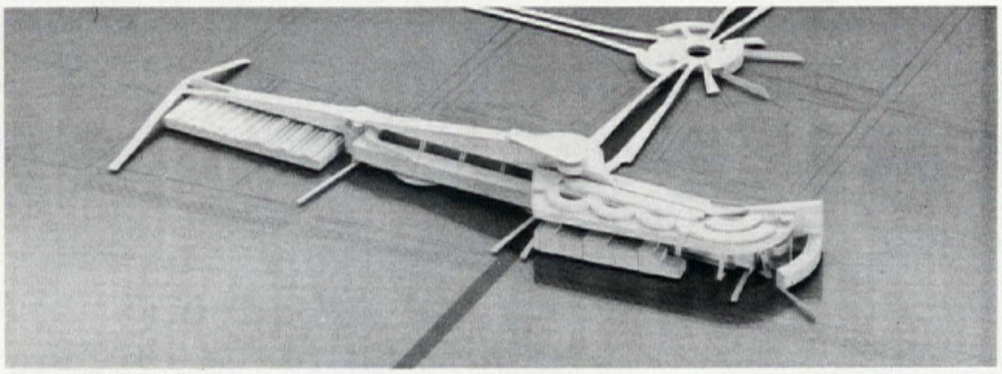
Richard Meier.



John Johansen, Ashok Bhavnani.



Lawrence Halprin.



Hermann Fehling, Daniel Gogel.

gram, so the designers concocted their own, some with no care for practicalities. Most recognized the need to consider the buildings in their context, but only Sottsass and Halprin spoke of actual costs and implementation.

Several of the projects utilize the buildings as they are: Roche, for example, creates a hotel, museum, and car park while maintaining the principal characteristics of the plant. Other plans all but erase existing structures. Halprin proposes lakes, fountains, and wintergardens to provide a green city or "lung" for the cement city. Pesce invents a complete futuristic world; Sartogo envisions a technological park.

The workshops are subjected to various exterior face-lifts while inside, proposals run riot, transforming the industrial monument into a drive-in car museum (Stirling), a 1365-unit apartment building (Aulenti), luxury "villas" (Meier), a self-contained city (Sottsass), a permanent museum of transportation, science, and technology, design and fashion (Hollein), or a polytechnical university (Gabetti and Isola). The car track is retained as a jogging and skating rink (Aulenti) or a promenade shaded with trees (Gregotti); even Pelli, who reshapes Lingotto and the surrounding area into city blocks patterned after 19th-Century Turin, keeps the track in one piece for walking and bicycle riding.

These 20 fantasies offer only a peek at the possibilities; close to $100 million would be required if Lingotto, otherwise a ghost of industrial archaeology, is to be revived.

[Monica Pidgeon, Donatella Smetana]

An "ideas" competition for Austin

Austin's municipal government outgrew its 1907 city hall long ago, overflowing into an ad hoc assemblage of city-owned buildings and widespread lease space that costs taxpayers $1,000,000 per year. Now a new city hall and administrative offices are to be built by private developers in exchange for the right to develop portions of the valuable lakefront site for commercial use.

Three design teams, each awarded a $10,000 prize, have emerged as first-place winners in the schematic design phase of a city-sponsored competition intended to generate ideas for a final program. In the competition's second phase, architect/developer teams will submit proposals based on new guidelines.

All three premiated schemes position the city hall on the central block facing an open plaza and flanked on adjoining blocks by hotel, office, and retail development. The scheme by Austin firm Black Atkinson & Vernooy, designated by the jury as "Best of Show," centers on a sunken plaza or "transitorium" surrounded by restaurants and shops in a perimeter loggia.

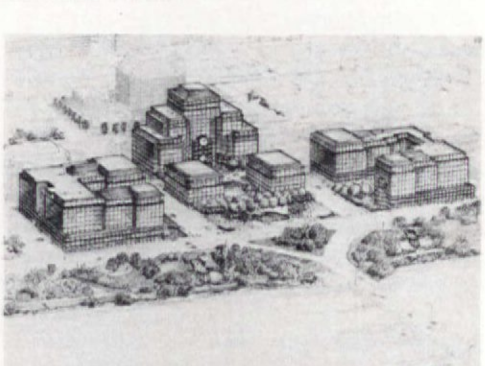
Equally formal in composition, although more contemporary in spirit, is the first-place entry of Shefelman & Nix, Austin; Moore Ruble Yudell, Santa Monica; and Peter Zweig, Houston, which incorporates local materials and regional motifs. A second entry awarded first prize, submitted by a joint venture of Lawrence Speck & Associates, Robert Jackson, Page Southerland Page, and Villalva Cotera Kolar, all of Austin, is unique in separating the council chamber from remaining city offices. Honorable mentions of $2500 were presented to Harry Weese & Associates, Chicago, and to a team of University of Texas-Austin students: Jonathan Perlman, Tim Cross, and Diane Berry.

Judging the 38 entries (19 local and 19 out-of-city or out-of-state) were Jonathan Barnett, New York; Boone Powell of Ford Powell & Carson, San Antonio; John Chase, Chase & Associates, Houston; Hal Box, Dean, UT-Austin, School of Architecture; and Natalie DeBlois, also of UT.

While the jury and the city are pleased with the winning entries, the competition has not escaped criticism. A commonly cited shortcoming is the absence of big-name entries from around the country, due perhaps to the speculative nature of the program (the city is not required by the rules to build any of the winning entries). A second objection involves the similarity among the three selected solutions. The city, however, is free to consult all 38 entries in its search for "ideas." [Larry Paul Fuller]

Larry Fuller *is the editor of* Texas Architect.

Black Atkinson & Vernooy.



Shefelman & Nix/Moore Ruble Yudell/Zweig.

Speck/Jackson, Page & Kolar.

Voorhees, Gmelin & Walker, Irving Trust, 1931.

New York, New York

By a combination of accident and intention, New York has been blessed this summer with three concurrent shows on American architecture of the 1920s and 1930s. "Manhattan Skyline: New York Skyscrapers Between the Wars," a show of 150 architectural drawings, models, photographs, and decorative objects currently graces the second floor of the Cooper-Hewitt Museum (through Sept. 23), while two major architects of the period—William Lescaze and Ralph Walker—are the subjects of separate exhibits at the National Academy of Design (through Sept. 2; previously at the Everson Museum, P/A, April 1984, p. 28) and the Syracuse University club respectively. All three shows draw from the Syracuse University architectural archives, which houses both the Ralph Walker collection and the William Lescaze archive.

The Cooper-Hewitt show in particular is an effective survey of material previously seen only in segments, such as the Chanin exhibit at Cooper Union (P/A, Jan. 1983, p. 24) or the Raymond Hood show at the Whitney Museum (P/A, March 1984, p. 21). The present trio confirms a renewed interest in the transition from mannerist eclecticism to mainstream modern, affected by such architects as Ely Jacques Kahn, Carrere & Hastings, or Cass Gilbert, who shaped the Manhattan skyline. Exhibited in the midst of Manhattan's present building boom, the coincidence of these shows is surely no coincidence. [DDB]

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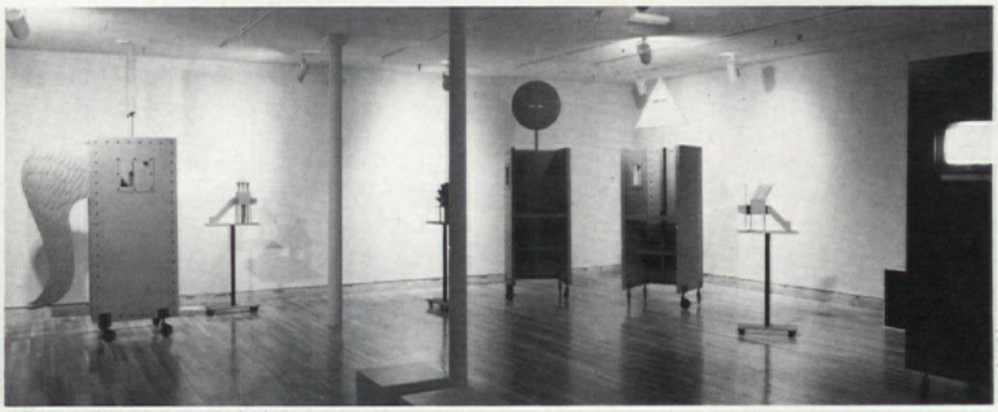


Charles Mayer

Hejduk's contribution to the New England Masque.

A modern masque in Boston

The "New England Masque Anti Masque," a multimedia presentation of works by architect John Hejduk, poet David Shapiro, musician Morton Feldman, and artist Anthony Candido, was recently commissioned by the Institute of Contemporary Art in Boston (on view May 16–June 16). Unlike many recent multimedia works, built upon a collaboration of the moment, this production is the product of a common reflection by artists bound by many years of friendship. It is the Hejduk contribution, however, that makes the collaboration particularly newsworthy, for this represents his most fully realized masque to date.

Searching for an alternative to "the current vogue of showing architectural drawings like art objects, in galleries, as if they were paintings," which he "abhors," Hejduk has revived the ritualized court drama of the Renaissance, those essentially plotless symbolic tableaux celebrating the monarch, which were written, designed, and set to music by such eminent artists and architects as Inigo Jones, who conceived at least 31 masques for the Stuart court. In the New England Masque, Hejduk takes as inspiration a legend that the devil roams at night, designing thrones for his use. These winged towers, scaled to the height of the gallery space, are inhabited by geometric, totemic masks, reminiscent of Picasso's wood sculptures (an acknowledged reference) and of Hejduk's own Venice Watchtowers (1979) and his "Berlin Masque" (P/A, Oct. 1982, p. 34). Small, attendant structures, which represent art, music, and security, stand alongside.

This, the fifth Hejduk masque since 1980, replaces the formalist concerns of earlier experiments with philosophical and psychosocial considerations, positing a human and political reality in place of an abstracted architectural one. The collective theme of the New England Masque is interpreted by curator David Joselit as a "striving towards a connection between the disparate arts or personalities and an existential focus on the individual." This individual, struggling to emerge from Hejduk's anthropomorphic masks, Candido's monumental Neo-Expressionist panels, Feldman's palpitating music, and Shapiro's personal poems, replaces the monarch at the center of the masque.
[Hélène Lipstadt]

Hélène Lipstadt *is an architectural writer in Cambridge, Mass.*

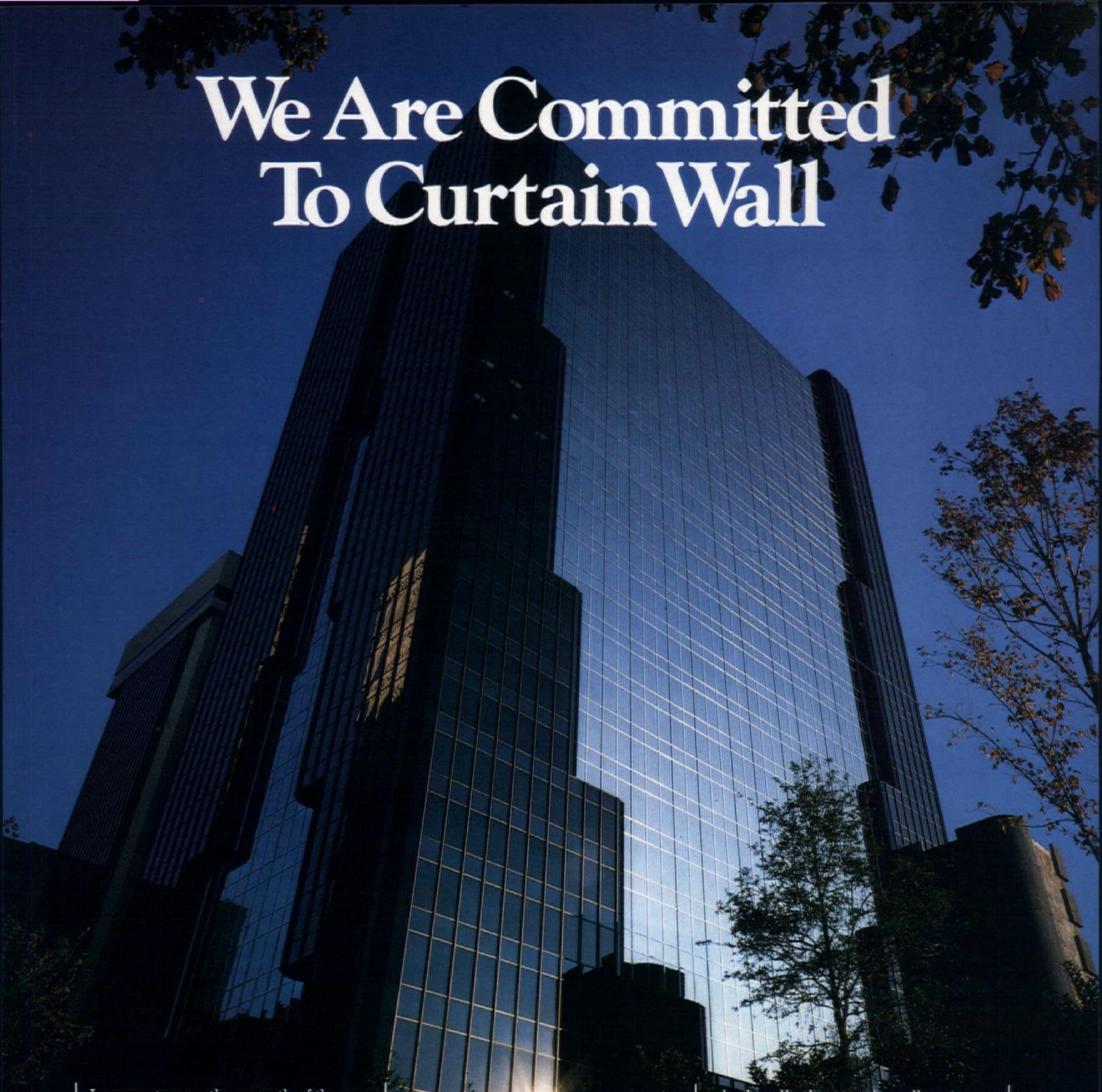
Club notes, Chicago

The Chicago Architectural Club has awarded its first annual traveling fellowship to Tannys Langdon. The fellowship, designed to further the education of younger club members, provides for three months in Rome at the American Academy. Langdon was selected on the basis of an architectural design competition, open to all club members 40 years old and under, for a club headquarters on a real or imaginary site. No form for submissions was specified, and architectural historians were encouraged to submit written entries.

All club members over 40 were invited to join the jury, together with guests Henry Cobb representing the Academy and John Casbarian of Taft Architects. Langdon's drawings and a selection of other entries, including that of first alternate John Syvertsen, will be shown at the Chicago Art Institute (Nov. 15–Dec. 31, 1984) and published in volume four of the *Chicago Architectural Journal,* the club's yearbook.

The awarding of the fellowship concluded an active year in which the club also sponsored an open design competition for skyscraper "Tops" (P/A, Jan. 1984, p. 23 and the *Journal,* vol. 3) and conducted reviews for new projects by club members with invited jurors such as William Pedersen of Kohn Pedersen Fox and critic Nory Miller for the session on new office structures and Roger Sherwood, author of *Modern Housing Prototypes,* for housing. [Stuart Cohen]

Stuart Cohen *is an architect in the firm Stuart Cohen and Anders Nereim, Architects, and teaches at University of Illinois, Chicago.*



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"The conference is a front for the interaction between conferees." This telling aside by design writer Ralph Caplan, delivered at the opening press meeting for the 1984 International Design Conference at Aspen, might have given solace to the 1200 mutinous troops who attended one of the most lackluster programs in the conference's colorful 34-year history.

The conference program, "Neighbors—Canada, U.S.A., Mexico," was cochaired by Canadian journalist Robert Fulford and Mexican architect Eduardo Terrazas. As self-conscious and obsequiously polite as newly acquainted in-laws, Canada and Mexico struggled to find interests in common; or rather, as design consultant Hy Zebowitz described it, "They behaved like two men in love with an extremely large woman."

Keynote speakers, predominantly social scientists or designers who disguised themselves as such, gave new meaning to the term esoterica. Conferees could, for example, thrill to a 9 A.M. lecture on "Reflections on the Biological Ontology of Reality" and catch an afternoon seminar on "The Postage Stamps of North America." Highlights included former Governor of California Jerry Brown's strategem for a "continental conservation corps" and James Houston's folksy accounts of his life with the Canadian Eskimos.

MIT biologist and IDCA advisor Jerome Lettvin will chair next year's conference entitled "Illusion is Truth," an ominously ambiguous subject. [Lynne Smith Spitalny]

Lynne Smith Spitalny *heads her own graphic design and marketing communications firm, SCHEMA, in Irvine, Calif.*

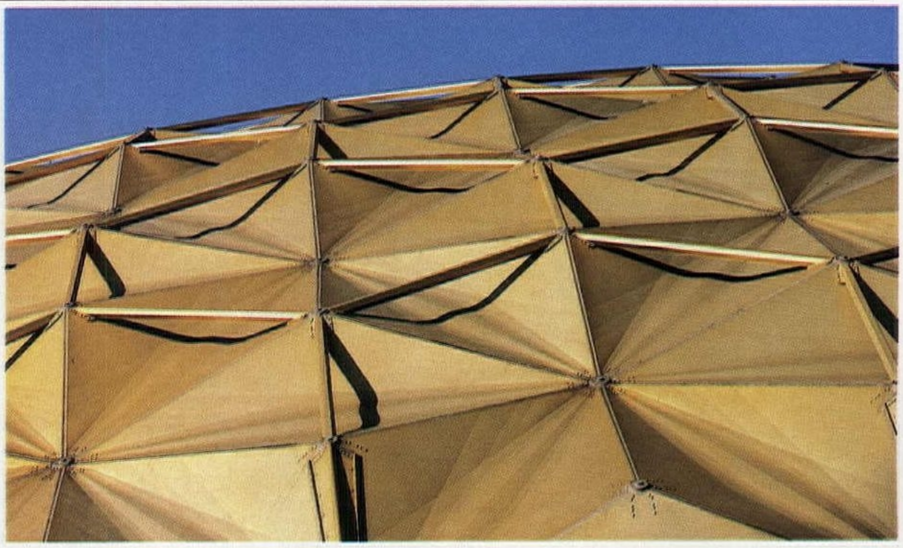
Cranbrook '84

The ACSA Teacher's Seminar, hosted yearly by Cranbrook Academy of Art, has become something of an academic institution. The annual conference was initiated 30 years ago to improve teaching skills of architecture faculty. This year's seminar (June 23–28), organized by George Anselevicius, Dean of Architecture at the University of New Mexico, concentrated on the studio experience, using the modern masters as models. Addresses by former students and associates on Frank L. Wright (Fay Jones), Eliel and Eero Saarinen (Paul Kennon), Jean Labatut (Charles Moore), Louis Kahn (Lee Copeland), and others preceded a two-day studio exercise led by critics Maurice Smith, MIT; Susana Torre, Columbia; Robert Harris and Ralph Knowles, USC; Charles Moore, UCLA and UT Austin; and Jerzy Soltan, Harvard.

An audience of architecture faculty necessarily shares many myths about the masters, and the speakers faced the challenge of clarifying realities. Several emphasized experience in the master's office, where ideas were put into practice, over the academic studio. Design methodologies were scrutinized for comparisons: the Saarinens, for example, separated analysis from synthesis in the design, while Breuer (Richard Stein) worked through all aspects of a problem at once. Mies set limitations for a problem and then studied it in parts. Kahn chose to teach only graduate students, with whom he could "begin at the beginnings but not with beginners."

Finally, architect Jean Paul Carlhian shared his current research on Beaux-Arts education, stressing the limitations imposed by presentation conventions on the design exercise. His observations provided particularly insightful analogies to computer-aided design, an issue for present and future architectural education. [Jacqueline S. McBride]

Jacqueline McBride, *a practicing architect in Connecticut, is an assistant professor at the University of Houston.*



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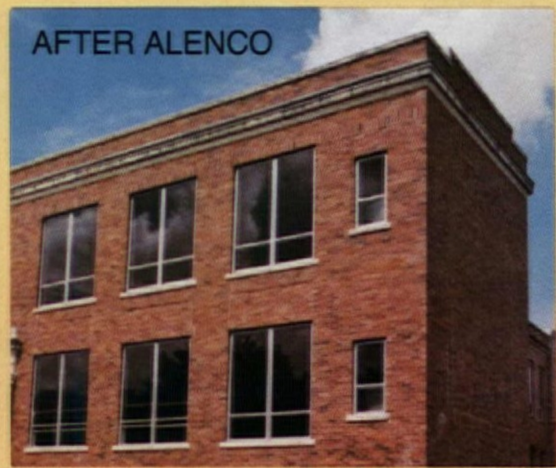

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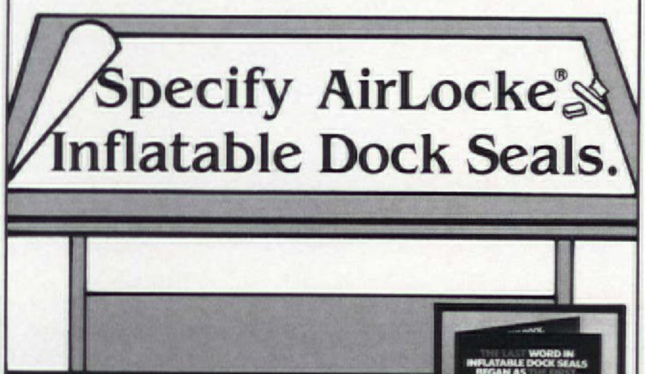

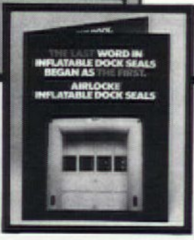

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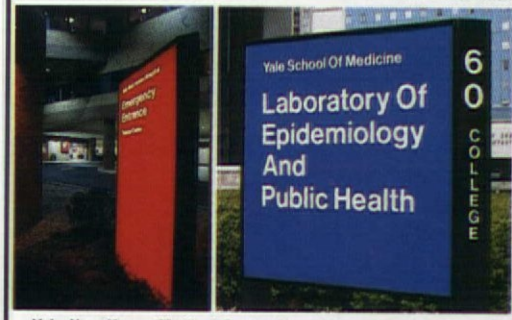

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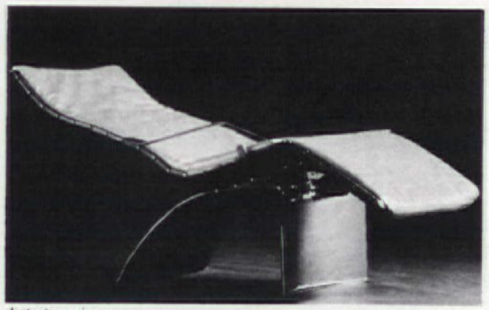

Antropovarius.

Porsche: The 1984 model

From the people who brought you Porsche comes this sleek, chic, ultra-modern lounge, dubbed "Antropovarius" by its author, auto designer Ferdinand Alexander Porsche.

The chair's "vertebral column" adjusts to suit the sitter—good posture or bad. The frame, a product of space technology, has the strength of steel at one fifth its density, and three times the rigidity of glass—all upholstered in leather (you can choose from over 70 colors, or if that's not enough, custom colors are available).

Antropovarius made its debut at NEOCON 1984; manufactured in Italy by Poltrona Frau, the chair is available through Interna Designs, Chicago.

Plans for Piazza del Duomo

Milan's Piazza del Duomo pleases no one. Milanese citizens find it cold and useless; tourists judge it ugly when compared with Piazza della Signoria or Piazza San Marco; subway engineers have difficulty digging around the remnants of medieval Milan beneath; shop owners find it draws only souvenir hunters, not moneyed customers; and city administrators recognize that the square falls far below the cultural and artistic standards of the city.

Enter Enzo Mari, a 52-year-old architect charged by the city of Milan to make over the square. Mari, a well-known designer of furniture, lamps, marble objects, and wooden puzzles, is not particularly renowned for urban design. He has produced not one but three possible solutions to the piazza problem. "The city stage," the most economical scheme, proposes pink and grey granite paving as a unifying carpet. "The city café" adds a subway station cum coffee shop (might it be a Milanese McDonald's?), while the third project, titled "By means of removing," redirects the piazza diagonally towards the Royal Palace. One corner of the Fascist-phase Arengario building, which stands in the way of the diagonal axis, is casually sliced off, and a mirrored façade plugs the wound, distorting the image of Duomo. Scheme two's subway station/coffee shop/meeting hall is transformed into a triangular building, and the equestrian statue it displaces is moved to one side of the square.

The models of these three proposals, recently exhibited in the Royal Palace, caused an incredible stir. Another exhibition on the subject, organized by Father Eugenio Bruno (no relation to philosopher Giordano Bruno), opened in Centro San Fedele, a church-owned

Enzo Mari, "City Cafe," Piazza del Duomo.

gallery. "For a Better Piazza del Duomo" showed 53 alternatives, many of which took wild liberties with the subject, by well-known and "anonymous" architects. (Mari's projects were chivalrously included.) So far, no final decision has been made, and the city wonders: Will the difficult Piazza del Duomo, historically a cemetery of projects for its improvement, add another gravestone, or rather 53 stones, in 1984?
[Donatella Smetana]

The Corbin Museum of Modern Art, Exhibit 7.

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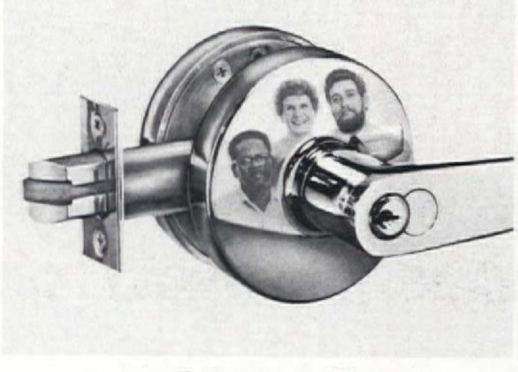

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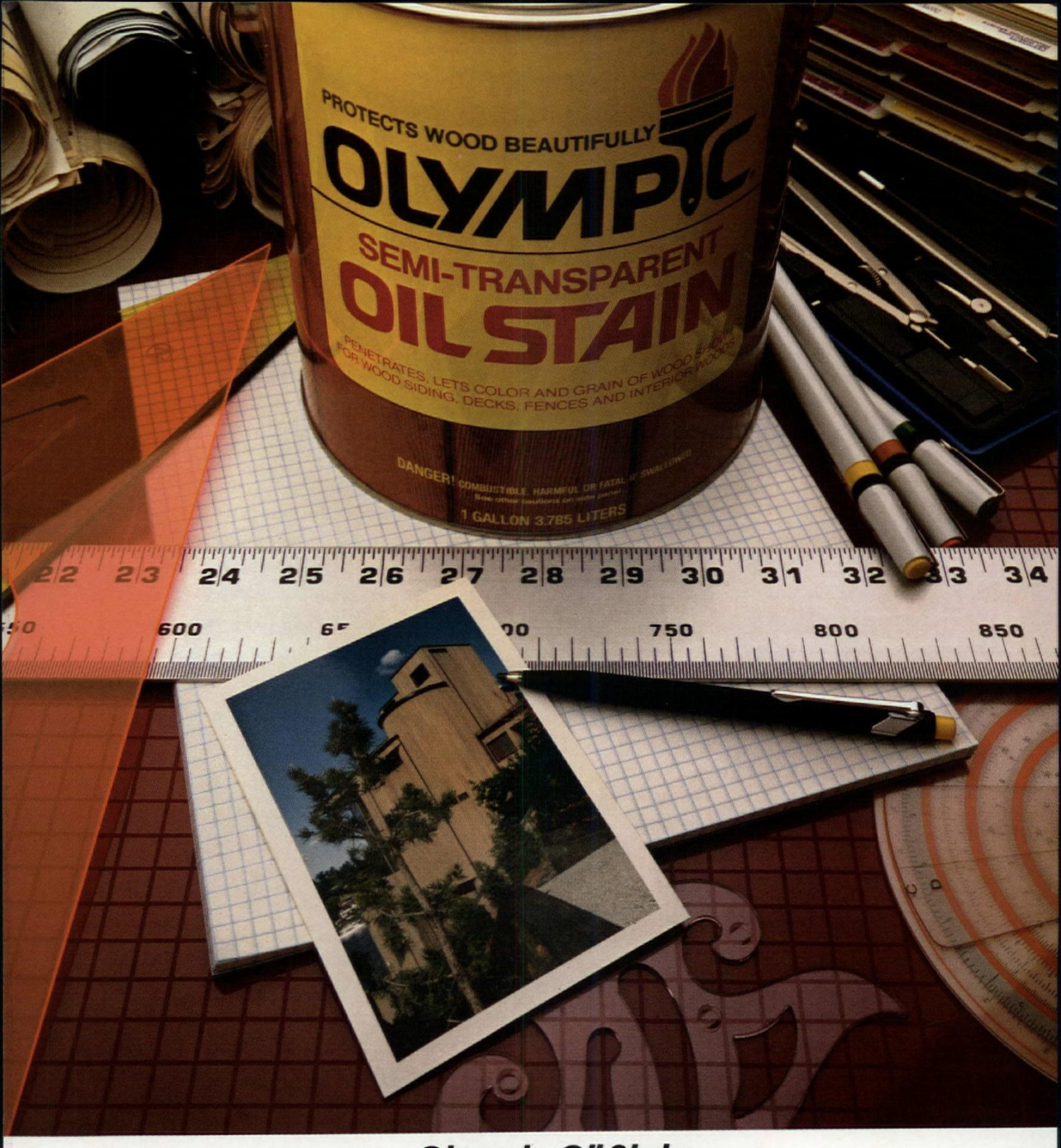

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Perspectives

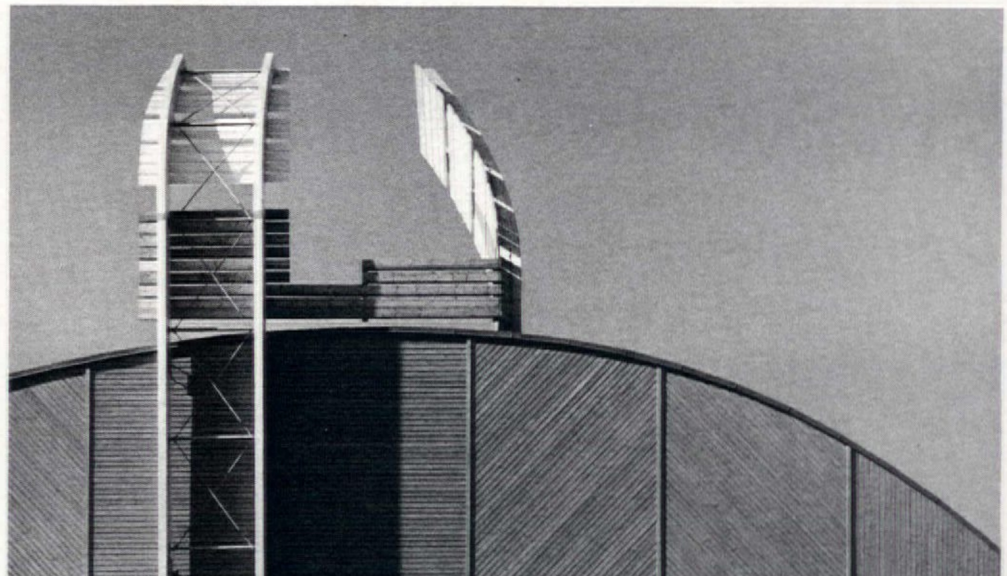
Three projects by Ralph Erskine for Stockholm University revitalize the campus at Frescati, north of Stockholm.

Ralph Erskine at Stockholm University

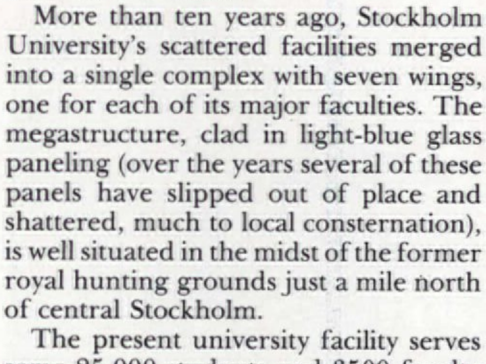
With his receipt of the coveted Wolf prize, English-born architect Ralph Erskine finally received the international recognition he has long deserved. Over the four decades that he has lived in Sweden, Erskine has become well known for his highly innovative and often unconventional solutions. His work contrasts more tradition-bound Swedish architecture, serving as an alternative source of inspiration for many of his younger colleagues. Coupled with his highly regarded efforts in the field of energy-saving design, Erskine's recent work at Stockholm University serves to illustrate his capacity for inventiveness and common sense.

More than ten years ago, Stockholm University's scattered facilities merged into a single complex with seven wings, one for each of its major faculties. The megastructure, clad in light-blue glass paneling (over the years several of these panels have slipped out of place and shattered, much to local consternation), is well situated in the midst of the former royal hunting grounds just a mile north of central Stockholm.

The present university facility serves some 25,000 students and 3500 faculty members. Its spine-and-spur plan has ironically increased the segregation of faculty departments that it was intended to integrate. Following a competition held in 1973, Ralph Erskine was asked to design a centrally located structure that would supply the services lacking in the existing building. Erskine proposed to divide the program into two separate structures: a library, linked physically to



Activerum (sports center).



Allhuset (student center).

Allhuset (student center).

the University building, and the "Allhuset," a student center, incorporating a 19th-Century museum building that was converted into the main dining hall.

Some time after the completion of this project, Erskine was invited to enter a competition for the design of a new campus sports center. His entry, marked by its aesthetic interest and economy, was selected and has since been completed.

Unlike the informal Allhuset and sports center, the library has a more restrained identity. Its entrance hall func-

University library.

Activerum.

tions as the university forum, with café, exhibition space, and coatrooms. Its high-vaulting ceiling, supported by a visible structure of wood and steel, is reminiscent of a railway station. Suspension bridges connect the old and new structures on each level.

Despite its immense size (250,000-square-foot floor area, holding some two million volumes), the library is surprisingly simple, based on a six-by-six-meter grid system, and organized along two main axes. A conscious effort was made to preserve good natural lighting and to maintain visual contact with surrounding nature through an irregular glazed perimeter and small planted courts.

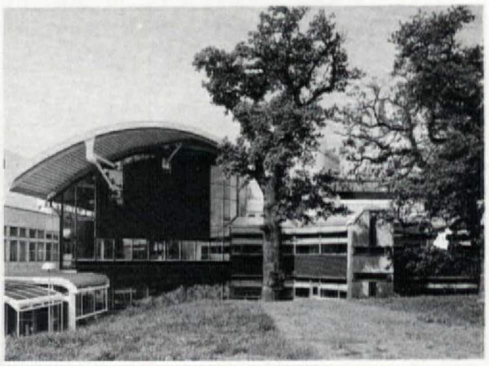
The Allhuset forms an enormous triangle wrapped about a single oak, its tentlike roof canopy visible to visitors approaching from the transit station. One of its three levels is below ground, and the visible two-story mass is in pleasing proportion to its natural surroundings. Inside, a "main street" lined with shops, information, travel services, the bookstore, and post office runs parallel to the front façade. From this street, a curved stair leads to the second floor with its café and student union, beneath a sloping roof. The attached existing structure that houses the main dining facilities stands in sharp but pleasing contrast.

Erskine's new sports center, built for the quite modest sum of $1.2 million, is owned and occupied by a nonprofit student-run organization. The large volume, framed with asymmetrical glulam arches, houses five flexible modules, each the size of a tennis court. Changing rooms, showers, saunas, etc., are contained in a two-story building constructed within the hall.

The total cost for all three structures was $25 million. Erskine made use of cheap materials and prefabricated units where possible, but such measures of economy have not inhibited his exuberant, ever-playful sense of design. The buildings possess a decidedly human scale and a strong ecological concern. They also rescue an otherwise totally sterile campus environment. Not surprisingly, the three structures have become something of an architectural attraction for Stockholmers and international visitors as well. [Anders Mortner]

Anders Mortner *is a partner in the Stockholm firm Tegner Arkitekgrupp and writes for the newspaper* Svenska Dagbladet.

Activerum, entrance.



Library.

Library.

All photographs by Rolf Dahlström

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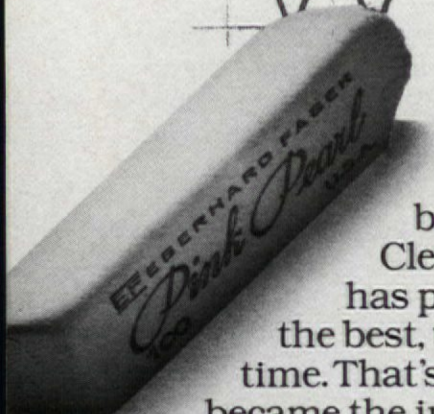

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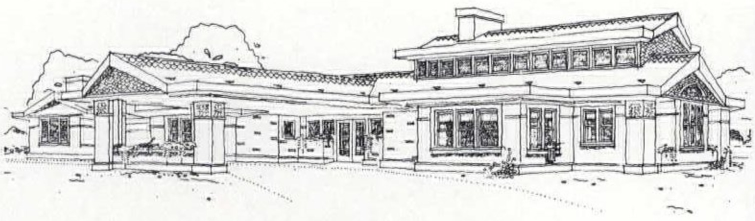
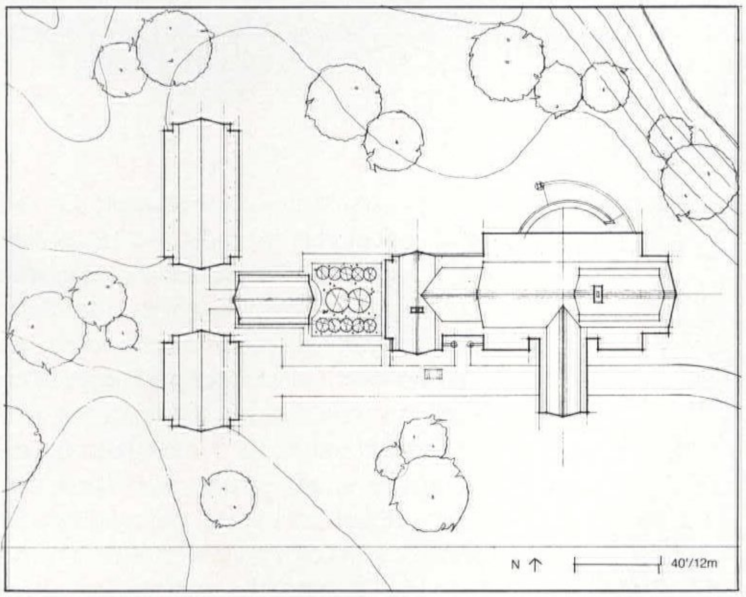
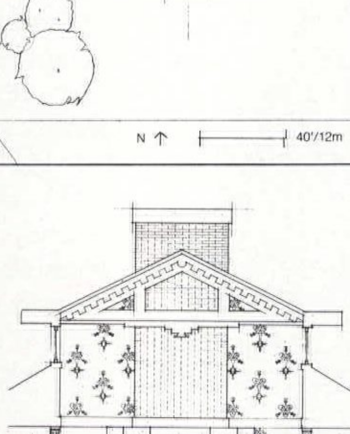
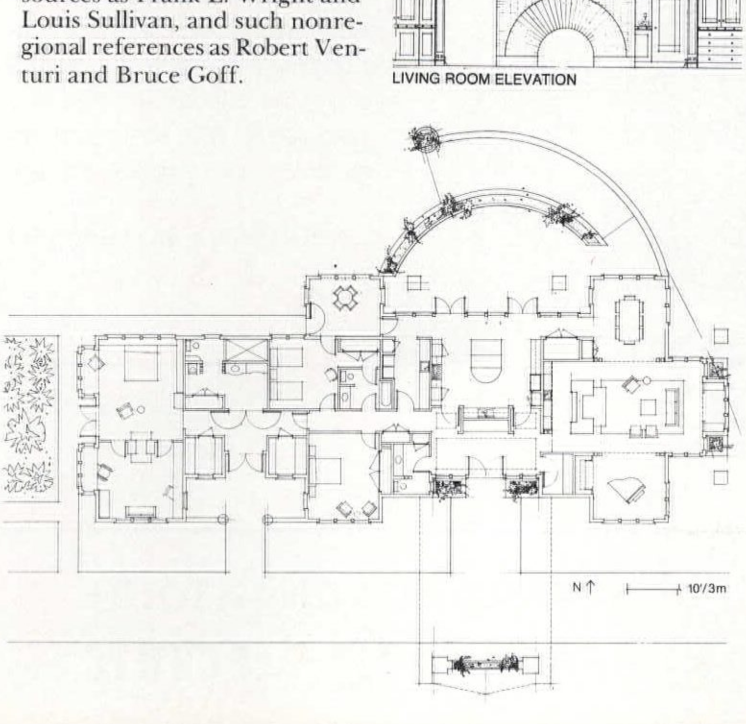




Smith Residence, Geist Brook, Indiana. *Architect: Muller & Brown, Cincinnati, Ohio.* Designed for a client confined to a wheelchair, this house is organized on a single level with ramped access. Its organization and ornamentation quote from such "regional" sources as Frank L. Wright and Louis Sullivan, and such nonregional references as Robert Venturi and Bruce Goff.



LIVING ROOM ELEVATION



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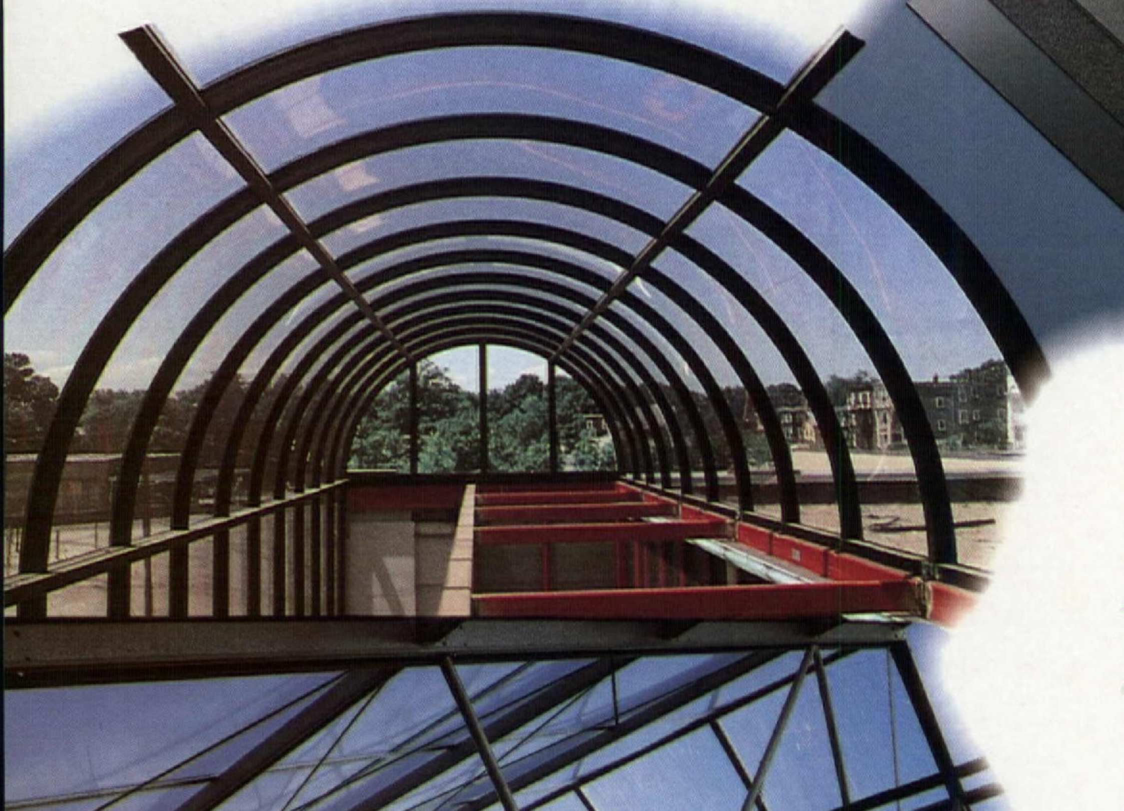

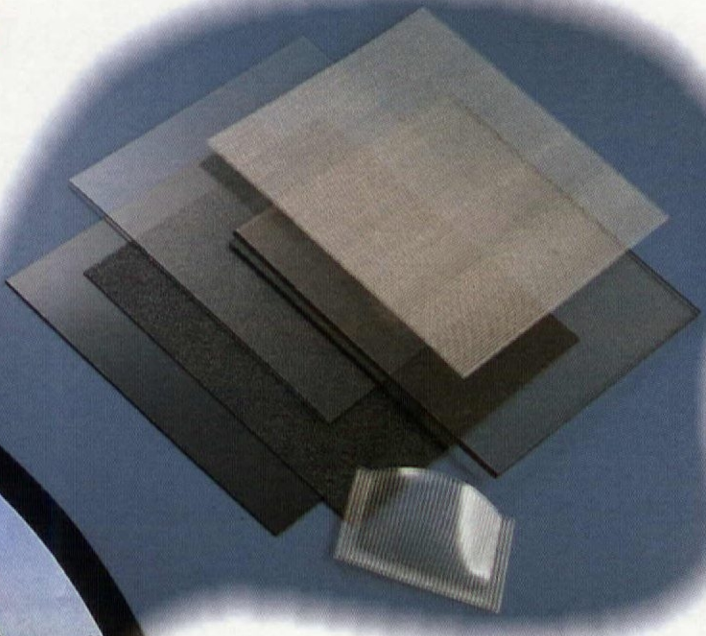

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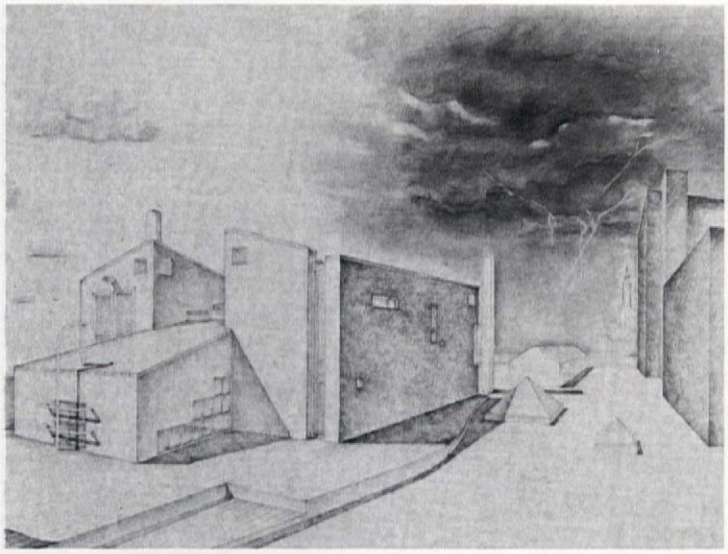
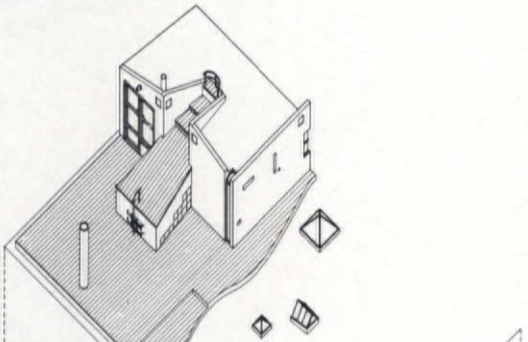
Erdman Residence, New York.
Architect: Peter Wheelwright, Anderson-Wheelwright, New York.
This top-floor apartment in lower Manhattan packs living spaces around a ceremonial stair leading to a rooftop writing studio and deck. A solid wall punched by tiny openings shields the roof "house," its private deck, and overlook from neighbors.





1 Apartment entry
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3 Bedrooms
4 Living/dining

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P/A Calendar

Exhibits

Through August 19
Arquitectonica. Center for the Fine Arts, Miami.

Through August 29
Robert Wilhite: Furniture and Sound Sculpture. Delahunty, Dallas, Tex.

Through August 31
Architectural Crafts. Fine Arts Center, Tempe, Ariz.

Through August 31
Chicago Furniture: Art, Craft, and Industry. Chicago Historical Society.

Through September 2
William Lescaze. National Academy of Design, New York.

Through September 3
The Folding Image: Screens by Western Artists of the 19th and 20th Centuries. National Gallery of Art, Washington, D.C.

Through September 23
Manhattan Skyline: New York Skyscrapers Between the Wars. Cooper-Hewitt Museum, New York.

Through January 6
Automobile and Culture. The Museum of Contemporary Art, Los Angeles.

Through January 13
Visions of Liberty: photographs of the Statue of Liberty. The New York Historical Society, New York.

September 6–October 28
Honor and Intimacy: Architectural Drawings by the Gold Medalists, 1907–1983. Art Institute of Chicago, Chicago. Also **February 5–March 25,** the Octagon, Washington, D.C.

September 27–November 27
Alvar Aalto: Furniture and Glass. Museum of Modern Art, New York.

October 16–December 1
Le Corbusier: Paintings, Collages, Drawings—1922–62. Prakapas Gallery, New York. Also, **January 11–March 2,** J.J.P. Oud: Architectural Drawings and Photographs.

October 21–January 6
A Serious Chair, designed by Bill Stumpf and Don Chadwick. Walker Art Center, Minneapolis, Minn.

Competitions

August 15
Submission deadline, Friends of Terra Cotta Annual Awards for preservation and new construction. Contact A.R. Carey, Architects, 401 China Basin, San Francisco, Calif. 94105.

August 20–September 3
Entry acceptance period, A Style for the Year 2001. Contact A Style for the Year 2001, Editorial Dept., Shinkenchiku-sha Co., Ltd., 2-31-2 Yushima, Bunkyo-ku, Tokyo, 113, Japan.

September 1
Entry deadline, 1984 Steel Bridge Awards. Contact American Institute of Steel Construction, 400 N. Michigan, Chicago, Ill. 60611 (312) 670-2400.

September 14
Entry deadline, 1984 Concrete Building Award. Contact Glen Simon, Portland Cement Association, 5420 Old Orchard Road, Skokie, Ill. 60077.

September 15
Submission deadline, International Association of Lighting Designers' Awards. Contact Ms. Marion Greene, IALD, 30 West 22nd St., 4th Flr., New York, N.Y. 10010 (212) 206-1281.

September 17
Postmark deadline, 32nd P/A Awards. See page 15 for information and entry form.

September 30
Entry deadline, Total Home Contest. Contact *New Shelter* Total Home Contest, Dept. JA, Emmaus, Pa. 18049.

October 1
Submission deadline, Non-Residential Renovation and Reconstruction Design Award. Contact American Wood Council, 1619 Massachusetts Ave., N.W., Suite 500, Washington, D.C. 20036.

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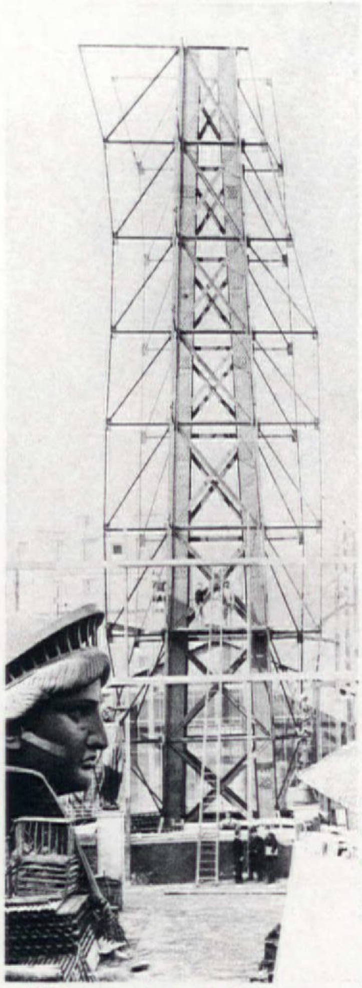

"Visions of Liberty," New York Historical Society, through Jan. 13, 1985.

Courtesy Musée Bartholdi.

December 1
Entry deadline, 1985 Tucker Architectural Awards program, sponsored by Building Stone Institute. Contact BSI, 420 Lexington Avenue, New York, N.Y. 10170 (212) 490-2530.

Conferences, seminars, workshops

August 19–22
Ceramic Tile Distributors of America 6th Annual Convention and International Ceramic Tile Exposition, Boston. Contact CTDA, 600 Talcott Road, Park Ridge, Ill. 60068.

August 26–28
AIA Design Conference, San Diego. Contact Ravi Waldon (202) 626-7452.

August 29–31
International Flat Roof Conference, Brighton, England. Contact Bituminous Roofing Council, P.O. Box 125, Haywards Heath, West Sussex RH16 3TJ, England.

September 11–14
Third International Conference on Space Structures, Guildford, England. Contact Dr. H. Nooshin, Space Structures Research Centre, University of Surrey, Guildford, Surrey GU2 5XH, England.

September 17–20
International Symposium on Long-Term Observation of Concrete Structures, Budapest, Hungary. Contact American Concrete Institute, Box 19150, Redford Station, 22400 W. Seven Mile Rd., Detroit, Mich. 48219.

September 19–22
Sixth International Conference on Urban Design, Pittsburgh. Contact Institute for Urban Design, SUNY at Purchase, Main P.O. Box 105, Purchase, N.Y. 10577.

September 24–25
World Conference on Ergonomics in Computer Systems, Los Angeles. Also **September 26–27,** Chicago and **September 27–28,** New York. Contact Crispin Littlehales or Rosemarie Burnett at Thomas L. Richmond Inc. (212) 581-4200.

October 2–7
CERSAIE '84, 2nd annual international trade fair for the building ceramics industry, Bologna. Contact the Italian Tile Center, 499 Park Ave., New York, N.Y. 10022.

October 7–10
Industrial Fabrics Association International, 72nd Annual Convention, San Francisco. Contact IFAI, 345 Cedar Bldg., Suite 450, St. Paul, Minn. 55101 (612) 222-2508.

October 11–15
Designer's Saturday, New York. Contact Designer's Saturday, 911 Park Ave., New York, N.Y. 10021.

October 25–30
Orgatechnik, 5th International Office Trade Fair, Cologne. Contact Messe und Ausstellungs-Ges.m. b.H. Koln, Postfach 2107 60, 5000 Cologne, W. Germany (0221) 821-1.

October 28–30
Pan Pacific Lighting Exposition, San Francisco. Contact Robert Zinkhon, Pan Pacific Lighting Expo, 2 Henry Adams St., San Francisco, Calif. 94103 (415) 563-7022.

November 28–30
2nd International Conference on Forming Economical Concrete Buildings, Chicago. Contact Registrar, 1984 Forming Conference, 5420 Old Orchard Road, Skokie, Ill. 60077-4321.

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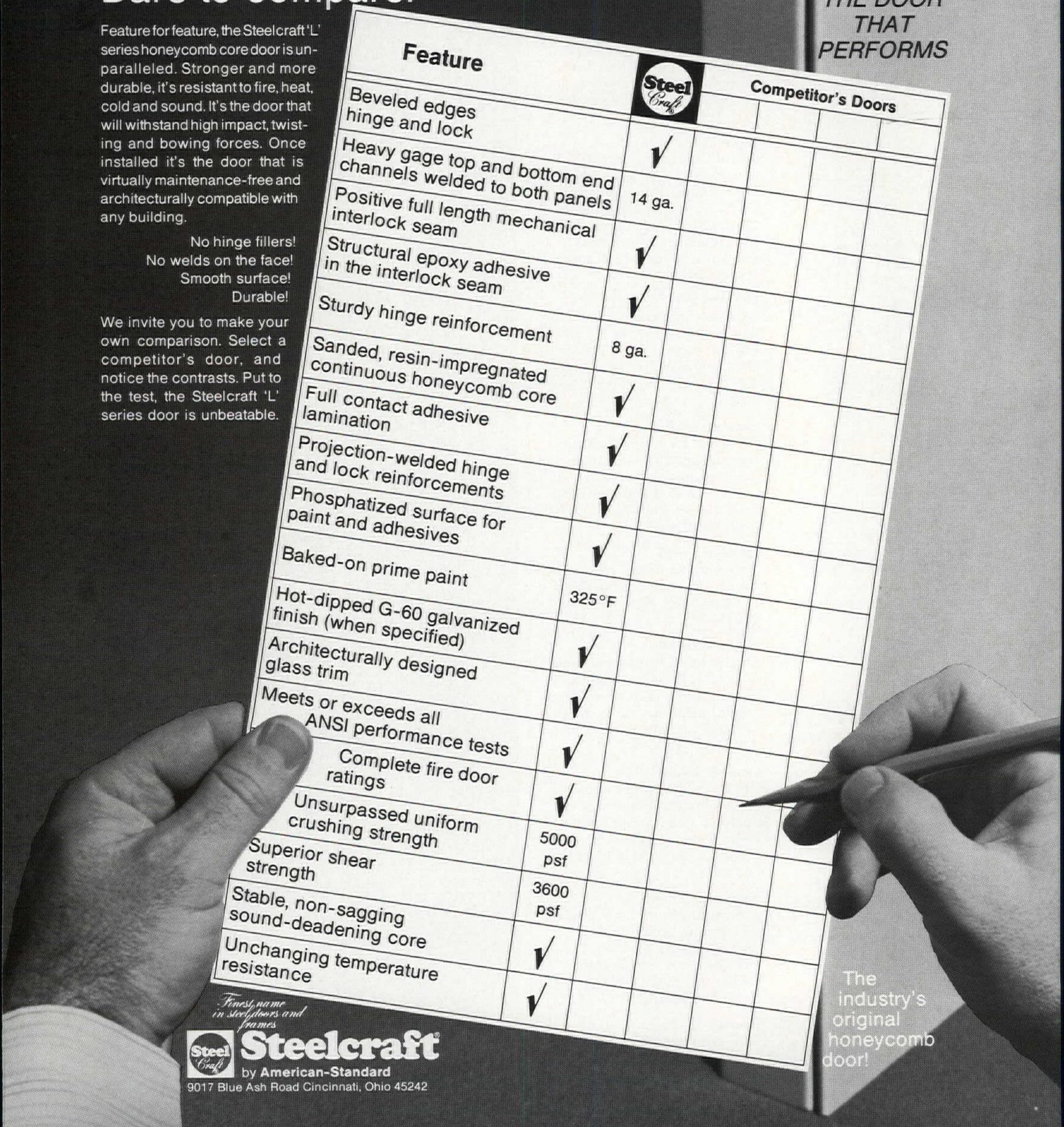

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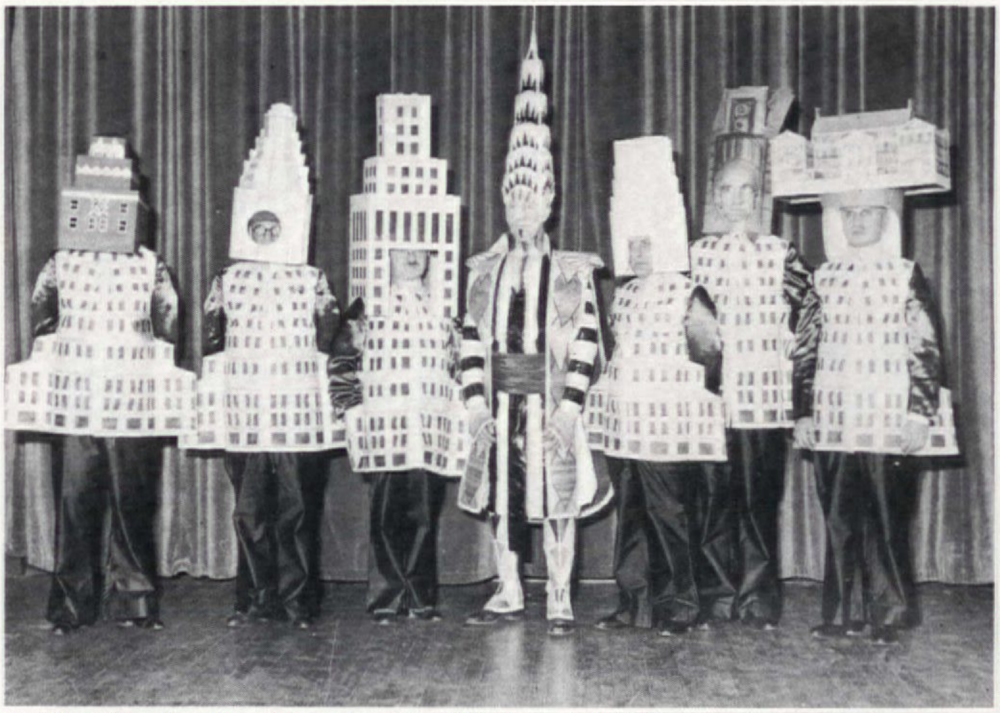
P/A Practice

In P/A Practice this month, Michael Hough discusses bidding; William Lohmann, the different roles played by drawings and specs; and Gregory Putnam, the use of key performance indicators.

When bidding is inevitable



Walter H. Kilham, Jr.

Architects dressed as their skyscrapers at the 1931 Beaux-Arts Ball.

Architects once were not permitted to compete for work on the basis of price. Most work was done as a percent of construction, giving firms very little incentive to control costs because everyone got the same fee.

Now, however, the government has forced the AIA to lift its ban against bidding, and many clients have begun to ask for price quotations from architects. This is particularly true in Maryland, where it is the law of the land, although other public and private clients are using price as a selection criterion.

The best strategies for the architect who wants to avoid bidding are these:

- Practice in markets, such as corporate headquarters, where clients do not care that much about fees;
- Provide a very specialized service that is in great demand and thus not subject to price competition; or
- Stay at or shrink to a size where present clients can keep you busy.

Many firms, though, cannot take these steps and thus must enter the bidding fray. This article is for them. Let's first consider the term "bid." Most clients (even in Maryland) do not always award the job to the low bidder. Competence often has some influence on the selection, so do not despair that your carefully nurtured reputation will be for naught; most clients will give it considerable weight.

The first recommendation on how architects can make it in the bidding world is for them to think less like a professional who wants to save the client from himself and more like a business person who provides a high quality service for a fee. Clients who ask you to bid do not deserve to be told, for example, that they need a zoning analysis if they have not asked for it. Firms including this service in the bid because it is the "professional" thing to do will lose the job to the firm bidding strictly on the scope provided by the client.

The Stasiowski Rule (named for the editor of *Professional Services Management Journal*) is: "Don't do anything more than the client requests (and) be sure to manage costs and control project teams from doing extra work"—a good rule to follow in bidding.

The second recommendation is to examine your internal costs very carefully to find any inefficiencies that make you noncompetitive with other firms. For example, do you keep your overhead low by charging as many hours and expenses as possible directly to projects? How do your costs per drawing compare with those of your competitors? Is your staff mix either too high quality (no one to do the detail work) or too low quality (work has to be redone too often)?

The third recommendation: look at how a project runs through your office. Do you get all the necessary information before starting the project or does it dribble in even after you are into working drawings? Is there one person in charge of each project or is the responsibility scattered among principal, designer, and job captain? Do you institute a design freeze after the design development drawings have been approved by the client? Firms that are successful in getting bid work and making money at it do all these things.

Here are some specific recommendations on how to submit the winning bid:

- Say no to a bad situation: the scope is too wide open; the client is totally without scruples; another firm has a political advantage.
- Bid only on the scope provided; however, you can muddy the waters by also submitting an *alternate* (and second) proposal that fills in the missing items (sometimes this will convince the client to withdraw the bid solicitation and give the project to you).
- If you lose, always challenge the award based, for example, on poor scope definition or nonresponsive submittal by the winner.

It is possible to make money on a bid project, but you must work very hard at it. Here are some suggestions:

- Be sure the project team clearly understands the scope and realizes what constitutes extra work.
- Keep the project managers informed about costs (actual vs. budget) and encourage them to make corrections early when there is a discrepancy.
- Control the clients; that is, don't let them add services without additional reimbursement.
- Use all available labor-saving tech-

niques, such as word processing for the specs; overlay/scissor drafting combined with CAD for the drawings; and microcomputers to do time-consuming design analyses. Yes, this equipment will increase your capital costs, but this should be balanced by a decrease in labor costs.

Finally, you should have a different attitude toward clients who solicit bids. Treat all clients equally, but treat more equally those who do not make you bid. [Michael R. Hough]

Michael Hough *publishes* A/E Systems Report, A/E Marketing Journal, *and the* Professional Services Management Journal.

Where to draw the line

At the heart of architectural practice is the need to communicate a project description in comprehensible form to the builders who will translate the project into reality. Such information includes everything from concrete mixes to security systems—from technical details to performance concepts—and traditionally is expressed on drawings and in written specifications.

The basic rule for separation of project information between the two modes has not changed much over the years because it has evolved from logical presentation techniques. Information that can best be described graphically with lines and symbols goes on the drawings, and extensive text forms the specifications. Consequently, drawings generally demonstrate the following project information:

- Shape and physical location of the project.
- Location, quantity, and generic type of manufactured products, equipment, materials, and finishes.
- Size, thickness, and significant dimensions of all items.
- Relationship of adjacent materials.

By the same rule, the specifications include the following:

- Trade names of products and equipment and their manufacturers.
- Type, grade, and quality of materials and finishes.
- Physical and chemical properties and performance criteria.
- Methods of fabrication, workmanship standards, and tolerances.
- Field installation requirements and warranties.

There are logical exceptions to the rule too. The location of certain information is sometimes determined by ease of reference in the field as well as its format. Room finish schedules (also door and equipment schedules) are used directly with the floor plans and are normally larger than an 8½" x 11" page would allow. Contractors prefer schedules in the drawings. For building permit sets, some agencies require a legal description of the site on the drawings. Reference details often find their way into the project manual. And symbol keys and abbreviations can go either way.

As a result, corollary rules have also developed: Use consistent terminology; Double-check cross-references; Eliminate duplication of information and thereby the source of ambiguity and conflict; Adequately describe everything somewhere. Both common sense and the courts have always demanded documents without gaps and overlaps of information.

Some types of information are more error-prone than others because of the temptation to "reinforce" them by repetition in both drawings and specifications. Special attention must be directed to schedules, lists of equipment characteristics, descriptions of furnishings, and similar items.

Much can be accomplished by preparing drawings and specifications concurrently. Give a copy of the draft specs to the job captain as soon as initial editing is complete. They will be a guide to proper terminology and the information that will eventually be a part of the project manual. Some master specifications include coordination instructions.

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Knowing that conflicts may occur in spite of all precautions, some standard general conditions establish the precedence of one document over another. For example, the City of Chicago Department of Public Works stipulates that the drawings govern over detail specifications in the event of a discrepancy and its standard general conditions supersede both. The contractor is assumed to have bid on the governing requirement. Hopefully, it is the best one for the project. Not all conflicts are discovered during the bidding period, however. Even when bidders uncover them, they are sometimes quietly held in abeyance for later negotiation.

A more rational approach to conflict resolution is found in AIA Document A201 "Conditions of the Contract for Construction." It states that all documents are complementary and the architect is responsible for clarification of them in case of ambiguity or omission. The only thing left to resolve is the cost and time difference of the two requirements. They are handled by change order. As might be expected, contractors favor this approach except when specifiers add the phrase "it will be assumed that the Contractor has bid on the more expensive of the two options."

The traditional relationships between drawings and specifications still apply, of course. But computer-aided drafting promises to alter some of them radically soon. Revision of drawings is suddenly easy. Schedules can be generated automatically. Lettering and notation are faster. Master notation for drawings eventually will be stored in the CAD system and directly tied to the master text for specifications. Concrete "sealer" in the specifications will no longer appear as "hardener" on the drawings.

For a look at future changes in the relationships between drawings and specifications, watch for Page Highfill's article in the October 1984 issue of P/A. [William T. Lohmann]

William T. Lohmann, *AIA, FCSI, is Specifications Manager for Murphy/Jahn, Chicago.*

Using key performance indicators

All architects and engineers must remain competitive and maintain the quality of their work if they expect to stay in business. The problem that many firms face is knowing how to be competitive. Where do they draw the line at giving extra service at little or no cost? What is a reasonable fee? What fee can the firm afford to do the work for?

Unfortunately, many firms do not have the information to determine if they are making a reasonable profit, much less if they are competitive in their fees and project budgeting. One firm was recently audited by a government agency in order to determine the appropriate overhead rate for calculating the fee for a project, only to find that their financial condition was so poor that according to generally accepted accounting practices (GAAP) and government regulations, the agency could not legally award them the contract. The firm's principal was unaware of the problem.

Most large firms and firms that have structured a business office to support their practice use five key indicators to determine their financial health: ***net profit, utilization, net multiplier, overhead, and technical hourly rate.*** Effective management starts with the monthly monitoring of these performance indicators; goals should be set for each, and strategies planned to balance the firm's profits with its service and pricing.

The first step for using these indicators is to make sure the firm is measuring the performance factors correctly. The most important and most often miscalculated figure is the firm's direct labor. Contrary to what many believe,

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this is not the total technical staff's payroll, nor does it include direct fringe benefits or mandatory taxes, such as employer's FICA. Direct labor is only that portion of actual salaries of all employees (including principals), on an hourly basis, that are chargeable to projects, whether billable or not.

The key indicators are measured on the accrual basis of accounting. Simply stated, the firm's income statement should include all work underway, even if the firm has not billed for it yet. It should also include all invoices the firm has received from printers, consultants, and other vendors, even if the firm has not paid them yet.

Once the firm's accrual basis statement has been created, and the direct labor is properly determined, the key performance indicators can be calculated (see table, right).

The proper balance between these key factors is critical to the success of any firm. Many firms balance them unknowingly. Most firms, however, do not know where they stand financially or what they can do to increase their profit.

A firm must first determine where it stands in relation to other firms. My own experience, supported by recent surveys conducted by the AIA and PSMA/PSMJ, has shown that a firm will be well balanced and reasonably profitable at the following rates:

Net profit	16.7%
Utilization	70%
Net multiplier	300%
Overhead	150%
Technical hourly rate	$12

Since each factor depends on the others, minor adjustments in one area can bring major improvements in another. For example, the net multiplier factor of 300 percent is related to the average hourly rate and number of hours spent on specific projects. If a firm negotiates higher fees or reduces the amount of time spent doing the work through the use of computers or improved project management, the net multiplier will increase. Very efficient firms have multipliers of over 375 percent, with potential profits of over 35 percent. The higher the net multiplier, the higher the net profit, if all other factors remain unchanged.

Measuring these key indicators each month also greatly improves a firm's ability to respond to a change in its performance. If, for example, the profits and the net multiplier drop in one quarter, the utilization factor might have increased too much by overstaffing projects, or the average hourly rate might have increased by hiring too many highly paid people. For the firm that tracked the indicators each month, the answer would be apparent, and its chances for survival much improved. [Gregory B. Putnam]

Gregory B. Putnam, *AIA, is an architect and the founder and president of Putnam Management Consultants, Inc., Oakland.*

Net profit	= Net income / Net fees	= %	(Net profit as a percentage of net fees)
Utilization	= Direct labor cost / Total labor cost	= %	(Chargeable labor as a percentage of total labor)
Net multiplier	= Net fees* / Direct labor	= %	(Net fees as a percentage of total direct labor)
Overhead	= Total expenses / Direct labor	= %	(Overhead and direct project expenses as a percentage of direct labor)
Technical hourly rate	= Direct labor / Total chargeable hours	= $	(Average hourly rate for labor charged to projects)

*Net fees are the firm's service fees exclusive of consultant fees and direct expenses such as reimbursable or nonreimbursable printing or travel.


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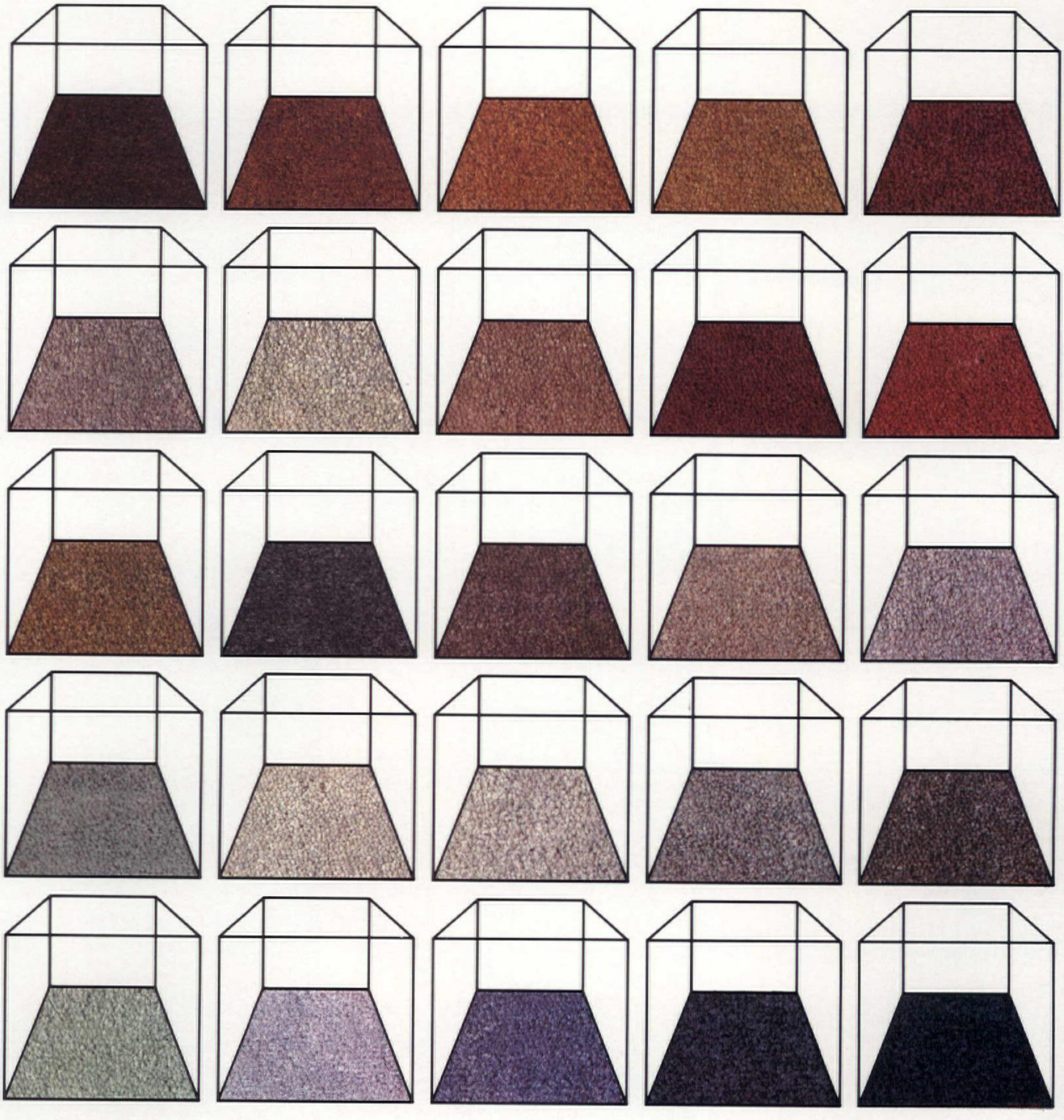

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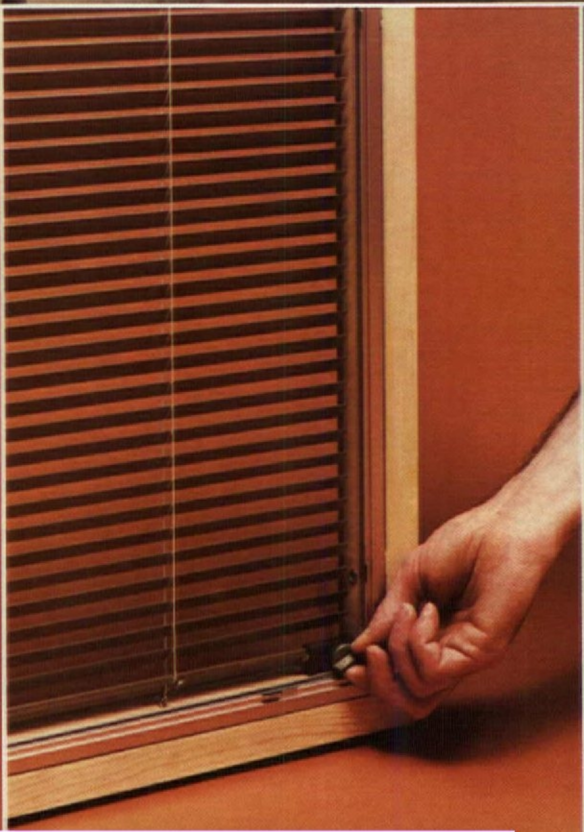


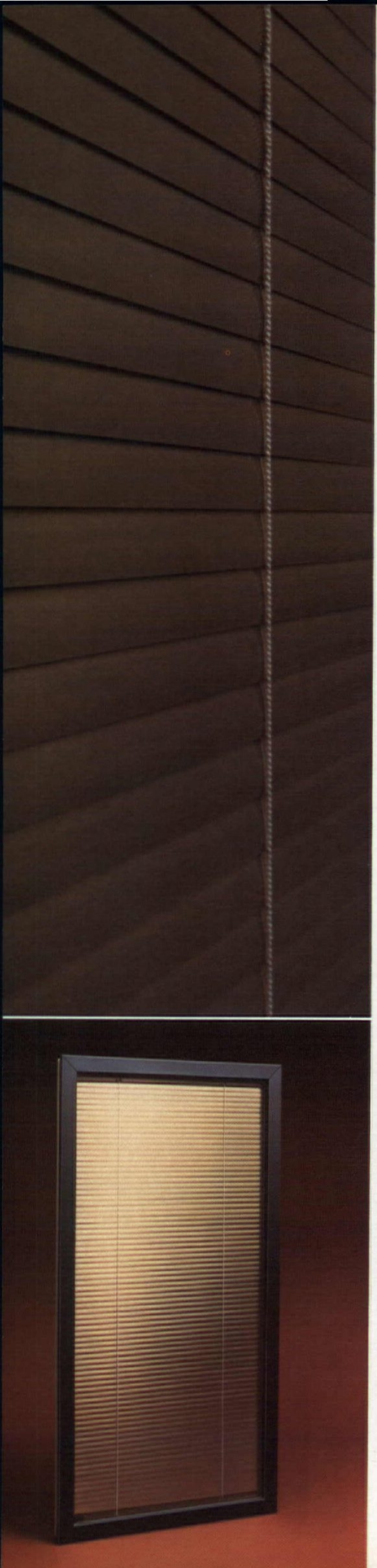

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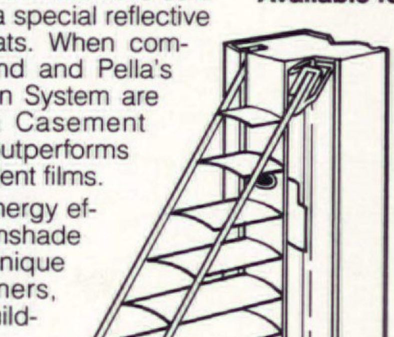

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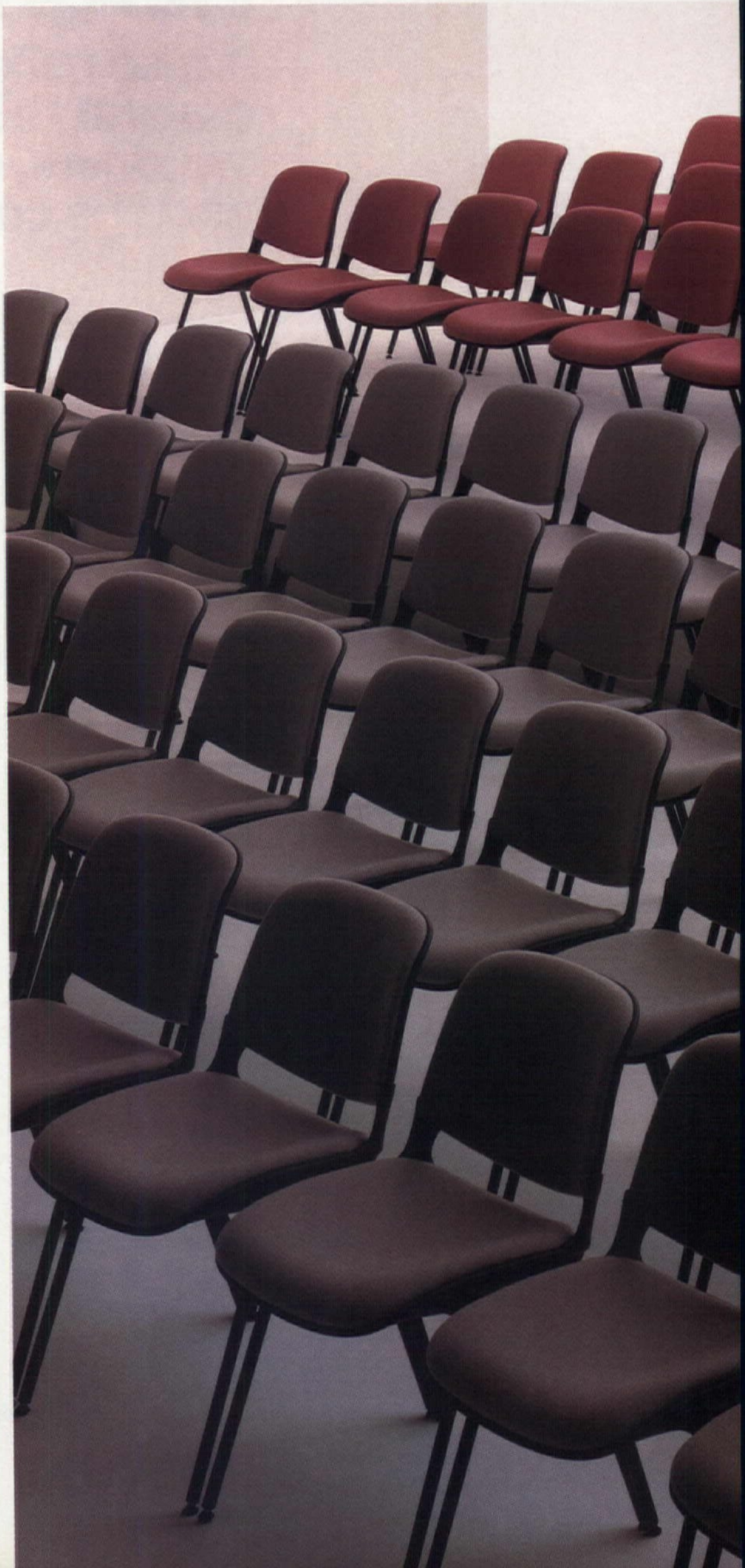

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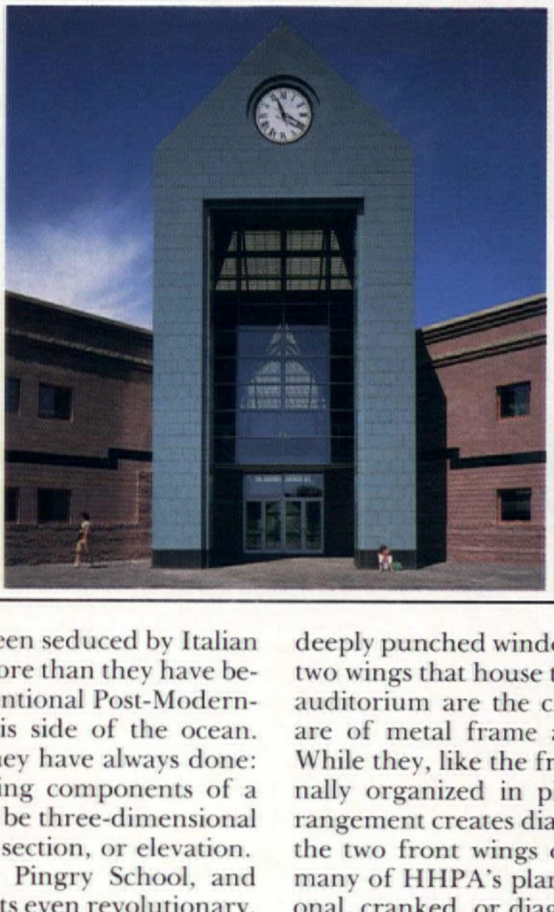
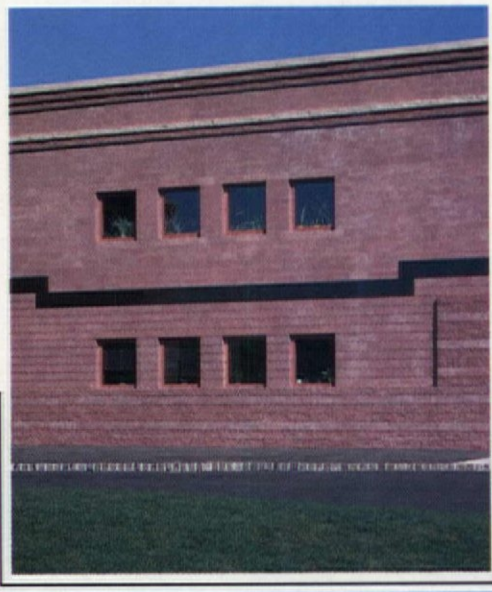
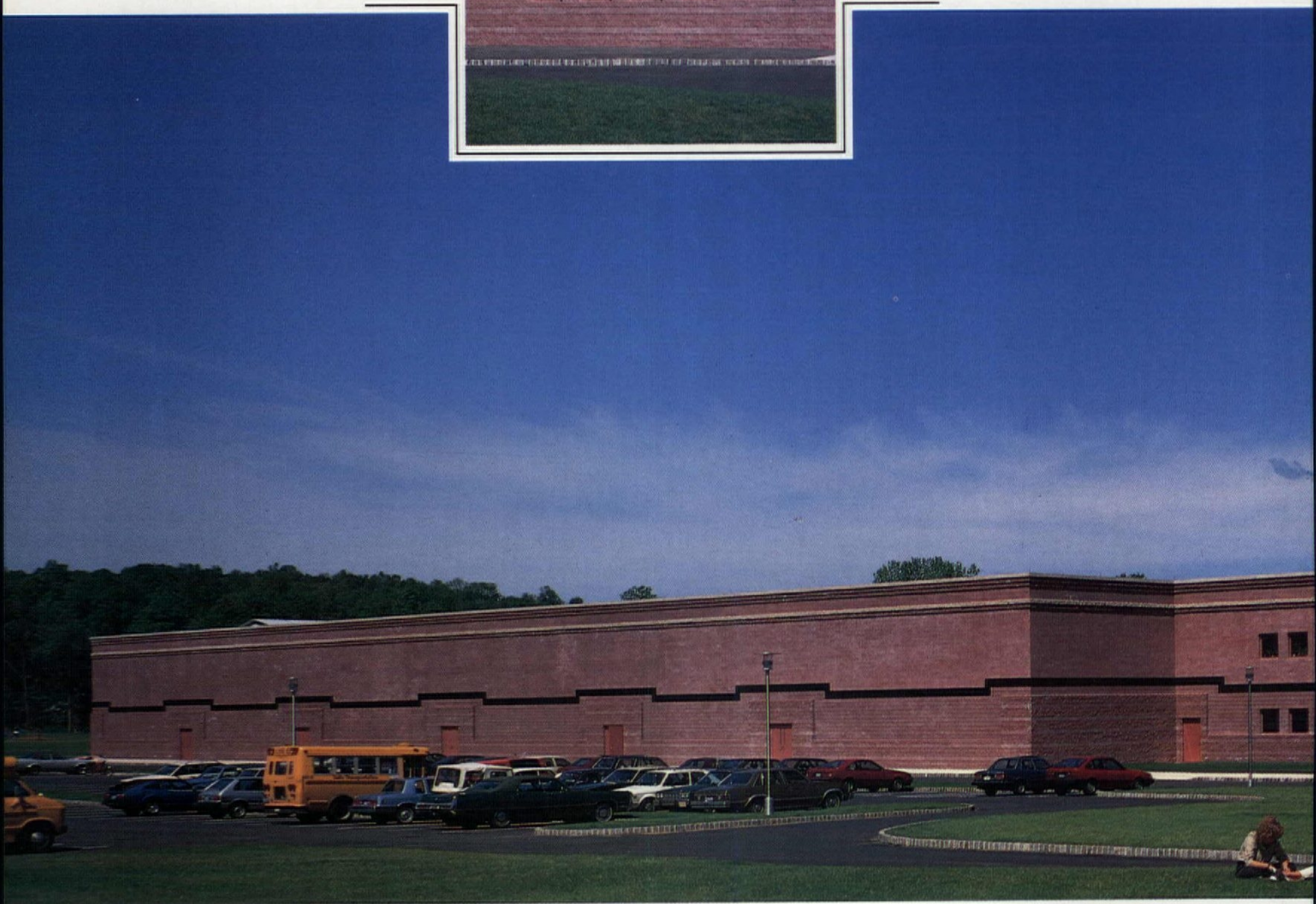


On first sight, the most striking feature of the new Pingry School in Bernards Township, N.J., is its entry. This two-story-high portico clad in aqua terra-cotta, with a clock in its pediment, reminds one more of what might be expected of a building by Aldo Rossi than of one by Hardy Holzman Pfeiffer Associates. Rest assured, though, that by employing the currently popular aedicule, even in this stripped-down version, HHPA have not been seduced by Italian Neo-Rationalism any more than they have become attracted to conventional Post-Modernism as practiced on this side of the ocean. They are doing what they have always done: collaging and juxtaposing components of a building, whether these be three-dimensional forms or parts of plan, section, or elevation.

What is different at Pingry School, and perhaps for the architects even revolutionary, is the scale at which this activity takes place. It occurs at the scale of the entire building, revealing the semidetached portico, the entire front portion of the building, and the entire rear portion as three completely separate units. Each is articulated at a scale different from the others, and in materials (and consequently in some construction techniques) dissimilar from each other.

The overscaled steel-framed entry, faced with terra-cotta tile, stands at the vertex of the main wings of the building (see plans, p. 68), which are at right angles to each other and which are constructed of steel frame and red split-faced concrete block with only a few, deeply punched windows. At the back of these two wings that house the athletic facilities and auditorium are the classrooms. Their wings are of metal frame and are clad in metal. While they, like the front wings, are orthogonally organized in plan, their sawtooth arrangement creates diagonals where they meet the two front wings of the building. Unlike many of HHPA's plans, in which the orthogonal, cranked, or diagonal are superimposed or closely integrated with each other, here one barely seeps into the other. Where they do



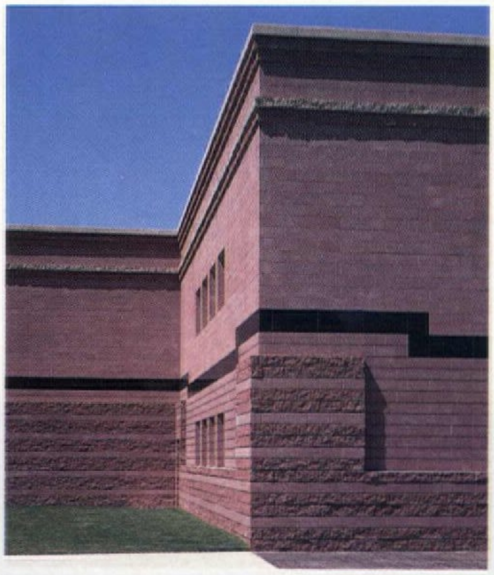


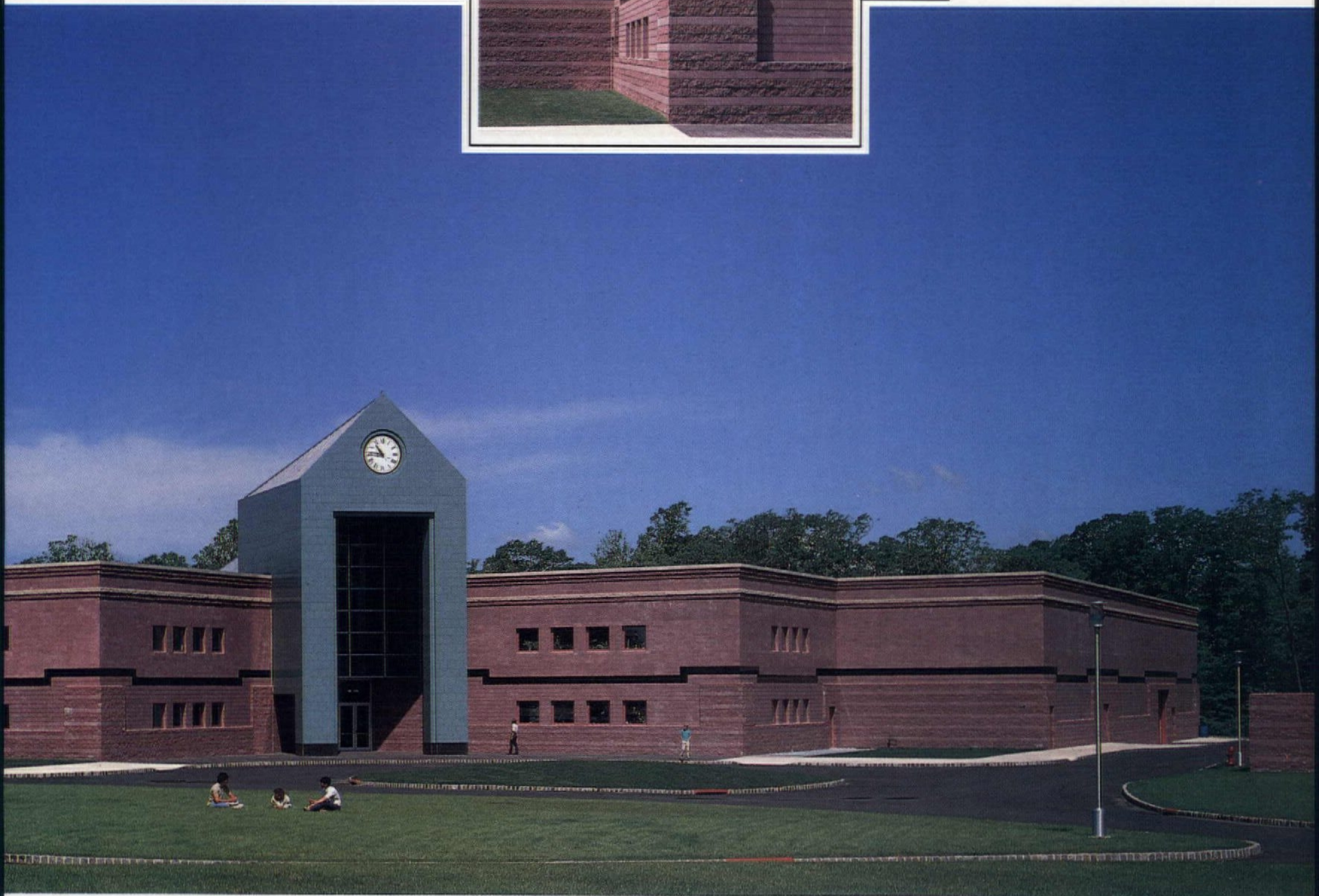
This portico of the Pingry School (right) is clad in aqua terra cotta, but it and the massive split-face concrete block wings flanking it have been detailed with some Classical motifs to maintain an association with the school's former buildings. A primary reason Pingry moved to the countryside from town was to be able to expand its extensive athletic facilities. The patterned curbs are not the architects' choice.

meet, the residual space has been used to great advantage for (much used) commons areas.

The three main parts of the building—the entry, the front wings, and the back wings—have, then, been clearly identified and separated from each other in terms of scale and materials, and are further distinguished from each other with respect to their plans. Why, one could ask, was this done; and does it really have anything to do with the function of the school? To answer these questions, one needs a little history of Pingry.

The school was founded over 120 years ago in Elizabeth, N.J., but since its beginnings, it has had a number of different homes. Each, however, had some classicized elements,



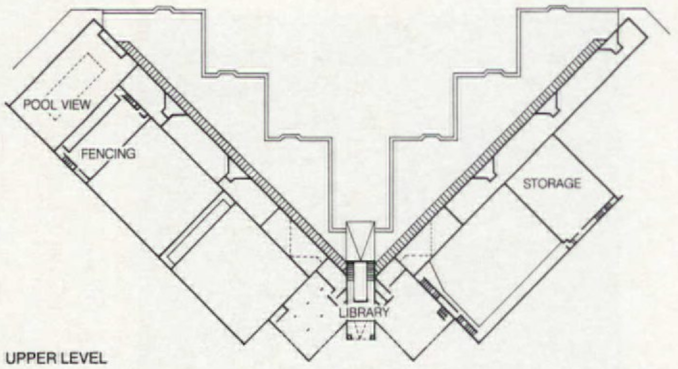


which had become traditional. The last building was a 1920s pseudo-Georgian structure with a Classical portico and tower. "The school did not want to give up all of its associations from the past," notes Norman Pfeiffer, which can explain the red masonry and the entry portico, but not the latter's scale. This is explained by the fact that this one element must "anchor" the 350-foot-long walls flanking it and act as a "sign" from the approach road, which is about 1000 feet away.

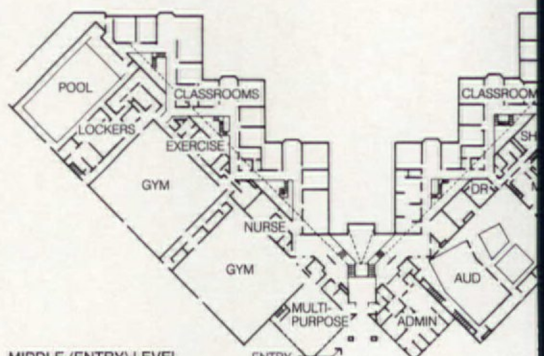
The large spaces

One of the reasons Pingry moved out to the country was to be able to expand its athletic facilities, which it was not able to do in the

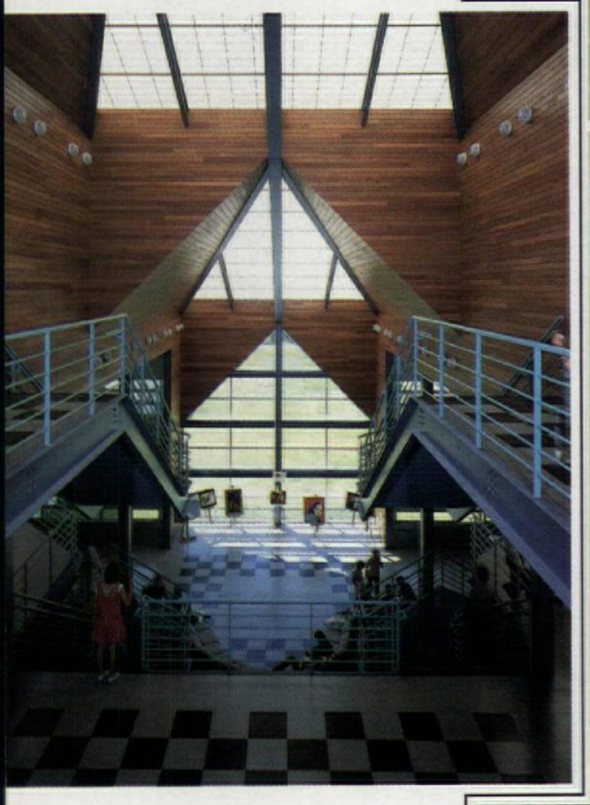
After entering the portico (previous page), one arrives at the middle level of the three-story school, where stairs lead either to the ground floor and its commons (below left), to all other horizontal circulation (below middle), or to the top-level library (below right).

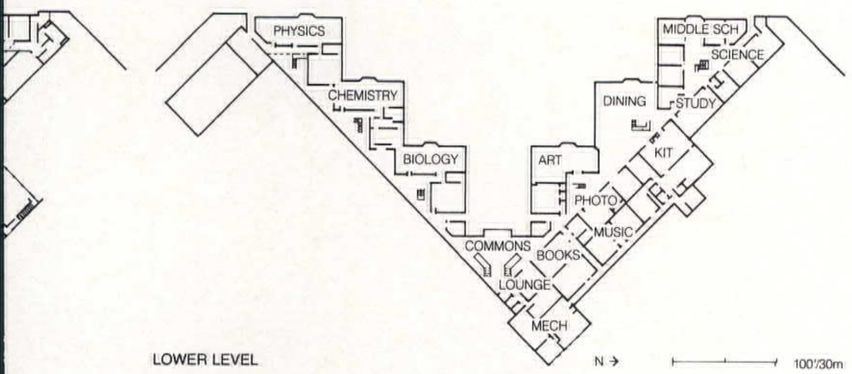


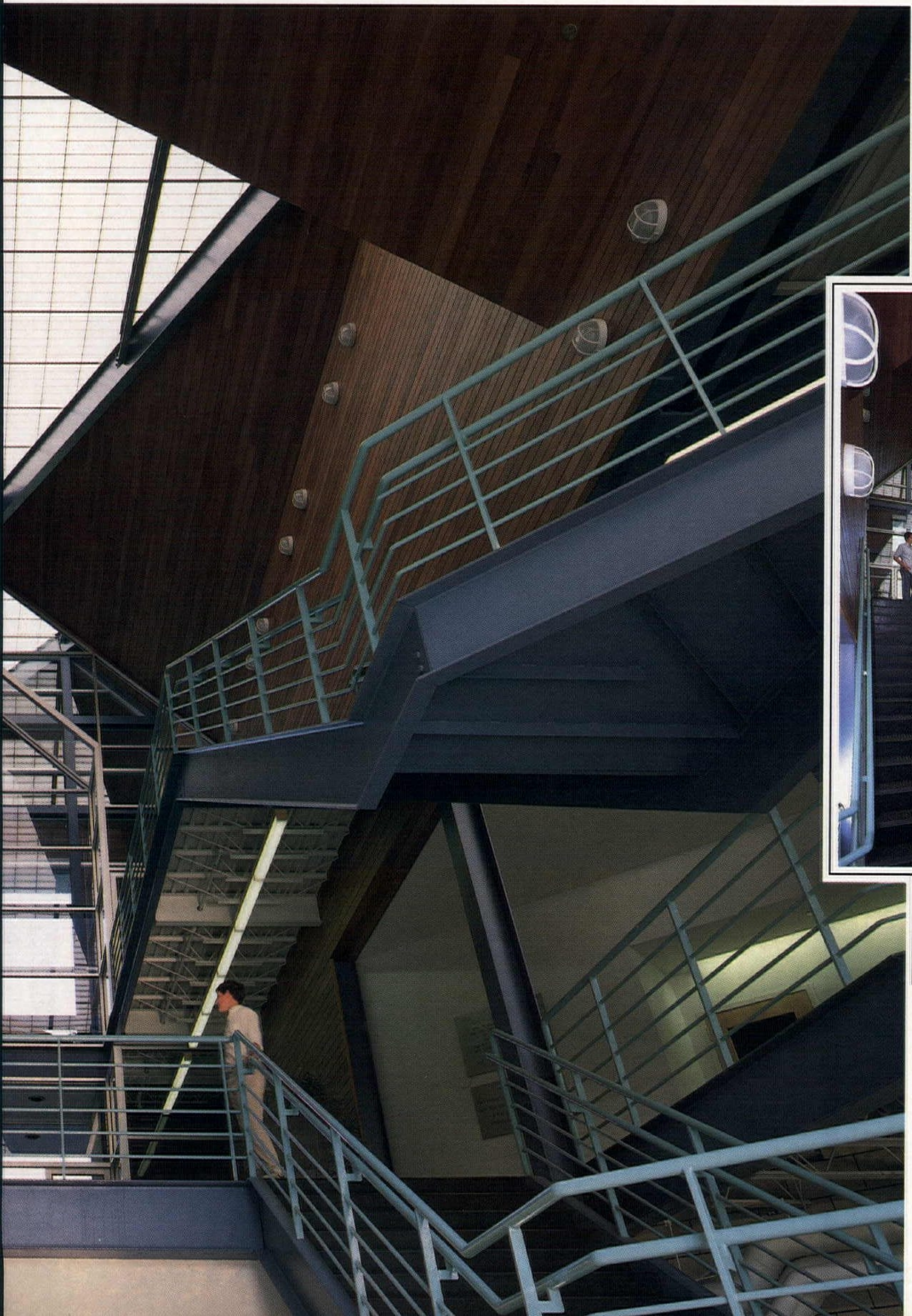
UPPER LEVEL

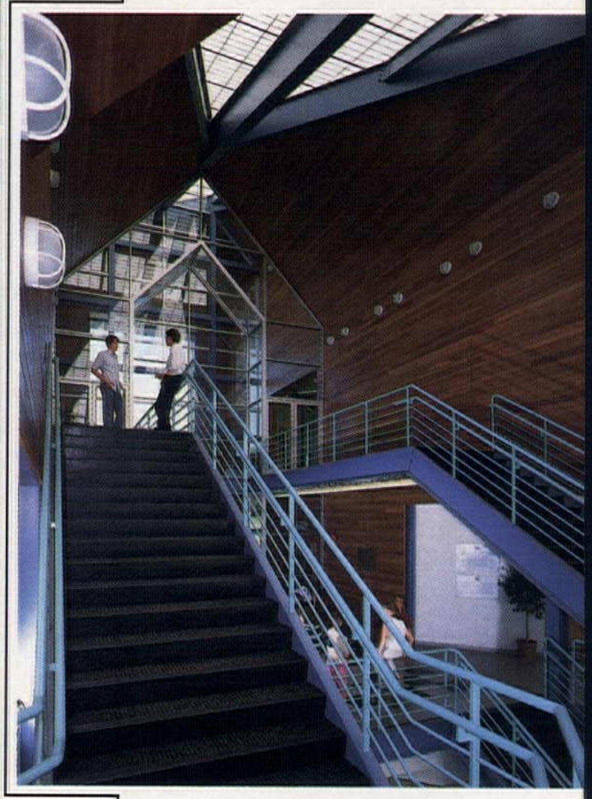


MIDDLE (ENTRY) LEVEL




PHYSICS
CHEMISTRY
BIOLOGY
COMMONS
LOUNGE
MECH
BOOKS
MUSIC
PHOTO
ART
KIT
DINING
STUDY
SCIENCE
MIDDLE SCH
LOWER LEVEL
N →
100'/30m



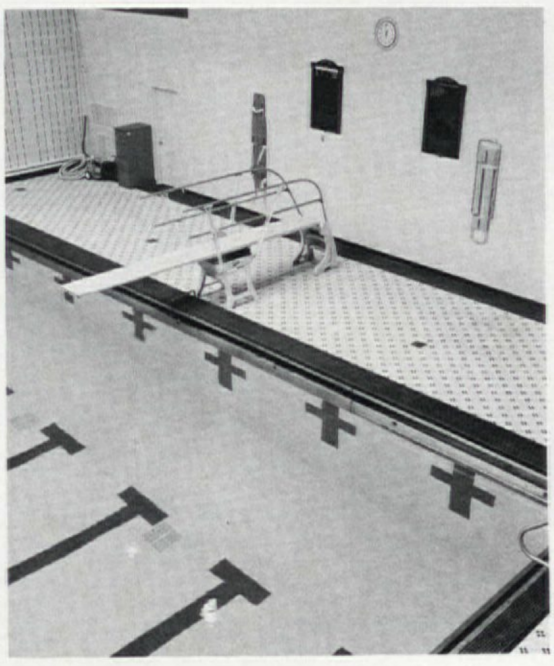


The mid-level circulation spine (below left and far right) zigzags across the back of the front wings, and small gathering areas are made in residual spaces between the front and back wings. Where the mid-level circulation spine encounters a corner, windows are cut to provide direct vision (seen at rear of photo, far right).

previous quarters. Because the school had traditionally emphasized sports and wished to reinforce those activities, it needed more space than would be normal for its 650 students. In addition to the 192 acres the school now has for its extensive activities in baseball, football, tennis, soccer, field hockey, and softball, it also has two very much needed large gymnasiums, an Olympic-sized swimming pool, exercise and weight-lifting rooms, and a fencing room.

These functions, and the other large-space areas (for the auditorium and maintenance) have been placed in the large-scaled wings of the building flanking the entry. On the outside, the red concrete block has been used in a combination of smooth and split-face to create a rusticated base. Above that, mortar joints are raked horizontally, to emphasize that dimension, up to a black granite band indicating a separation between two levels (that in actuality may or may not exist). Above that, smooth block runs up to a red and buff rough-faced stringcourse, and then to a similarly treated cornice. All of this Classical detailing, except for that in granite, is accomplished with standard concrete block.

The interior walls of these wings, that is, those facing into the circulation spine, are clad in acoustical ceramic tile, as are those around the pool. The spaces, though, are straightforward. The auditorium, however, is not, but its complex and intelligent plan bears witness to the firm's long experience in theater de-



David Morton

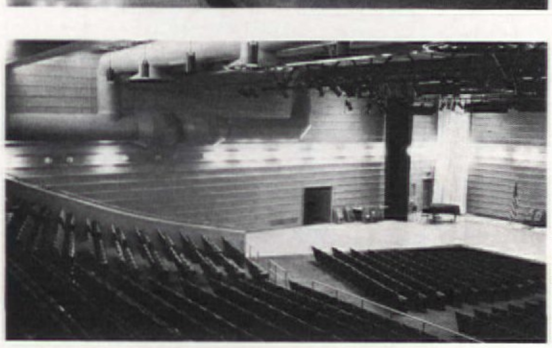
A six-lane swimming pool (facing page bottom) and gymnasiums occupy most of one front wing, while the large auditorium (bottom) occupies most of the other. It is actually entered (top photo) across a side stage, which continues around to the front of the room (bottom photo). On the wall opposite the side stage is a mezzanine, and these two elements give great flexibility to the use of the space.

sign. Its angled side entry serves both as access to the orchestra seats and as a side stage. Opposite, a mezzanine for additional side seating or other uses looks back. "This very asymmetrical organization," Pfeiffer explains, "makes the room less formal but gives it more variety and flexibility, which a director can use to great advantage."

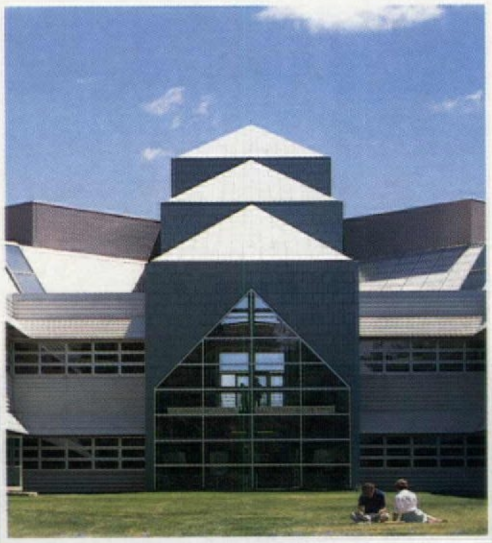
The classrooms

The metal classroom wings are sawtoothed across the back of the massive concrete-block front wings. They are broken down in scale by being articulated as two zigzagged strips whose corner edges barely extend into the backs of larger wings. At the entry (middle) level, a hall parallels the line of the inner zigzag, but where it goes around corner rooms, the architects have simply cut windows in the rooms' corners (at end of middle hall, photo, right) so one can always see what's ahead. Running in a straight line above the hall, shed-like Kallwall and clear glass skylights bring natural light into the lowest level's communal spaces.

In contrast to the heavy masonry and Classical detailing of front wings, the rear wings are light, metal-framed, and clad in white painted metal with the same material used as awnings over operable, ribbon industrial sash. In one direction, bay windows look out over the green fields to the woods. One is unprepared for this; you simply do not expect to find a white metal-clad industrial building at-

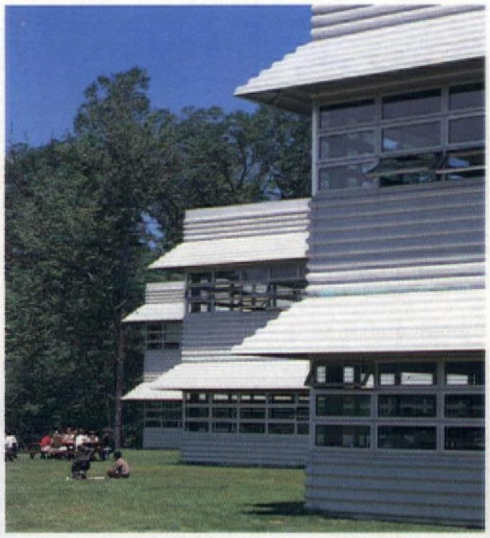


Photos: David Morton



The back of the school (above) is completely different from the front. Although both are structured by steel framing, the back is entirely clad in metal except for the main circulation hall, which is clad in the same terra cotta as the front entry portico. Awnings over the ribbon sash are of the same material as the siding, but simply turned up and supported by metal brackets.

tached to the back of what looks like a red stone building with Classical elements. The shift in scale is also a shock. But surprisingly, all of this somehow seems very right. In its contrasts, complexities, and most of all in its clarities, one can sense that this building represents a direction HHPA has been leaning toward for some time. In dealing with the idea of collage at the building scale, rather than at the scale of parts or details, it writes big things the firm has been writing small for a long time. It may not indicate a new direction in their work, and in that sense be a pivotal piece. But it could in any case become a landmark in their *oeuvre complet*.
[David Morton]



Project: *Pingry School, Bernards Township, N.J.*
Architects: *Hardy Holzman Pfeiffer Associates (Norman Pfeiffer, partner in charge; Stephen Johnson, Victor Gong, project managers; Jack Martin, construction administrator; Raoul Lowenberg, field architect; Ann Benson, Carol Berens, Jaime Fournier, Theron Grinage, Steven Kirk, John Leggett, John Lowery, Henry Merkin, Scott Sullivan, architectural team; Darlene Fridstein, Monica Morrow, interiors team).*
Client: *Chairman, board of trustees, Pingry School.*
Site: *194 rural acres.*
Program: *plan and design new building and grounds for 650-student prep day school to include 36 classrooms, 7 laboratories, a 730-seat auditorium, a 300-seat dining room, and extensive indoor and outdoor athletic facilities.*
Structural system: *concrete foundation, footings, slab-on-grade; steel frame, steel joists, steel deck.*
Major materials: *split-faced and ground-faced colored concrete masonry units, terra cotta, preformed metal siding (see Building materials, p. 138).*
Mechanical system: *oil-fired boiler, hot-water perimeter radiation, forced-air ventilation.*
Consultants: *Stanley H. Goldstein, structural; Jansen & Rogan, mechanical; Jules Fisher Associates, Inc., auditorium stage equipment; Jules Fisher & Paul Marantz, Inc., architectural lighting; Peter George Associates, Inc., acoustical; VEP Associates, civil; Converse Consultants, geotechnical; Romano/Gatland, food service.*
General contractor/Construction manager: *Torcon, Inc.*
Costs: *$18,250,000; $78 per sq ft, except site work and equipment.*
Photography: *Norman McGrath, except as noted.*

Charleston Place
Boca Del Mar, Fla.

A venerable town pattern reemerges

Despite code restrictions and contrary expectations, Andres Duany and Elizabeth Plater-Zyberk revive traditional forms for a condominium development.

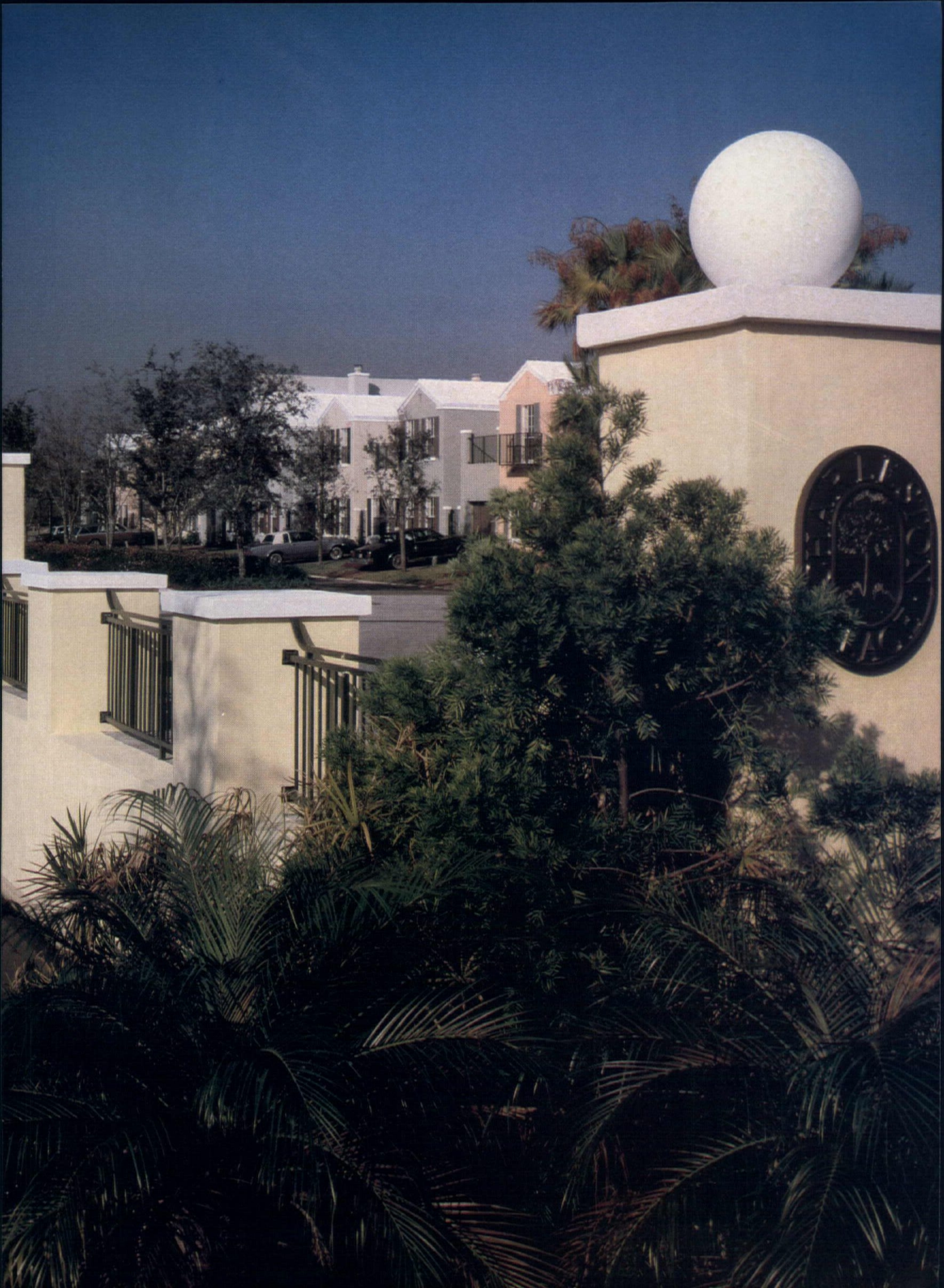
In a region where condominium houses tend to be wood-clad asymmetrical forms with shed roofs, and to wend their way romantically in staggered groups through random clumps of trees, Charleston Place is an anomaly. And yet the images of Charleston Place—regular linear street, symmetrical gabled houses, façades that vary only slightly, private gardens, and back lanes—are likely long ago to have been implanted upon the minds of those who are now migrating to southern Florida from older, more northerly cities.

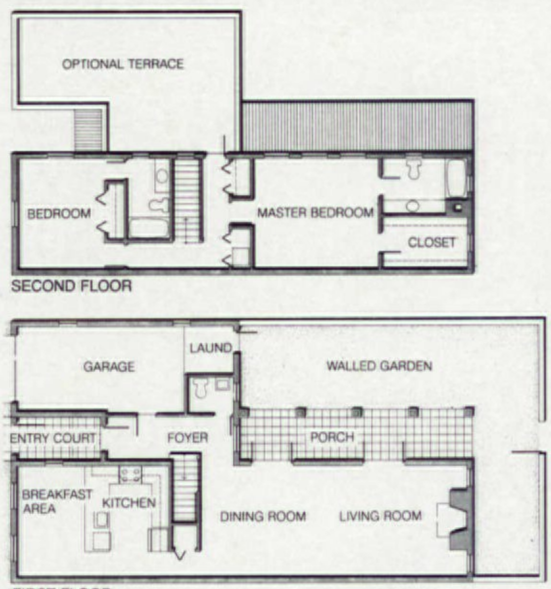
When architects Andres Duany and Elizabeth Plater-Zyberk were commissioned to design the 110-unit condominium project west of Boca Raton, they visited developments in the area and concluded that these straying "sons of Sea Ranch" had two undesirable characteristics: The landscaping included no private gardens; and the bulky houses, abutted and slightly shifted against each other, were disappointingly dark internally.

The architects decided to return to the lessons of the traditional American small town, and to use the narrow Charleston, S.C., townhouse with private garden as the housing model. The traditional town, they explain, has specific characteristics: an orthogonal street grid; housing types that are perceived as individual objects but which define the street corridor; and a landscape pattern that reinforces the form of the street. "But," they point out, "these elements have so long been at variance with the marketing principles of post-war development that they are proscribed by the zoning codes, and to build Charleston Place, we had to manipulate certain bureaucratic definitions." To avoid the street setback requirements in the suburban code, which virtually mandate garden apartments in parking lots if seven units per acre are desired, and to circumvent the ruling that forbids automobiles to back out of driveways directly into streets, the architects labeled streets "parking lots" in the site plan, and the permit was granted. Making virtue of necessity again, Charleston Place's back mews filled a code requirement for "jogging tracks."

The settlement is entered via a bridge over a pond (drainage water is collected to form an attractive site boundary), and the bridge extends to the main boulevard of the town. Secondary streets in an orthogonal grid create six blocks, with housing on the four now complete. At the center of each quadrant are a pool and a poolhouse. At the south end of the site, the irregular lot shape is formally resolved by a crescent of townhouses (two of which are now being built) around a semicircular park with two gazebos.

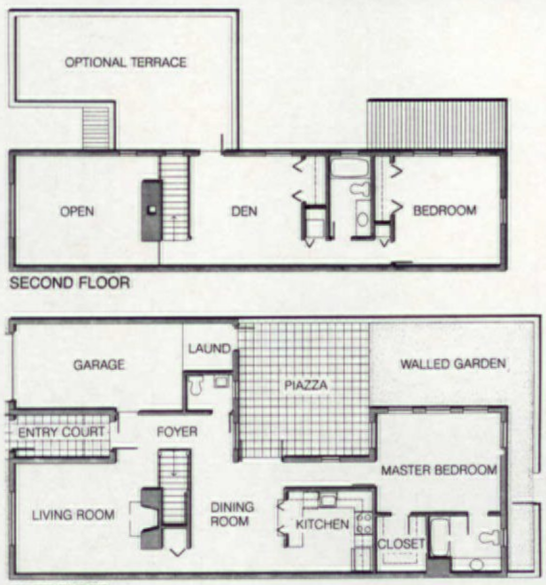
The entrance bridge (opposite page) extends into the main boulevard of Charleston Place, which is fronted by the gable ends of, for the most part, two-story units (right). A rhythm is created along the street by one-story deck-covered garages (sometimes converted by the owners into guest rooms) linking the units, and by two one-story units behind a single gable at the center of the block (not seen here). Colors are the result of the analysis of original Charleston colors, by a consultant.





SECOND FLOOR

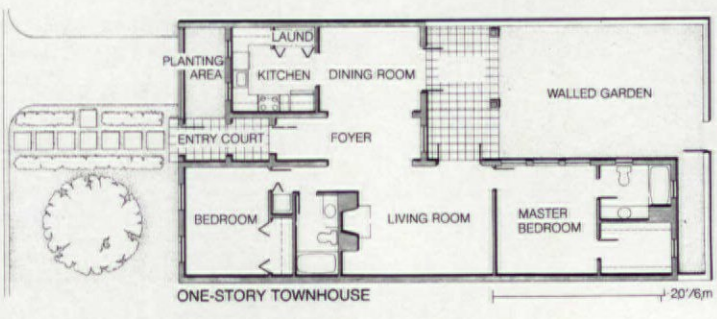
FIRST FLOOR
TWO-STORY TOWNHOUSE



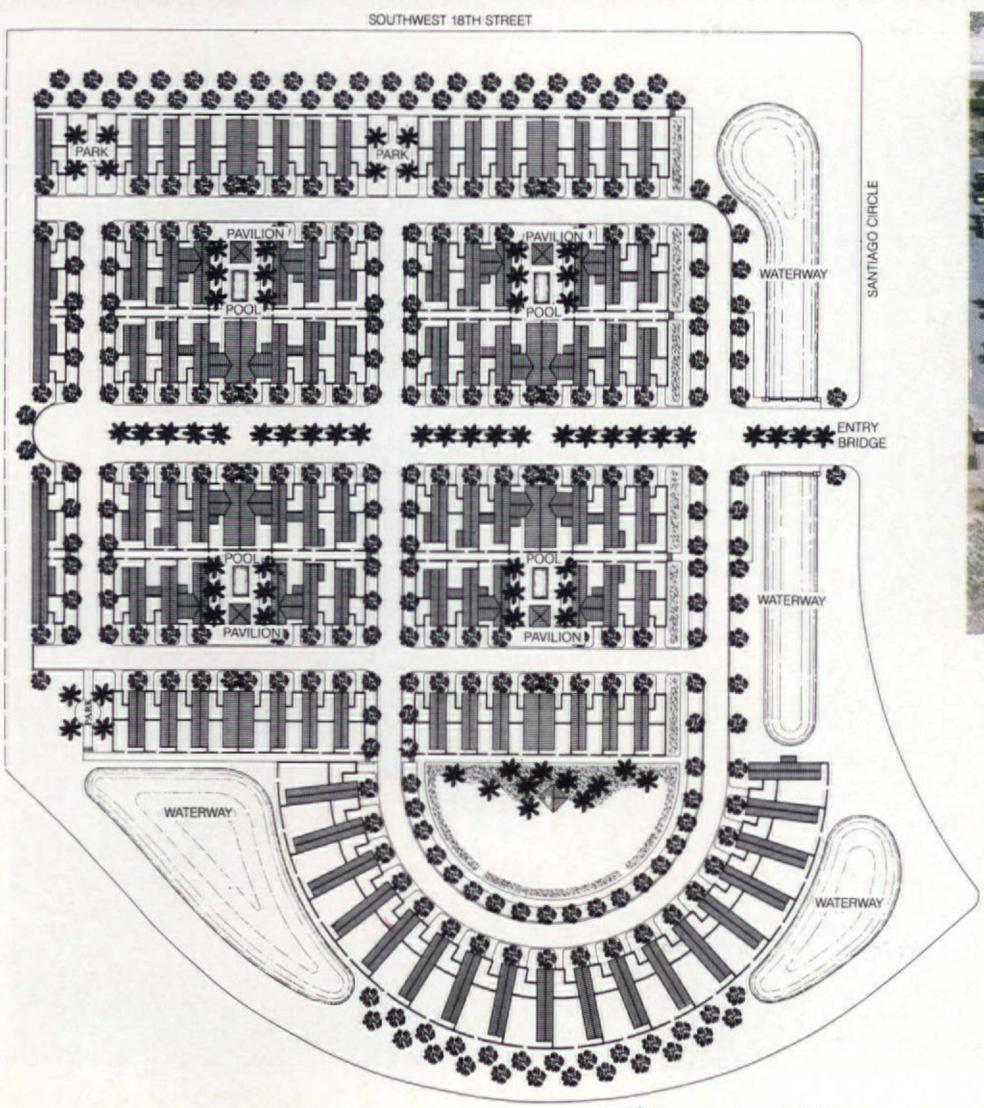
SECOND FLOOR

FIRST FLOOR
TWO-STORY TOWNHOUSE

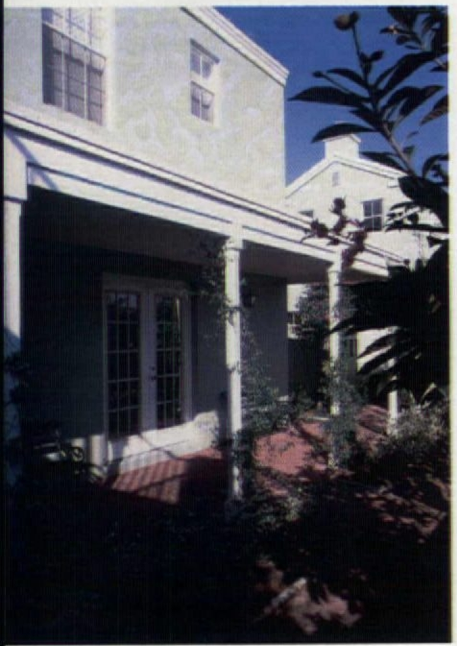
The long sides of the units (top) are most handsome, and form a strong composition with the flower-covered alleys that run through the centers of the blocks. Off the alleys are private walled gardens (see plans above), captured within the ell of the units. Sometimes, they have open galleries along their side (above); sometimes they are squarer in shape (right). There are five unit types in all, designed for different family groups.



ONE-STORY TOWNHOUSE


SOUTHWEST 18TH STREET
SANTIAGO CIRCLE
PARK
PAVILION
POOL
WATERWAY
ENTRY BRIDGE
N
100'/30m

The garden shown below has an open gallery along its side, reminiscent of its South Carolina precursor. The alleys behind the townhouses (below right) are romantic versions of jogging paths—a code requirement. Their dimensions result from studying the lanes in Coral Gables. While the planning is inspired by Charleston, the imagery is closer to the sunny atmosphere of Bermuda, as found most evocatively in the poolhouses (opposite).



"We don't believe in unfounded invention," says Duany. "We design by integrating our observations of precedents." As mentioned, the housing units are based upon the South Carolina prototypes, though lot sizes (about 30′ x 83′) are smaller, requiring adjustment of some major elements, such as stairs and driveways. The houses, for the most part two-story, have gable ends that face the street and are linked by one-story deck-covered garages. The house's ell encloses a private garden, lined by a covered gallery. The pastel-colored stucco walls depart from Charleston's wood imagery to reflect a sunny, Bermuda-like atmosphere, and the dimensions of the back alleys are borrowed from Coral Gables.

The subtle variety in elevations results from the variety in unit plans, a response to the needs of probable users: bachelors, families, retired couples. As the blocks were built in stages, the architects progressively refined wood trim and adjusted layouts. The interiors have wood floors and molding, but these details, as well as exterior lamps and fiberglass shutters, were specified by the client and his decorator. Says Plater-Zyberk, "While we had to relinquish control of these small matters, in the large issues, in the form and layout of streets and houses, our ideas prevailed."

In Seaside, a north Florida town for which they have designed the master plan and code, the architects have applied another lesson they learned from Charleston Place: they are leaving most of the buildings for others to design, so that real variety will result. In Charleston Place, with only one building type, consistency, they feel, goes a little too far.

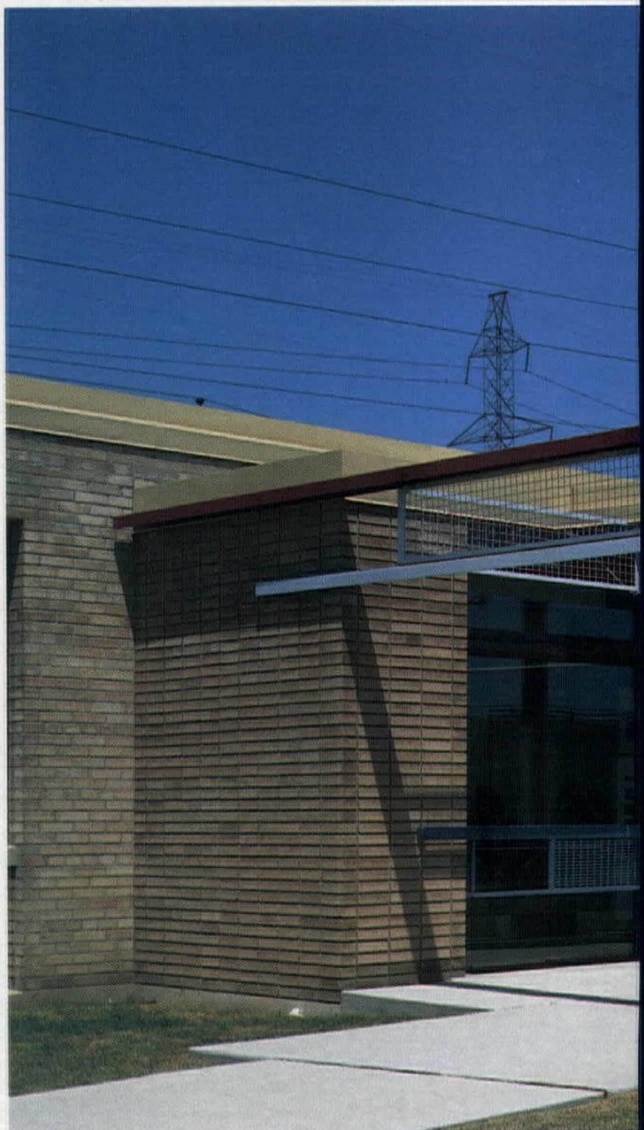
Already, some new housing developments in the Boca area are imitating the traditional look of Charleston Place, AIA chapter award winner. But the effect is only façade-deep. "We hope," say the architects, "that codes will begin to change, to allow the venerable town pattern to reemerge." [Susan Doubilet]

Project: *Charleston Place, Boca Del Mar, Palm Beach County, Fla.*
Architects: *Andres Duany & Elizabeth Plater-Zyberk, Architects, Miami, Fla. (Carlos Figueroa, Thomas Christ, job captains; Caridad Hidalgo-Gato, Dolores Benet, Maria-Elena Ortega, Patrice Marbin-Barrocas, Manuel Fernandez, project team).*
Client: *Richard O'Connell.*
Site: *irregularly shaped 16-acre superblock. Peripheral drainage canals. Flat site, no existing trees.*
Program: *110 housing units, five unit types.*
Structural system: *concrete footings, concrete bearing walls, wood trusses.*
Major materials: *stucco exterior, gypsum wallboard interior, cement tile roofs (see Building materials, p. 138).*
Mechanical system: *electric HVAC with heat recovery unit.*
Consultants: *Frank Bilbao, landscape. Linda Cornell, interiors. Santiago & Associates, structural. Martin & Vilato, mechanical. Conrad Schaefer, civil engineering.*
Costs: *$32 per sq ft, excluding site work and interior finishes.*
Photography: *Steven Brooke.*

Ontario Trucking Association
Rexdale, Ontario

At the crossroads

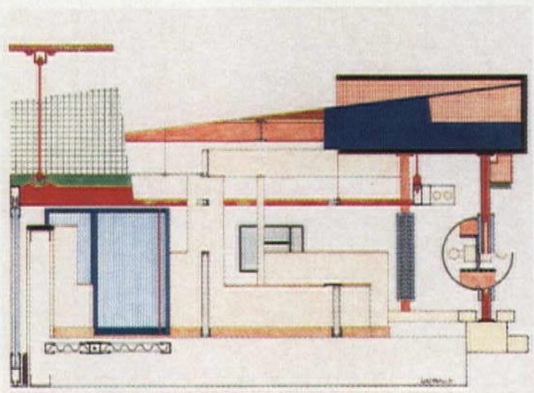
Baird/Sampson Associates restore a sense of place to a nondescript building caught between highways in suburban Toronto.



When architect George Baird was asked to renovate a mediocre 1950s building to provide more pleasant working conditions and to create a dramatic symbol for the Ontario Trucking Association, he decided to work with the existing window/wall configuration, but to alter the structure's relationship to the site. The building had originally been designed as an object within a lawn, but expanding highways had eroded the foreground, rendering it neither an object nor a street building.

To intensify the relationship to the streets, the architects created a virtual rectangle cranked at an angle from the building rectangle. The shifted rectangle is delineated by landscape elements—retaining wall, sidewalk, parking lot—as well as by an angular bay window in the executive office and, most strikingly, by a large corner sign and a new entrance portico—both collages of industrial materials. The shift is brought into the building by a funnel-shaped reception hall and an angled central ceiling structure.

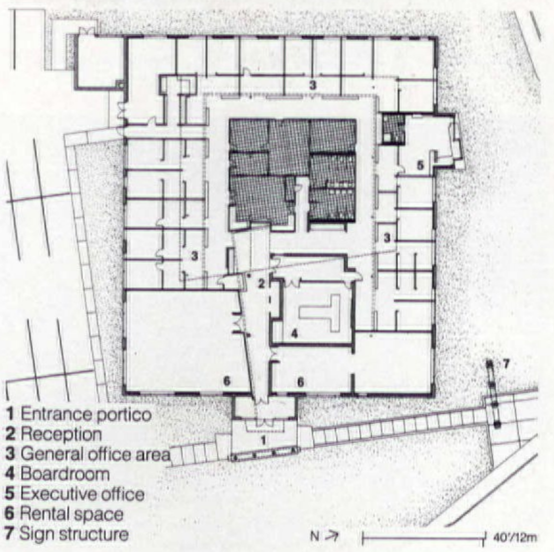
The architects worked delicately, and the orientation of the flatter landscape elements is more noticeable in plan than in a context of high-speed traffic on two arterial roads and an elevated expressway, with a high-voltage electric transmission corridor in the background. The large-scale elements, on the other hand, achieve an ideal balance between distant legibility and close-hand sensibility, as well as between the rough and the refined nature of truck design. The corner sign and the entrance portico with its false sign are collages using industrial iconography—corrugated metal, chain link, plumbing mountings, and most notably, heat shields from the exhaust systems of trucks. Given their scale, the signs form focal points upon the electric transmission system behind. In their relationship with the highway, one might say they learn from Las Vegas; their materials recall Frank Gehry's; their forms seem Constructivist (compositionally, not philosophically, says Baird). And the delicacy of their assemblage shows respect for the finely crafted items that trucks are, and by extension, respect for the members of the Ontario Trucking Association. [Susan Doubilet]



The tall sign and the entrance portico (bottom right and below) adjust the existing building to the orientation and scale of the surrounding highways and electric transmission corridor. These elements are part of a system that extends into the interior of the structure, as shown in plan and composite drawing (bottom left) by Detlef Mertins. The materials—corrugated metal, chain-link fencing—are appropriately tough and industrial, but the composition is refined, reflecting a respect for the finely crafted objects that trucks are. They, in fact, are represented by their heat shields, used here to surround the columns of both portico and sign.

Pat Bazelon

Project: *Ontario Trucking Association Building, Rexdale, Ont.*
Architects: *Baird/Sampson Associates, Architects, Toronto, Ont. (Project team: George Baird, principal; Detlef Mertins, associate in charge; Marc Baraness, Martin Kohn, Barry Sampson).*
Client: *Ontario Trucking Association.*
Site: *one acre of flat land at the intersection of two suburban arterial roads, bounded, as well, by an elevated expressway and a high-voltage electric transmission corridor.*
Program: *renovation of a single-story, 13,500-sq-ft building for association offices, with 2750 sq ft of rental space.*
Structural system: *existing steel frame, perimeter masonry walls, wood roof deck.*
Major materials: *structural and decorative steel; drywall; conventional suspended ceiling (see Building materials, p. 138).*
Mechanical system: *gas-fired hot water radiation system; electrically driven air-cooled air-conditioning unit with VAV distribution; pneumatic zone and room controls.*
Consultants: *Nicholas Rusz & Associates, Ltd., Consulting Mechanical & Electrical Engineers. Carruthers & Wallace, Ltd., Consulting Structural Engineers.*
General contractor: *Fairwin Construction Company.*
Cost: *\$460,000; about \$34 per sq ft.*



Peter MacCallum

Opposites attract

Skidmore, Owings & Merrill and Alan Chimacoff explore the expressive possibilities of energy conservation and explode several myths in the buildings at Enerplex.

Like two horseshoe magnets facing each other, the pair of office buildings developed by Prudential Insurance Company at Princeton's Forrestal Center research park have the same size, shape, and function but they represent opposite formal, aesthetic, and conservation polarities. They also have very different attractions.

The Enerplex project began with one grant given by Prudential to Princeton University's Center for Energy and Environmental Studies to study the feasibility of ice ponds for summer cooling, and with another grant to the School of Architecture and Urban Planning to study the formal and expressive implications of energy-conservation strategies. Alan Chimacoff of Princeton, and Skidmore, Owings & Merrill and engineers Flack and Kurtz were then commissioned by Prudential to design an energy-conserving speculative office building.

With many conservation strategies—and formal ideas—to explore, Chimacoff, and Raul de Armas of SOM, decided to design not one, but two smaller buildings. They studied several site plans and settled upon a scheme that oriented the two buildings north and south, facing each other across a narrow court, with a tree-shaded parking lot and a covered ice pond to their east. The buildings' opposite orientations forced each architect to pursue a different conservation strategy, which visually reinforced their philosophical differences.

The buildings nevertheless have several things in common. Apart from their similar height and shape, they both have large atriums, central light-slots, and extensive perimeter glazing for daylighting. They both cost about the same. And they both have suffered because of code requirements, most apparent

The two buildings at Enerplex are opposite in their aesthetic expression and in their approach to energy conservation. Alan Chimacoff's south building (left) is hierarchical in organization and Classical in character, with passive energy features. SOM's north building (below) is nonhierarchical in organization and Modern in character, with both passive and active energy features. The buildings face each other (bottom) across a narrow courtyard, whose urban quality contrasts with the rambling, suburban character of Princeton's Forrestal Center.

in the atriums that must remain unused to satisfy the code's maximum allowable floor area for the buildings' construction classification—a solution that penalizes more than it protects the tenants.

Polar opposites

What makes Enerplex significant, though, are the differences between the two buildings, and what those differences mean. The glass-enclosed north building, designed by Raul de Armas and Tom Killian of SOM, has an active solar collection system. In the winter, the south-facing atrium acts as a large collector. Fans draw hot air off its ceiling, pass the air through concrete storage pipes under the building, and circulate it through an 18-inch-wide double glass wall on the building's north, east, and west sides. In summer, night air flushes heat from the building's mass by circulating through the double wall, while the cooling system draws cold water from the bottom of the covered ice pack formed by spraying water into the pond during the winter. Active solar collectors on the roof serve the building's domestic hot water system.

In contrast to that active approach, Alan Chimacoff's south building conserves energy through passive means. The building's limestone-clad exterior allows for ample perimeter insulation, while its light shelves and clear glass transoms enhance perimeter daylighting. The unconditioned north-facing atrium, warmed by the sun from south-facing skylights, acts as a thermal buffer rather than a solar collector. A well-water heat pump, tied to an aquifer under the building, supplies both the heating and cooling systems. It's too early to judge which approach works best, but some Prudential representatives seem more optimistic about the simpler passive strategies.

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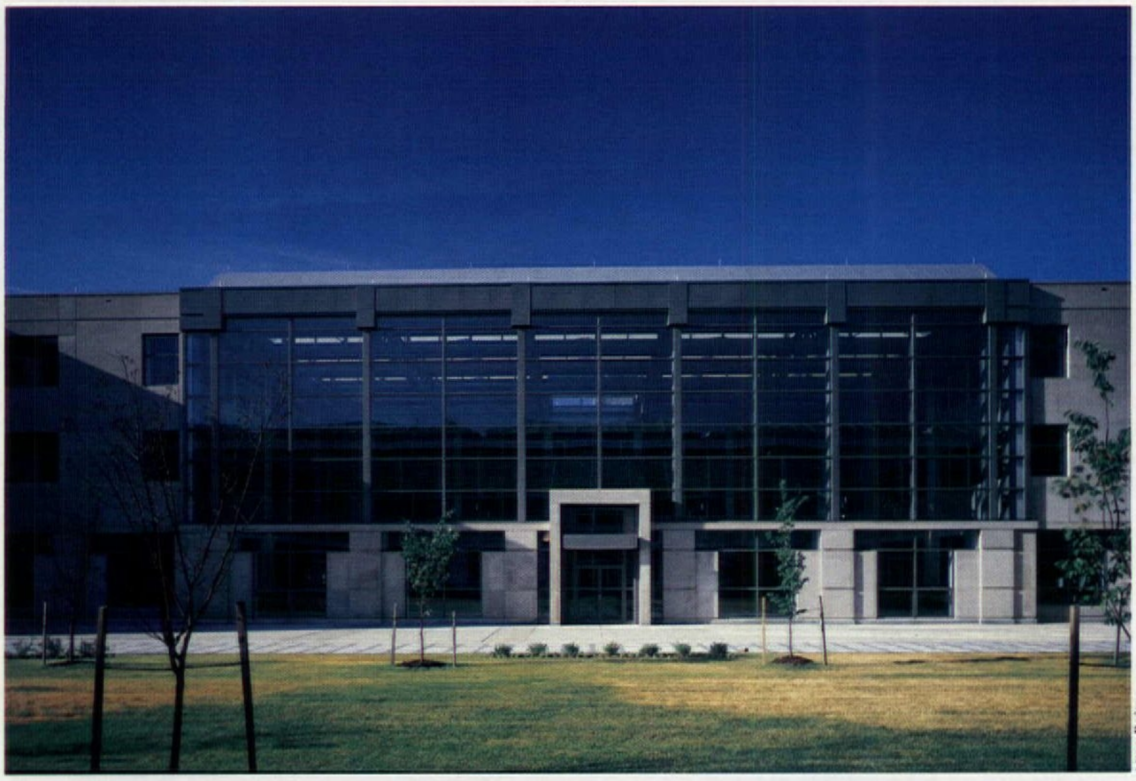
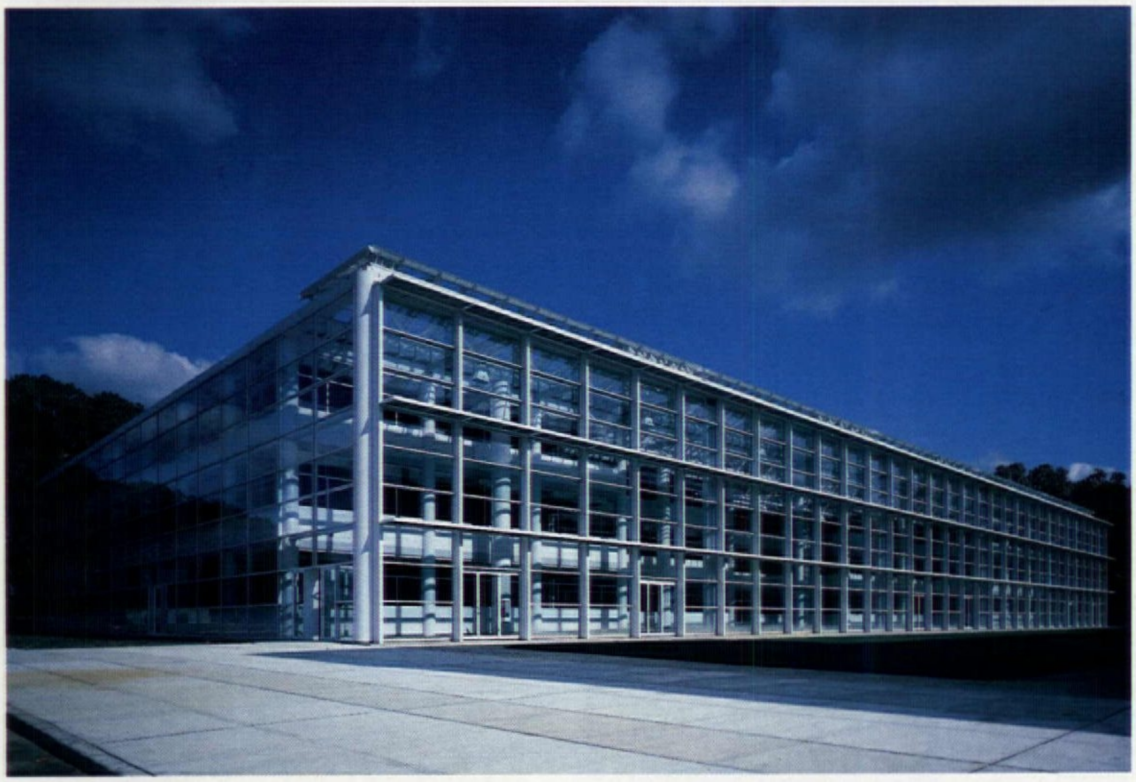
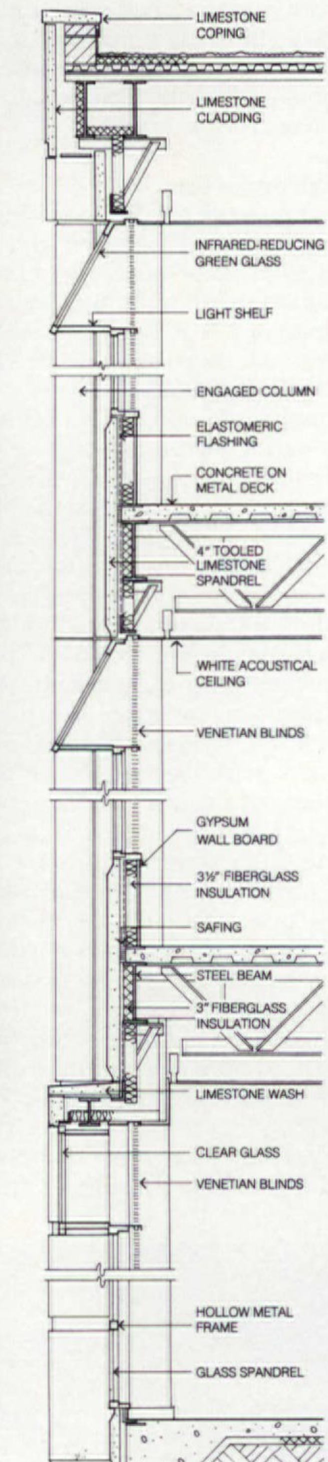


Otto Baitz





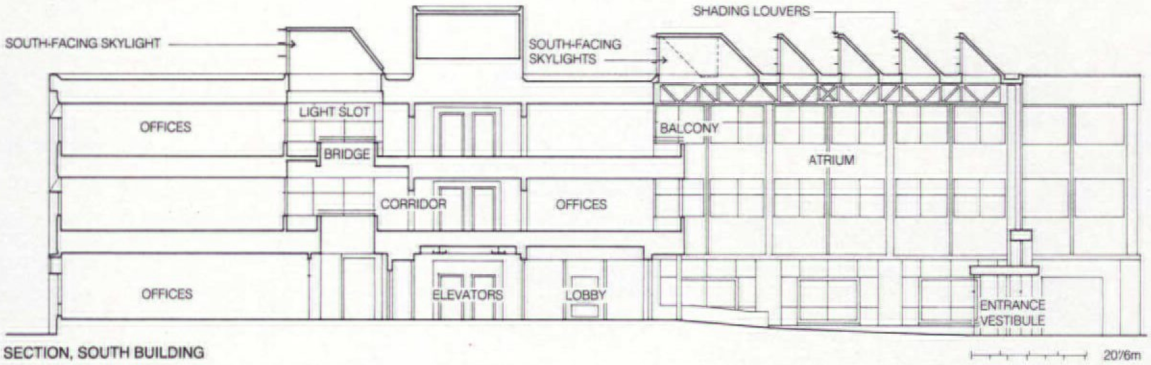
SOUTH BUILDING
SOUTH WALL SECTION

The buildings' interiors are also different in intent. SOM emphasizes the continuity of spaces by painting most surfaces white. That pervading whiteness not only increases the reflection of daylight within the public spaces, it underscores the architects' view that an office building should look like an efficient workplace.

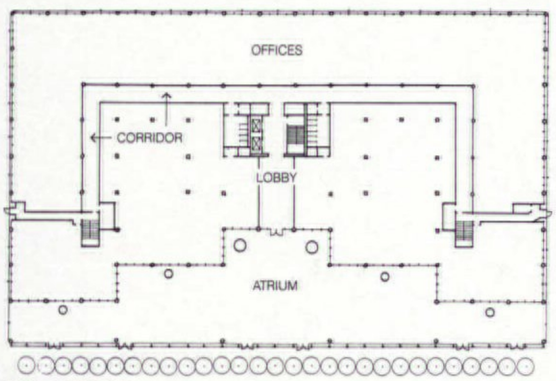
In the south building, Chimacoff emphasizes not the continuity but the hierarchy of spaces, distinguishing between supporting and nonsupporting surfaces by varying their depth and by painting them various shades of cream and earthen colors according to their importance. That articulation of elements has the effect of reducing the apparent size of the taller spaces, such as the atrium and light-slot, and reducing the scale of the lobby, with its colonnade and bowfront stair. Chimacoff further establishes a hierarchy among the offices. In the three-story light-slot, for instance, he has located the corridor balconies to the outside of the space, creating the illusion that the front offices form a smaller building within a larger one.

The same dichotomy between continuity and hierarchy is seen on the buildings' ex-

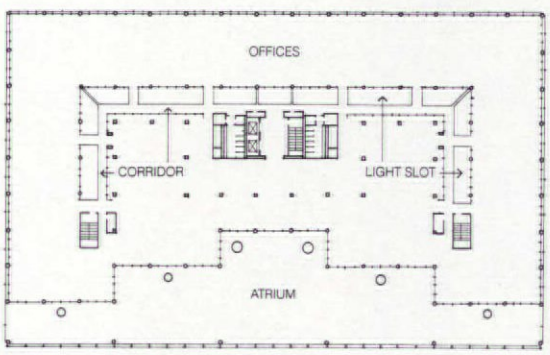
SECTION, NORTH BUILDING



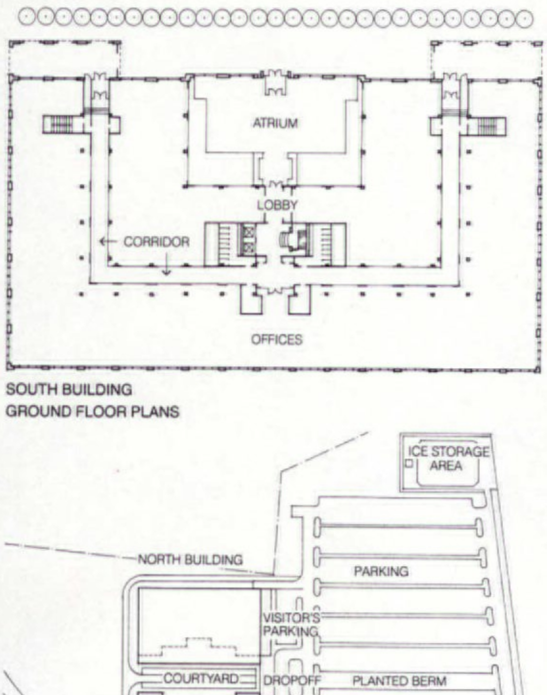
SECTION, SOUTH BUILDING



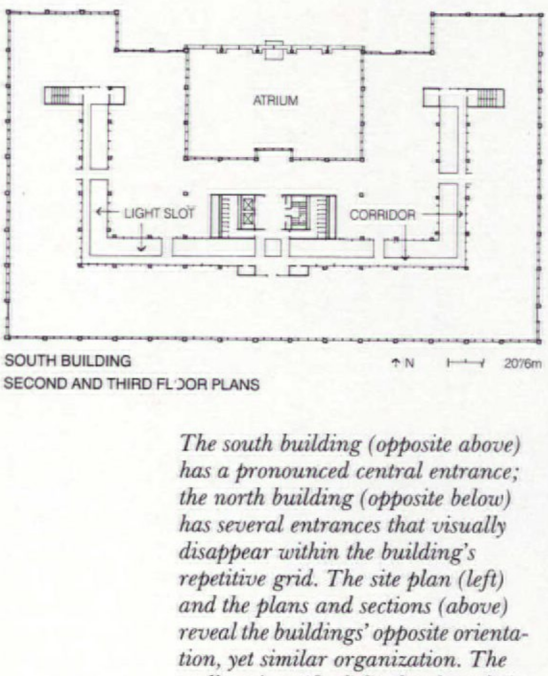
NORTH BUILDING



NORTH BUILDING

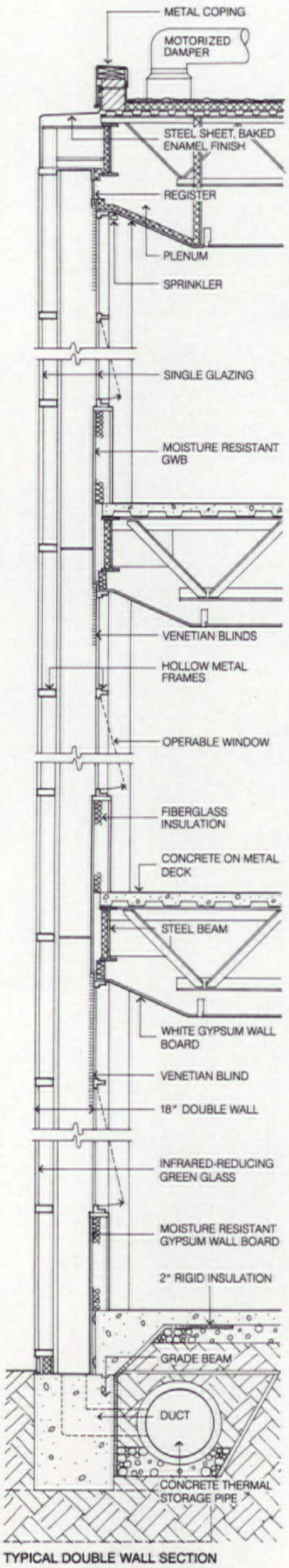


SOUTH BUILDING
GROUND FLOOR PLANS



SOUTH BUILDING
SECOND AND THIRD FLOOR PLANS

The south building (opposite above) has a pronounced central entrance; the north building (opposite below) has several entrances that visually disappear within the building's repetitive grid. The site plan (left) and the plans and sections (above) reveal the buildings' opposite orientation, yet similar organization. The wall sections (far left) also show their different approach to daylighting.



TYPICAL DOUBLE WALL SECTION
NORTH BUILDING 3'/1m

The cathedrallike atrium in the north building (opposite) acts as a passive solar collector, with fans blowing its heated air through concrete pipes to the building's double-wall perimeter. The south building's atrium (below) marks an entry procession, with its ramp and projecting second floor leading to a colonnaded lobby and bowfront stair (bottom).

teriors. The attraction of SOM's north building lies in its tactile quality—in the play of light and shadow on the double glass wall—and in its elegant detail. Its weakness lies in the muteness of its form. Like so many repetitive-glass buildings, it lacks identity, depending mainly on outside lighting conditions for its effect. It also resurrects some of the formal dilemmas inherent in a glass box. For example, how does one enter? Raising an all-glass building on columns and entering from underneath may be the most logical solution, since an entrance in the glass wall itself tends either to fight the mullion pattern or to disappear within it, which happens here. The doors located at several places along the perimeter of the atrium fit too well within the spacing of mullions and transoms and match too closely the white color of the wall's frame. While perhaps a functional problem, that disappearance is all the more troubling given the building's U-shaped configuration and central core, which seem to call for a more pronounced, central entrance.

Chimacoff's building resolves many of the formal dilemmas of its companion. The building, with its limestone cladding, has a distinct, almost civic character. The varied elevations, responding to their solar orientations, have a clear hierarchy. And the colonnade, leading from the parking lot to the projecting central entrance, makes the entry obvious. Other organizing ideas, such as the vertical division of the elevations into a base, middle, and top, and their horizontal division into structural and nonstructural elements, accommodate the minor asymmetries that give the building its surprising richness.

Where the building falls short, though, is in some of its detail. For instance, an early proposal for the pair of buildings had their end bays, flanking the courtyard, borrowing elements from each other. The north building was to have an end bay with a limestone frame; the south building, a large panel of glass infill. While SOM dropped the limestone from their building, Chimacoff retained the glass end bay in his building—a remnant of a good idea that now looks somewhat awkward. Another example is the vertical division of the exterior walls into a base, middle, and top. That division, especially on the east and west sides, just isn't strong enough; the windows in the first floor base are too large, the limestone reveals are too flat, and the tooled limestone in the spandrels is too subtle to read as infill. One can only guess at the results if the

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Otto Baitz

architects had decided to do a single building, with all of the formal strength of the south building and some of the assured detail of the north.

Challenging the myths

Prudential's intent in constructing Enerplex was to investigate the practicality of various energy-conserving strategies in a speculative office building and to explore the design implications of those strategies. They must be

Otto Baitz

pleased, for their investment reaped a rich harvest. Some of the energy ideas proved expensive, such as the ice pond (especially when condensation ruined the insulation in the cover), and time-consuming, such as the well-water heat pump that took almost a year to get public approval. The simplest strategies seemed the most successful.

The real value of Enerplex, though, lies with the architectural myths it challenges: the myths that energy-efficient buildings offer little room for different architectural expressions, that solar orientations and angles preclude arranging buildings in tight urban configurations, that nonreflective glass office buildings cannot be energy efficient, that stone-clad buildings cost more than curtain-wall buildings, that hierarchically organized buildings offer less flexibility than those planned according to a repetitive modular grid, that speculative office buildings cannot conserve as much energy as those owner-occupied, and that developers will not experiment with new technologies and design approaches. If for no other reasons than these, Enerplex should be long remembered.
[Thomas Fisher]

Otto Baitz

Otto Baitz

The two buildings represent different approaches to the office building as a type. SOM's building (top right) stands as an unobtrusive backdrop to the activity within and as a kind of pristine object in the landscape. Its white-painted light slot (top left) reinforces that neutral image. Alan Chimacoff's building (bottom right) has a tougher, more monumental, and more urban character, with its end wings defining and partly embracing the space before it. The light slot (bottom left) retains that sense of urban space. The inner offices have the appearance of a separate building, aided by the use of color to distinguish the base, middle, and top and to set apart structural and nonstructural elements.

Project: *Enerplex, Forrestal Center, Princeton, N.J.*
Architects: *(North Building) Skidmore, Owings & Merrill, New York (Gordon Wildermuth, partner in charge; Raul de Armas, design partner; Thomas K. Fridstein, Barry W. Milliken, project managers; Thomas G. Killian, senior designer; Herman Borst, senior technical coordinator; Edward Weller III, senior interior designer; Herbert M. Lynn, specification writer; Edwin Dauber, technical coordinator; Mary Delaney, color and materials specialist; Roger A. Swingle, site design); (South Building) Alan Chimacoff, Princeton (Alan Chimacoff, principal investigator; George Myers, research fellow; Nicholas Garrison, Deborah Barlow, Martin Bashevin, Thomas Fridstein, research and design assistants; Robert Socolow, Frank Sindon, Gerard Born, Don Kirkpatrick, Theodore Taylor, energy consultants).*
Client: *Prudential Insurance Company.*
Site: *23-acre, partly wooded site in research office park.*
Program: *two 130,000-sq-ft speculative office buildings using prototype energy conservation strategies.*
Structural system: *structural steel frame, concrete spread footings.*
Major materials: *(North Building) glass; (South Building) limestone and glass (see Building materials, p. 139).*
Mechanical system: *(North Building) primary heating—atrium solar collector, concrete pipe storage and distribution system, double glass wall for perimeter distribution; secondary heating—electric resistance fan-powered VAV boxes; primary cooling—chilled water from covered ice pond for fan-powered VAV system with economizer cycle; secondary cooling—roof-mounted, air-cooled chillers; (South Building) heating and cooling from well-water source heat pump, fan-powered VAV distribution system.*
Consultants: *SWA, landscape; Flack & Kurtz, mechanical; Berkeley Solar Group, energy; Princeton University Center for Energy & Environmental Studies, energy.*
General contractor: *Torcon, Inc.*
Photography: *Wolfgang Hoyt © ESTO, except as noted.*

Eleven South LaSalle Street
Chicago, Ill.

The last word

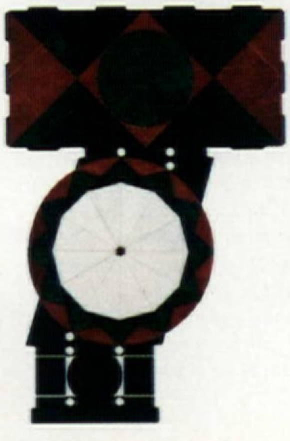
Hammond Beeby & Babka create order out of chaos in a much-renovated Loop office building.

Even buildings suffer identity crises. For example, the one at the corner of Madison and LaSalle Streets in Chicago, designed by Holabird & Root (then Holabird & Roche) and built in 1915, was originally christened the Lumber Exchange Building. In 1923, five floors were added to yield a 16-story structure, and in 1926, a 37-story tower, designed by the same architects with engineers Rebori and Brown, was added to the east side of the building, which was then renamed Roanoke. By the time Hammond Beeby & Babka Architects arrived on the scene a couple of years ago, the building was in its third incarnation—as Eleven South LaSalle Street—and its ground floor and lobby had been ravaged by successive modifications over the years. The client, LaSalle Partners, Incorporated, a corporate real estate services firm, asked the architects to upgrade the services and "reestablish the eclectic charm of the building on the main floor and tenant corridors," as the architects put it.

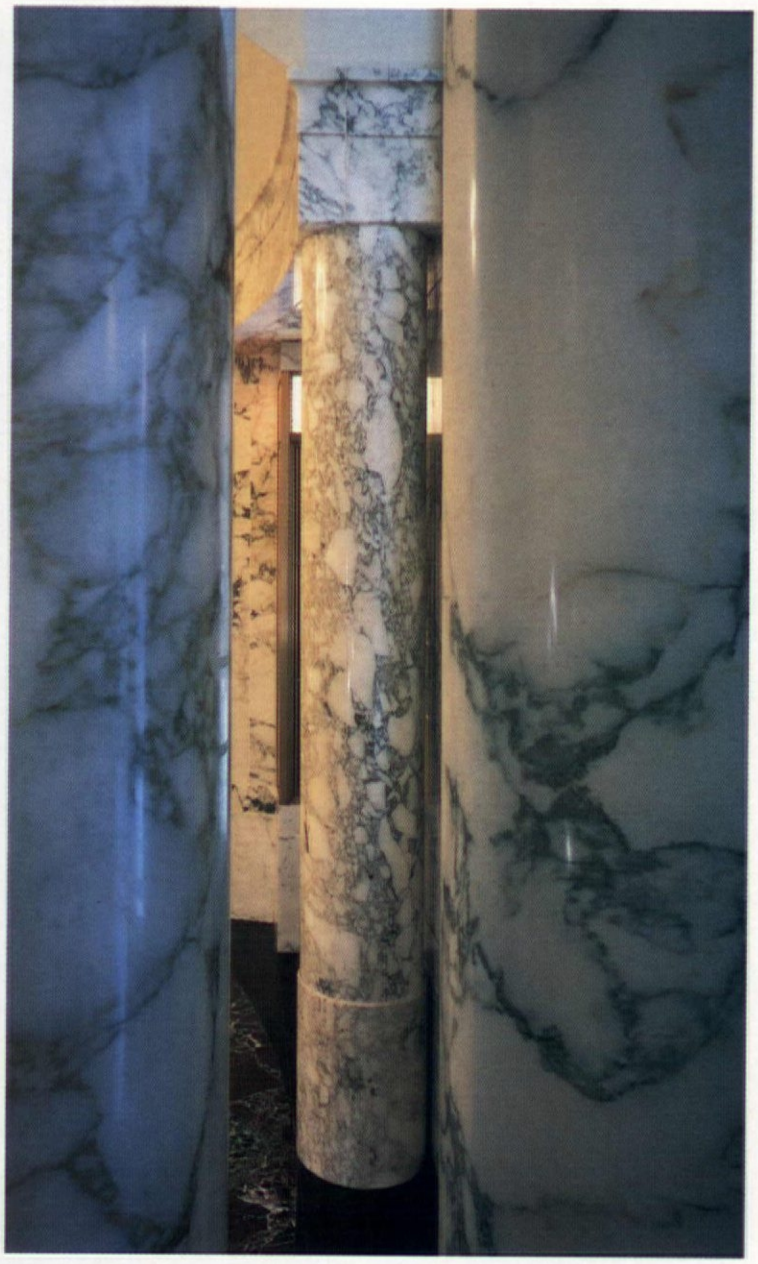
"Eclectic" is certainly the word, but since Hammond Beeby & Babka could never hope to replicate the building's original rich ornament, they opted for quiet luxury, using fine materials and sumptuous detailing to achieve a sense of substance and solidity. The ground floor exterior was reclad with marble, as was the lobby. But while the outside appears quiet and proper, the interior is an almost sinfully rich confection in white, with thick door jambs, corners, and cornices. The entrance is virtually a continuation of the lobby on the exterior, a deliberate attempt to express the small scale of the interior on the large-scaled façade, a transition by juxtaposition. The building wears its new identity with considerable assurance; in our own age of eclecticism, that is no mean feat. [Pilar Viladas]

The ground floor of Eleven South LaSalle Street (facing page, top) was originally clad entirely in black granite, but the architects restored only the granite base, cladding the exterior walls with a forest green marble that they found more compatible with the rest of the building. The corner details mimic those of the original terra cotta above. The new entrance (facing page, bottom) occupies the original entry bay, but uses forms and materials from the lobby to give a "preview" of that space and to become an "inset" in the building's façade; the cornice line of the entry (above) is carried through the vestibule and lobby. Two bronze light fixtures, the only original ones still existing, were moved from another entrance; the architects designed new finials to replace the lost originals.

The lobby plan (below) illustrates the transformation of the original L-shaped space. Along the new diagonal path from the center of the entrance to the center of the elevator lobby, the transition from vestibule to elevator lobby is made by a circular reception area that houses a bronze desk and directory designed by the architects (right). The marble and granite floor reinforces this geometry, as do the ceilings—domed in the circular area, groin-vaulted in the rectangular ones. Interstitial spaces between cornice line and groin vaults are mirrored; custom bronze fixtures house up- and downlighting.



Columns of solid calacatta vagli marble (right) reinforce the feeling of solidity and richness sought by the architects in the lobby. An odd column at each end of the reception area (see plan) resulted from the intersection of the diagonal axis and the rectangular rooms.



Project: *Eleven South LaSalle Street, Chicago, Ill.*
Architects: *Hammond Beeby & Babka Architects, Chicago (Thomas Beeby, Bernard Babka, and Dennis E. Rupert, principals and project architects).*

Client: *LaSalle Partners Incorporated, and the Estate of L.J. McCormick, Chicago.*
Site: *southeast corner of Madison and LaSalle Streets.*
Program: *renovation of existing 300,000-sq-ft office building and tower, to include upgrading of building services, and reestablishment of a unified architectural character at ground floor exterior, main lobby, typical floor lobbies, and tenant standards.*

Major materials: *granite, marble, bronze, plaster (see Building materials, p. 139).*
Consultants: *Gullaksen, Getty & White, structural: Mitchell Kohn, lighting.*
Construction manager: *EAI Construction Corp., Chicago, Ill.*
Photography: *Karant & Associates, Inc.*

Carver-Hawkeye Arena
Iowa City, Iowa

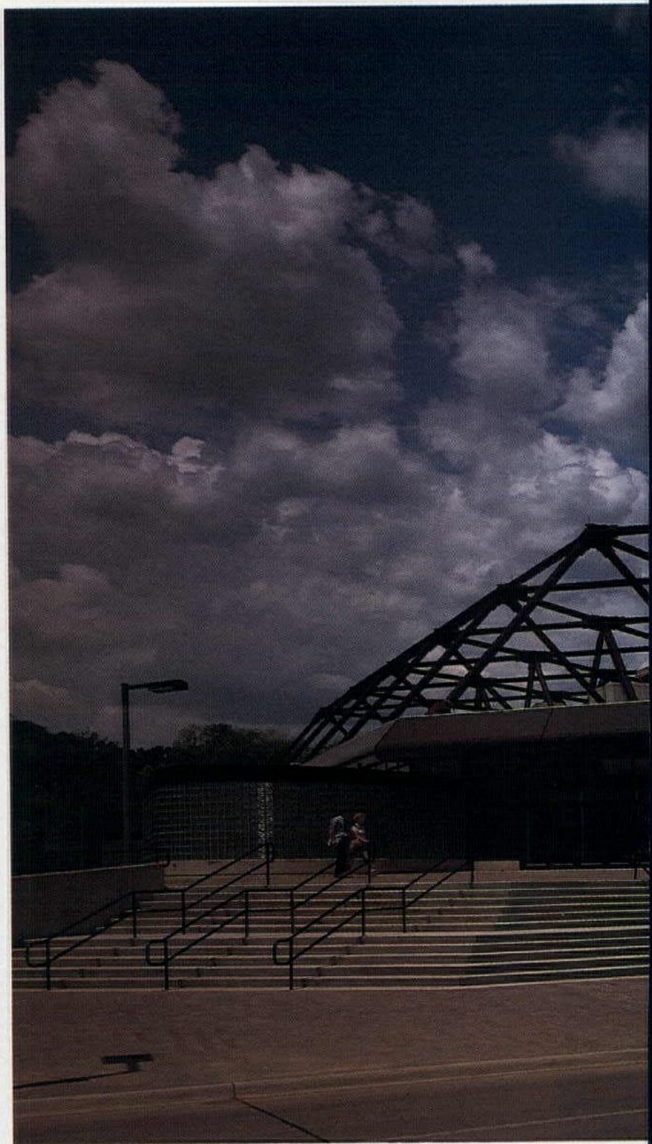
Assured understatement

CRSS, The Durrant Group, and Geiger Associates have fitted a large sports facility into a campus edge with only the appropriate amount of fanfare.

University of Iowa basketball is in a depressed condition; it has nothing to do with ratings, ability, or spirit, however. Rather the low profile of basketball, wrestling, and other indoor sports at the Iowa City campus is architectural in nature, and then only at first sight. Seen from most angles, the new Carver-Hawkeye Arena at the U. of I. looks like an exoskeleton hovering over a low, extended, quiet, but articulate enclosure. Somehow, though, the powerful yet delicate exposed structure invites a closer look—it must be overkill for such an otherwise low-scale facility. Once inside, the observer needs no further explanation.

Designed by CRS Sirrine (CRSS, formerly Caudill Rowlett Scott) with The Durrant Group as associate architects and Geiger Associates (formerly Geiger Berger Associates) as structural engineers, the arena is a tour de force. Its site was almost made for the building type, with a natural ravine into which arena seating could be carved with relative comfort. But rock underpinnings for the pilings supporting the dominant design element, the skew-chord truss, offered some surprises. Test borings turned up difficult elevation variations and large unexpected voids, altering the construction schedule slightly

Column-free spectator areas can be achieved in other ways, of course, but the system used here had a number of advantages. The arena was programmed for 13,200 fixed and 2000 movable seats, calling for clear spans of 300′ x 340′. Because of fast-track procedures, steel was chosen to best satisfy geometric, weight, and erection requirements. In an effort to enhance the energy-conserving aspects of a building already largely earth-pro-



Seemingly levitated above the enclosure below it and, in turn, the surroundings, the skew-chord truss roof structure rests on columns well inside the gently undulating glass block walls. As part of the response to inevitable roof movement, curved fascia panels are segmented, with expansion joints.

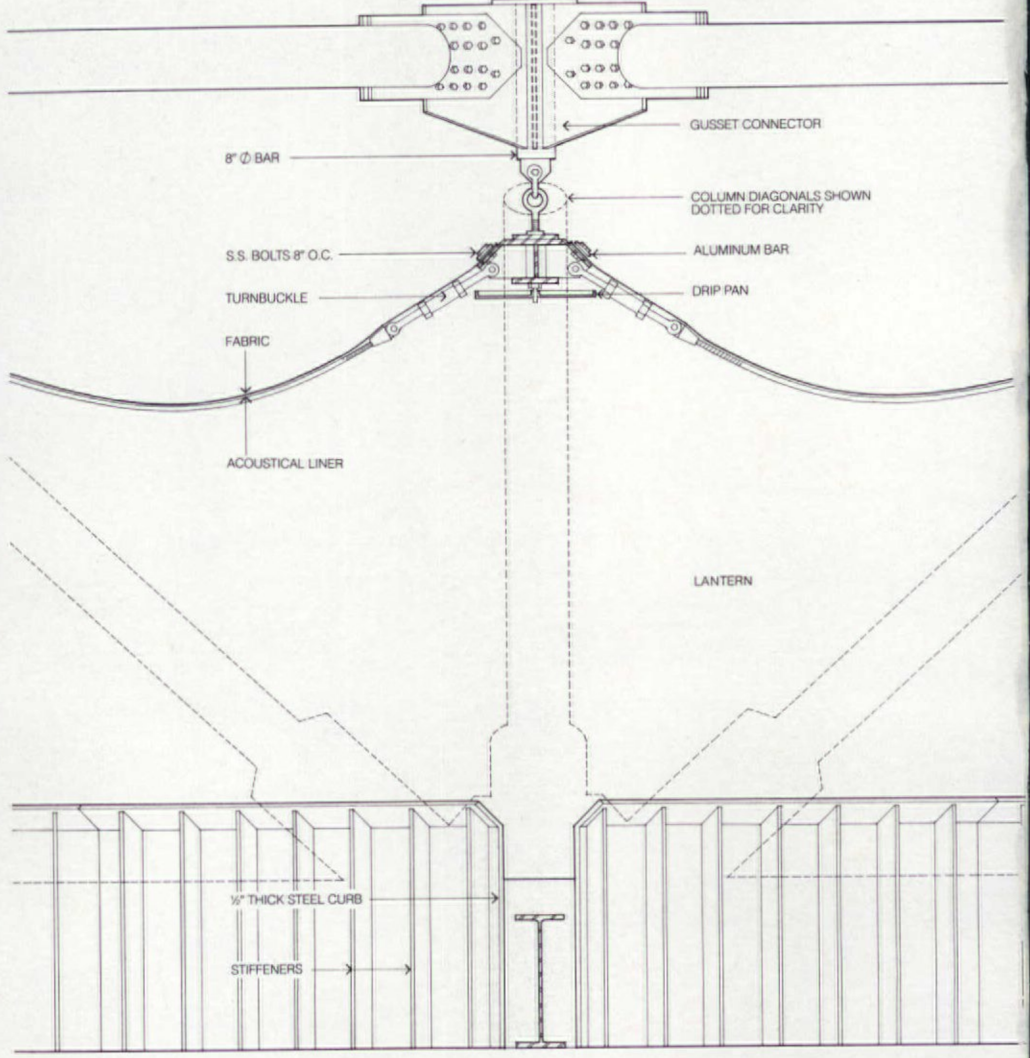
tected, it was desirable to exclude the roof structure volume from the heated and ventilated enclosure. Further architectural considerations, such as lightness of scale and an effort to blend with surrounding trees led to the weathering steel skew-chord space truss.

Cantilevered out beyond the eight main columns, the roof shelters first a broad circulation concourse, then the adjoining perimeter of concessions, rest rooms, and entry foyers. An expression of structural freedom, the perimeter walls of glass block curve smoothly around the building corners and inflect toward banks of entry doors. By day, the rest rooms comprising these perimeter forms are delightfully free of the dark institutionality usually accorded such functions. At night, the translucent surfaces become lighted signs of life for the building.

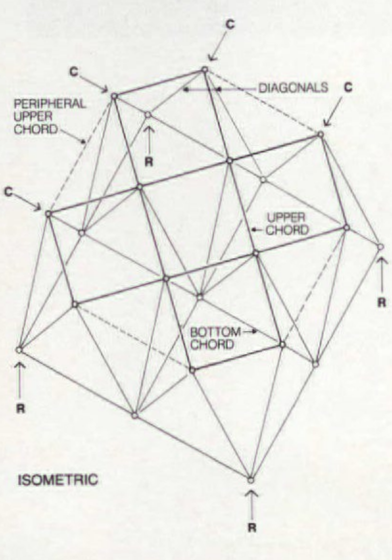
Roofs move in all kinds of ways—not news to anyone—under loading, expansion, and contraction factors. To accommodate such movement, the Carver-Hawkeye Arena design incorporates several forgiving features. Roof expansion and contraction, generating lateral forces, is allowed guided movement at half of the column connections. By designing the overall roof in segments, vertical loading deflections measured in feet rather than inches can be managed routinely.

Carver-Hawkeye Arena

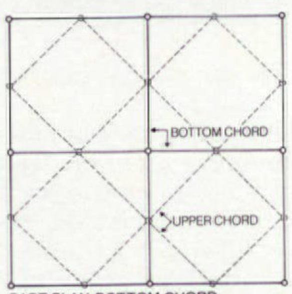
Part of the technical logic behind the deceptively simple expression of the skew-chord truss can be explained in relatively simple diagrams (bottom). Only a detail photo and section (below) can begin to describe the elegant detailing that went into the structural connections and the fabric lantern. All steel connections were factory-fabricated to incredibly close tolerances, and bolted on site.



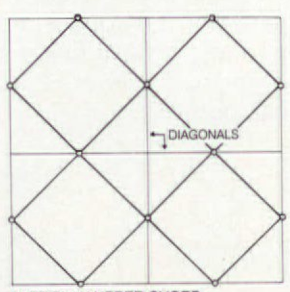
TYPICAL ROOF DETAILS



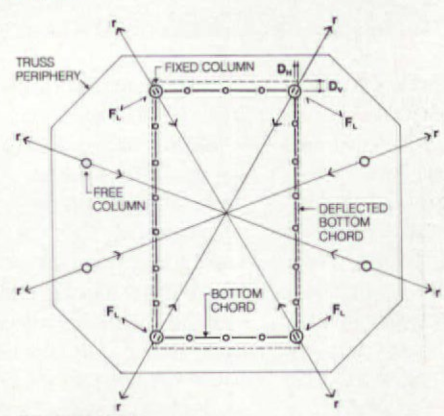
ISOMETRIC



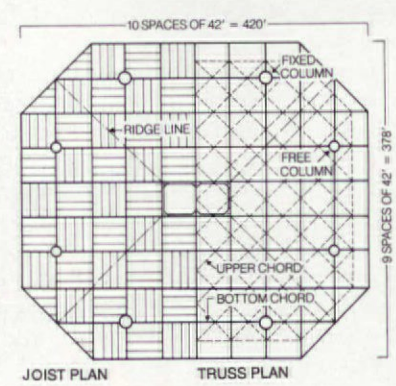
PART PLAN BOTTOM CHORD



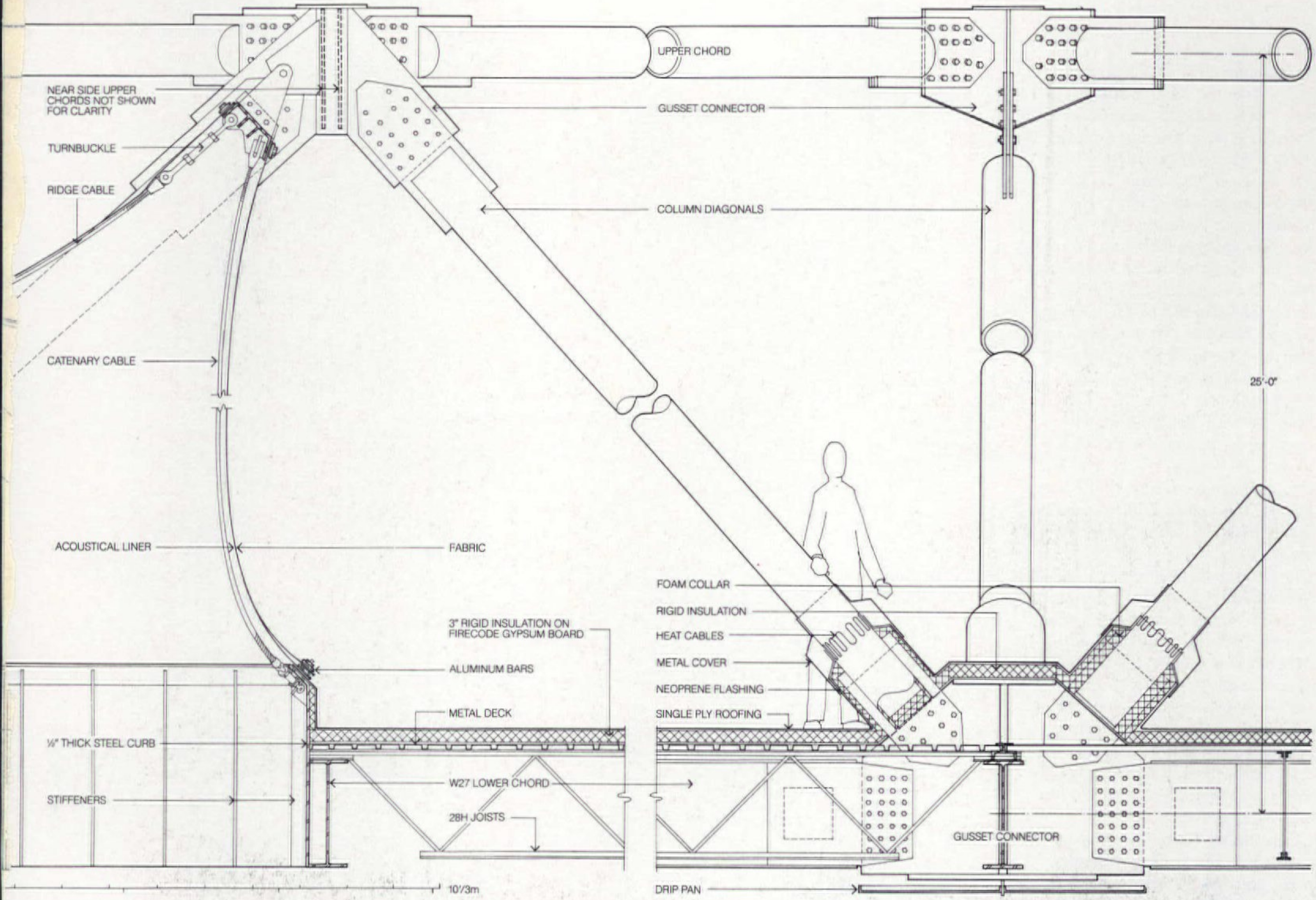
PART PLAN UPPER CHORD



FORCE DIAGRAM



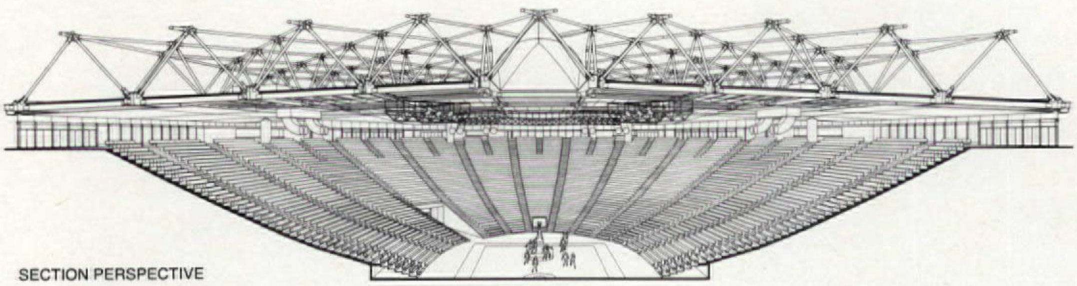
JOIST PLAN TRUSS PLAN



Unrelated to, but in conjunction with, structural behavior, the truss is exposed to widely divergent temperature differences and swings. In winter, upper truss members can be at a below zero outside temperature, while the lower chord is at a comfortable inside level. In anticipation of condensation and conduction problems under such conditions, thermostatically controlled heating elements wrap through-roof members. Conditions have not yet required their use, the owners report.

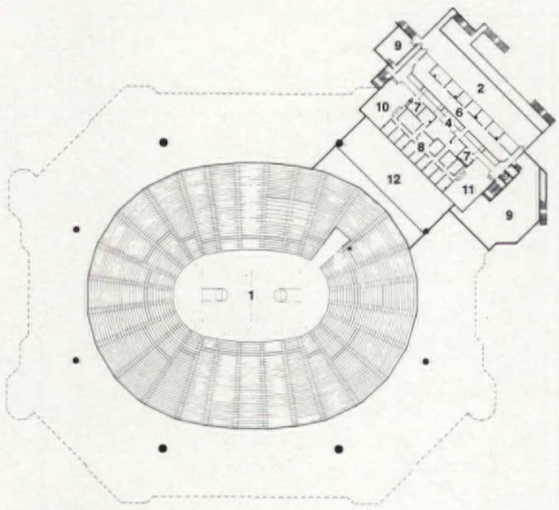
Highlighting the roof is a two-bay lantern of Teflon-coated fiberglass fabric. Natural light entering these central openings is intended to cut down on lighting needs during the day; they glow at night as another announcement of the activities inside. The lanterns and the rooftop HVAC unit housings are the only elements showing a problem—weathering steel droppings. While the HVAC units can (and probably will) be painted dark to counter this staining, oxide on the lantern fabric is threatening to cut down light transmission severely if not removed.

As complex as the solution to this seemingly effortless and graceful main space is, it is only part of the story. This is much more than a glorified basketball court with bleachers. Only from the northwest corner is the full depth of the ancillary facilities visible from the exterior. Connected at 45 degrees to the main arena, roughly 60,000 square feet of office and support space is incorporated within a relatively small footprint. This roughly orthogonal building houses such functions as

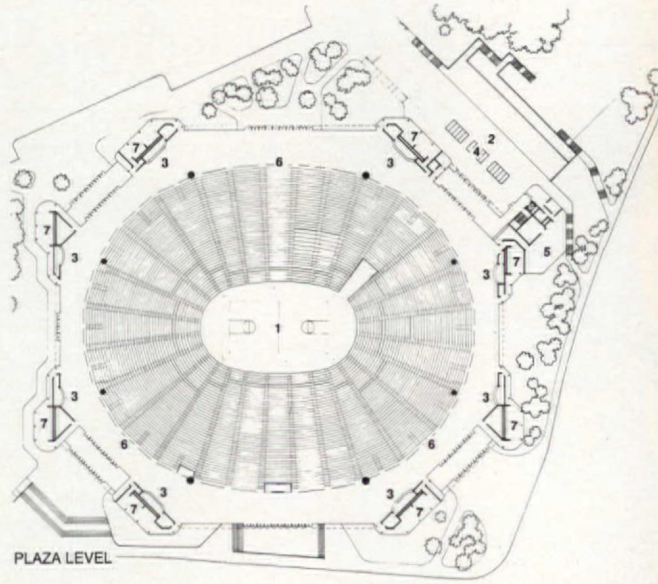


SECTION PERSPECTIVE

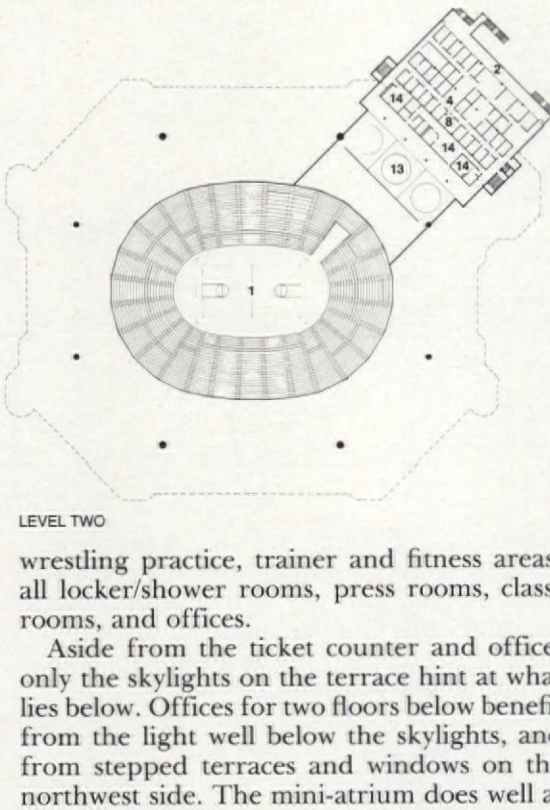
1 Arena
2 Terrace
3 Concessions
4 Skylights/light court
5 Tickets
6 Handicapped viewing
7 Toilets
8 Staff offices
9 Mechanical
10 Iowa Room
11 Big Ten Room
12 Open to wrestling below
13 Wrestling
14 Lockers
15 Storage
16 Training
17 Classrooms
18 Shipping



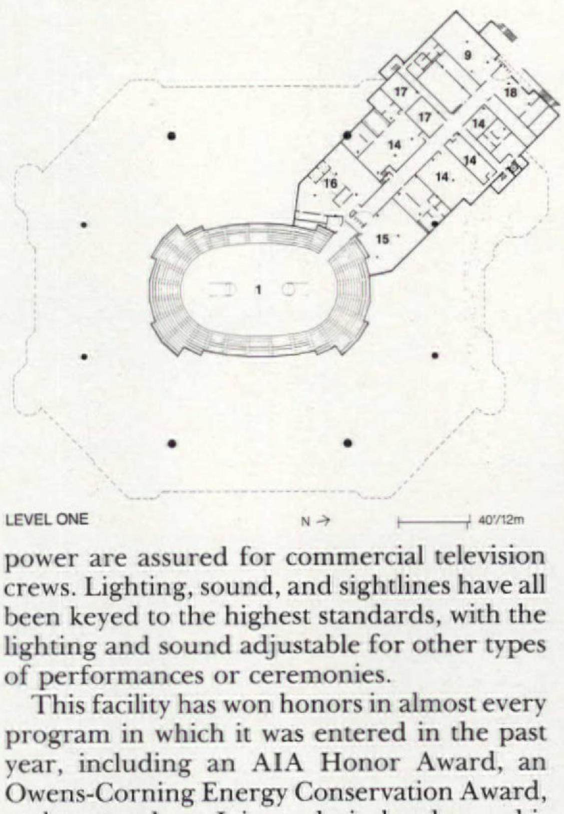
LEVEL THREE



PLAZA LEVEL



LEVEL TWO



LEVEL ONE

N → 40'/12m

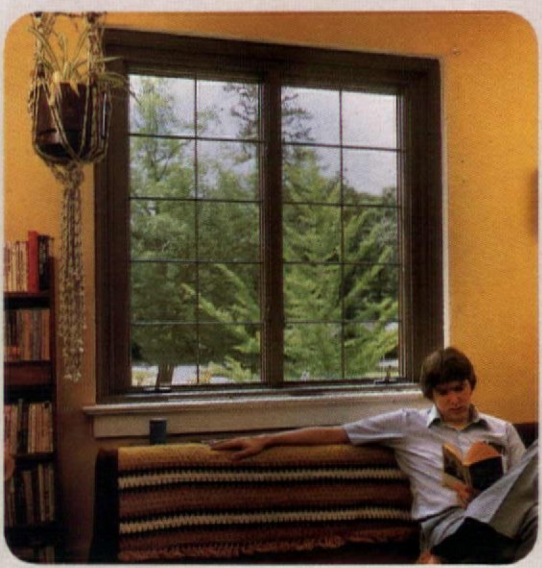
Project: *Carver-Hawkeye Sports Arena, University of Iowa, Iowa City, Iowa.*
Architects: *CRSS/CRS Sirrine, Inc.—Architecture Division, Houston, Texas; associate architect, The Durrant Group, Dubuque, Iowa (CRSS: Paul Kennon, design principal; Wallie Scott, partner in charge; Jay Bauer, project director; Doss Mabe, senior designer; Tom Koechlin, Aubrey Raymond, Mark Sadler, designers; Ralph Carroll, project manager; Oras Williams, senior project architect. The Durrant Group: Norman Wirkler, officer in charge; Max Schmidt, project director; Barney Bishop, project manager).*
Site: *partially wooded land with deep ravine, at the west end of the university campus.*
Program: *indoor sports arena with 13,000 fixed seats, 2000 movable seats; support facilities for athletic program.*
Client: *Iowa State Board of Regents.*
Structural system: *steel skew-chord truss and metal deck on reinforced concrete columns, caps, and pilings.*
Mechanical system: *rooftop HV units, baseboard hot water radiation, variable air volume air conditioning for offices, centrally chilled water.*
Major materials: *weathering steel truss, glass block, aluminum entry and fascia components (see Building materials, p. 139).*
Consultants: *Geiger Associates, structural (David Geiger, design principal; Peter Galdi, senior designer). CRSS and The Durrant Group, mechanical, electrical, and plumbing (John Kettleman, director, mechanical engineering, and Conny Brown, senior mechanical engineer, CRSS; Charles Marsden, director of engineering, Thom Flickinger, electrical engineer, and Mike Broge, mechanical engineer, The Durrant Group). Shive-Hattery & Associates, civil engineering; Coffeen Anderson Fricke Associates, acoustical; Crose-Gardner Associates, landscape.*
Construction management: *CRSS/CRS Sirrine, Inc.*
Costs: *$17.6 million.*
Photography: *© Balthazar Korab.*

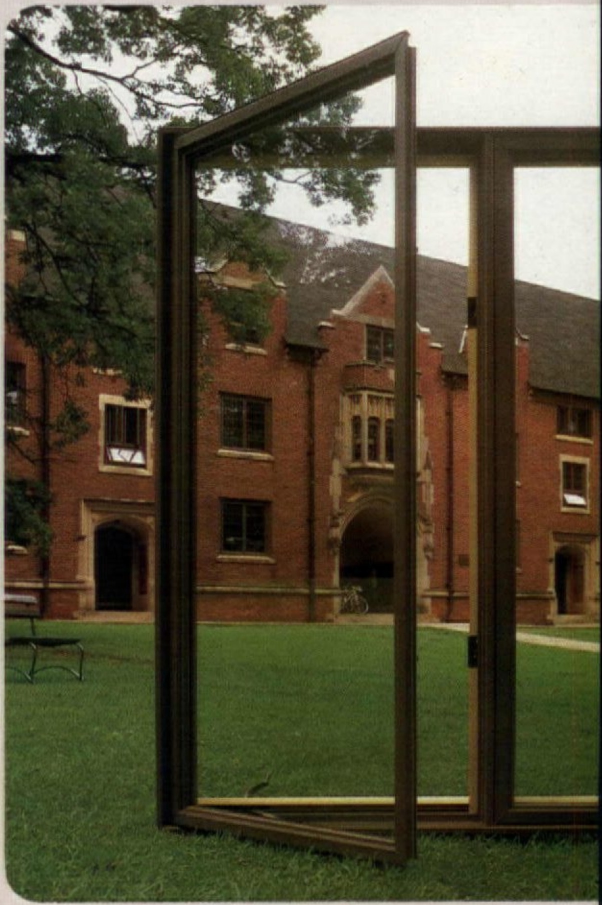
wrestling practice, trainer and fitness areas, all locker/shower rooms, press rooms, classrooms, and offices.

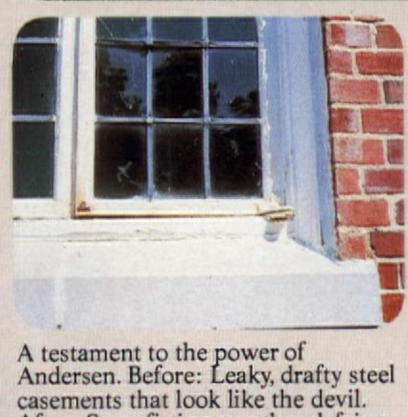
Aside from the ticket counter and office, only the skylights on the terrace hint at what lies below. Offices for two floors below benefit from the light well below the skylights, and from stepped terraces and windows on the northwest side. The mini-atrium does well at dispelling the "downstairs" feeling of the offices and circulation; most staff members use the terrace entrances rather than the elevators for access.

With recent emphasis on network television coverage of collegiate events, the Carver-Hawkeye Arena program took the technical requirements quite seriously. Access into and through the building, and proper electrical power are assured for commercial television crews. Lighting, sound, and sightlines have all been keyed to the highest standards, with the lighting and sound adjustable for other types of performances or ceremonies.

This facility has won honors in almost every program in which it was entered in the past year, including an AIA Honor Award, an Owens-Corning Energy Conservation Award, and many others. It is a technical and an architectural accomplishment, capable of standing tall in either classification. Its distinction in both areas shows the skill of the architects and engineers, *and* the savvy of a knowledgeable client. [Jim Murphy]







A testament to the power of Andersen. Before: Leaky, drafty steel casements that look like the devil. After: Snug-fitting, weather-defying Perma-Shield casements in dignified Terratone color.

When replacing windows at this seminary, many were called.

But Andersen was chosen.

Columbia Theological Seminary in Decatur, Georgia, is a quiet, peaceful place where it's easy to feel at home.

And lately it has become even more comfortable. Because, with the help of their contractor, the Seminary owners replaced their leaky, drafty steel casement windows with Andersen® Perma-Shield® casements.

Why Andersen windows? First, they knew Andersen windows are quality windows. Built far more weathertight than industry air infiltration standards. To seal out drafts, seal in comfort all year long.

But just as important they found that, of all window companies, Andersen offered the best system for filling the odd-shaped openings of the steel casements: The Andersen Window Replacement System.

The Andersen Window Replacement System is specially designed to custom-fit stock-size Perma-Shield windows into window openings of any size. The System's low maintenance rigid vinyl or vinyl-clad installation aids easily adapt to any exterior siding. To maintain maximum weathertightness and window beauty.

The aids are available in white or Terratone™ color. Here at Columbia the beautiful earth-hued Terratone color of both the Andersen windows and the aids blend beautifully with the brick and stone exteriors. So the character of the Seminary isn't changed. Just beautified.

Got a replacement job coming up that needs a little more spirit and grace? Specify Andersen windows, and the Andersen Window Replacement System.

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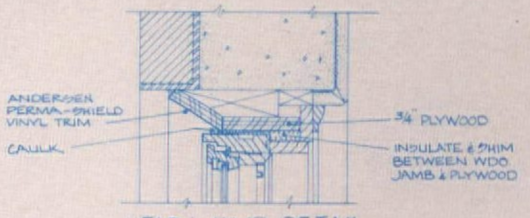
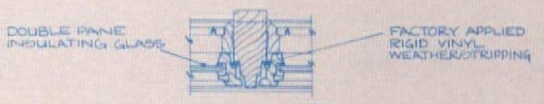


HEAD & JAMB DETAIL



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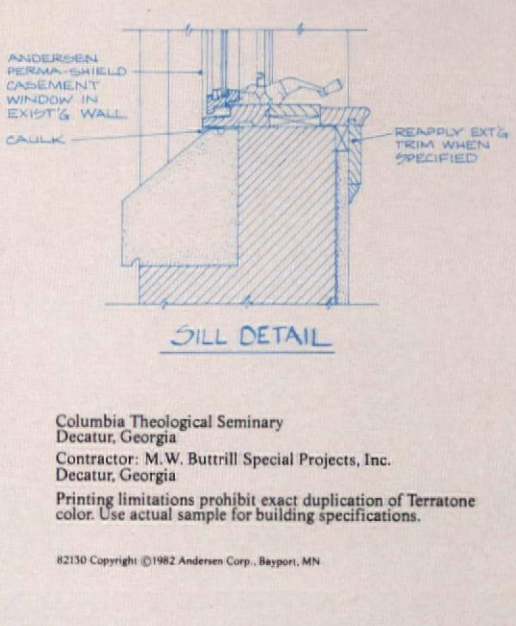

SILL DETAIL

Columbia Theological Seminary
Decatur, Georgia

Contractor: M.W. Buttrill Special Projects, Inc.
Decatur, Georgia

Printing limitations prohibit exact duplication of Terratone color. Use actual sample for building specifications.

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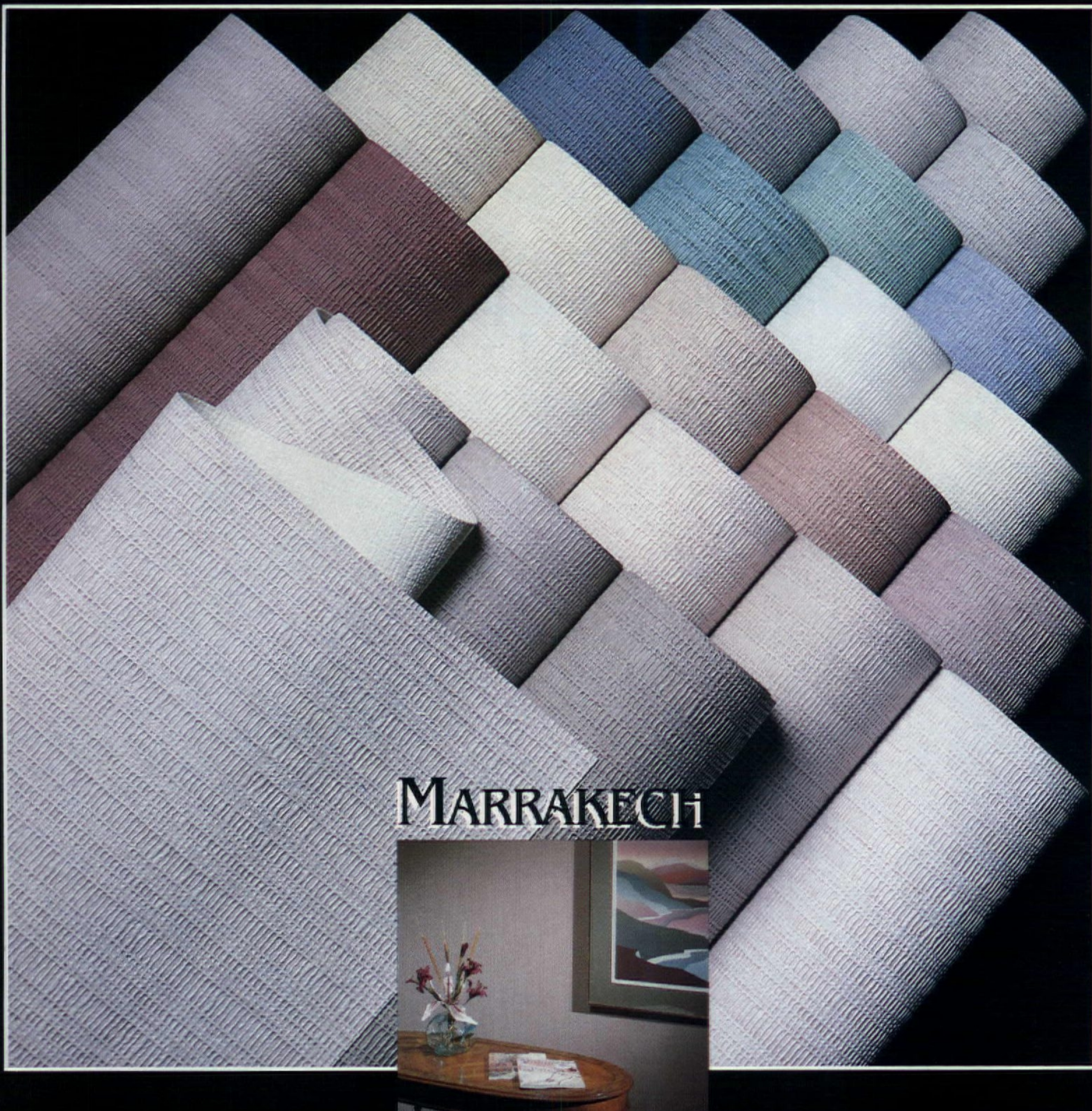

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Next window, please

More and more, old windows are being scrapped for new. The many available choices require thorough evaluation from design, technical, and economic standpoints.

Marvin Windows

William Mathis

The windows in the rehabilitated façades at 2000 Pennsylvania Avenue, Washington, D.C. (above), by Hellmuth, Obata & Kassabaum and John Carl Warnecke & Associates, show the variety of configurations possible with custom replacement windows.

The market for replacement windows is enormous. For single-family residences alone, it was projected at nearly $5 billion in 1983, with substantial continued growth anticipated for the decade ahead. By all accounts, these projections have been borne out, and then some.

No such estimate seems to be available for the size of the commercial and institutional window replacement market, but there is little doubt that it, too, is huge and growing. Window companies, including many wood windowmakers who in the past supplied mainly to residential construction, are pursuing opportunities and meeting needs in nonresidential buildings with a host of new products and techniques.

The need is easy to understand. Development economics and preservation interests have combined to produce an era of unsurpassed building rehabilitation and reuse. Yet, while basic structures may remain serviceable, windows—because they have been poorly maintained, are unsuitable for the new occupancy, or have simply worn out—usually need serious attention. Next to roofing systems and components, windows are most vulnerable to the elements, highly susceptible to deterioration, and the most likely part of a building's exterior to be in need of extensive repair or replacement. New uses and contemporary expectations also pose unprecedented performance demands on fenestration systems, which few older windows, healthy or otherwise, could have met before the advent of new manufacturing techniques and materials.

Among those demands are: resistance to rain penetration, air infiltration, intruders, and heat loss or gain; and provision of visual and acoustical privacy, easy maintenance, and safe use. If care is taken to assess needs and choose well, a proper balance can be struck among those demands. The key is to be clear about what is important to a given project, and to understand the available alternatives.

Basic choices

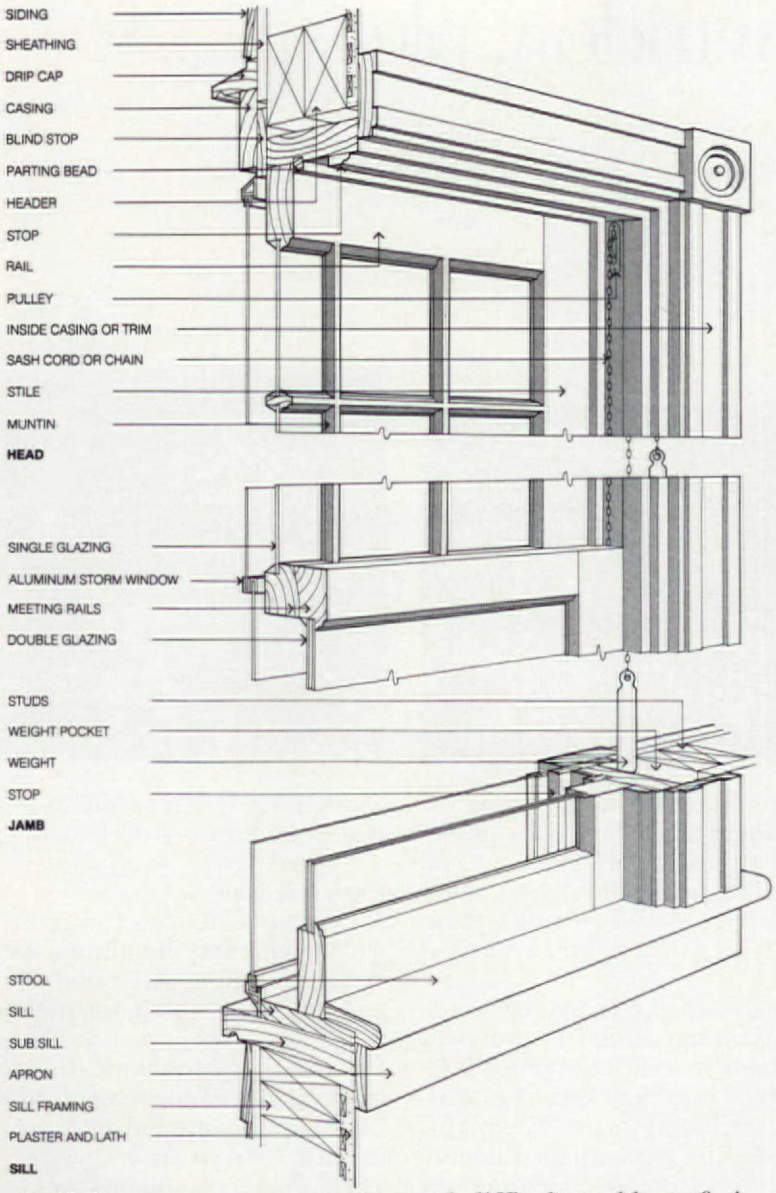
There are many. Start with the solids: wood, vinyl, steel, and aluminum. Move on to the clads: aluminum-clad wood, vinyl-clad wood, and vinyl-clad aluminum and steel. There remain various other paints and coatings, as well as countless permutations that apply different techniques and materials to different parts of the window—one for the frame, another for the sash, and so on.

There are also many types of window patterns and operating systems: single-hung, double-hung, casement, awning, fixed, inward-swinging, upward-lifting, louvered, divided lights, undivided, and so on.

Each variation carries special implications and imperatives pertaining to conditions of use, environmental elements, structural loading, looks, initial costs, maintenance costs, and so on. It's not long before even the most serious investigator pleads for a place, anyplace, to begin.

Appearances aren't everything, but . . .

Looking carefully at the *old* windows, if such there be, is not a bad place to begin. They are often full of architectural and technical clues about what to do, or not to do. One of the first things to be ascertained is the degree to which historic appearance and authenticity are important. The Technical Preservation Services Division of the National Park Service, which generates the Department of the Interior's standards and guidelines governing certification of federal tax credits for historic rehabilitations, regards windows as one of the



The anatomy of a double-hung window (above), adapted from a drawing by Jonathan Poore in the Old House Journal, *suggests the complications found in even the simplest of windows.*

most complex and difficult problems facing owners and designers.

Preservationists see windows as one of the most important character-defining architectural elements; such seemingly small matters as the width and depth of muntins can loom large on this scene. The National Park Service can point to tough experience with projects denied tax credits on grounds of inappropriate replacement windows. The Secretary of Interior's "Standards for Historic Preservation" indicate a clear preference for window repair and restoration, with replacement a last resort. When replacement is necessary, past is prologue.

Even where historic design guidelines and standards do not apply, there is often good reason architecturally to maintain what window manufacturers call a "traditional look," matching new windows in size, materials, and style to their predecessors, or perhaps modifying them only slightly, while upgrading basic quality. Herein lies a tough challenge to the architect, and a major distinction among manufacturers' orientations to the replacement market. On the one hand are those who view window replacement as part of an overall design approach that seeks to "modernize" and, in so doing, to change basic appearances dramatically. Other manufacturers seek to achieve the look of historic antecedents. In either case, there is the question of whether a stock unit will suffice, or special fabrication is called for.

Fits about fits

Although there are many variations, the basic approaches to fitting an existing rough opening (assuming that one does not alter the size of the rough opening itself, often an expensive and troublesome undertaking) fall into two categories:

- "Custom" fitted windows, which, by design, fit the opening exactly without aid of adapters, fit kits, panning systems, or other measures designed to make the opening fit the window; and
- "Stock" windows, which, by use of manufacturer-supplied adapting components, adjustable receptors, and other devices, or by on-site work to reduce the opening, are made to fit within an existing rough opening, sometimes imparting an ungainly "thick" look to the surrounding window frame and presenting tough installation and detailing challenges.

The choice of approaches is influenced by considerations of cost, appearance, and availability. Custom fitting is becoming an easier and highly competitive option, its obvious advantages increasingly outweighing the presumed economies of picking from stock. The growth of the replacement market has led at least one manufacturer of nationally sold wood and aluminum-clad wood windows to position itself squarely in the "build-to-order" market—also an advantage in many new projects—and local millworks in many areas have been rejuvenated by the chance to occupy this new niche.

Smaller local mills, however, frequently cannot offer the larger manufacturers' quality of design and production, especially in the critical junctures between glazing and sash and sash and frame. They also have difficulty in providing new glazing and hardware options offered by larger window companies and are hard pressed to meet orders, sometimes for hundreds or even thousands of units, on a reasonable schedule.

COMPARATIVE PROPERTIES

In every case, windows can be obtained that exploit the advantages and overcome the disadvantages; these are general considerations and characteristics, which may not apply in each specific case.

REPLACEMENT WINDOW TYPE	ADVANTAGES	DISADVANTAGES
Solid wood	Wood is a good thermal insulator; custom shapes and sizes easier to create; "natural" or historic appearance possible.	Components subject to expansion with moisture; requires painting and other care at regular intervals; can be heavy.
Solid aluminum	Wide choice of colors for coatings; lightweight; some flexibility in shapes and sizes; low maintenance; variety of extruded sections available.	Unless thermally improved, may be subject to greater conductive heat loss and interior condensation; for strength, requires thicker sections than steel; unhistoric appearance.
Vinyl-clad wood	Combines strength of wood and protection of vinyl; very low maintenance; stock sizes available with trim and fitting kits.	Limited colors, especially in darker ranges; custom sizes and shapes usually not possible; unhistoric appearance; vinyl subject to breakage and very difficult to repair once broken; can be heavy.
Vinyl-clad aluminum	Durable and structurally very strong; improved thermal properties.	Limited colors, especially in darker ranges; unhistoric appearance; can be expensive.
Solid vinyl	Very durable, with few components subject to moisture retention or decay; wider variety of colors available.	Unhistoric appearance; may be broken and very difficult to repair in place.
Aluminum-clad wood	Very strong and durable; wide range of colors available; some flexibility in sizes and shapes.	Heavy; subject to moisture penetration at seams and joints unless carefully made; unhistoric appearance; "thick" in section.
Steel	Thinner, very strong sections possible; flexibility in sizes and shapes; wide range of paints and coatings.	Can be expensive; require periodic painting and other maintenance; unless thermally broken or well insulated, may be subject to conductive heat losses and condensation.

Thomas Vonier, AIA

Although there are some exceptions to these comparative properties (above), the list provides a basis for deciding what window material to use.

All-wood windows must nearly always be made to fit, because of practically insurmountable trimming and detailing problems in fitting a stock wood window to an opening it does not match. When they are clad, stock-sized wood windows can be used with clad or solid framing and attachment systems that can be adjusted to the size of the opening. These clad appurtenances overcome some of the weatherproofing difficulties that would otherwise be encountered.

Custom-manufacture of clad wood windows is usually prohibitively expensive, because of the tooling and production costs for dies and extrusions. Special profiles, frames, and muntin sections can be produced more cheaply for all-wood windows, through adjustment of jigs and grinding of special milling and cutting tools. Some aluminum window manufacturers can provide special extrusions that are economical for large orders, and all-vinyl and all-steel windows can be produced to meet special requirements, in terms of window size, shape, and profile.

An advantage of metal, aluminum, and vinyl panning and receptor systems is that they permit a finished, weathertight covering to be placed over existing frames (usually wood), thus simplifying installation of the new units and eliminating the demolition work involved in removing the old frame. But the lines, scale, and detailing of the panning or other surround is rarely as fine as that imparted by the original frame, and a shiny new finish may produce an undesired appearance.

Stock windows can be used attractively and will yield excellent performance, but only when all aspects of installation and detailing—concerns of equal magnitude when using "custom" windows, but more complicated and difficult here—are carefully designed and monitored. With respect to costs, it is important to consider that, while the millwork or fabricating price bids may be lower for stock versus specially made windows, the total costs of installation, after special fitting and finishing, may not be far apart.

Thermal conductivity

Whether custom fabricated or ordered from stock, basic window materials have a significant influence on basic thermal transfer properties, and because one of the main justifications for the expense of window replacement is a reduction in "lost" energy and an improvement in occupant comfort, these should figure prominently in considering alternatives. Wood is a naturally good thermal insulator and all-vinyl sections are also excellent. Metal windows must be "broken" thermally to interrupt heat losses by conduction. In all cases, considerations cannot stop with frame and sash alone; the material they hold is also of great importance.

Glazings

There are virtually as many choices for glass as there are for frame, sash, and hardware components. Various systems of single-, double-, and triple-pane lites are offered, and even the thickest sections can be accommodated within authentic muntin divisions instead of the less respected (but cheaper and easier to maintain) "snap-in" counterparts. Assuming that the frame and sash materials being used are strong enough to carry dead and live loadings and can accept the necessary profiles, virtually any glazing approach can be accommodated.

Thermal resistance and solar control are key factors, and new "low emissivity" and "selective" glazing products are making a con-

The Bergdoll Brewery by Alestar & Rieff, Architects (right top) has replacement windows with muntins patterns and profiles that closely match the original. Architects Bower Lewis Thrower performed photo and archival research into the original windows of this 1855 bank building (right below) for its rehabilitation into a library annex for the American Philosophical Society. The new windows, made at a local mill, appear much as the originals once did, but incorporate double glazing and a solar-blocking film to protect the historic interior. The excerpts from the Department of the Interior's "Standards for Historic Preservation" (opposite) recommend a course taken by the two projects on this page: retaining original windows where possible or replacing them with new windows that match the original in appearance. The actions not recommended in the standards can jeopardize federal tax credits.

Marvin Windows

Donald Dissinger

GUIDELINES FOR HISTORIC BUILDINGS

RECOMMENDED	NOT RECOMMENDED	
Identifying, retaining, and preserving windows — and their functional and decorative features — that are important in defining the overall historic character of the building. Such features include frames, sash, muntins, glazing, sills, heads, hoodmolds, panelled or decorated jambs and moldings, and interior and exterior shutters and blinds.	Removing or radically changing windows which are important in defining the overall historic character of the building so that, as a result, the character is diminished. Changing the number, location, size or glazing pattern of windows, through cutting new openings, blocking-in windows, and installing replacement sash which does not fit the historic window opening, frame, sash, and muntin configuration.	Changing the historic appearance of windows through the use of inappropriate designs, materials, finishes, or colors which radically change the sash, depth of reveal, and muntin configuration; the reflectivity and color of the glazing; or the appearance of the frame. Obscuring historic window trim with metal or other material. Stripping windows of historic material such as wood, iron, cast iron, and bronze.
Repairing window frames and sash by patching, splicing, consolidating or otherwise reinforcing. Such repair may also include replacement in kind of those parts that are either extensively deteriorated or are missing when there are surviving prototypes such as architraves, hoodmolds, sash, sills, and interior or exterior shutters and blinds.	Replacing an entire window when repair of materials and limited replacement of deteriorated or missing parts are appropriate. Failing to reuse serviceable window hardware such as brass lifts and sash locks.	Using a substitute material for the replacement part that does not convey the visual appearance of the surviving parts of the window.
Replacing in kind an entire window that is too deteriorated to repair — if the overall form and detailing are still evident — using the physical evidence to guide the new work. If using the same kind of material is not technically or economically feasible, then a compatible substitute material may be considered *if* it will convey the same form, design, and overall visual appearance as the historic window.	Removing a character-defining window that is unrepairable and blocking it in; or replacing it with a new window that does not convey the same visual appearance or the historic character of the building. Inserting new floors or furred-down ceilings which cut across the glazed areas of windows so that the exterior form and appearance of the windows are radically changed.	Creating a false historical appearance because the replaced window is based on insufficient historical, pictorial, or physical documentation.

Excerpts by Thomas Vonier, AIA from National Park Service documents

tribution. These visually undiscernable techniques, which create major thermal advantages, essentially permit heat to enter a building in greater quantities than it can escape. Invisible permanent coatings are applied to the glass panes, which become "selective" with regard to solar radiation wavelengths. The longer, warming rays of the sun's light are admitted, while the shorter wave radiant energy from the building interior is blocked.

One complication, especially in historic applications, involves how the window glass looks from the outside. Reflective or tinted glazings are often not appropriate, and many designers lack confidence in the new, presumably permanent low emissivity and selective coatings, whose long term performance has been tested only under laboratory conditions. Special "temporary" transparent coatings and films, which are applied with a squeejee and must be replaced at intervals of from three to five years, are an alternative for situations where it is important to block ultraviolet rays, and tinting is ruled out.

Windows of vulnerability

Window condensation is confined mainly to residential buildings, but it can crop up in commercial renovations, where the exterior envelope has been made less permeable to moisture migration. Most often the signs are fogged windows or units whose interior sills and frames are wet and seem to be sweating.

When warmer indoor air, which holds more moisture, comes into contact with cooler air surrounding the window glass, it too becomes cooler, and must surrender a portion of the moisture it contains; this occurs on the glass, or sometimes on metal frames and sills. Insulating glass, multiple-pane glazing, and thermally improved metal frame and sash components reduce chances for condensation, as they result in warmer air near the window.

Concerns have been raised about possible consequences to interior and exterior wall surfaces, and even to the replacement window itself, of "sealing" wood frames—which may already be decaying, or may eventually become subject to unseen moisture and rotting—beneath a cladding that is not easily removed. On clad-wood windows, imperfectly sealed claddings or claddings that become damaged in use may admit moisture to the wood inner core, eventually leading to decay and serious deformation of the cladding from

The selection matrix for various types of windows (below) was developed at the National Bureau of Standards a few years ago. Since then, many manufacturers have overcome some of the disadvantages identified here. (For example, there are double-hung windows that are easily washed from inside and horizontal sliding units that can be easily outfitted with screens and storms.) The matrix, however, does provide a list of points to consider. The two buildings (opposite below) use window technologies (solid mahogany on the left, solid vinyl on the right) that have been common in Europe for many years, but are only now being widely used in this country.

internal swelling and frost formation. Metal-clad windows, where joints and edges cannot always be sealed as well as is possible with the welding of vinyl joints, may be especially vulnerable in this regard. It is also important on metal-clad systems to assure that protective paints and coatings have been applied to edges at joints and cuts. Otherwise, pitting, corrosion, and other evils can set in at these vulnerable points. Solid extruded vinyl and aluminum frame-and-sash systems appear to present few problems in this regard.

Warranties and guarantees on replacement windows seem as varied, both in type and duration, as their manufacture. Some makers back only the glass in writing, others all components, and others offer nothing at all in writing. Virtually all insist that proper installation is the most crucial ingredient, and do not regard written warranties or guarantees as particularly important in the marketplace.

Color them forever

A nearly universal requirement imposed on replacement windows by cost-conscious owners is that they be as free of maintenance as possible. New claddings and coatings for wood and aluminum have, in the hyperbole of some of the product literature, "eliminated forever" the need for painting, and this is just as well, because few of these claddings and coatings will even *accept* paint.

Although now being offered in colors other than white, vinyl and vinyl-clad windows are seldom recommended in very dark colors. Problems may be encountered with discoloration and ultraviolet degradation of the compounds needed to obtain darker colors. Darker colors also cause vinyl, which is subject to substantial thermal expansion, to reach much higher temperatures and thus to distort unacceptably.

Tough new paints and coatings are being offered on wood windows in dark colors. They have an excellent reputation for service and durability, but seem not to be available in a wide range of colors. For example, one major wood window manufacturer offers only three choices of interior and exterior colors for a polycron coating: white, gray, and brown.

The use of anodized aluminum, according to industry association sources and several large aluminum window manufacturers, is very much on the wane. Pitting and corrosion, long a problem and now exacerbated by acid deposition in the atmosphere, is one cause. More important, there are now superior or-

WINDOW SELECTION CONSIDERATIONS

WINDOW TYPES	ADVANTAGES: 100% vent opening	Diverts inflowing air upward	Deflect drafts	Rain protection while partly open	Screen/storm sash easy to install	Easy to wash	DISADVANTAGES: Only 50% of area operable	No protection from rain when open	Hard to operate when over an obstruction	Hazard if vent low and close to walkways	Hard to wash	Interferes with furniture, drapes, blinds, etc.	Screens-storm windows difficult to provide	Sash has to be removed for washing
Horizontal sliding					◆	◆	◆	◆	◆				◆	
Double hung					◆		◆	◆	◆		◆			◆
Double hung (reversed)					◆	◆	◆	◆	◆					
Casement (out)	◆		◆		◆			◆		◆	◆			◆
Casement (in)	◆		◆		◆	◆		◆				◆		
Pivoted (vertical)	◆		◆			◆		◆		◆		◆	◆	
Pivoted (horizontal)	◆	◆	◆	◆		◆			◆	◆		◆	◆	
Top hinged (out)	◆			◆	◆				◆	◆				◆
Bottom hinged (in)	◆	◆	◆	◆		◆						◆		
Fixed sash											◆			◆
Jalousie	◆	◆		◆							◆			

Source: National Bureau of Standards

ganic and inorganic coatings for aluminum, which yield good colors and long life.

Hardware

Attaching, hinging, locking, and operating hardware are grounds for major disappointment (here, new windows, too, fall short). European windows seem to provide a preferable array of more versatile, attractive, and durable alternatives, notably for continuous perimeter locking and more positive-feeling operators. Most U.S. window manufacturers will provide "anything you want" in the way of hardware, but often at a premium and with some difficulty. If looks, security, and longevity are major considerations, designers are well advised to investigate alternatives early in the process.

Alternatives are also scant for other window appurtenances, such as roll-down external blinds, awnings, or contemporary shuttering systems. These devices offer cost-effective advantages for security, acoustical isolation, visual privacy, and thermal insulation. They, too, are seen widely in Europe and, with climate-conscious variations, in South America. Some of these devices are available for import, at high cost, but are not offered at all in conjunction with domestic windows. One would think the market here is large enough to warrant entry by a U.S. company.

Conclusion

The virtue of the replacement window may also be its vice: So many alternatives are available, each with important implications, that architects and their clients can become bewildered by and eventually weary of sifting through the information. Patient endeavor is likely to be rewarded, however, and may make the difference between the long-term success of an installation and a seemingly endless round of fenestration woes. The keys lie in assuring that the new windows are part of a comprehensive architectural solution, and in helping clients, who may be anxious to make such decisions quickly and to get started with the work, to understand why this is crucial. [Thomas Vonier]

Thomas Vonier, *AIA, is a Washington, D.C., architect and P/A's correspondent there.*

Detlef Stroel/Aldra Windows

Trocal/Dynamit. Nobel

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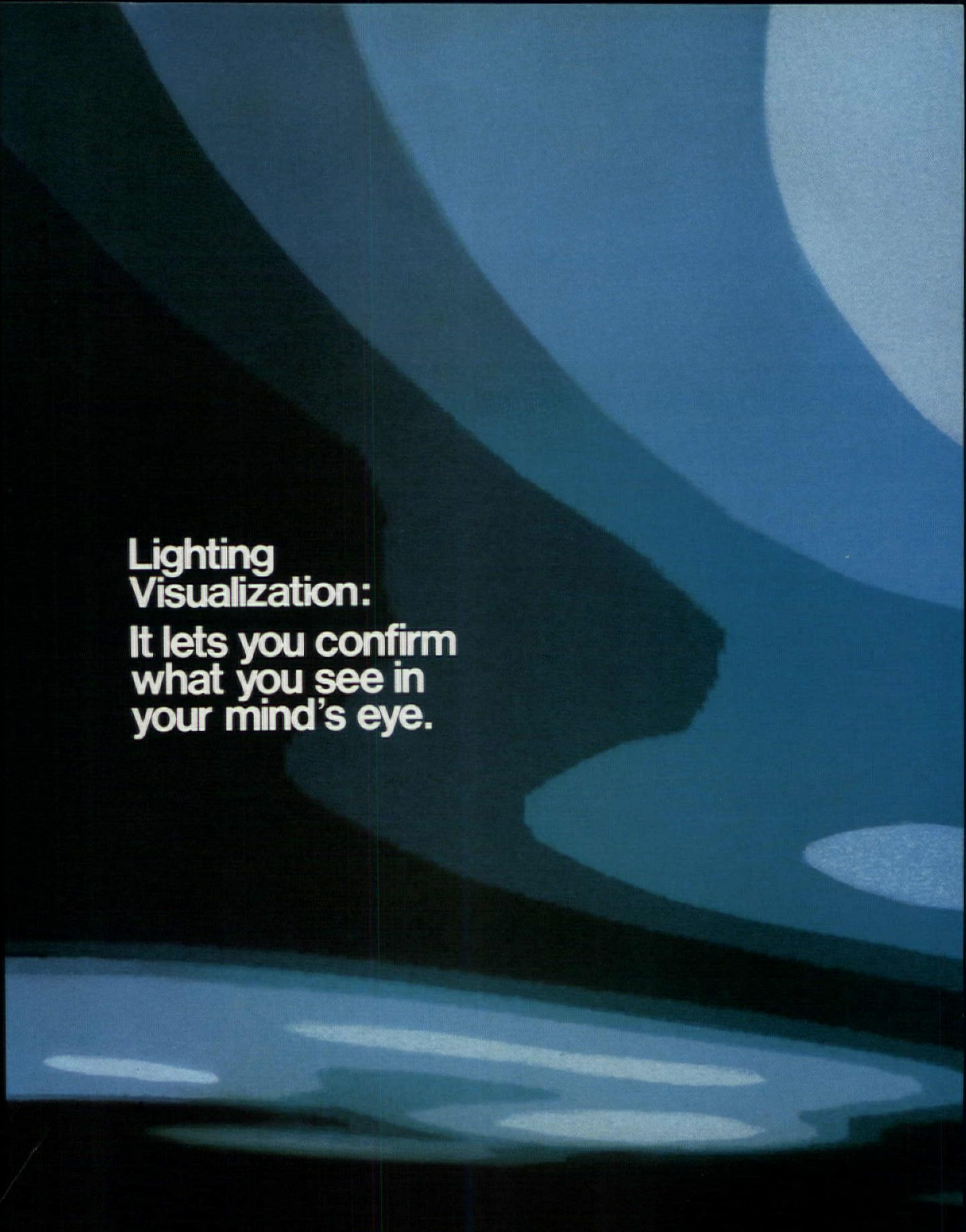
Steelcase



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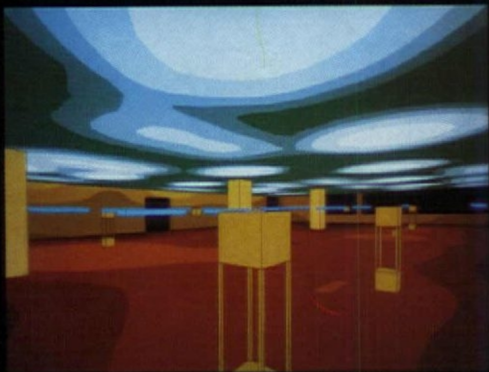

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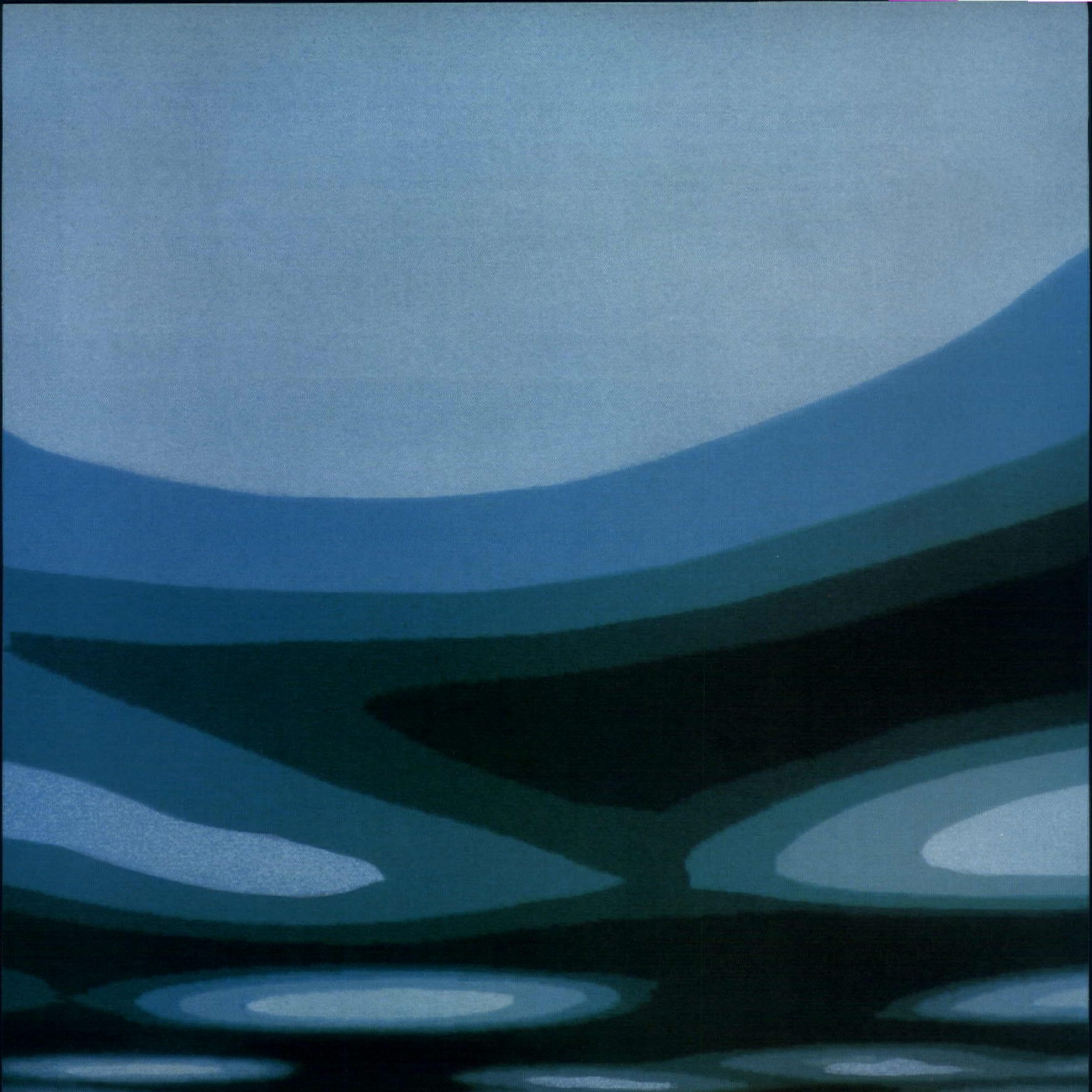

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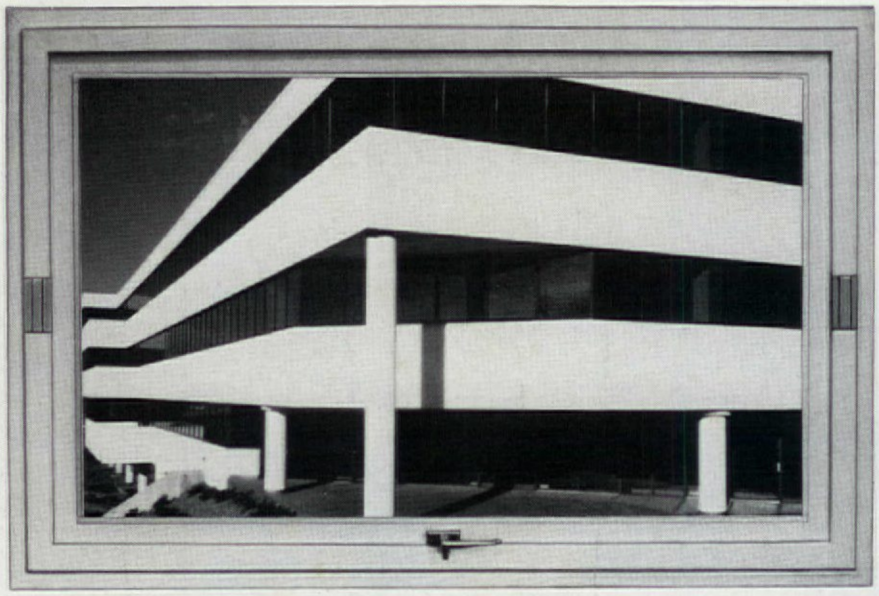

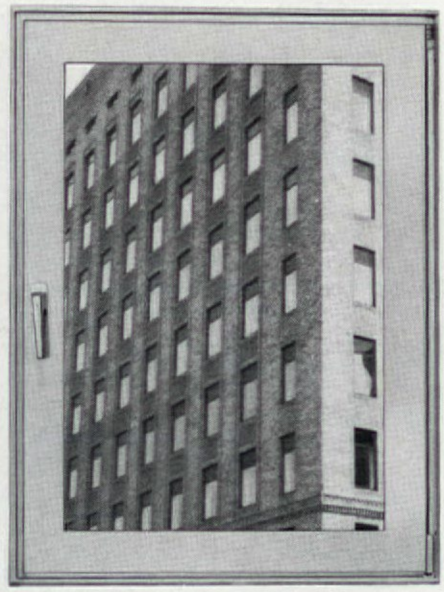

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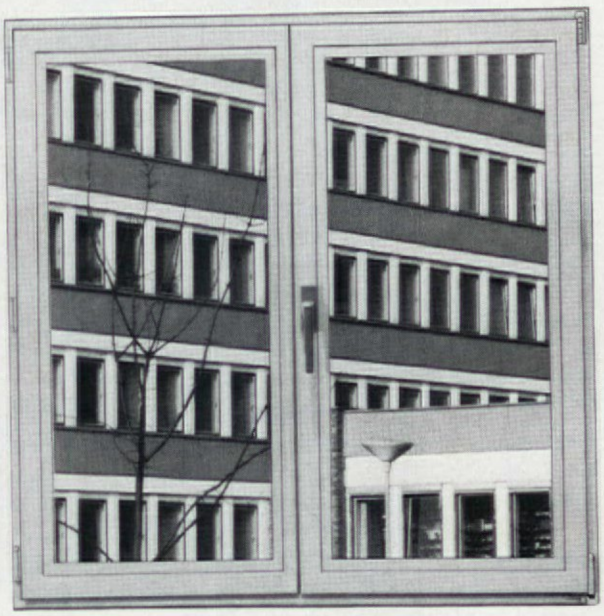

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Durability: Extruded, high impact-resistant, rigid PVC • Impervious to almost everything, i.e., mortar, corrosion, salt air, industrial pollution, chlorine, plaster, etc. • Virtually frost-free and condensation-free

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For a more detailed view of Trocal Window Systems, send for your free 8-page brochure, "A New Dimension in Energy Saving," Dynamit Nobel of America, Inc., Trocal Commercial Windows, 10 Link Drive, Rockleigh, NJ 07647.

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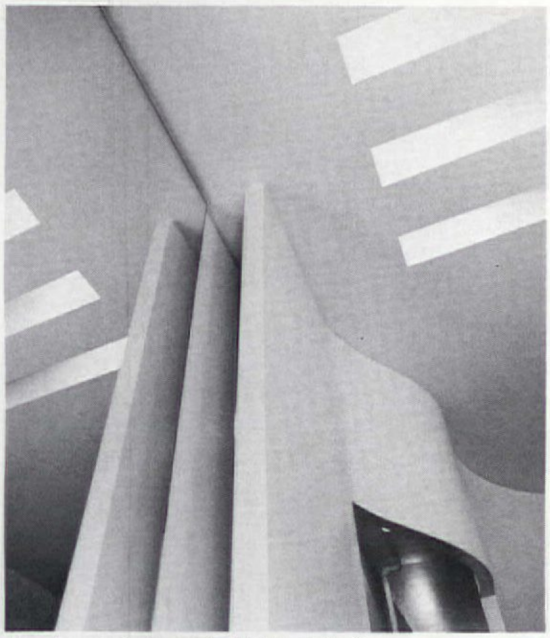
Coming next month

P/A in September: Interior design



Michael Datoli

Apartment designed by Michael Kalil.

Interior design will be the subject of the special September issue, P/A's eighth annual issue devoted to interiors. This year, the emphasis will be on the give and take of the designer/client relationship. Interior design will be viewed in the light of the clients' needs for visible identity, their own professional or business viewpoints, and their budgets. Among the 16 interiors to be featured are sets of projects—similar and dissimilar—by the same designer for the same client; several are for clients in the art and design worlds; others are notable for creativity within a minimal budget; all are lessons in the art of interpreting the client's needs.

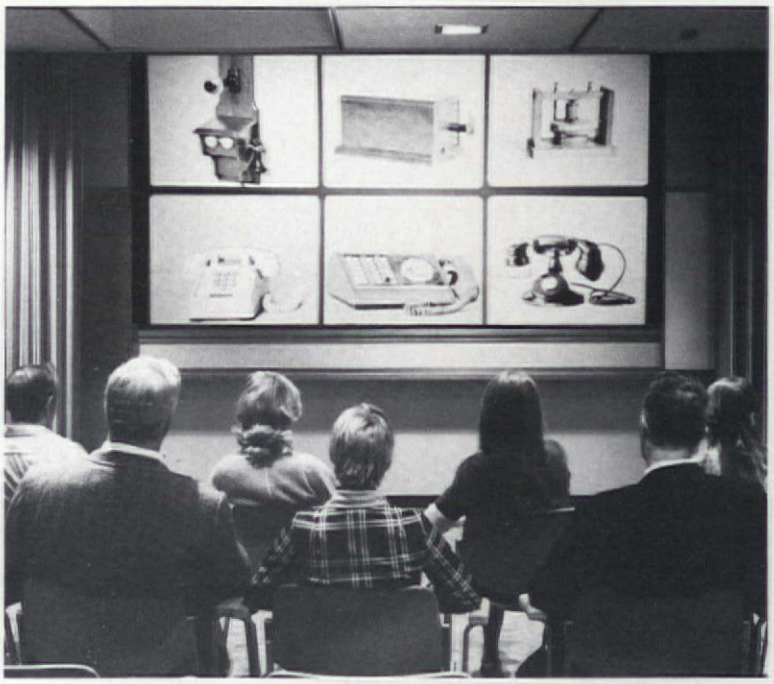
Technics: Toxic fumes will take up an all too real concern in building interiors: the gases given off in case of fire. While hard data on toxic fumes are hard to pin down, the essentials presented here will guide architects and designers to ask the right questions and weigh the answers properly.

Designer's Saturday will be the subject of a definitive guide to the annual October interior design event in New York.

P/A in October will feature James Stirling & Michael Wilford's dazzling and provocative new museum at Stuttgart, along with articles on the current design work of other internationally influential architects.

Specify Da-Lite

75th Anniversary Da-Lite 1909 1984 Projection Screens



Leading architects choose the leading projection screen

Designers of the Harvard University Science Center, the Gulf Oil Building in Pittsburgh, the National Bank of Detroit's Renaissance Center offices and the Wisconsin Telephone Company headquarters (above) all have one thing in common. They specified Da-Lite projection screens.

For visual impact...from convention centers to the most elaborate computer age audio visual facility...Da-Lite produces screens in all formats and sizes.

Da-Lite's automatic electric Electrol® screens, recessed in the ceiling and operated by remote control, lower and raise unobtrusively to set the stage for a professional presentation. Built-in Da-Lite Polacoat® rear projection and manual wall and ceiling screens offer additional versatility in perfecting the design concept.

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ACME BRICK. THE INNOVATIVE SOLUTION.

How Acme Brick gave Amarillo's Harrington Cancer Center another unique treatment.

DON AND SYBIL HARRINGTON CANCER CENTER, AMARILLO, TEXAS:
Architects: Paul Rudolph, FAIA Wilson/Doche Architects, Inc., AIA
Structural Engineer: Rex Daniel, Amarillo
Masonry: Turner Masonry, Amarillo
General Contractor: Western Builders, Inc., Amarillo

The Don and Sybil Harrington Cancer Center is part of a medical complex with the only particle accelerators in Amarillo. When the center was completed, in August 1981, it was as innovative architecturally as it was medically.

To execute Paul Rudolph's striking design, Wilson/Doche Architects went to Acme Brick.

Acme developed custom architectural brick that gave Wilson/Doche Architects the flexibility it needed to complete the project. The brick's subtle earth tones enabled the center to complement neighboring buildings in the Amarillo Medical Center complex.

Today, the Harrington Cancer Center treats about 80 outpatients a day. And Wilson/Doche Architects is again using Acme architectural brick on other West Texas projects.

For more information on innovative treatments using architectural brick, please write Marketing Services, Acme Brick Company, P.O. Box 425, Fort Worth, Texas 76101. Or call (817) 332-4101.

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Books

The Architecture of Death: The Transformation of the Cemetery in Eighteenth-Century Paris ***by Richard A. Etlin. Cambridge and London, The MIT Press, 1984. 441 pp., 268 illus., $37.50. Reviewed by Dr. James Stevens Curl.***

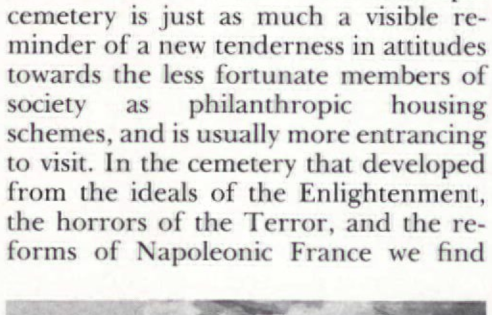
Elysium

Publication of this book was aided by the National Endowment for the Arts, and that body as well as MIT Press are to be congratulated on their imaginative support for Etlin's scholarship. *The Architecture of Death* is an immense subject, but Etlin has confined himself to a very important and significant period in the history of funerary architecture: basically the second half of the 18th and first decade of the 19th Century in Paris. The publishers deserve even warmer thanks for bringing out a work that would be regarded by most English publishers as too "specialized" by half.

Etlin correctly points to the early 19th-Century Parisian cemetery of Père-Lachaise as a milestone in European attitudes to death, disposal, hygiene, and sensibility. Certainly this noble cemetery was the exemplar for many hundreds of successors in several countries, notably the British Isles, and the United States. Few people seem to realize that the cemetery, as opposed to the churchyard, or church burial-place, is of comparatively recent date (although Classical Antiquity enjoyed cemeteries of supreme beauty and grandeur). The burial-places of the urban European were unsavory spots, with vast pits, ground that was so exhausted it could no longer facilitate decay, slimy surfaces covered with the contents of chamber-pots, and hung about with the revolting stench of cadaverous rot. Skulls and bones were common sights, and the *charniers* of the Cemetery of the Innocents in Paris had masses of human remains on display: the dead lingered among the living.

The potty-training of urban man commenced, as Etlin tells us, in France, but as this reviewer has demonstrated in his own *A Celebration of Death* (London and New York, 1980) and elsewhere, the necessities of forming cemeteries outside towns and away from the living were forced on colonial Europeans rather earlier. The British in India and the French in Louisiana formed cemeteries where the dead were disposed of in a rather more dignified manner than at home, and returning colonials found burial customs in Continental France or in Island Britain far from superior to the grand tombs and spacious layouts of cemeteries in the Indian subcontinent or across the Atlantic. The idea of the vast hygienic cemetery was then imported to the mother-countries and helped to shape reforms.

It was in France that the civilized, peaceful cemetery emerged as a result of a new concern for decency, hygiene, and the common man. The municipal cemetery is just as much a visible reminder of a new tenderness in attitudes towards the less fortunate members of society as philanthropic housing schemes, and is usually more entrancing to visit. In the cemetery that developed from the ideals of the Enlightenment, the horrors of the Terror, and the reforms of Napoleonic France we find



Longchampt-Delehaye © CNMHS/SPADEM

Alexandre-Théodore Brongniart, Chapel (unexecuted) for the Cemetery of Père Lachaise, Paris.

Classical architecture, Elysian landscapes, and an immensely moving sense of repose. In the new cemeteries the landscaped garden became the setting for Neo-Classical mausolea, pyramids, catacombs, obelisks, pedestals, columns, urns, sculpture, statuary, chapels, lodges, and all manner of architectural enrichment. Cemeteries were to be morally uplifting, educational, improving, and repositories of Taste: they were thought of as historical records, national necropolises, and peaceful bosky groves where no untoward horrors would intrude. No more would mephitic miasmas and terrible images of decaying flesh plague the living: the national pantheon was to fuse indissolubly with the arboretum, botanic garden, landscaped park, and open-air sculpture gallery. Even the Glyptotheca was projected, and in some cases realized.

Etlin has shown that there were three distinct phases in Parisian cemetery reform during his chosen period: the first was the removal of cemeteries (with slaughter houses, prisons, and lazarettos) to the outskirts of the city; the second was encapsulated in the extraordinary visionary designs of architects like Boullée who abolished the overt signs of death and decay to give us blank walls, awesome portals, and vast spaces to suggest the desolation and terror of death; and the third was a transformation that created the funerary garden, with temples, sculptures, and grottos. The last was Elysium indeed.

How splendid, one feels, if some of the necropolises-that-might-have-been had materialized! The Champs Elysées lined with tombs in the Neo-Classical manner, with Voltaire and Rousseau strategically placed near the Louvre at the very start of the linear cemetery to end all linear cemeteries; the Panthéon surrounded by fields, cypress groves, and open space instead of buildings; the factory in a Graeco-Egyptian-Revival manner to convert human remains into glass urns or sculpture; or the mighty series of Mortuary Depôts by Molinos would all have enriched Paris beyond compare. Much as the true lover of Paris enjoys Père-Lachaise and the delightful cemeteries of Montmarte or Montparnasse, the city is the poorer, one feels, for its civic masters' failure of nerve to give the go-ahead to some of these sublime and wondrous schemes.

In many ways this is a most interesting book, and a valuable addition to a neglected area of architectural study. The printing is clear and fine, and the illustrations are fascinating. However, there are one or two points of adverse criticism that need to be made: first, although there are notes, the absence of identifying marks in the text makes it slightly difficult to relate quoted sources to the passages in the book proper; second, the author translates the simplest of French phrases into English despite the probability that his readers will have at least a smattering of the French language (do we really need *cimetière* translated?); third, certain terms like "chemical furnaces" are used without telling us what they are; and fourth, the occasional use of the ghastly word "ongoing" sets the teeth on edge. The exhaustive scope of the book could have deserved an even more comprehensive bibliography: impressive though the lists of sources are, there are some strange omissions that could have been rectified to increase the value of the book to scholars. These are minor matters, however, and this reviewer will not carp further, for Etlin and his publishers have produced a remarkable work that will grace at least one set of bookshelves for years to come.

The influence of Père-Lachaise and its progeny on subsequent developments in Britain, America, and elsewhere cannot be overstressed. The great necropolises of Glasgow, Liverpool, Highgate, Kensal Green, Mount Auburn, Greenwood, and many others are all derived to a greater or lesser degree from the French exemplars. Etlin covers this point, but his main strength is the amount of detail he has given us regarding his selected topic. His illustrations are superb, and many of them have not been published before: they speak to us more eloquently than any words of the architectural ambitions of the latter part of the 18th Century, and portray not only the humanitarian ideals of the Enlightenment, but the chilling impersonality of the Terror and of egalitarianism. Elysian groves, Gessner's *Oeuvres,* and the English landscape traditions were the antidotes to these extremes, and Etlin leaves no stone unturned in his fine exposition of his theme.

Rarely does a book of impeccable scholarship come the way of the jaded reviewer, and rarely does the subject of an architecture concerned with death appear in published form these days. Death has become 20th-Century pornography, and many Western societies try to pretend it does not exist. Modern man is born in a hospital and dies in one (there are even those who say he lives in one, so antiseptic are his diet, his home, and his family). Death becomes ever remote, so fear of it increases to hysteria, and the signs are ominous for civilization itself. Death is separated from us by the television screen, by the hospital, by the doors that hide the flames of the crematory from view, and by a conspiracy to pretend it is no longer there in reality. Death is pretended violence, filmed shootings, and something that is unthinkable to most. Yet this is in itself a denial of life, for death is the only certainty in existence. The architects of the Enlightenment gave us an architecture of death that is singular, awesome, appropriate, and solemn: they created *architecture parlante* that expressed the Sublime inevitability of life's end, and Man's terrible course towards the necropolis in Elysium.

"Playstered and whited Sepulchres," wrote Sir Thomas Browne, "were anciently affected in cadaverous, and corruptive Burials," and man desired to "subsist in lasting Monuments, to live in their productions, to exist in their names." Yet, Sir Thomas reminds us, "who knows the fate of his bones, or how often he is to be buried? Who hath the Oracle of his Ashes. . .?" Like Sir Thomas, we can but wonder how "the bulk of man should sink into so few pounds of bones and ashes" if we consider "not its constitution." The architecture and landscapes of death that Etlin describes are all the more amazing when we remember this fact. Not all the grandeur of the earth can prevent the inevitable end.

It is a great pleasure to salute this study, its author, and its publishers, and to recommend this nobly conceived book to all intelligent readers.

Dr. James Stevens Curl is a British architect and town planning consultant, and author, most recently, of The Egyptian Revival.

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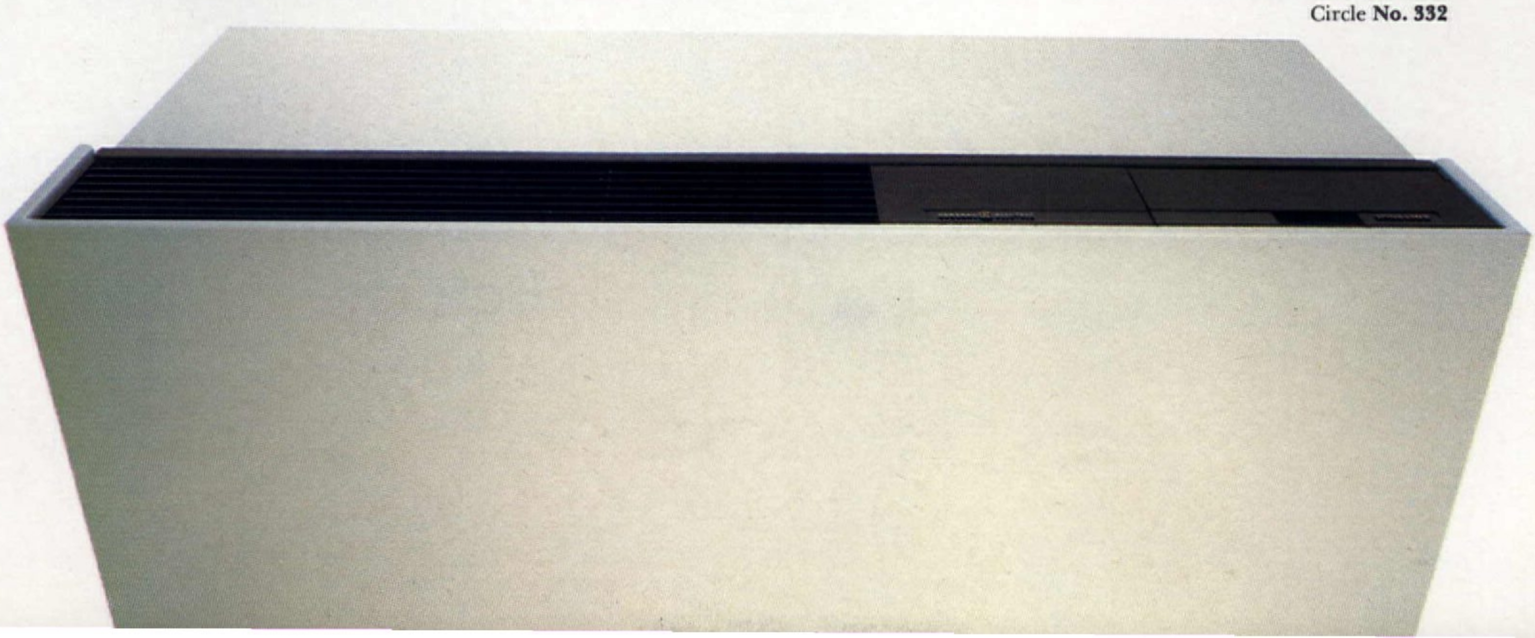

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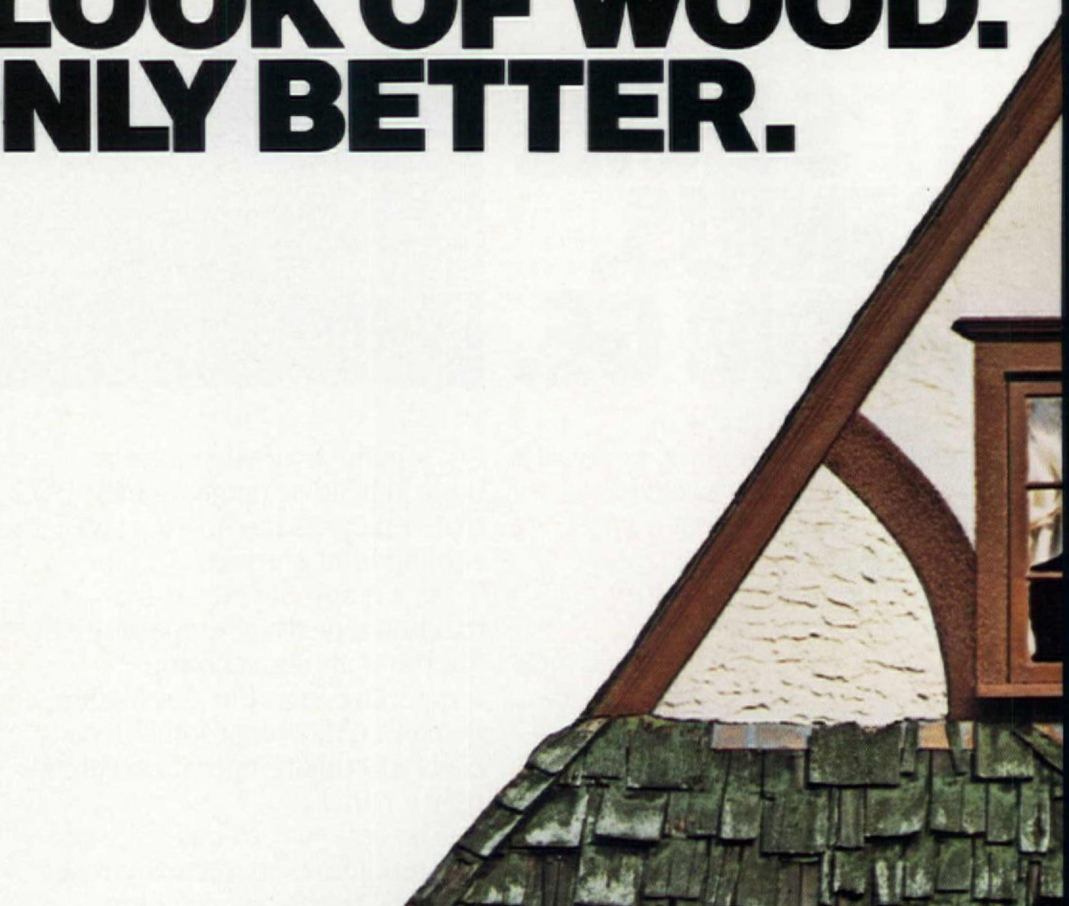

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For details, see Sweet's Catalog Reference Number 7.7 GAF.

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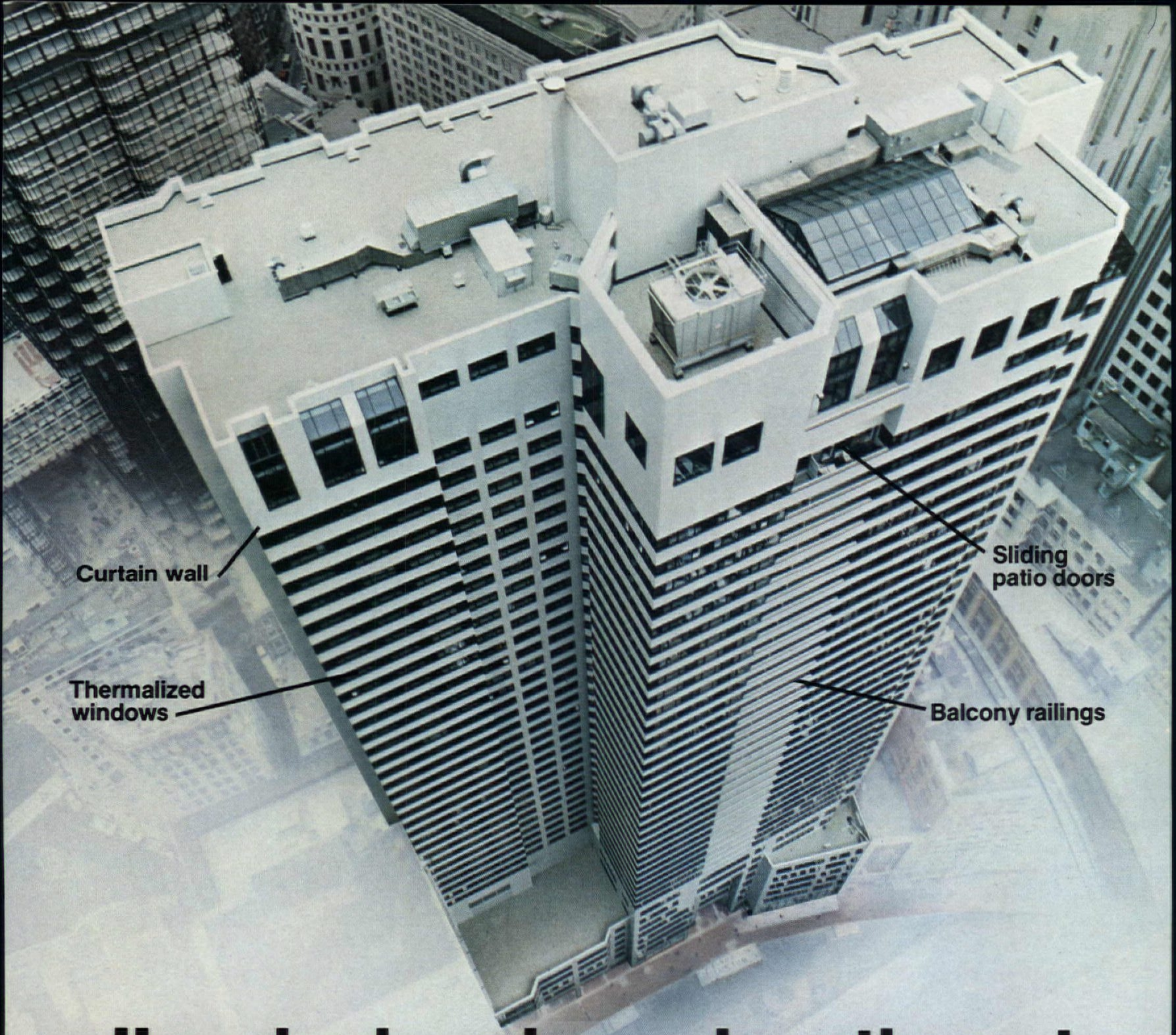


How aluminum keeps down the cost of keeping up the Devonshire.

Savings start with the Devonshire building's 230,000 square feet of low-maintenance aluminum exterior panels that make it a standout on Boston's skyline. They're coated with a new fluoropolymer finish in a shade of gray that matches across the entire facade.

Savings continue with 7,000 thermalized aluminum windows that reduce the likelihood of condensation, and reduce heating and cooling costs.

Exterior balconies on the 36 residential floors that rise above the seven commercial floors of the Devonshire have sliding access doors and railings of aluminum for its durable and attractive finish with a minimum of maintenance.

Aluminum gives architects other opportunities to build-in operational and maintenance economies. For example, aluminum modular flooring systems to reduce the cost and disruption of installing and changing underfloor wiring and conduit. Aluminum ceiling systems for a rich choice of colors, styles and finishes as well 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.

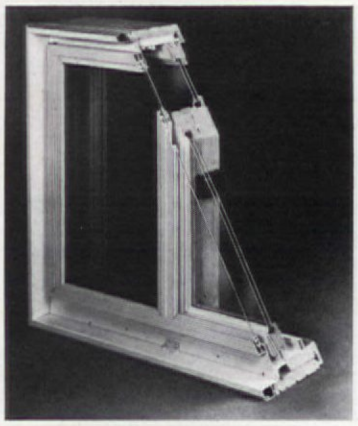
For more information write the Aluminum Association, Inc., Dept. B, 818 Connecticut Avenue, N.W., Washington, D.C. 20006.

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

MAKE IT WITH ALUMINUM

P/A Products and literature

The products and literature section begins with items related to the Technics article, p. 103, about replacement windows.



NorClad™ aluminum-clad sliding windows and patio doors are intended for new construction or to replace existing aluminum units without reframing. The frames combine wood and aluminum for energy efficiency and low maintenance, and windows have a weatherstrip seal. Both sides of the window slide. Doors and windows are both available in brown or white, with the door also available in sandstone. Norco Windows, Inc.
Circle 100 on reader service card

Retrofit windows of aluminum cover or replace existing frames and are installed from within the building. They are finished with PPG's two-coat Duranar fluoropolymer coating available in seven standard colors and custom colors. A chart shows styles, glazing options, and locking methods. The company will also provide engineering consulting services and/or installation crews. Graham Architectural Products Corp.
Circle 101 on reader service card

The Trim-All replacement window system has an aluminum exterior frame that covers the existing frame after the sash has been removed. Once the new frame is anchored and caulked in place, it will accept any one of 38 window types. The company says it can provide windows and pans to match existing architectural styles or new installations. EFCO Corporation.
Circle 102 on reader service card

The NuPrime® VinylWeld® replacement window has window members welded to form square, rigid, strong sashes. The material is white throughout, not just coated. Precision mitered corners are locked together and fusion welded at 475 F; then horizontal and vertical sash members are welded into a single piece. The low conductivity of vinyl keeps the window from transmitting heat or cold. Weather-stripping seals out wind and moisture. Season-all Industries, Inc.
Circle 103 on reader service card

Millwork of the 17th and 18th Centuries, including mortise-and-tenon sash and frames with old glass, is available in authentic reproductions. Other products include interior doors, exterior doors and entries, shutters, and paneling. Maurer & Shepherd Joyners, Inc.
Circle 104 on reader service card

Aluminum window systems for replacement, new construction, and historic restoration are offered in a 16-page brochure. Case histories of the selection of new and replacement windows are presented, along with installation details and energy information. Window and performance specifications are provided. DeVac, Inc.
Circle 200 on reader service card

Energy-Guard™ residential replacement windows of aluminum have a Climate Guard® thermal break and interior vinyl overlay for energy saving. The double glazing has almost an inch of dead-air space between panes. There is also a triple-glazed option that could save as much as 63 percent of heat lost through single-pane windows. The windows are available in ten interior/exterior color combinations and three styles: double hung, double slider, and picture window. Reynolds Aluminum Metals Company, Construction Products Div.
Circle 105 on reader service card

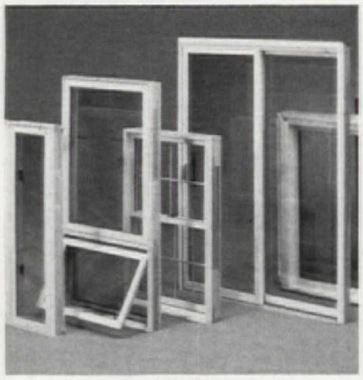
Window pamphlet explains energy ratings and insulation terminology used to rate window efficiency. It offers a chart showing energy efficiency of Hurd's aluminum-clad casement, double-hung, and awning windows and patio doors, with space for writing in values of competitive products. It also explains the increased energy efficiency of windows and doors with Southwall Corporation's Heat Mirror film added to glazing. Hurd Millwork Company.
Circle 201 on reader service card

Trocal® windows of 100 percent polyvinyl chloride (PVC) never need painting and won't swell, peel, pit, rot, or dry out, according to the manufacturer. A homogeneously bonded 20-mil layer of colored acrylic provides permanent color that cannot peel off, fade, or deteriorate. Tilt/turn, project, casement, pivoting, double-hung, and sliding windows, a sliding door, and fixed lites are available. Trocal® Window Systems, Dynamit Nobel of America, Inc.
Circle 106 on reader service card

Arch-Top™ windows of all wood with aluminum cladding are custom made in any size and shape to match color and clad profile of major window manufacturers' products. They are adaptable to residential or commercial use and fit any wall depth. Exterior aluminum is primed and finish coated with baked-on acrylic enamel paint for maintenance-free surface. Interior sill, jambs, and stop are solid clear pine that will accept any stain, paint, or finish. New Morning Windows.
Circle 107 on reader service card

Aluminum replacement windows are offered with four glazing options: single glazed, single glazed with insulating panel, ⅝-inch double insulated glazed; ⅝-inch double insulated glazed with insulating panel. They are equipped with high-security latches and a sealed top panel to eliminate air infiltration. Panels can be adjusted for draft-free ventilation. Fisher-Insley Corporation.
Circle 108 on reader service card

Replacement window capabilities brochure illustrates three very different retrofit projects: Buffalo, N.Y., City Hall; One Winthrop Square, Boston; and Soldier's Field Press Box, Chicago. The four-page color brochure describes each project and the way in which the retrofit was accomplished. Marmet Corporation.
Circle 202 on reader service card



Commercial window systems for new and retrofit applications are made of wood with exterior cladding. Wood offers insulating value and condensation resistance, as well as a warm appearance. Aluminum exterior cladding provides maintenance economy. Standard exterior finish is chestnut bronze or white. Glazing options include sealed, double-pane insulating glass and triple glazing. Casement, awning, double-hung, and sliding windows, skylights and patio doors are offered in the 58-page brochure. Caradco Corporation.
Circle 203 on reader service card

Institutional replacement window catalog offers single-hung and double-hung series, horizontal sliders, and inside storm windows. Frames are heavy-gauge extruded aluminum. All models are available glazed with Heat Mirror™ insulating glass, a product of Southwall Corporation. The 12-page catalog provides short form specifications for the windows and detail drawings. Louisiana Pacific Corp., Weather-Seal Div.
Circle 204 on reader service card

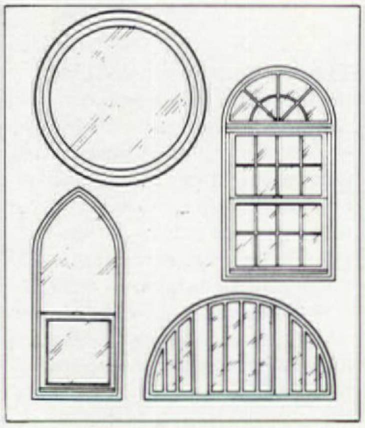
'Aluminum Windows and Curtainwall' brochure includes information about choosing replacement windows for remodeling. Factors considered are energy savings, space utilization, and architectural integrity. The 20-page catalog also covers such custom work as detention windows, church windows, and windows that provide ventilation while closed. Wausau Metals Corp.
Circle 205 on reader service card

Wood windows catalog covers several styles of operable windows and fixed lites in a variety of shapes and sizes. Size charts are provided for each, and drawings show installation details. Several door styles are also described and illustrated. Specifications describe window and door frames, sash or door panels, glazing options, grilles, screens, and hardware. Also included are data on SunGain film added to glazing in several configurations. Weather Shield Mfg., Inc.
Circle 206 on reader service card

Round decorative window frames of reaction injection molded Baydur 724 polyurethane structural foam, by Mobay Chemical Corp., are made to match double-hung and casement windows and are compatible in size and appearance with existing wood windows and doors. Complete window units consist of molded polyurethane exterior portion; interior sash, trim, and rail made of wood, attached to the frame, ready for painting, and a removable wood grille. The unit has a molded polyurethane nailing flange with predrilled holes for installation in the house framing. Webb Manufacturing, Inc.
Circle 109 on reader service card

Double-hung, thermal-break-multi-frame windows E-245 and E-245H, designed for rehab, new commercial, and residential construction are covered in a six-page brochure. Specifications are provided for materials, frames, sash, hardware, finish, glass, screens, and installation. Features include double-panel operation, easy panel removal for cleaning or glass replacement, and fin-type pile weatherstripping in both sashes. Capitol Products Corp.
Circle 207 on reader service card

Double-glazed windows that have interior and exterior glazing frames separated by neoprene gaskets are pressure sealed with mechanical fasteners. Models with thermal barriers, all of which can be cleaned from the inside, include a double-hung window; horizontal rolling window available as two-lite single vent or three-lite center vent; and a one-lite operating nonventilating window. The 16-page catalog that describes the windows has a selection chart listing types, ratings, construction, and glazing options. Amacor Industries, Inc.
Circle 208 on reader service card



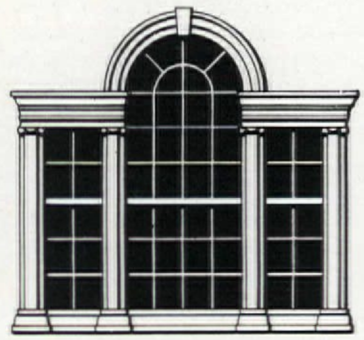
Pro-Comm™ replacement windows can be modified to fit almost any frame shape. Frames are made from aluminum extrusions with thermal breaks and compression-sealed foam weatherstripping to reduce air infiltration. Options included internal blinds, operated by magnetic force, eliminating physical connections to adjust louvers; Van-Gard® security glazing consisting of an outer lite of clear polycarbonate and an inner lite of double-strength glass. Window styles, trim, and panning systems are described and illustrated in a 16-page brochure. Season-all Industries, Inc.
Circle 209 on reader service card

Window/door catalog is a series of brochures showing windows and doors having thermal barriers for commercial and residential installations. The brochures provide detail drawings and specifications and illustrate applications in specific buildings. Acorn Building Components, Inc.
Circle 210 on reader service card

Aluminum window and windowall brochure includes information about window replacement systems that offer energy and maintenance cost savings while providing the design suited to the style of the existing building. The 12-page catalog covers several types of windows with or without thermal barriers, as well as a curtainwall system. Modu-line Windows.
Circle 211 on reader service card

Windows, doors, and sloped glazing systems for commercial buildings are shown in a 40-page catalog. The windows are made from wood, aluminum-clad on the exterior with a baked enamel finish. There are casement, awning, double-hung, and circle-head windows. Double-glazed units can be supplied with Slimsash® aluminum slat blinds between glass panels. Several remodeling and replacement styles are included, with details showing methods of installation from the exterior or the interior. Also included are swinging and sliding glass doors and sloped glazing and skylights. Rolscreen Company.
Circle 212 on reader service card

Windows and gliding doors catalog provides information about vinyl-clad windows with a preservative-treated wood core. Window styles include casement, awning, angle and box bays, bowed, gliding, and double-hung. Painting and installation notes, specifications, insulating values, and air-infiltration and heat-gain data are provided in the 56-page catalog. Andersen Corp.
Circle 213 on reader service card



'Speaking of Windows,' Technical Note 16, provides a historical background on glass and a 22-page glossary of more than 570 terms related to windows, with illustrations. Written by Seichi Konzo, emeritus professor of mechanical engineering, University of Illinois, the 32-page brochure is $3 plus 50¢ postage and handling and is available from Small Homes Council-Building Research Council, University of Illinois, One East Saint Mary's Road, Champaign, Ill. 61820.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Made-to-order windows in more than 1500 sizes have sash, casings, and jambs of Ponderosa pine, with all exterior wood treated to prevent rot and decay. Most windows are available with removable double glazing, insulating glass, triple glazing with removable storm panel, or Tripane insulating glass with two air spaces. They are weather-stripped to minimize drafts. The windows are shown and described in a 40-page catalog, with size charts and installation details. The catalog also shows terrace and patio doors. Marvin Windows.
Circle 214 on reader service card

Windows and doors for new or retrofit applications are the subject of a 16-page brochure. Windows are constructed of wood or metal-clad wood in a variety of opening methods and are reversible for easy cleaning. The brochure provides information about performance, window construction, glazing, materials, and finishes. It also explains the Exhaustair triple-glazed system that uses slots at the sill to draw room air between glass panes, keeping the inner glass surface at a comfortable temperature. Optional blinds deflect solar radiation in warm weather. Specifications are included. Carda, Div. of A.O. Stilwell Co.
Circle 215 on reader service card

'Replacements Windows and Doors,' a 16-page brochure, illustrates and provides specifications for several window styles including Model 803 commercial replacement window. It has one-inch insulated glass, polyurethane thermal break, heavy-duty aluminum frame and sash, two energy locks on each sash, and sweep locks at meeting rails. The Masterguard version, for schools, institutions, and high-crime areas, uses polycarbonate glazing instead of glass for greater security. Air Master.
Circle 216 on reader service card

'Voluntary Guide Specifications for Aluminum Architectural Windows,' published by AAMA, assists those responsible for specifying high-performance aluminum windows. They include prime or replacement windows, either nonthermal or thermally improved designs, in many types and styles. Prepared in the CSI three-part format, it has commentary and instructions following specified requirements, where appropriate. The guide is available for $10 per copy from American Architectural Manufacturers Association, 2700 River Rd., Des Plaines, Ill. 60018.

The 'Bretz' seating collection, made in Israel, includes the armchair shown and a sofa. Upholstery is soft, supple Elmo™ leather available in several colors. Regba-Diran, Inc.
Circle 110 on reader service card

Vogue decorative laminates are available in seven new colors, all in either glossy or textured finish: Rose Bisque, Peachykeen, Tea Rose, Iced Plum, Chesapeake, Saxe Blue, and Shallows. Textured finish, general purpose grade, comes in two sizes: 48" x 96" and 60" x 144"; glossy finish in general purpose and vertical grades is 48" x 120" only. Nevamar Corp.
Circle 111 on reader service card

Classic wood columns of Western hemlock and Douglas fir are available plain or fluted in lengths from 8 to 20 feet. Matched bases and capitals are also provided. All parts are completely sealed to prevent moisture penetration and to provide excellent paint adhesion. E.A. Nord Co.
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Mapico® pure synthetic iron oxides are inert, permanent, relatively inexpensive pigments for coloring cement products. The oxides and color formulations are discussed in a six-page brochure that includes a chart of colors which can be produced with the oxides. Columbian Chemicals Company.
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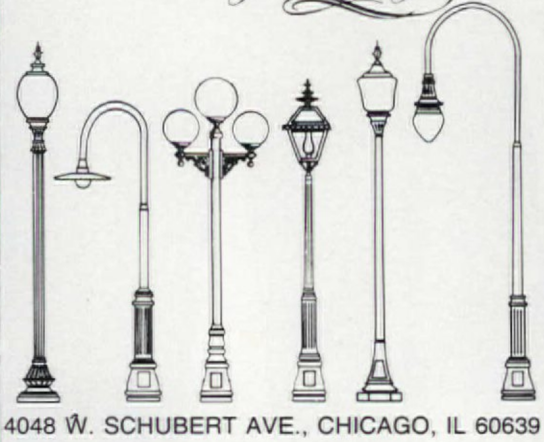

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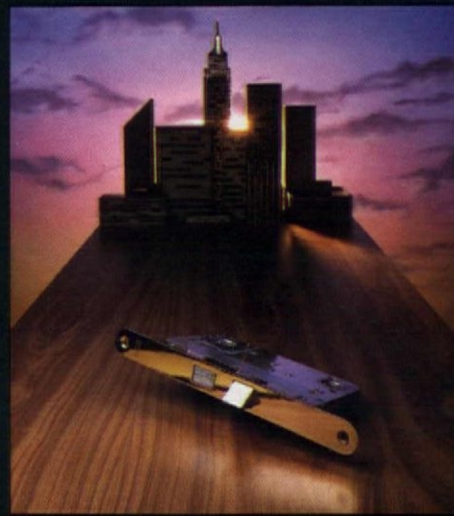

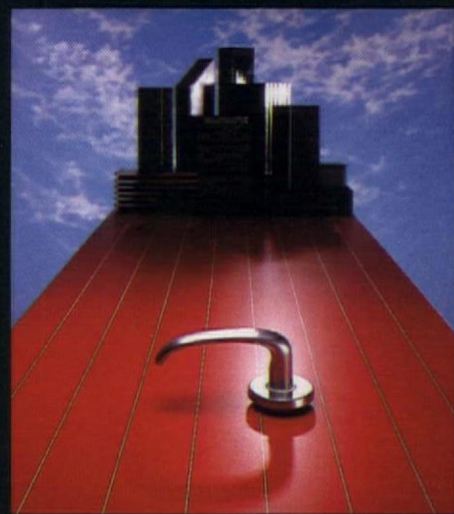

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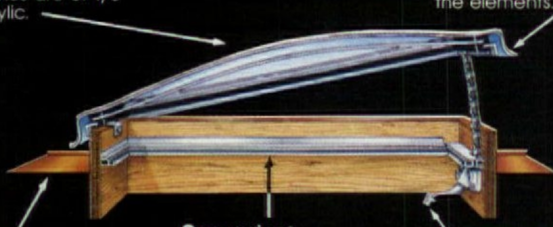

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Suprascan™ 9800 Series electrostatic plotter, with 508 dots per inch, has 62 percent more dots per inch than competitive models. It can be used with either roll paper or vellum. Standard features include MicroResolution™ writing head, built-in self-diagnostics, automatic monitoring of supplies and toner, integral paper take-up and paper cutter. Optional feature is the Graphware controller to perform vector-to-raster conversion, freeing the host computer for other activities. Benson, Inc.
Circle 113 on reader service card

Recreational equipment catalog covers swimming pool, aquatic, recreational, and competitive equipment. Besides steel pool walls, floors, and recirculating perimeter systems, the 116-page catalog offers filtration systems, pool safety products, therapy pools, and deck equipment. Competition and instructional items include pace clocks, kickboards, and other training products, as well as water sports equipment for volleyball, basketball, and polo. Recreonics Corporation.
Circle 218 on reader service card

Preformed roofing and cladding/siding six-page Spec-Data brochure describes Decor-Rib™ batten seam roofing, Decor-Seam™ and Gran Prix® standing seam roofing, and Posi-Lock™ soffits. Technical information is provided about baked-on coatings. Materials available are copper, anodized aluminum, and Bethlehem Steel's Galvalume. Profiles, shapes, and locks are illustrated. Howmet/Alumax, Building Specialties.
Circle 219 on reader service card

Louver brochure covers fixed and operable louvers. Details, blade profiles, suggested specifications, and test and performance data are provided in the 32-page catalog. Categories include roll-formed louvers, fixed and operating louvers, door louvers, acoustical louvers, modular brick and block vents, and vertical/horizontal chevron blade louvers. Construction Specialties, Inc.
Circle 220 on reader service card

Architectural panels for roofs, soffits, or walls, roll-formed from aluminum alloy or Bethlehem Steel's Galvalume™ steel, are available in custom cut lengths up to 40 feet. The panels are described in a 20-page brochure illustrated with panel styles, line profiles, and detail drawings of suggested structural design. Colors shown on a chart are Crimson Red, Aztec Gold, Copper, Hawaiian Blue, Polar White, Koko Brown, Light Stone, and Burnished Slate. Metal Building Components, Inc.
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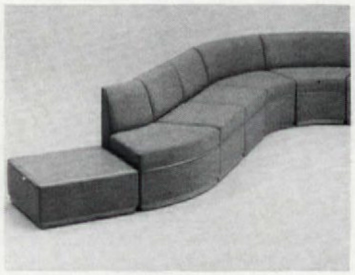

Encompas I lounge seating consists of modular upholstered units accented with oak trim reveals. Thre are corner and armless modules, curved armless pieces, an ottoman, and a table. Trim is finished in natural, medium, or dark oak. Carolina Seating Company.
Circle 114 on reader service card

Square bollard lights of heavy precast aggregate are virtually vandalproof and maintenance-free. They have specular spun aluminum reflectors and accept 200-watt incandescent, 150-watt high pressure sodium, or low-watt mercury vapor lamps. The bollards are suitable for malls, parks, walkways, and similar areas of pedestrian traffic. Trimble House Corp.
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Proximity-Plus card reader for access control can read from a distance of up to two feet and through walls of glass, brick, cement, wood, or wallboard. This allows readers to be concealed to prevent tampering or vandalism. Each card is unique; the system allows over 250 million individual codes for high security. The hidden reader allows new applications such as tagging inventory or assets with cards, installing readers in confidential/maximum security locations, or installing cards on moving objects. Cardkey Systems.
Circle 116 on reader service card

The Directolite wall bracket for outdoor area lighting, or tamperproof construction, has an adjustable cut-off. The cast aluminum fixture has a polycarbonate door enclosure and is fully gasketed, weatherproof, and UL listed for outdoor and wet locations. Directolite is also available for pole mounting. mcPhilben/Omega Lighting.
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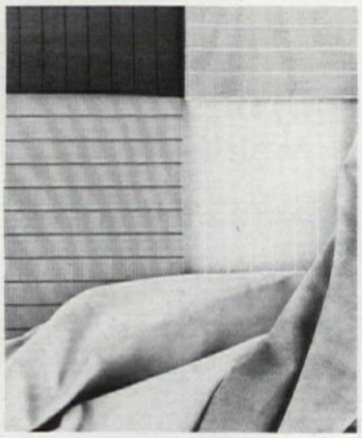

Wallingford Striped Cloth, pin-striped in contrasting colors, has a ribbed surface. For upholstery uses only, the 51-inch-wide fabric is woven of 66 percent cotton and 34 percent viscose. Colors include gray with red stripe, red with navy, and cream with white. Also available are pigskin suedes, 30" x 40", in burgundy, chamois, and gray. Brunschwig & Fils, Inc.
Circle 118 on reader service card

Parabolume lighting brochure describes sources of reflections on video display terminals caused by operator clothing, glare from windows and bright surfaces, incorrectly placed illumination sources, and high levels of illumination. The four-page brochure explains how Parabolume lighting and anodized aluminum louvers minimize glare. Columbia Lighting, Inc.
Circle 222 on reader service card

Building materials

Major materials suppliers for buildings that are featured this month as they were furnished to P/A by the architects.

Pingry School, Bernards Township, N.J. (p. 65). *Architects: Hardy Holzman Pfeiffer Associates.* Steel frame: Bethlehem Steel. Steel joists: Ceco. Steel decking: Wheeling. Concrete masonry units: Plasticreto Block and Supply. Preformed metal panels: Binkley Co. Terra cotta: Gladding, McBean. Structural glazed tile: Stark Ceramics. Aluminum curtainwalls and windows: Kawneer Co. Insulated panel skylights: Kalwall. Glass skylights: Fisher. Brick pavers: Hastings Pavers. Rubber flooring: Pirelli. VAT: Armstrong. Wood flooring: Robbins, Inc. Metal pan ceilings: U.S. Gypsum. Membrane roofing: Gates Engineering. Terne-coated stainless steel roofing: Follansbee Steel. Interior paint: Con-Lux. Hardware: Russwin. Lockers: Republic Steel. Wood bleachers: Universal Bleachers. Swimming pool: Paddock Pools. Laboratory equipment: Kewaunee Corp. Tower clock: Electric Time Company. Tennis courts: Chevron. Running track: American Surfacing Company. Steel radiators: Runtal Radiators. Carpeting: Harbinger. Wood tables: Krug. Commons seating: P. W. Lombard. Lounge seating: Vecta. Auditorium seating: Irwin Seating.

Charleston Place, Boca Del Mar, Fla. (p. 74). *Architects: Andres Duany & Elizabeth Plater-Zyberk, Architects, Miami.* Wood trusses: Custom Design Truss Co. Aluminum windows: Pan American Window. Metal doors: Taylor. Wood overhead doors: Raynor. Brick paving: Donan. Fiberglass insulation: Owens-Corning. Latex paint: Devoe. Hardware: Schlage. Kitchen equipment: Whirlpool. Tubs, lavatories, water closets: Briggs. Plumbing fittings: Delta. Air conditioning: Carrier.

Ontario Trucking Association Building, Rexdale, Ont. (p. 80). *Architects: Baird/Sampson Associates, Toronto.* Structural steel: Russelsteel, Jensen Steel. Windows: Kawneer. Skylight: Slimlight. Doors: Architectural Hardware. Overhead door: Dodds. Flooring: Colonnade Carpet, Amtico. Acoustic tile ceiling: Armstrong Cork. Roofing: Domtar. Insulation: Dow Chemical, Fiberglas. Paint: Color Your World. Hardware: Hager, Schlage, LCN, Corbin, Aljohn Metals. Kitchen equipment: Maytag, Inglis. Fire detection & alarm system: Edwards. Signage: Letrasign, New Style Signs, Brill-Light Neon. Lighting: Johns-Manville, Lightolier, C + M/Westinghouse, Rabb. Plumbing and sanitary equipment: American-Standard, GSW Inc., Hubert. Air conditioning: Carrier. Environmental control systems: Honeywell. Lamps: Luxo. Furniture: D.G. Severn, Aarkash, Architectural School Products. Blinds:

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Levolor. Upholstery material: Egan-Laing. Acoustic panels: Decoustics.

Enerplex, Princeton, N.J. (p. 82). *Architects: Skidmore, Owings & Merrill, New York; Alan Chimacoff, Princeton.* Reinforced concrete: Bethlehem Steel and Richcrete Concrete. Steel frame: Slosher Steel. Concrete and steel deck: Bethlehem Steel and Richcrete Concrete. Roof: Carlisle. Curtain wall: LOF Glass, Union County Plate Glass, Alumiline. Ribbon windows: LOF. Indiana limestone: Bergen Blue Stone. Gypsum wallboard: Anderson. Hollow metal window frames: Builtrite. Hollow metal frames and opaque panels: Fisher Skylights, Robertson Panels. Hollow metal doors: Somerset Doors. Exterior paving: Hastings Pavers. Interior paving: Domestic Marble. Waterproofing: Sonneborn. Area drains: Aircon. Roof insulation: Owens-Corning. Exterior and interior alkyd enamel: Conlux. Exterior resinous coating: Du Pont. Hardware: Corbin. Fire detection: Simplex. HVAC controls: Widelite/GE, Allen Electric. Elevators: Dover. Metal stairs and rails: Slosher Steel. Exterior halon lighting: Widelite. Interior incandescent: Sylvania. Fluorescent: Widelite. Toilet fixtures: American-Standard. Hollow metal stalls: S & D Sales. Toilet accessories: Accessory Specialties. Water fountains: American-Standard. Sprinklers: Adelpia. Electric resistance heaters: Aircon. Well-water heat pump: Dunham-Bush. Air conditioning: Aircon. Environmental controls: Robertshaw. Carpets: Bentley Mills. Horizontal blinds: Atco-Levolor. Ice pond structure: Span Systems. Solar domestic hot water system: Aircon. Smoke evacuation system: Penske. Landscaping: Panacek.

Eleven South LaSalle Street, Chicago, Ill. (p. 90). *Architects: Hammond Beeby & Babka, Chicago.* Marble: Carrara Marble and Mosaics Co. Custom bronze doors, grilles, and desk: Illinois Bronze Works. Revolving bronze door: Crane Door Co. Exterior storefronts: Kawneer. Custom lighting and bronze stool: Wilmer S. Snow. Directory: Tablet & Ticket Co. Leather upholstery: Interior Crafts.

Carver-Hawkeye Sports Arena, Iowa City, Iowa (p. 94). *Architects: CRSS/CRS Sirrine, Inc., Houston, Texas; associate architects, The Durrant Group, Dubuque, Iowa.* Weathering steel: U.S. Steel. Glass block: Pittsburgh Corning. Lantern fabric: CHEMFAB (fabric manufacturer); Birdair Group (lantern fabrication). Steel deck: Bowman. Aluminum curved fascia: Consolidated Aluminum. Aluminum door and window framing: Kawneer. Metal framed skylights: Boehme. Wood doors: Weyerhaeuser. Hollow metal doors: Curries. Sectional steel overhead doors: Crawford. Ceramic tile: American Olean. Lay-in acoustic panels: USG, Armstrong, Owens-Corning. Reinforced PVC roofing, mechanically fastened: Sarnafil. EPDM sheet waterproofing: Carlisle. Caulking and sealants: Tremco, Pecora. Insulation: Dow Styrofoam (at foundation); GAF (at roof). Roof and deck drainage: Wade. Steel stud and gypsum board walls: USG. Masonry walls: King Materials. Folding partitions: Emco. Paint: Glidden. Hinges: Stanley. Locksets: Sargent. Door closers: LCN Closer Co. Panic exit hardware: Von Duprin. Expanded metal lockers: Lyon Metal Products. Fire extinguisher cabinets: JL Industries. Fixed seating: Irwin Seating. Movable seating: Universal Bleacher. Signage and banners: Nesperspsigns. Elevators: Schumacher. Steel pipe rails: Noredco. Lighting: exterior HID, Sterner; interior sport, Hitek; interior HID, Lightolier; fluorescent, Daybright; incandescent, Lightolier; exit, mcPhilben. Electrical switch gear, transformers, switchboard & panelboard: GE. Emergency generator: Kohler. Auto transfer switches: Asco. Lavatories, water closets, and urinals: Kohler. Saunas: Tylo. Showerheads and fittings: Bradley. Flush valves: Sloan. Metal stall partitions: Global Steel. Washroom accessories: Accessory Specialties. Water fountains: Elkay. Fire sprinklers: Continental Fire Sprinkler. Floating piping systems: Gruvlok by Grinnell. Baseboard radiators, central station VAV system: Trane. Heating/ventilating rooftop units: Semco.

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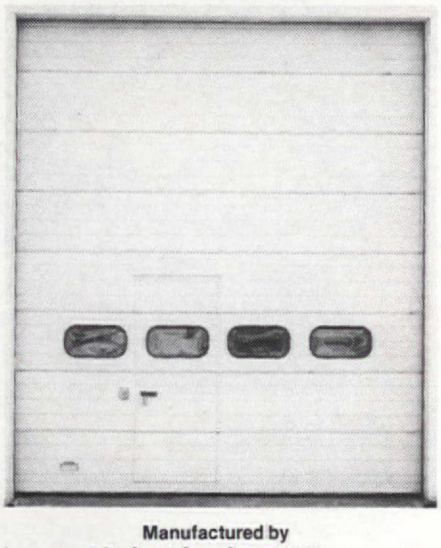

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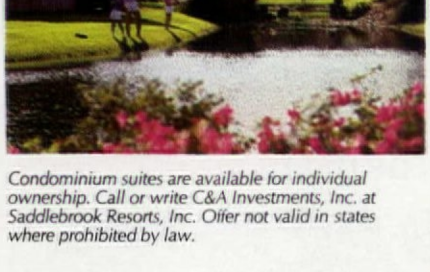

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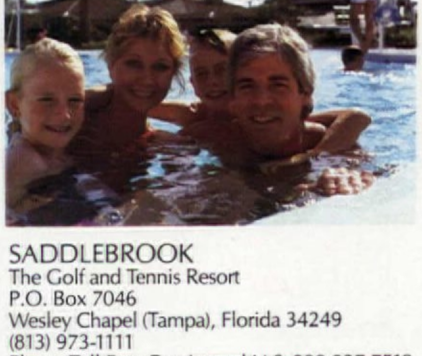

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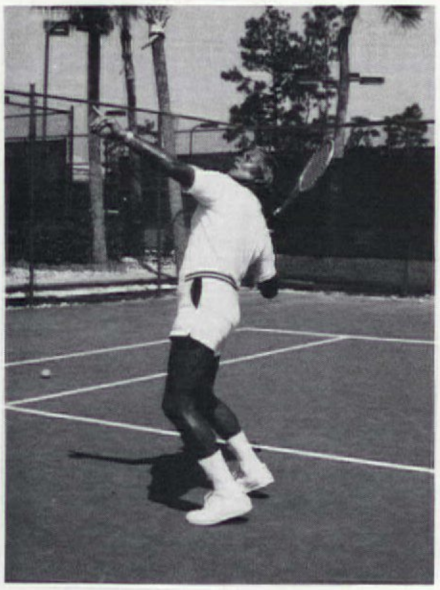

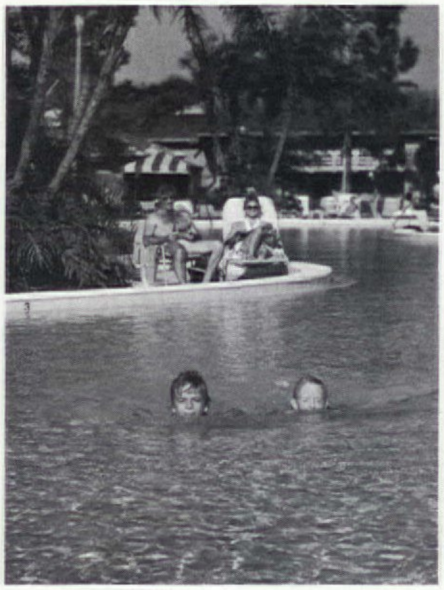

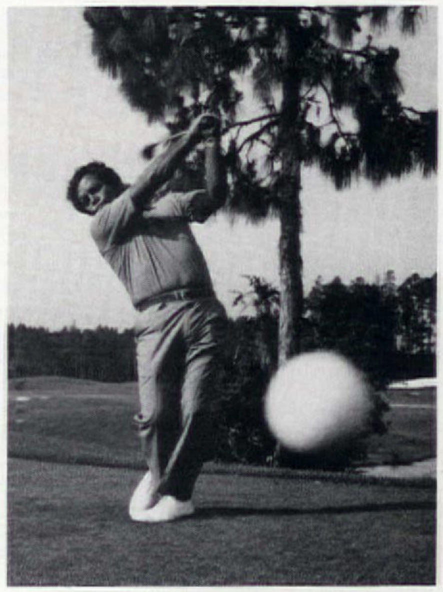

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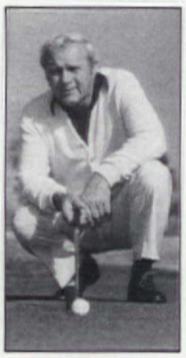

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Alaska—USKH, a 70-person architectural, engineering and surveying firm with offices in Anchorage and Fairbanks, has two openings: Director of Construction Administration and Quality Control—Professional registration, BSCE or BArch, 10 years responsible experience emphasizing construction management. Responsible for establishing quality control standards, conducting plan reviews, assisting clients with bidding and negotiations, and contruction inspection. Project Manager—BArch, professional registration, 10 years progressively responsible experience on school, health care, corrections, commercial and/or multifamily residential projects. Responsible for design and management of project teams on multiple projects. Extensive client contact. Send resumes to 2515 "A" Street, Anchorage, Alaska 99503 or call (907) 276-4245. USKH is an EOE.

Architect—Design Partner—Multi-disciplinary firm providing architectural, engineering, and many specialty consultation services nationwide and internationally has opening for a qualified architect, leading to the position of architectural design partner, capable of assuming autonomous design responsibilities. Candidates should have a strong academic background and a minimum of 8 years experience in designing architecturally significant projects. A long term opportunity in midwest location. Candidates should send detailed resume and salary history in confidence, including descriptions of specific involvement with the architecturally significant projects, to Box 1361-436, *Progressive Architecture*. An Equal Opportunity Employer.

Architect, NCARB certification with a minimum of five years of registered experience; Requires strength in design, management, and client relations; For principalship in a small, well-established architectural/engineering firm in Southwest. Initial investment required. Please include professional resume and salary history. Reply to Box 1361-437, *Progressive Architecture*.

Architect: Opportunity to gain ownership position in established S.F. Architectural firm. Must be experienced in com'l work and have NCARB reg. Admin-oriented Owner needs strong technical Architect with proven management skills to assume leadership of 10-person prof. staff. Must have entrepreneurial spirit! Future growth unlimited in solid nationwide market segment. Send resume to Suite #532, 55 Sutter Street, S.F., CA 94104.

Architects: 1. Graduate architect—several years experience in quality office, interested in working in both design and production. 2. Architect—substantial production experience on commercial-institutional work, capable of taking senior responsibility. Office practices primarily in New England and has scheduled planning, historic preservation, and new construction projects through 1984–85. Reply Robert Burley Associates, Waitsfield, VT 05673.

Architects—We are looking for individuals who possess solid experience, particularly in the design development and working drawing phases of architectural services. Candidates should also have at least a 5 year Bachelor's Degree in Architecture or equivalent and 4 to 6 years architectural production experience. Resumes should be submitted to James R. Warring, John Portman & Associates, 225 Peachtree St., Suite 201, Atlanta, GA 30303 Attn: Architecture. We are an Equal Opportunity Employer.

Architects—HLM is a top 20 national A/E firm seeking experienced Design Architects, Project Architects and Job Captains for our Iowa headquarters. Positions require a bachelor's degree and experience in medium to large-scale institutional, commercial or industrial projects. Health care project experience a plus. Design Architects should have a minimum of 5 years related experience in all aspects of architectural design. Project Architects and Job Captains should have a minimum of 3 to 5 years experience with extensive background in contract document preparation desirable. If quality of life and professional growth are important to you, look into our dynamic, growth-oriented firm, located in an ultra-professional Big 10 university community known for its cultural environment. We offer outstanding professional opportunities, competitive salaries and attractive benefits. Send letter and resume in confidence to: Director of Personnel, Hansen Lind Meyer, Drawer 310, Plaza Centre One, Iowa City, IA 52244. Equal Opportunity Employer M/F.

Architectural Draftsman: Architectural firm has a position for an Architectural Draftsman who will perform nonroutine and complex drafting assignments that require the application of most of the standardized drawing techniques regularly used. Duties typically involve such work as: preparation of architectural drawings for construction of a

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building including detail drawings of foundations, wall sections, floor plans, and roof. Receives initial instructions, requirements and advice from supervisor. Completed work is checked for technical adequacy. Will build architectural scale models. BA degree in Architecture or Interior Design. 40 hrs. per week. $8.00 per hour. Contact E.R. Robinson, Alabama State Employment Service, 1816 8th Avenue No., Birmingham, AL 35203. Job Order #030993

Architectural Graphics and Signage Designer— The Graphics Division of Urban Design Studio, West Palm Beach, Florida, has an immediate opening for a Designer with 3–5 years of experience. Must be able to handle project inception, design, construction documents/specifications and construction administration through field installation. The majority of our work relates to large residential communities requiring comprehensive signage programs and other related graphics. Salary commensurate with education and experience. For additional information please contact: Dennis Felix, AIA, Urban Design Studio, 2000 Palm Beach Lakes Blvd., Suite 600—The Concourse, West Palm Beach, FL 33409-6582.

Chairperson, Undergraduate Architecture— Pratt Institute seeks a Chairperson to assume responsibility for all phases of administration, including curriculum development, faculty matters, and student advisement, in its Undergraduate Architecture program. The selected candidate will report directly to the Dean. Advanced degree in Architecture, architecture license, significant experience in academic administration and teaching; and demonstrated managerial, supervisory and leadership ability required. Salary: Mid $30's. Submit resume by September 15, 1984, to: Pratt Institute, Personnel Office, Dept. PA, 200 Willoughby Avenue, Brooklyn, New York 11205. Affirmative Action/Equal Opportunity Employer.

Faculty Position—The Graduate School of Architecture and Urban Planning at UCLA invites applications for a full-time, tenure-track position in the Architecture/Urban Design Program, beginning academic year 1985/86. The successful applicant will be expected to teach design studios and to make a contribution to at least one other area of the teaching program, and to actively pursue practice and/or research and scholarly activities. It is anticipated that the position will be filled at a senior level. UCLA is an Equal Opportunity/Affirmative Action employer and the Architecture/Urban Design Program especially encourages applications from women and members of minority groups. Applicants are asked to submit letters of inquiry, including curriculum vitae and the names and addresses of at least three referees by January 1, 1985 to Professor William J. Mitchell, Head, Architecture/Urban Design Program, Graduate School of Architecture and Urban Planning, UCLA, Los Angeles, California 90024.

Historical Architect—Two openings for Historical Architect, National Register Department, Texas Historical Commission. Provide technical preservation assistance, review plans and specifications for certified rehabilitation projects, federal and state historic preservation grant administration, and review of proposed work to state's historic county courthouses. B.A. in architecture with 3 years experience in preservation/rehabilitation or M.A. in architecture with two years experience required. License and non-smoker preferred. $21,500 annually. Resume by September 1, 1984 to Stanley Graves, National Register Department, Texas Historical Commission, P.O. Box 12276, Austin, TX 78711.

Interior Design. Assistant Professor. Tenure Track, beginning September 1, 1984. Teach Design in design studios and Theory of Design through lectures and seminars. Ph.D. desirable, Master's Degree in Interior Design, Architecture or related design discipline required. Professional design experiences highly desirable. Commitment to discipline of interior design and understanding of architecture essential. Send curriculum vitae and examples of design and scholarly work to: John Meunier, Director School of Architecture and Interior Design, DAAP College, University of Cincinnati, Cincinnati, Ohio 45221. Equal Opportunity Affirmative Action Employer.

Marketing Communications Coordinator. Large multidisciplinary Architectural/Engineering firm located in Midwest seeking experienced professional in development of marketing/PR materials, public relations, presentations and proposal preparation, brochures and related business development materials. Journalism degree plus a solid background in media relations, demonstrated proficiency in writing, strong interpersonal and communication skills with a minimum of 3 years A/E or related work experience required. Send resume with full background and salary requirements to Box 1361-439, *Progressive Architecture*.

Professor of Building Technology, MIT—Senior faculty position in architectural technology as Associate or Full Professor available in the Department of Architecture, MIT. Candidates should have achieved recognized prominence in practice, research and/or teaching in architectural technology, preferably in building construction processes, materials and methods, or integration of mechanical systems with building fabric. Responsibilities include direction of Department building technology group; teaching in professional curriculum; teaching and advising theses in post-professional program; participation in development of doctoral study; and research in area of specialization. Ph.D.

[*Job mart continued on page 144*]

Minnesota Judicial Building Design Competition

The State of Minnesota, The Minnesota Judicial System, and the Capitol Area Architectural and Planning Board announce a national competition for the design of a Minnesota Judicial Building to be located in Minnesota's Capitol Area. This project presents a major design challenge.

The winning design must incorporate an existing building which is on the National Register of Historic Buildings with new facilities which are to be added on an adjacent site. The project includes renovation of approximately 100,000 GSF and 125,000 GSF of new construction, and will provide facilities for the Minnesota Supreme Court, Court of Appeals, and state law library.

The competition is open to all firms or teams which include personnel with NCARB certification or architectural registration in Minnesota. From credentials submitted by the registrants a limited number will be selected as finalists, and will be invited to submit competition design proposals. The finalists will be paid a cash stipend to be determined. The winner will be awarded a cash prize and the commission to further develop the project.

The criteria for the selection of the design finalists will include previously-demonstrated ability to accomplish projects of this type and scope.

Registration will be by letter accompanied by a non-refundable check for $50.00 made payable to the Capitol Area Architectural and Planning Board. Registrations should be addressed to:

Walter H. Sobel, FAIA and Associates
Professional Advisor
Minnesota Judicial Building Competition
Capitol Area Architectural and Planning Board
Room 122 Capitol Building
St. Paul, Minnesota 55155

Detailed information regarding the competition and credential submission requirements will be sent to all registrants. Letters of registration are due September 26, 1984.

Job mart *continued from page 143*

or equivalent (CE, ME or Arch) and considerable teaching experience required. Submit letter, curriculum vitae, and samples of work by September 1, 1984 to: Professor John R. Myer, Head, Department of Architecture, Room 7-303, MIT, 77 Mass. Ave., Cambridge, MA 02139. MIT is an Equal Opportunity/Affirmative Action Employer.

Project Architect—Design, construction of real property emphasizing private residents. Preparation of construction documents. 40 hr. week, $26,500 yr. Requires M. Arch., 1 yr. exp. in job or architectural design. Requires resi. design exp. and resume. Apply at Texas Employment Commission, San Antonio, Tx. or send resume to Texas Employment Commission, Austin, Texas 78778, J.O. #3451590. Equal Employment Opportunity Employer.

Project Manager: Developer specializing in renovating/expanding super regional shopping malls seeks project manager to plan and implement expansion of newly acquired mall. Background should include broad experience in shopping center design, cost estimating, construction management, and a thorough understanding of the shopping center redevelopment process. Send resume, including previous project involvement, to James Egnew, Dusco, Inc., 5201 W. Kennedy Blvd., Suite 730, Tampa, FL 33609.

Senior Arch. Draftsman—Min. 15 years solid drafting in architectural office. Knowledgeable, motivated person to take charge of all drafting. Small creative architectural firm 45 miles north of Tampa. Top salary. Send resume to: Sanford Goldman, 22238 Mann Road, Brooksville, Fl. 33512.

Tenured Faculty Position in Architectural Design: The Department of Architecture, University of California, Berkeley, seeks candidates for a tenured faculty position in the area of architectural design to begin in Fall Semester 1985. The applicant should be a practicing architect with extensive professional experience and a record of accomplishment in architecture which makes significant contribution to the discipline. A full commitment to teaching and a continuing engagement with architectural practice are required. Interested persons should contact the Secretary of the Faculty Search Committee, Department of Architecture, University of California, Berkeley, California 94720, for further information and application forms. The final date for filing completed applications is November 8, 1984. The University of California is an Equal Opportunity, Affirmative Action Employer.

Situation Wanted

Architect—Thirteen years experience, ten years in major design roles with state, regional, and national recognition. Seeking association with complimentarily skilled individuals. Resumé available. Reply to Box 1361-438, *Progressive Architecture*.

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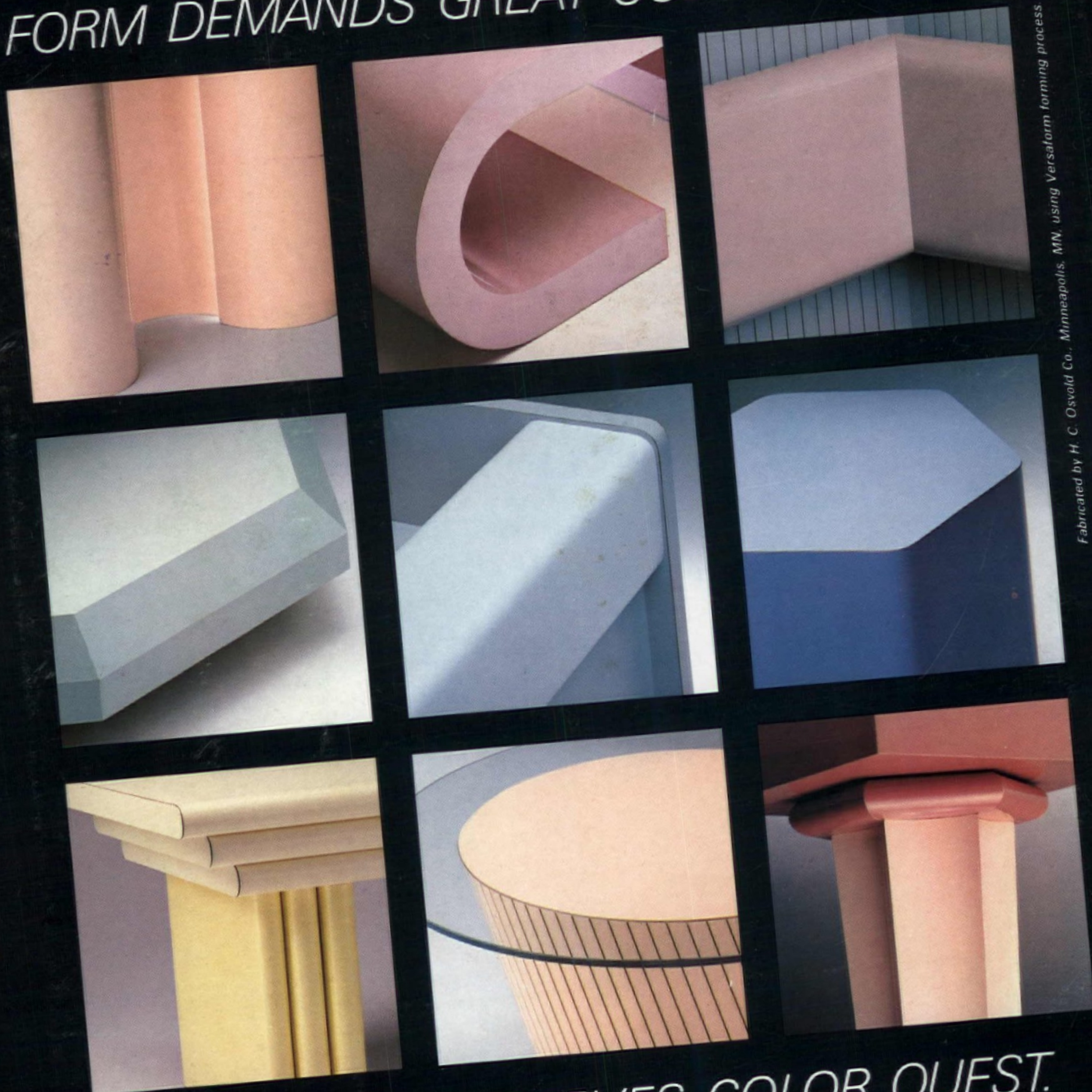

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