

Progressive Architecture

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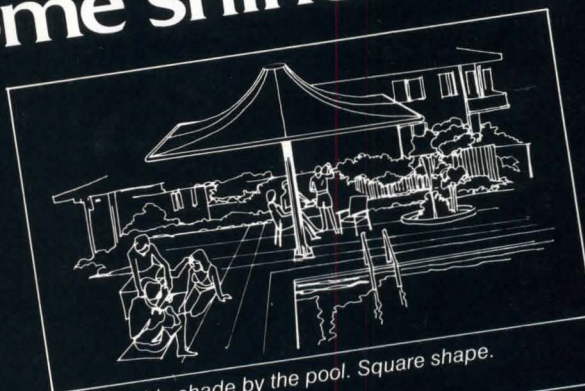
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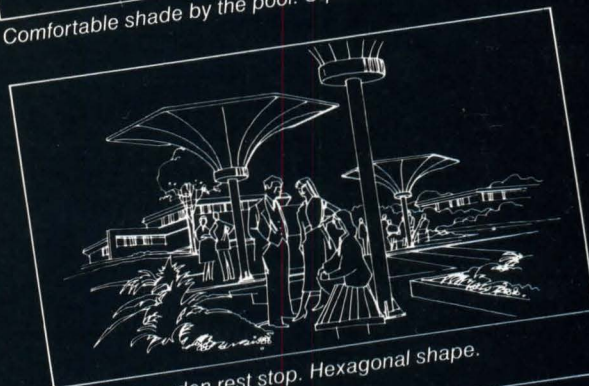


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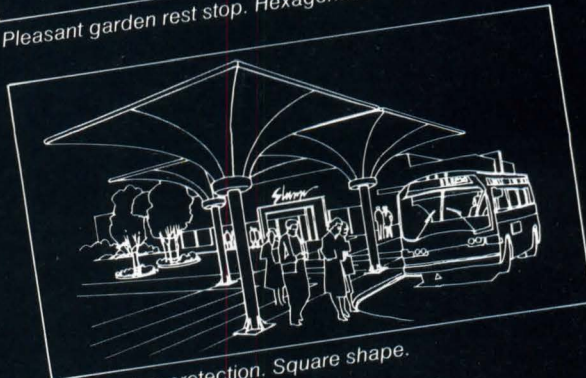
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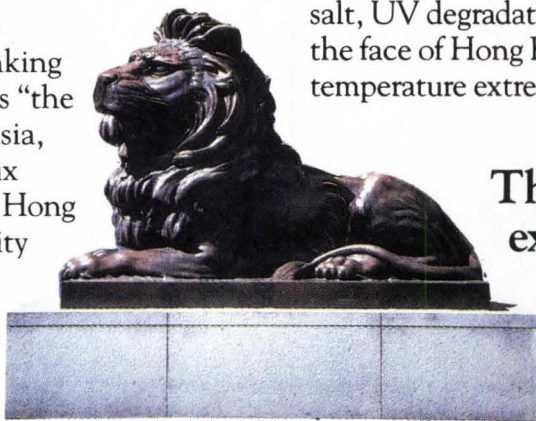
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The new headquarters of The Hongkong and Shanghai Banking Corporation, known simply as "the Bank" throughout much of Asia, rises 47 levels above Des Voeux Road, in the neighborhood of Hong Kong's Star Ferry terminal, City Hall, and local British military headquarters. Opening this year, the new building is the largest curtainwall project ever built—and the largest single use of any fluoropolymer coatings in history. The coatings: Duranar® by PPG.



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Structural Engineers: Ove Arup and Partners Hong Kong Ltd.
Management Contractor: John Lok and Partners Ltd., Hong Kong,
with George Wimpey International, Ltd., London
Curtainwall Engineering, Fabrication, and Erection: Cupples Products,
St. Louis, Missouri; Division of H.H. Robertson Company

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Continuity and Adaptation

ONE of the persistent flaws in our education as architects is the illusion that buildings are discrete objects, fixed in form and purpose. Most of our professional commissions reinforce this illusion with clear limitations in scope and time frame. Much of what we read also reflects this view of buildings as independent, immutable objects.

Everyday experience, however, reveals that all architecture is subject to cycles of construction, adaptation, deterioration, and demolition or rehabilitation, while the fate of each building is clearly tied to that of its neighbors. When the editors of P/A devote a whole issue, such as this one, to remodeling and preservation commissions, we are reminded forcibly that buildings are continually changing. So are architects when they undertake such projects.

I was reminded on a recent trip to Italy of how effectively long-term evolution can generate architectural fabrics that could not be planned. (There, in fact, is a fundamental obstacle to our understanding: Most design professionals hate to acknowledge that unplanned events over long periods of time can produce superior design.)

A case in point is the core of Verona, with its Roman arena fronting on the Piazza Brà. The massive arena—partly destroyed, partly rehabilitated—was being used when I was there for rock concerts. The throbbing sound and gyrating audience—visible from the square as a Dionysian frieze around the top of the walls—formed a remarkably apt match of activity to structure (probably closer to the arena's original uses than its summer opera programs). The square below, largely ignored in texts but one of the world's finest in my view, is big and loose enough in form so that its traditional activities—strolling crowds, outdoor dining, conversations under the trees—could go on unimpeded by the

concert. Clearly, some conscious design decisions went into the present design of this piazza—there are some stately public buildings among the structures that enclose it—but the space and most of the buildings around it seem to respond to evolving patterns of use, and to fit them as no predetermined configuration could.

In Turin, the sequence of piazzas and arcaded streets along the main axis of the Via Roma presents an example of conscious, formal design, but apparently built and rebuilt over a period of centuries. The arcaded buildings that line the route run the historical gamut from a rather low-keyed Rococo of the 18th Century to an imposing stretch of muscular 1930s Rationalism—all symmetrically matched across the axis and all somehow complementary. A few emphatic Baroque landmarks effectively break the consistency. The city's best shops, cafés, and banks are along these arcades, but the density of pedestrians seems a bit thin in some stretches and the automobiles (made in Turin, after all) seem too numerous. One hopes the economic vitality of the Via Roma will sustain its urban design form without spoiling it.

Back in Verona, one building complex seems to embody beautifully the whole concept of evolution in buildings. This is the Castelvecchio Museum, remodeled in the years 1957–1964 by the late Carlo Scarpa (P/A, May 1981, pp. 118–123). There are lessons for us all in the way Scarpa worked within and subtly modified the agglomeration of tough old buildings that comprise this castle. In countless ways, his forms and details reveal the process of physical change and comment on it. Yet he introduced many handsome elements that could only have been designed in this century by this architect, and he generated an environment tailored to both the artworks and their viewers.

Although the specifics of this work are delightful, it is the intention to interpret process that is crucial; that is the source of its architectural richness.

Consider, by comparison, current proposals to alter museums: Pei's additions to the Louvre in Paris (P/A, July 1984, p. 26), Graves's for the Whitney in New York (P/A, Sept. 1985, p. 25), and Gwathmey/Siegel's for the Guggenheim in New York (design made public just as we go to press; see next issue). I have not studied all of these designs carefully enough to publish a case-by-case evaluation, but it seems unlikely that any of these efforts will produce a whole greater than its parts. I do know, however, that they all are based on a keen awareness of the chance to knit existing and new into a richer whole. But I can see that all three, to varying degrees, suffer from the difficulties that even our best architects—and our most enlightened clients—have in dealing with incremental change, in developing architecture that transcends the object isolated in space and time. ■

John Morris Diefen

The kind of evolution that produces a superior built environment can be observed in many places, but seems very hard to achieve in America today.

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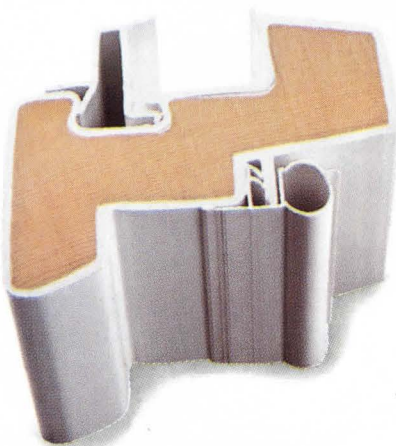
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Views

Whitney Addition: The next episode?

I read with much interest your commentary concerning the Whitney Museum (P/A, Sept. 1985, p. 25). It is understandable that the proposed addition would excite the natives of the Big Apple. Whether one embraces the existing Breuer design or not, one has to admit it is a landmark. I believe the proposed addition is just another example of one architect running roughshod over the architecture of another. The Johnny Come Lately always assumes he is more enlightened.

Perhaps in this case blame should be also placed on the Whitney director and staff. They have now decided that open space for art exhibitions does not work. Perhaps in another twenty years they will flip-flop and the next addition will be executed by taking this mess (as per P/A photos) and putting it all in a neat glass box.

Bob Dial

*Caldwell R. Dial, Jr., Architect
Columbia, S.C.*



Cover photo credit correction

The cover photograph for the P/A October issue was incorrectly credited. It is the work of Barbara Karant of Karant & Associates.

America painting credit

Murals in the America restaurant (P/A, Sept. issue, pp. 147-150) were painted by a company named SLAJ, of New York.

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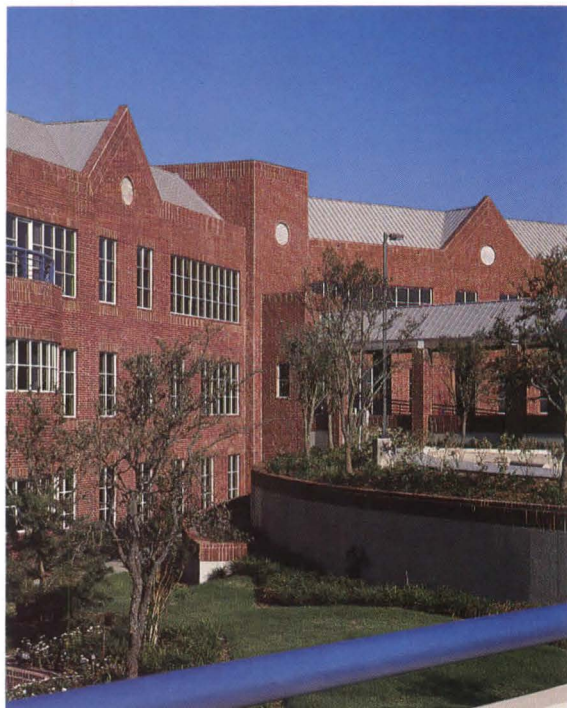
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PROGRESSIVE ARCHITECTURE announces the sixth annual competition recognizing outstanding furniture and lighting design proposals, not yet being marketed by any manufacturer as of entry deadline, January 16, 1986. The competition is intended to give the design professions a forum to express ideas about the next generation of furniture design, at a time when architects and designers are increasingly custom-designing furniture for their projects and manufacturers are increasingly open to fresh ideas. The competition is specifically aimed at furniture intended for use, but the design need not be constrained by existing production or marketing practices. Entries may be based on either fabricated pieces or project drawings. Designers are encouraged to consider the aesthetic and ideological implications for furniture design implied by the current concerns within architecture and other design disciplines.

WINNING PROJECTS

will be published in the May 1986 P/A and they will be displayed at major industry events during the year. Winners will be honored in New York City at an awards ceremony in early March attended by press, designers, and industry manufacturers.

In addition to the exposure afforded the submissions, the competition will encourage further discourse between the entrants and respected furniture producers. Any ongoing discussions will, of course, be up to the individual designers and manufacturers, but benefit to both is anticipated.

SUBMISSIONS

are invited in all categories including chairs, seating systems, sofas, tables, desks, work stations, storage systems, lighting, beds, and miscellaneous furniture pieces.

THE JURY FOR THIS COMPETITION

Ralph Caplan, New York, author, editor, critic.

Paul Haigh, principal, Haigh Space Ltd., New York, architect and furniture designer.

Perry A. King, principal, King Miranda Associates, Milan, Italy, industrial, furniture, lighting, and interior designer.

Margaret McCurry, principal, Tigerman Fugman McCurry Ltd. Architects, Chicago, Ill., architect, interior and furniture designer.

William Stumpf, principal, William Stumpf + Associates, Minneapolis, MN, industrial and furniture designer.

JUDGING

will take place in New York City during the month of February. Designations of *first award*, *award*, and *citation* may be made by the invited jury, based on overall excellence and advances in the art.

[Turn page for rules and entry forms]

DEADLINE FOR SUBMISSION

JANUARY 16, 1986

Entry form International Furniture Competition

Please fill out all parts and submit, intact, with each entry (see paragraph 11 of instructions).
Use typewriter, please. Copies of this form may be used.

ENTRANT:
ADDRESS:

ENTRANT PHONE NUMBER (day):
(evening):

CATEGORY:

ENTRANT:
ADDRESS:

DESIGNER(S) RESPONSIBLE FOR THIS SUBMISSION
(identify individual roles if appropriate):

I confirm that the attached entry meets eligibility requirements (paragraph 1-3)
and that stipulations of publication agreement (paragraphs 4-6) will be met.
I verify that the submission is entirely the work of those listed on this form
(or an attached list as necessary).

SIGNATURE
NAME (typed)

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(Receipt)
Your submission has been received and assigned number:

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ELIGIBILITY

1 Architects, interior designers, industrial designers, and design students from all countries may enter one or more submissions.

2 Design must be original. If found to be substantially identical to any existing product design, entry will receive no recognition.

3 Designer may be under contract to or in negotiation with a manufacturer for this design, but design must not be available in the marketplace as of entry deadline.

PUBLICATION AGREEMENT

4 If the submission should win, the entrant agrees to make available further information, original drawings or model photographs as necessary, for publication in the May 1986 P/A and exhibition at major industry events.

5 P/A retains the rights to first publication of winning designs and exhibition of all entries.

6 P/A assumes no obligation for designer's rights. Concerned designers are advised to document their work (date and authorship) and seek counsel on pertinent copyright and patent protections.

SUBMISSION REQUIREMENTS

7 **Submissions will not be returned under any circumstances.** Do not use original drawings or transparencies unless they are sent with the understanding that they will not be returned. P/A will not accept submissions with outstanding custom duties or postal charges.

8 Drawing(s) and/or model photo(s) of the design should be mounted on one side only of one 20" x 30" foamcore board presented horizontally. **Any entry not following this format will be disqualified.**

9 There are no limits to the number of illustrations mounted on the board, but all must be visible at once (no overlays to fold back). No actual models will be accepted. Only one design per board.

10 Each submission must include a 5" x 7" index card mounted on the front side of the board with the following information typed on it: intended dimensions of the piece of furniture, color(s), materials, components, brief description of important features, design assumptions, and intentions. This information is to be presented in English.

11 Each submission must be accompanied by an entry form, to be found on this page. Reproductions of this form are acceptable. All sections must be filled out (by typewriter, please). Insert entire form into unsealed envelope taped to the back of the submission board. P/A will seal stub of entry form in envelope before judging.

12 For purposes of jury procedures only, projects are to be assigned by the entrant to a category on the entry form. Please identify each entry as one of the following: Chair, Seating System, Sofa, Table, Desk, Work Station, Storage System, Lighting, Bed. If necessary, the category "Miscellaneous" may be designated.

13 Entry fee of \$35 must accompany each submission, inserted into unsealed envelope containing entry form (see 11 above). Make check or money order (no cash) payable to Progressive Architecture.

14 To maintain anonymity, no identification of the entrant may appear on any part of the submission, except on entry form. Designer should attach list of collaborators to be credited if necessary.

15 Packages can contain more than one entry; total number of boards must be indicated on front of package.

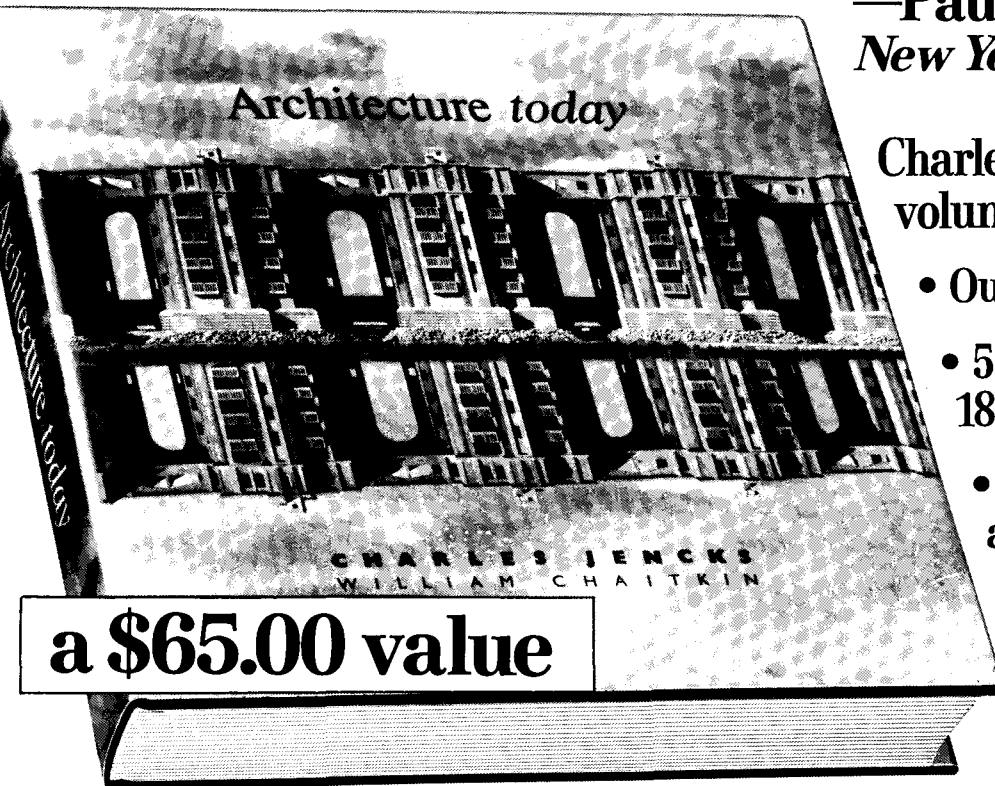
16 Deadline for sending entries is January 16, 1986. First class mail or other prompt methods of delivery are acceptable. Entries must show postmark or other evidence of being en route by midnight, January 16. Hand-delivered entries must be received at street address shown here by 5 p.m., January 16.

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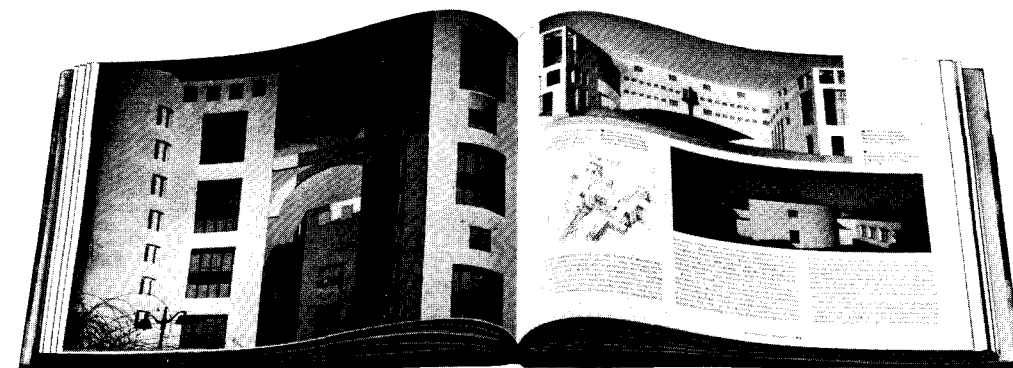


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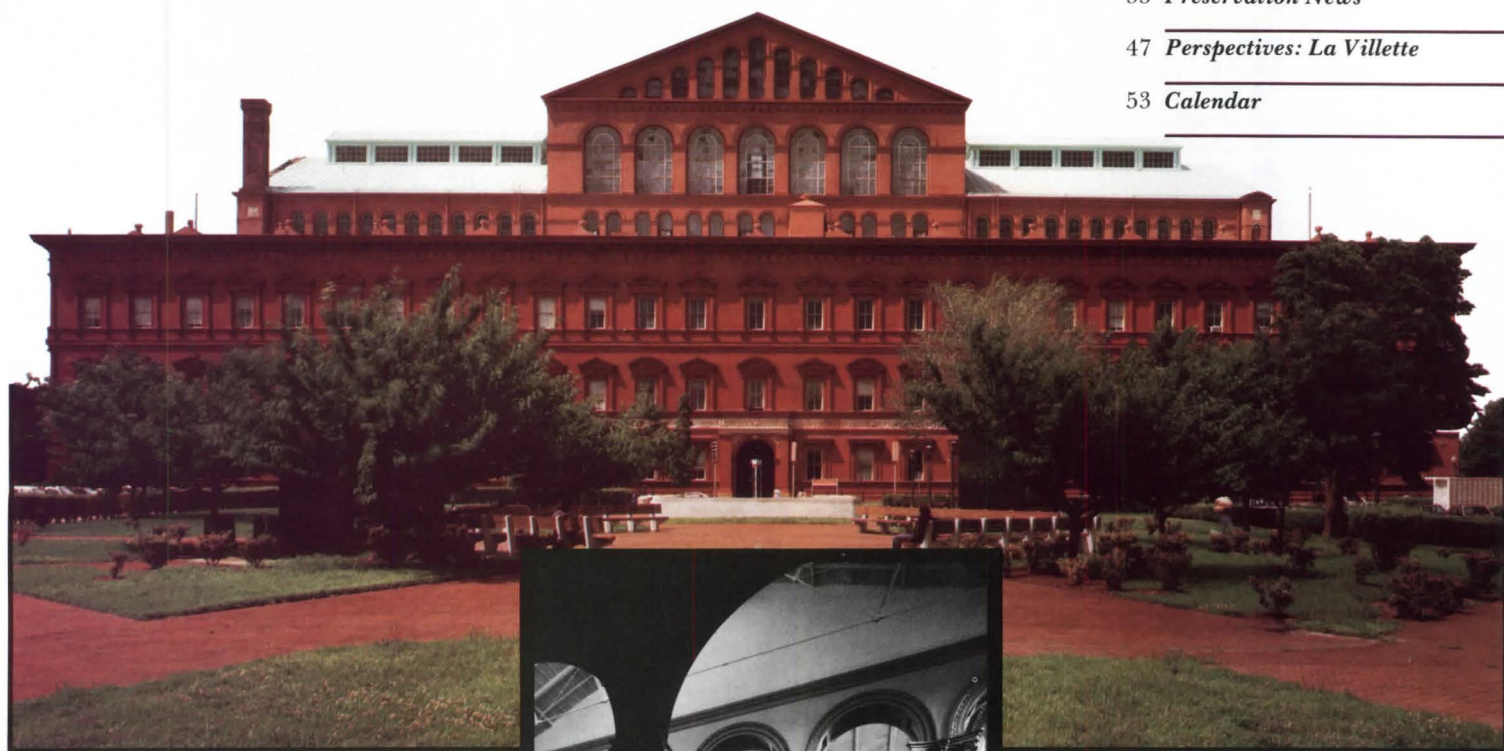
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P/A News Report

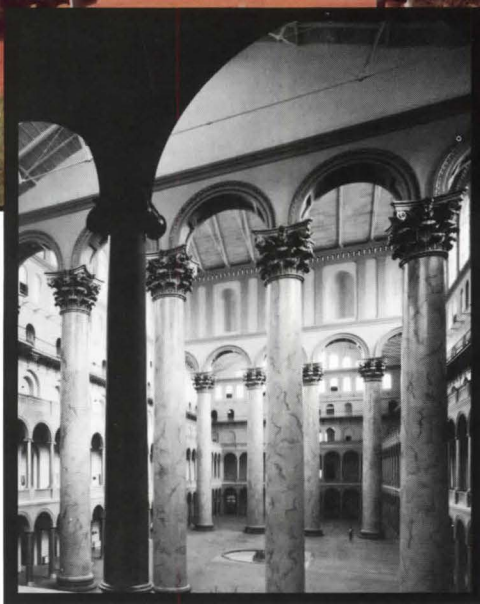
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Photos: Harlan Hambright



National Archives



Architect of the Capitol

National Building Museum Opens

Why should an organization that has existed for five years, housed in a building that has stood for nearly a century, be holding an opening only now? Because, at last, the National Building Museum in Washington, D.C., is ready . . . sort of. The first substantial preservation work on the quirky neo-Italian-renaissance-palazzo known as the Pension Building, designed in 1881 by Montgomery C. Meigs and occupied in 1887 by the now-defunct U.S. Pension Bureau, is finally completed, and the Museum has unveiled its first major show.

The opening honors remarkable feats, considering the odds against this ambitious undertaking. The building, all 15,500,000 bricks of it, presents a challenging and expensive preservation job, funded to date in fits and starts by the federal government. Funds sufficient to complete the restoration

did not appear in the administration's budget until this year. Thus far, work has been carried out on the roof, some of the exterior, several notable rooms and galleries, and a portion of the astonishing Great Hall, the site, before the structure was completed, of the 1885 Inaugural Ball, and of inaugural balls ever since.

"Building Our National Image: Architectural Drawings for the American Democracy," several years in the making, is the principal opening show, one of four that will be on display through December. This exhibit and its accompanying book, both supported by United Technologies Corporation, presents over 80 never before displayed drawings of federal buildings constructed around the country between the late 18th and early 20th Century.

Bates Lowry, director of the museum since its inception, was elated on the eve of the planned late-October opening, remarking that the event signals real progress in the life of the museum. Yet other well-established

museums with less unusual programs are now seeing traditional sources of funds evaporate. The National Building Museum, despite an impressive record of private donations and unwavering Congressional support, has great cause for concern about its future. For the moment, however, all attention is turned toward celebrating this tangible and welcome step forward.

Thomas Vonier

Top: The new National Building Museum in the former Pension Building; above center: the Grand Hall, inaugurated by Grover Cleveland; above left: Wiloughby J. Edbrooke, Post Office in Fargo, North Dakota, 1893; above right: Thomas U. Walter, design for the Senate Chamber in the U.S. Capitol, 1855.

Pencil points

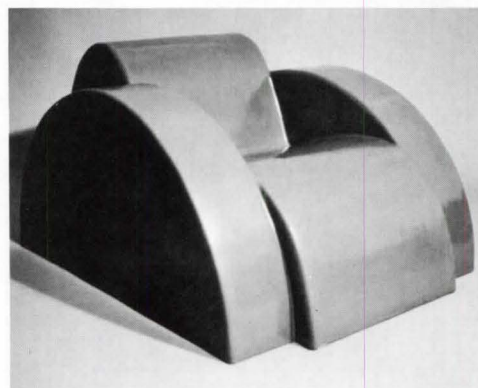
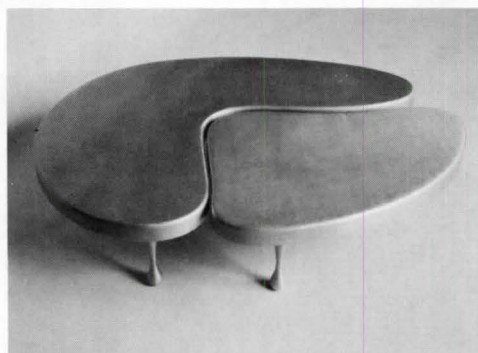
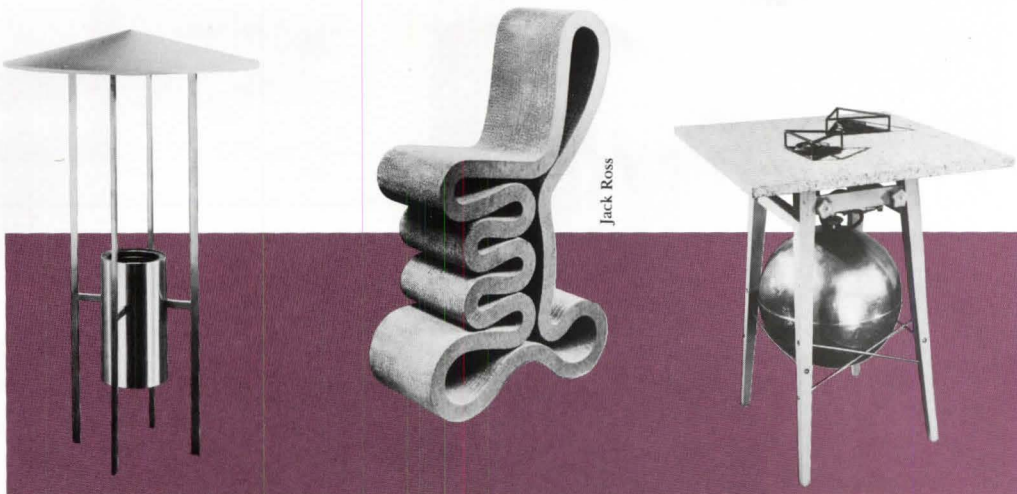
Westway is dead. Last-minute lobbying could not save the billion dollar highway and redevelopment project planned for the west side of Manhattan. City and state officials, faced with a fish problem that would not go away (P/A, Sept. 1985, p. 24) and other obstacles, decided to trade in the Westway funds for general transit aid. New York officials also blame their counterparts from New Jersey for indulging in a bit of "New York bashing" that turned Congress against the project after ten years of support.

Charles Moore's Hood Museum at Dartmouth College in Hanover, N.H., designed with Centerbrook, opened in late September. The rather casual assemblage of nine galleries and 200-seat auditorium fills left-over space between the Romanesque revival Wilson Hall and contemporary Hopkins Center, designed by Wallace K. Harrison in his Lincoln Center phase.

The Metropolitan Museum of New York has announced yet another accretion—er, addition—on Central Park. The \$35 million wing, which will house European sculpture and decorative arts, is to be designed by Kevin Roche to mirror his own American Wing with a second garden court.

The Whitney Museum's planned expansion controversy continues. An Ad Hoc Committee of architects and artists has sent a petition to the Museum's Board of Trustees urging them to abandon Michael Graves's design for an addition to Marcel Breuer's 1966 Manhattan original (P/A, Sept. 1985, p. 25). "The expansion," they write, "would totally destroy the architectural integrity of the original building. . . the Whitney appears willing to allow the destruction of a world-renowned work of architecture. . ." Signers include critics Stanley Abercrombie, Dore Ashton, Peter Blake, and Bob Campbell; architects Edward Larabee Barnes, Peter and Serge Chermayeff, Robert Gatje, Romaldo Giurgola, and John Johansen; and artists Isamu Noguchi, Robert Motherwell, Julian Schnabel, and Saul Steinberg. Neither the Whitney nor architect Graves had issued a response by publication. The scheme is on view at the Whitney through Nov. 24.

The St. Paul Riverfront Commission has hired a three-firm team to study the city's riverfront development potential. Bennett, Ringrose & Wolsfeld (BRW), Minneapolis; [Continued on page 30]



Top, left to right: Philip Johnson and Richard Kelly, floor lamp, 1949; Frank Gehry, Easy Edges High Chair, 1972; Bruce Tomb, granite cooktop, 1984; Charles and Ray Eames, side chair, 1949; William Purcell and George Grant Elmslie, floor lamp, 1913. Above: Frederick Kiesler, nested coffee tables, 1938, and William Lansing Plumb, Volks armchair, 1970. Below: George Washington Maher, fireplace surround, 1901.

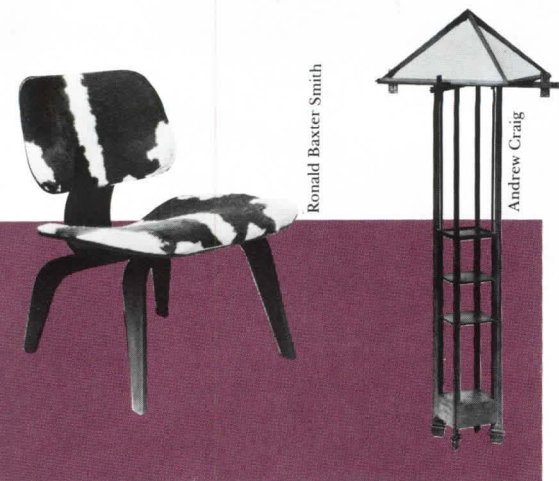
High Style Estate Sale

The exhibition "High Styles: 20th Century American Design," at the Whitney Museum of American Art in New York through February 1986, is the Whitney's first foray into American decorative arts. Billed as a "comprehensive survey," the "first" such to focus exclusively on American achievements, the show is comprehensive in a chronological sense only, and even that chronology has been manipulated, broken down into convenient 15-year segments that don't always coincide with developments in technology and taste.

The six curators (five guests and one staff) provide a total of 300 personal selections from their respective periods. The six—decorative arts consultant David Hanks (1900–1915), architectural historian David Gebhard (1915–1930), art history professor Rosemarie Haag Bletter (1930–1945), architectural historian Esther McCoy (1945–1960), *House & Garden* editor Martin Filler (1960–1975), and Whitney associate curator Lisa Phillips (1975–1985) who conceived and also shepherded the show—seem to have consulted with one another infrequently if at all. Their divergent intentions come clear in the catalog, where David Gebhard is free to pursue a nonvisual history of popular culture in the 1920s and Martin Filler to indulge in a personal reminiscence of the 1960s, complete with that cliché, "you really had to be there."

But the exhibition itself suffers from an absence of explanation. The introductory board, rather than explaining the special structure of the show, offers trite—or worse,





Ronald Baxter Smith

Andrew Craig

Harvard's Salute(?) to Walter Gropius

"We cannot go on indefinitely reviving revivals," Walter Gropius wrote in "Archaeology or Architecture." This foresighted comment suggests that the time has come for a cool-headed resighting (or hindsighting) of the work of this archetypal Modernist. For better or worse, however, the exhibition of 150 photographs, drawings, and models drawn from the Gropius Archive at Harvard University's Busch-Reisinger Museum and shown there through November 10 will generate as much heat as it sheds light on such appraisals.

Visually, the show is stunning. The extensive drawings, as varied as the generation they span and as mixed in their authorship as the projects they display, show the richness of the Archive's collection of 5000 works. The graphics are splendid in both quality and condition. The show skips Gropius's sojourn in England and does not highlight the classic oeuvre, but concentrates almost exclusively on Gropius's pre-American work, the Archive's forte, with 66 selections from the wonderful 1912 Fagus Factory (with Adolf Meyer) and the 1927 Total Theater project to the many housing projects of that period.

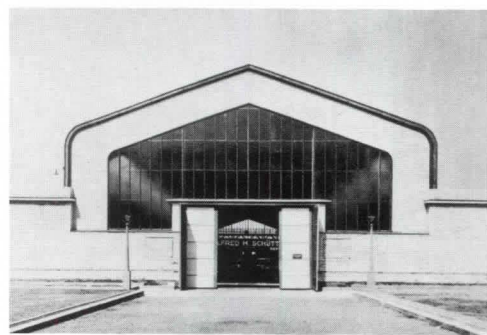
Captions and commentary, however, turn the exhibition into a critical biography. German architectural historian Winfried Nerdinger, head of the architectural collection at the Technical University of Munich, has virtually rained on his Gropius parade with pages of commentary pinned to the walls. "Gossipy, opinionated putdowns," says a partner at TAC, The Architects' Collaborative, which Gropius founded in 1945. "Why invite a guest to dinner only to insult him?" asks another member of the 280-person firm. "To counterbalance the myth of Gropius," responds curator Peter Nisbet. Such countervailing criticism not only repeats staple attacks on the failure of Modernism to provide social housing, but also excoriates Gropius's design ability, his capacity to get work, and "his unembarrassed use of the team-work slogan to appropriate projects by others to himself." Tom Wolfe was no more relentless.

Although the exhibitors have turned their self-proclaimed "chance to wag the scholarly finger" into an ax-wielding occasion, they can still be credited with supplying a striking and

stimulating retrospective. If the work has receded in the dimness of a half century, it has not faded in its import, nor, on the evidence of many of these drawings, in its visual impact. The exhibition will travel to the Bauhaus Archive in Berlin, and is accompanied by an illustrated catalog.

Jane Holtz Kay

Gropius with Adolf Meyer: *Chicago Tribune project*, 1922, below; *Werkbund Model Factory*, Cologne, 1914, middle; *Sommerfeld residence*, Berlin, 1921, bottom.



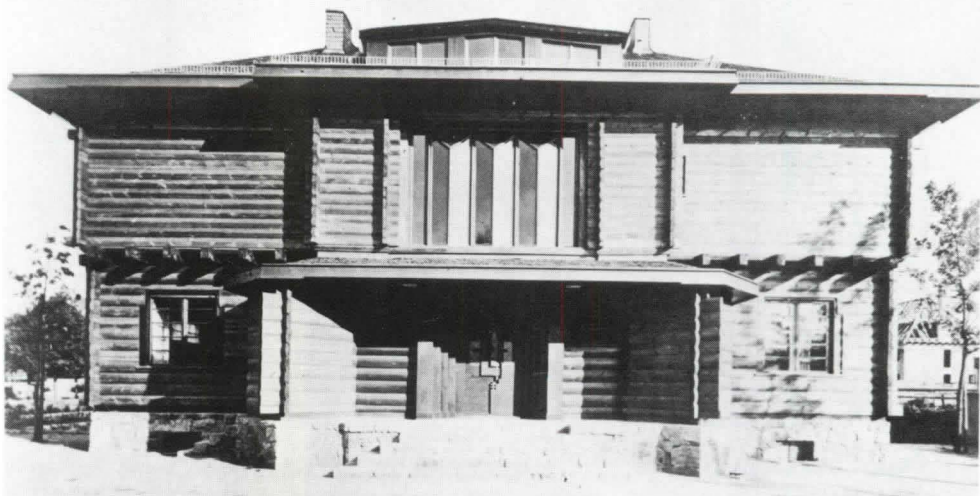
misleading—aphorisms about style. Style, we are told, is a "mark of distinction . . . (it) suggests intelligence, talent, originality, and glamour. Consequently style is now relentlessly pursued and promoted." The boards introducing each section are too brief to be really informative; short of space, the curators resort to sweeping generalities of cause and effect. The objects, of course, can be enjoyed in their own right—and many are both exceptional and beautiful—but the criteria for selection vary radically from section to section, lending the show the uneven appearance of an estate sale.

The best sections of the show—curated by Bletter, McCoy and Filler, have some internal cohesion, the result no doubt of self-imposed limitations. McCoy's alone seems really stuffed to the gills; while other sections—particularly Gebhard's, which substitutes enlarged Xerox reproductions for some items—seem strangely sparse.

Although the catalog relies heavily on period photographs from popular magazines that depict full rooms and environments, the show itself offers no such context, but is exclusively object-oriented. Robert Venturi's mazelike installation frames furniture best, on low platforms that approximate "real" placement. Smaller decorative objects, particularly those illustrating Art Nouveau or Arts and Crafts, fare less well, set in glass cases that permit limited frontal views, with no mirrors for back and sides. But even Venturi's consistent installation cannot keep the show from fragmenting. We can't quite tell from the objects alone if this is a show about popular culture, as the first two sections suggest, or about high design, as the last four imply. And the title "High Styles" is a coy dodge. *Daralice D. Boles*

Jane Holtz Kay Joins P/A

With this issue, architecture critic Jane Holtz Kay joins P/A as correspondent for the Boston area. Kay has served as architecture critic for *The Christian Science Monitor*, *The Nation*, and *The Boston Globe*. She has contributed articles to the former *AIA Journal*, *Columbia Journalism Review*, *Landscape Architecture*, *The New York Times*, *Smithsonian*, and many other publications. Author of *Lost Boston*, Kay is now completing *Preserving New England* (Pantheon/National Trust) for spring release.



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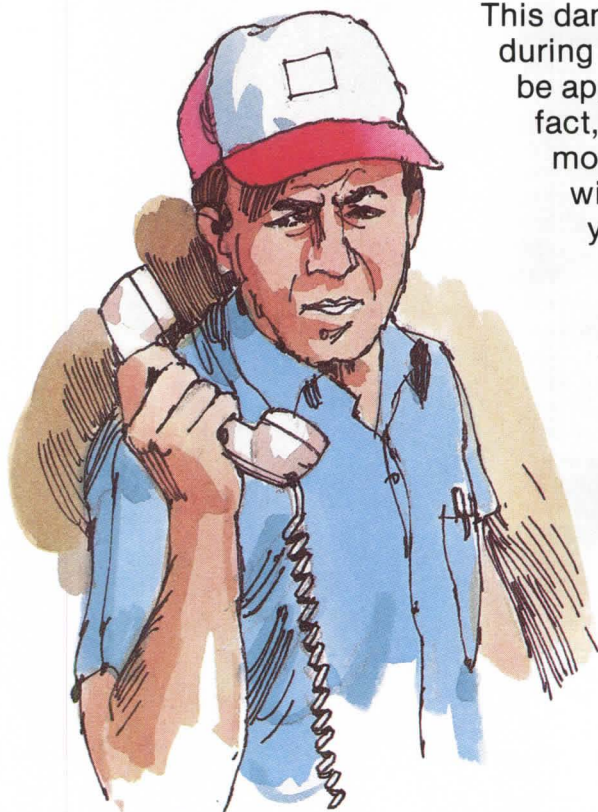
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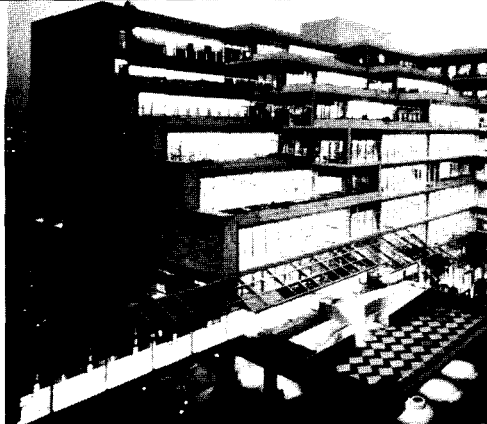
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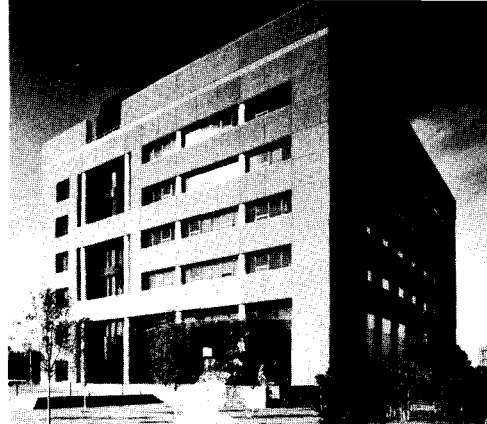
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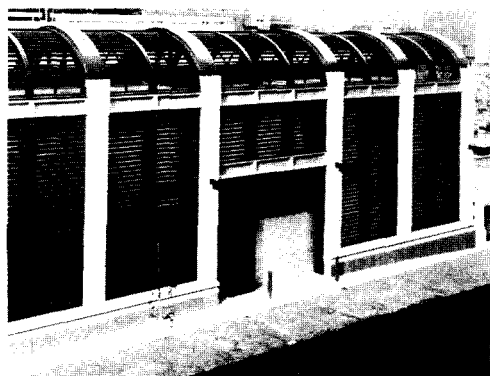
The 1985 PCI Awards

The 1985 Prestressed Concrete Institute Awards program recognizes nine buildings and three bridges for excellence in design using architectural precast concrete or precast prestressed concrete. AIA President R. Bruce Patty (jury chairman), Brian Eldred, president of the Royal Architectural Institute of Canada; bridge engineer Wayne Hennessee of the Texas Highway Department; Richard W. Karn, president, American Society of Civil Engineers; and architect Gerald Horn, Holabird & Root, Chicago, based their selections on aesthetic expression, function, and economy.

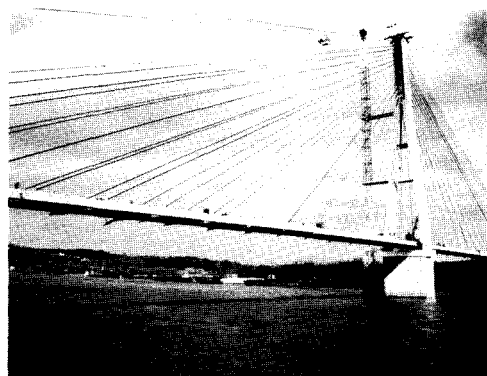
The twelve winners are: Denver Technological Center Parking Garage, Englewood, Colo. (C.W. Fentress & Associates, Denver, architect; KKBNA, Wheat Ridge, Colo., engineer); Broward County Main Li-

brary, Fort Lauderdale, Fla. (Gatje Papa-christou Smith, New York, and Miller & Meier & Associates, Fort Lauderdale, architects; Weidlinger Associates, engineer); Whitehead Biomedical Research Institute, Cambridge, Mass. (Goody, Clancy & Associates, Boston, Mass., architect; Zaldastani Associates, Boston, engineer); Angelus Plaza Elderly Housing, Los Angeles, Calif. (Dworsky Associates, Los Angeles, architect; John A. Martin & Associates, engineer); Montreal Convention Center, Montreal, Quebec (Victor Prus, LeMoyné & Associates, Labelle, Marchand Geoffroy, and Hebert & Lalonde, Montreal, joint venture architects; Martinau, Vallee et Deslauriers, Mercier, Montreal, engineers); IBM Field Engineering & Training Center, Atlanta, Ga. (Cooper Carry & Associates, Atlanta, architect; Bennett & Pless, Atlanta, engineer); Robert L. Millender Center, Detroit, Mich. (The Ehrenkrantz Group, New York, architect; Ohlin & Higgins, Akron, Ohio, with Williams

& Hach, Cleveland, Ohio, engineer); Trans-Alta Utilities Corporation, Calgary, Alberta (J.H. Cook, Calgary, architect and engineer); Marta Rapid Transit Bridges, Atlanta, Ga. (Figg and Muller, Tallahassee, Fla., engineer); East Huntington Bridge over the Ohio River between Huntington, W.Va., and Proctorville, Ohio (Arvid Grant & Associates, Olympia, Wash., engineer); Consolidated Edison 40th St. Substation, New York (Beyer Blinder Belle, New York, architect; Consolidated Edison, New York, engineer); S-1369/Watauga River, Washington County, Tennessee (Tennessee Department of Transportation, Division of Structures, engineer). ■



40th St. Substation



East Huntington Bridge



Angelus Plaza Elderly Housing

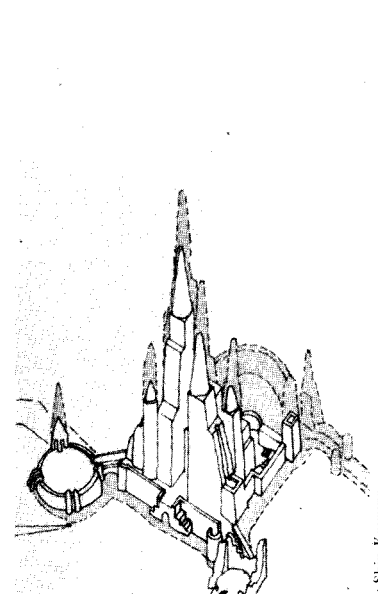
All Hail Boreas

As legend has it, in St. Paul at least, Boreas, King of the Winds, holds a festival each February in that winter wonderland of a city. During the Winter Carnival, merriment reigns, and an Ice Palace rises to house Boreas and his celebrants. 1986 is the centennial year of the St. Paul Winter Carnival, and to ensure a properly festive commemoration of the event, the Winter Carnival Association and the St. Paul chapter of the Minnesota AIA held a contest to design a centennial ice palace.

The winning design by Ellerbe Associates, Inc., of Minneapolis, is an elaborate interpretation of the Boreas legend, with 150-foot-tall spires (the tallest Ice Palace ever) shaped like inverted icicles; an Enchanted Grove inhabited by Starlight and Dawn, parents of the four winds; special chambers within the palace where the winds reside; and toboggan runs and skating rinks, where the joyous spirit of Winter Carnival can find active expression. *Joanna Wissinger*



Ice Palace for St. Paul.



Ice Palace: Construction phases

Photos: Shin Koyama

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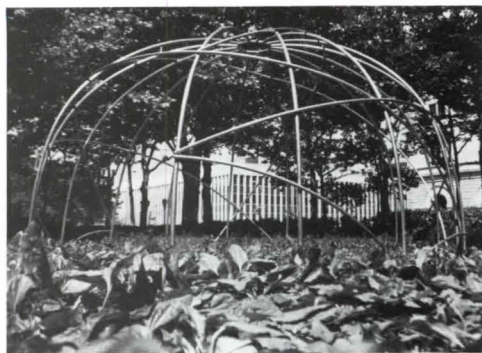
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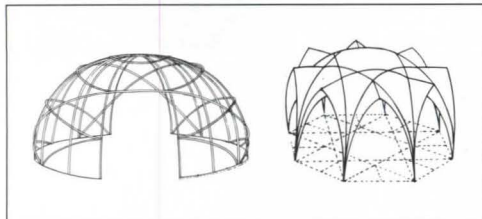
Public Spaces for Private Thought

Two projects in Brooklyn by environmental sculptor Hera (she renamed herself after the Ancient Greek goddess) could help redeem the bad rep public art has recently acquired (P/A, April 1985, p. 29). Vaulted Arbor was installed in 1984 at the Glenwood Houses project in the Carnarsie section, while Spirit House will occupy Cadman Plaza, a small park in Brooklyn Heights, until late fall, when it will be transferred to a permanent site at Laumeier Sculpture Park in St. Louis. Both works were sponsored by the Brooklyn Botanical Garden and funded by New York State and City Agencies.

The pieces are constructed of galvanized steel tubing and are intended to serve as arbor frameworks. Each shape has its precedent; Vaulted Arbor, octagonal in shape with pointed arches and a central dome, adapts cathedral elements. Spirit House, on the site of an old Marewicz Indian trail, is a beehive shape, like a wigwam. When the frames are finally covered with vegetation, the works will become outdoor rooms. Vaulted Arch has been planted with four different flowering vines and English ivy to ensure thick foliage all year. Spirit House is currently bare, its morning glory vines having been trampled into the ground by local children who enthusiastically use the piece as a jungle gym.

Hera had specific social as well as aesthetic agendas in mind for each piece when she designed them. The residents of Glenwood Houses are mainly elderly; Vaulted Arbor is intended to encourage their participation, as gardeners and occupants, in the life of the work. Spirit House arouses a sense of history, recognizing the original inhabitants of the landscape, who are seldom officially acknowledged by the current residents.

These works combine a number of qualities: meditative space, nostalgic allusions to formal 19th-Century garden arbors, the pure pleasure of being outdoors, and the serenity of formal geometry. They are not just to gaze at, but to walk through, stand in, climb on, smell, touch, and—if only metaphorically—to inhabit. *Joanna Wissinger* ■



Spirit House and Vaulted Arbor



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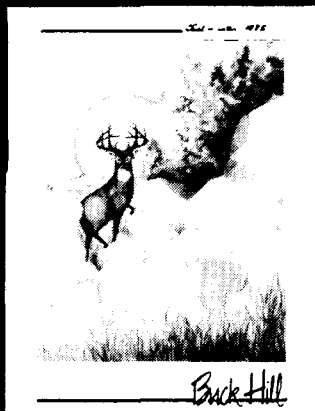
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Pencil Points

Wallace, Roberts & Todd, Philadelphia; and Hammer, Siler & George Associates, Washington, D.C., will examine four riverfront sites including several former industrial plants along the Mississippi.

Five finalists have been selected in a competition to design a new court complex for Suffolk County, New York. The five include Arata Isozaki, Tokyo, with Bentel & Bentel, Locust Valley, and Block, Hesse & Shalat, New York; Mitchell/Giurgola, Philadelphia; Arthur Erickson, Los Angeles; John Carl Warnecke, New York, with Michael Lynn, New York, and Theodore Bindrim, Melville, N.Y.; and Kohn Pedersen Fox, New York. Jordan Gruzen of the Gruzen Partnership will serve as professional advisor.

HOK, St. Louis, has been awarded the commission to design the new 6-million-square-foot manufacturing facility in Tennessee for Saturn, General Motors' car of the future. HOK will serve as design partner with Saturn Corporation and G.M. Argonaut.

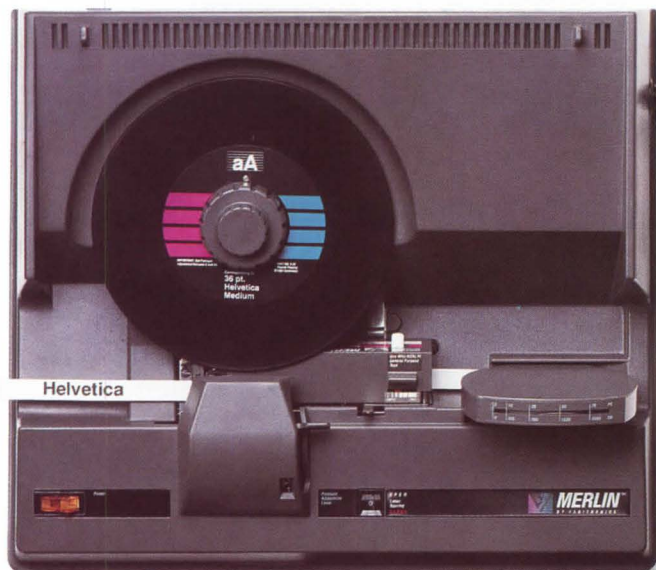
The Royal Academy in London is planning a major show on the work of Britain's big three: Norman Foster, Richard Rogers, and James Stirling, to open in June 1986.

Also in London, seven British and two Canadian entries have made the first cut in the competition for the Grand Buildings site on Trafalgar Square. Second-stage submissions are due in January from YRM Partnership, Richard Horden, Caroline Miller and James Utting; Miller Bourne Partnership (with Groupe 14-27, Paris), Nigel Mills and Ferenczi Design, all of the U.K.; Crang & Boake, and Murray & Murray Griffiths & Rankin, Canada.

● **Across the Square**, the National Gallery apparently has followed the example of the Getty Museum in its search for an architect to design the controversial new addition, sending committee members 'round the globe to examine relevant examples. Among the sites reportedly scouted are I.M. Pei's museum in Portland, Maine, and Richard Meier's Frankfurt museum.

Quote of the month comes from Federal Judge Edward Weinfeld, who dismissed Donald Trump's \$500 million libel suit against the Chicago Tribune. The New York developer claimed the newspaper had damaged his reputation in an article criticizing the 150-story tower he planned to build in Manhattan. Said the Judge, "In the realm of architecture, as in all esthetic matters, what is appealing to one viewer may be appalling to another."

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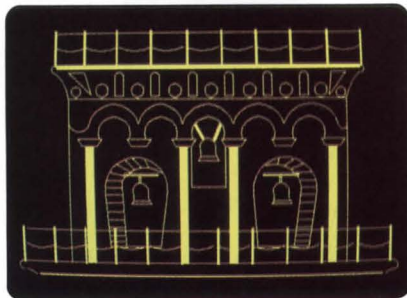


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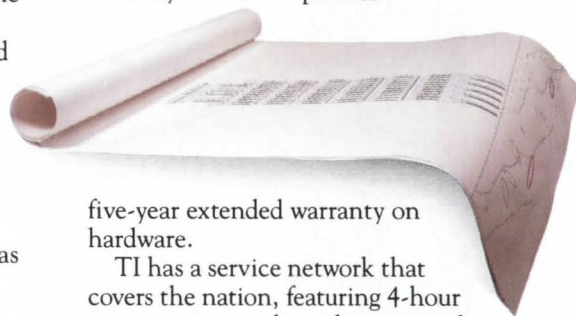
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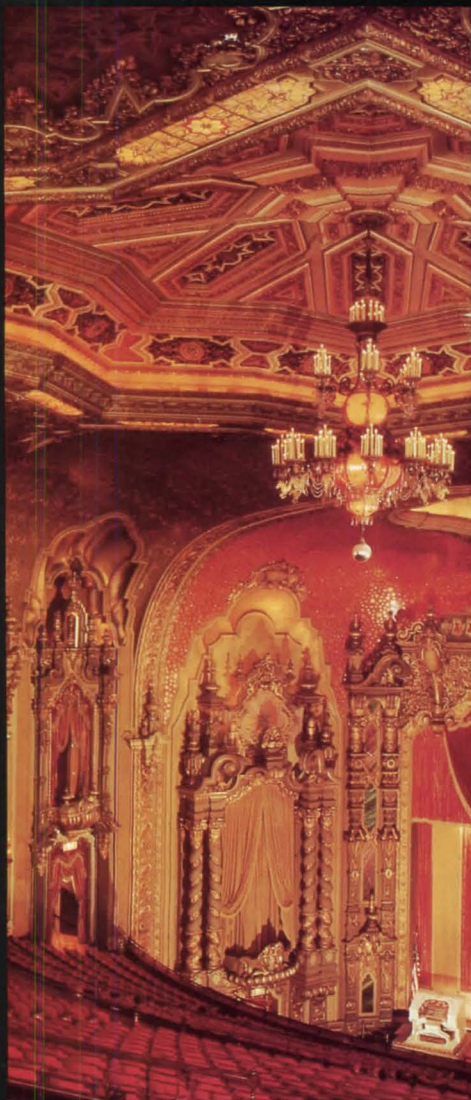


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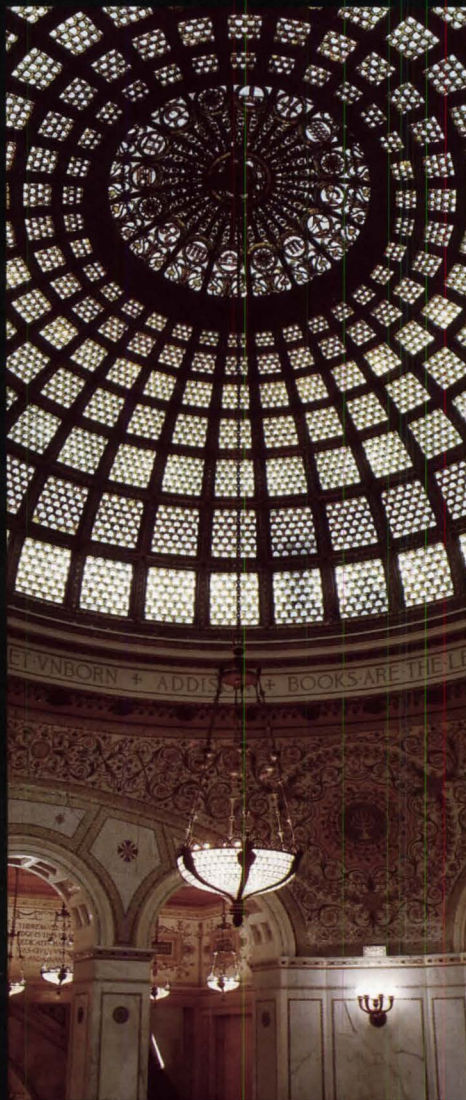
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Preservation News

This new section of the News Report, part of P/A's preservation coverage, considers upcoming projects, completed works, and controversial issues. Compiled by Joanna Wissinger



Hôtel Salé, grand stair.

Hôtel Salé Restored

Last September, the 17th-Century **Hôtel Salé** began a new life as the Musée Picasso. Architect Roland Simounet was charged with the restoration of the hotel and construction of the galleries. Museum director Dominique Bozo, who chose nearly 3000 objects from the artist's personal estate, was chiefly responsible for their superb placement in the galleries.

The hotel, an imposing Classical villa built in 1656 for tax collector Aubert de Fontenay by Jean Boullier, startled even the Paris of the Sun King with its scale and luxury. By 1964, however, the villa was vacant and

deteriorating. Restoration took more than a decade—twice as long as the original construction—as preservationists and curators resolved conflicting demands.

Happily, Simounet's design harmonizes venerable form with radical function. The façade and the entrance hall with its extraordinary grand stair are the only survivors of the original construction, but their impact determines the building's image: ordered, capacious, powerful. The rest of the interior was entirely gutted and replaced, save for some door frames and cornice fragments. Yet Simounet has retained the original plan of the grand first floor and related other galleries, more sinewy and compartmented, to its scale. The



New Gallery, corps de logis.



Hôtel Salé.

result is a "natural" unity that permits the arrangement of the art to follow its own exigencies while remaining in harmony with the building as a whole. The circulation, which follows the path 17th-Century guests would have taken, is especially successful.

The problems are minor. The well-scrubbed façade seems a little raw; the very white gallery walls disturb both building and art; sightlines open and close with a suddenness that seems more ingenious than lucid. Some landmarks are missing from the collection, as well. But on the whole, Picasso and Louis XIV, Simounet and Bozo, work together well. **Tom Matthews**

The author is a freelance writer based in New York.

McKim Mead & White's 1898 **Boston Public Library** is to be restored as part of a \$20.3 million campaign to refurbish 27 Boston libraries. Shepley Bulfinch Richardson & Abbott of Boston are now at work programming the restoration. On their list of absolute necessities are a complete rewiring, modernization of the mechanical system (the library has no air conditioning), and restoration of original finishes and features. The \$13.4 million budget should also cover restoration and relighting of the John Singer Sargent murals.

Liverpool's 1846 **Albert Docks**, closed since 1972, are undergoing an \$80 million renovation. One of the largest projects is the conversion of the Neo-Classical Dock Traffic Office into Granada TV's 24-hour News Centre, due to be completed at the end of this year. Architect is Ken Moth of Building Design Partnership. A maritime museum and art gallery are also scheduled.

The battle over **Broadway theaters** continues before the New York City Planning Commission, where several major theater owners are contesting the recent designation of multiple theaters by the Landmarks Preservation Commission. Claiming economic hardship, the owners seek permission to sell their air rights, while preservationists, led by the Municipal Arts Society, are calling for even stricter limits on new construction in Times Square.

Last June, the House of Representatives unanimously approved the **Olmsted Heritage Landscapes Act**, sponsored by Rep. John F. Seiberling (D., Ohio) and Sen. Daniel P. Moynihan (D., New York). The bill directs the Interior Department to list all Olmsted landscapes, which number in the thousands; only 44 of these are currently listed on the National Register.

Preservation News

The U.S. Senate is once again weighing a bill to save *historic bridges*. Sponsored by Sen. Robert Stafford (R., Vt.), the bill requires states to update and complete their historic bridges inventories and permits the use of federal bridge funds for appropriate repairs to those bridges still in use as part of the highway system. Federal demolition money can be redirected to save unused bridges for cyclists and pedestrians.



Sage Hall

Cornell University's 1875 *Sage Hall* was designed by Charles Babcock, Cornell's first professor of architecture, as a "complete academic, athletic and residential" facility for women. The university now plans to convert it to a student services center. The architect has not been selected.



La Citadelle

Haiti has allocated 1 percent of its annual budget, or \$200,000, to the ongoing project to restore *La Citadelle*, a fortress built between 1806 and 1820 by subjects of Henri-Christophe, the island nation's first king. The fortress was declared a World Heritage monument in 1982. Restoration of the 130-foot-high, 18-foot-thick walls and eight levels of cannon galleries is made all the more difficult by limited site access and frequent torrential rainfall.



New York's IDC Opening

The long-awaited opening of the International Design Center in Long Island for Designer's Saturday (Oct. 10) restores two fine industrial buildings to active duty housing the showrooms of major U.S. and foreign manufacturers of office and residential furniture, floor and wall coverings, textiles, and other architecture products. New York architects I.M. Pei & Partners have produced the master plan; Gwathmey Siegel & Associates are designing the public interiors. IDCNY will ultimately comprise two million square feet of space in three buildings on ten acres at the Long Island entrance to the 59th St. Bridge. In addition to showrooms, the IDC will also house a resource library and archive planned in conjunction with Parsons School of Design.

The City of New York is contributing \$4 million towards the construction of various public amenities, including landscaping, lighting, sidewalks, street benches, and covered crosswalks connecting the site with local public transportation facilities. ■

Top two photos: IDCNY's Center One present and future; bottom two photos: Centers One, Two, and Three (left to right) present; (right to left) future.

New Law for Landmarks

The New York State Assembly may soon rectify the inherent inequities of the historic preservation tax credits program, which currently benefits only private owners. The **State Assistance for Historic Properties Bill**, introduced this fall, provides grant programs and technical assistance for the preservation of historic property owned by not-for-profit organizations. The bill, now in Committee, is sponsored by 37 assemblymen, including Daniel Walsh and Senator John Flynn.

That pair has recently reintroduced their religious **Properties Exemption Bill** (P/A, March 1984, pp. 19-20), which would exempt those properties from the provisions of local landmark and historic district laws. The exemption bill has met with strenuous objections from preservationists and civic leaders, who see the assistance bill as one constructive alternative. ■

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Eleven historic farm buildings, part of the 1897 *Great Camp of Sagamore* in the Adirondacks, were saved from demolition this year by the passage of a unique land exchange bill in the New York State Legislature. The effort to save Camp Sagamore, organized by the Preservation League of New York State, required an amendment to the state constitution to allow 10 acres of state-owned land, where the buildings are located, to be swapped for 200 acres of wild forest land, which will be donated to the Adirondack Forest Preserve.



Pan Pacific

Los Angeles restores

It wasn't very long ago that the mere act of saving a historic Los Angeles building was news. Important structures, ranging from Irving Gill's Dodge House to Morgan Walls & Clements' Art Deco Richfield building, regularly disappeared to be replaced by more profitable development. In the last five years, however, the situation has changed dramatically, and the variety of restoration and adaptive reuse projects taking place in Los Angeles is impressive by any standards.

The 1935 **Pan Pacific Auditorium**, best known for its green, streamline-moderne façade, is finally coming back to life after years of disrepair. The interior of the building is being gutted to house a 160-room, five-level garden court hotel and the three-theater American Cinematheque, a film club. The project, designed by Gruen Associates, has been renamed Pan Pacific Center and is scheduled

to begin construction in 1986.

Plans for the restoration and extension of Bertram Goodhue's 1922 **Central Library** building have also been finalized, and a survey of the original structure is now being carried out by Levin & Associates. The library restoration is part of a complicated real estate transaction masterminded by Maguire Thomas Associates (see P/A, July 1985, p. 72). Hardy Holzman Pfeiffer Associates will carry out the renovation and expansion of the library, which includes a new 200,000-square-foot east wing, library automation, and underground parking for 600 cars. The interior of the original building will be completely refurbished with a few changes: the children's wing will be partly dismantled, but its sculpture and murals will be relocated inside the library addition. Restoration of the west lawn, currently a parking lot, is being carried out by Lawrence Halprin.

The **Embassy Auditorium** is another recently restored Los Angeles performing arts space. Built in 1914 for the Methodist

Church as the Trinity Auditorium, the complex, which includes 250 hotel rooms and a restaurant, was restored by Charles Moore and the Urban Innovations Group. The reopened auditorium, which features an ornate dome crowned by a circular stained-glass window, will be used for light opera and concerts. The auditorium seats 1500 people, and the restoration included upgrading the stage and lighting. Tina Beebe selected the color palette for the theater, restaurant, and hotel rooms. The restaurant, whose design is based on the ancient ruins of Petra, is decorated with Sonotube columns with neon-lighted, quilted fabric capitals.

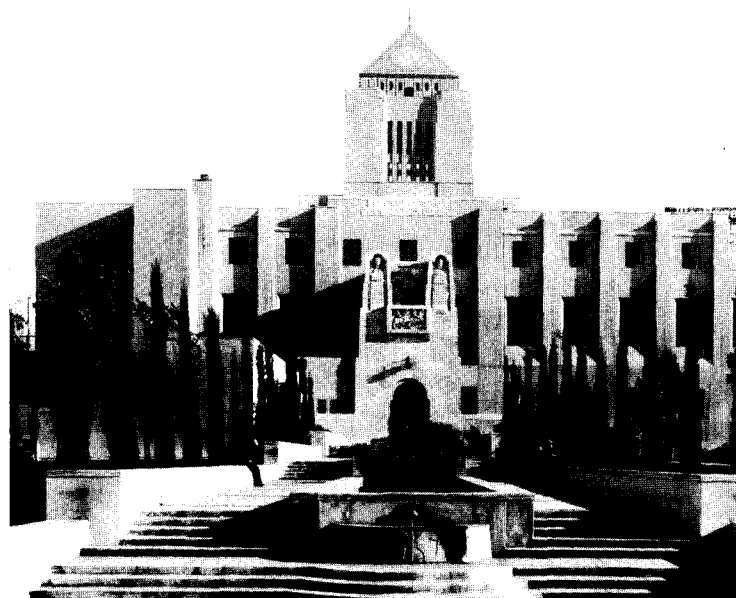
Wayne Ratkovich, whose 1979 restoration of the Oviatt building pioneered commercial preservation in Los Angeles (P/A, Nov. 1982, pp. 112-115), has recently completed restoration of the **Wiltern Theatre**. Ratkovich had previously restored and rented the offices and commercial spaces in the 1930 "zigzag moderne" Pellissier building, and



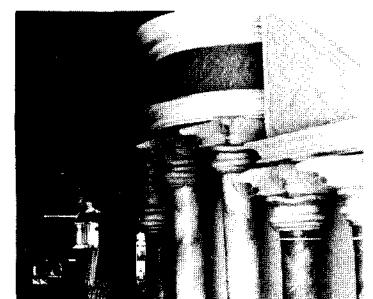
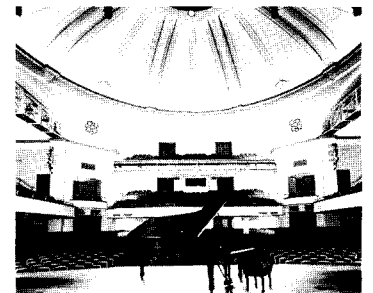
Verde River Sheep Bridge

The *Verde River Sheep Bridge* in Arizona is endangered. A suspension bridge designed and built in 1940 by shepherds to get their charges across the river, the rickety structure is listed in the National Register. The Forest Service, however, thinks it's unsafe, and wants to tear it down and replace it with a replica. Bridge fans worry there won't be funding for the replacement.

Londonderry's *inner city*, the last remaining walled city in Ireland, is undergoing restoration. A project to reunite the strife-torn city and establish it as a tourist attraction brings together groups of dropouts to be trained by unemployed craftsmen in building techniques. Long-term plans include a museum of medieval life and a replica medieval village, as well as exhibits portraying the city's role as embarkation point for Irish emigrating to America.



Central Library



Embassy Auditorium and restaurant

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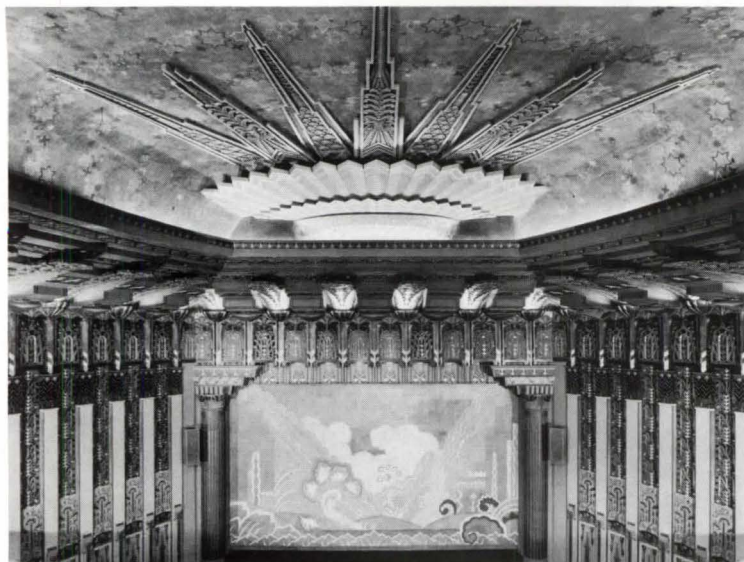
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Wiltern Theater

the opening of the 2400-seat theater, the building's central feature, completes the program. The Wiltern, originally designed as a flagship first-run cinema for Warner Brothers, is now in use as a concert and dance theater managed by Bill Graham Presents. The restoration included replacing plaster starbursts on the auditorium ceiling, upgrading the theater to current codes, and repairing decorative paint-

ings, iron grillework, and light fixtures. Architect for the job was Levin & Associates, with Ray Shepardson as theater consultant; the sons of several of the original craftsmen contributed to the restoration efforts.

Finally, the **Roosevelt Hotel**, a Hollywood landmark, is getting a new lease on life. First home of the Academy Awards ceremony, the building is located directly opposite Hollywood's most fa-



Roosevelt Hotel

mous landmark, the Chinese Theatre. The 380-room hotel has been down at the heel for many years, but is now being restored to former glamour by Solberg & Lowe. The project shows a tremendous amount of confidence in Hollywood Boulevard, a street that has in recent years deteriorated into a cruising ground for transients, teenagers, and dazed, out-of-town tourists. **Barbara Goldstein** ■



Bathhouse Row

New Life for Old Tubs

The National Park Service has issued a Request for Proposals for leasing and adaptive use of five of the eight bathhouses on Bathhouse Row at Hot Springs National Park, Arkansas. The structures in question are the 1911 Maurice, 1915 Hale, 1915 Superior, 1921 Quapaw, and 1922 Ozark Bathhouses. The first phase of the submission process closed in late September. Although the NPS refused to give even broad details of proposed schemes, they did say that 18 of the 19 submissions received qualified for the second phase, during which developers are invited to submit detailed plans for reuse. Final results are promised by mid-January. ■



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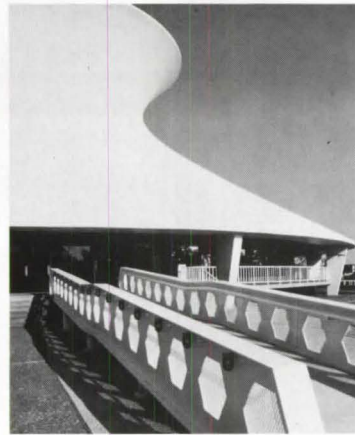


Robert Harris

Furness Building, Philadelphia. Designed by Frank Furness in 1891, this building is slated for restoration by architects Venturi Rauch & Scott Brown and preservation specialists the Clio Group, both of Philadelphia. The Furness building has been in use as a library for 95 years, and currently houses the University of Pennsylvania's Fine Arts Library, the Louis I. Kahn Collection, classrooms, architectural archives, and studio space. The building's original features are to be restored, roof and windows replaced, and building services brought up to date in time for the 1991 centennial.



Fire Station No. 4, Miami. Listed on the National Register, this 1922 fire station, the oldest in Miami, is scheduled for restoration and conversion to restaurant use. The original fixtures, including brass poles, will be preserved, and the firemen's quarters will be restored as private dining rooms. The project is a key part of the city's plans to redevelop the surrounding area as a pedestrian mall. Restoration architects are Tilden, Tachi & Pales of Coconut Grove.



St. Louis Science Center, St. Louis. This renovation of HOK's 1962 McDonnell Planetarium, designed by Gyo Obata, was completed earlier this year by Henderson Gantz Architects of St. Louis. Alterations to the building include a new "gangplank" entrance and new lighting and signage, as well as installation of state-of-the-art projection equipment in the existing Star Theater. The upper-level gallery windows were covered over on the inside to create additional display space, and a Discovery Room for hands-on education was established on the lower level.



Curtis Center, Philadelphia. Restoration of the Curtis Center, former quarters of the Curtis Publishing Company which produces popular favorites such as the *Ladies Home Journal*, includes the transformation of its open court into a 12-story atrium. The 1.1 million-square-foot conversion to office retail and restaurant space is by architects Oldham & Seltz with developer Kevin F. Donohoe Co.

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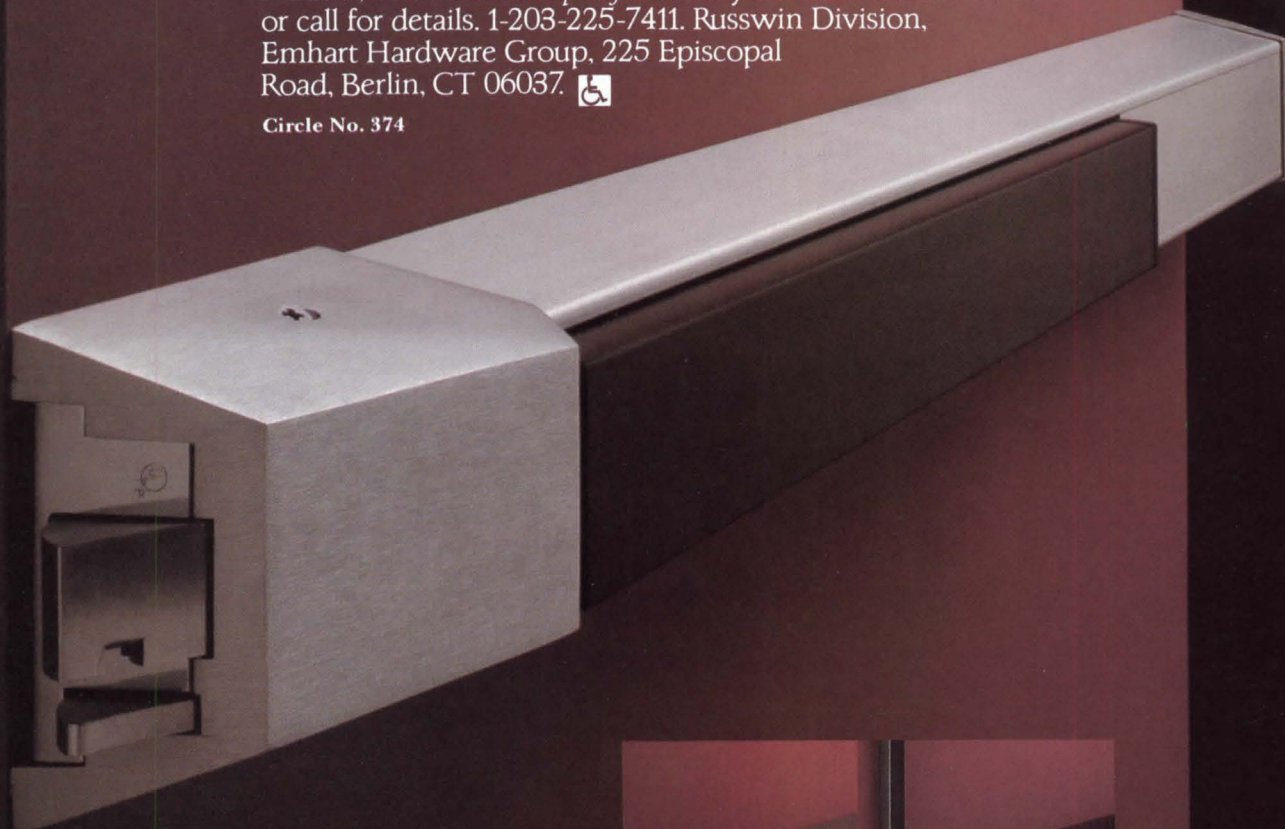
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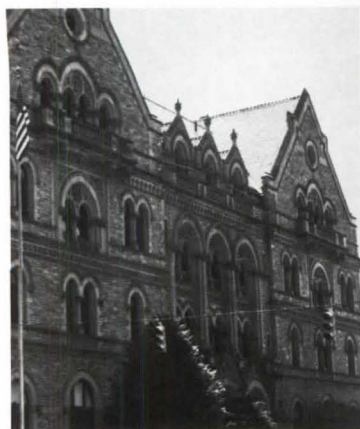


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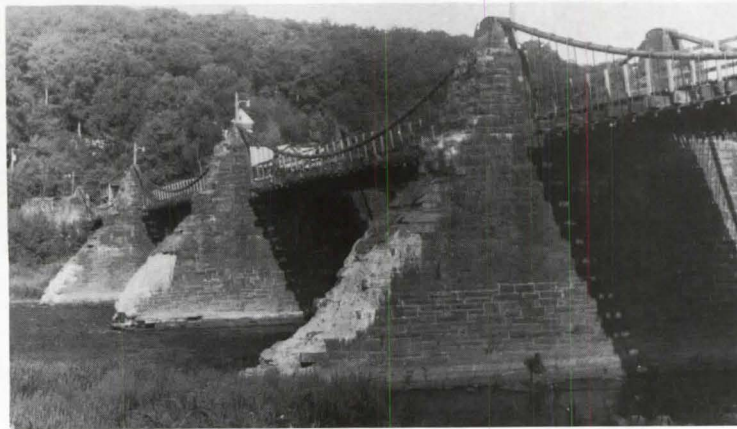
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Old Old Post Office, Columbus, Ohio. This 1885 building, re-modeled and expanded in 1912, was once used as both a courthouse and a post office. Its conversion into offices for a large law firm by the firm of Bohm-NBBJ, Inc., of Columbus involves bringing building systems and services up to date, replacing the badly deteriorated roof and windows, and restoring interior details and finishes, such as marble wainscoting and a carved oak screen wall, to their original magnificence.



Delaware Aqueduct, Lackawaxen, Pa. The oldest surviving wire cable suspension structure and the earliest extant work by Brooklyn Bridge designer John A. Roebling, this aqueduct is undergoing restoration by Beyer Blinder Belle of New York. Opened in 1847 as part of the Delaware and Hudson Canal, the Aqueduct carried canal traffic across the Delaware River until 1908, when it was converted to a toll road. The conversion was never successful, how-

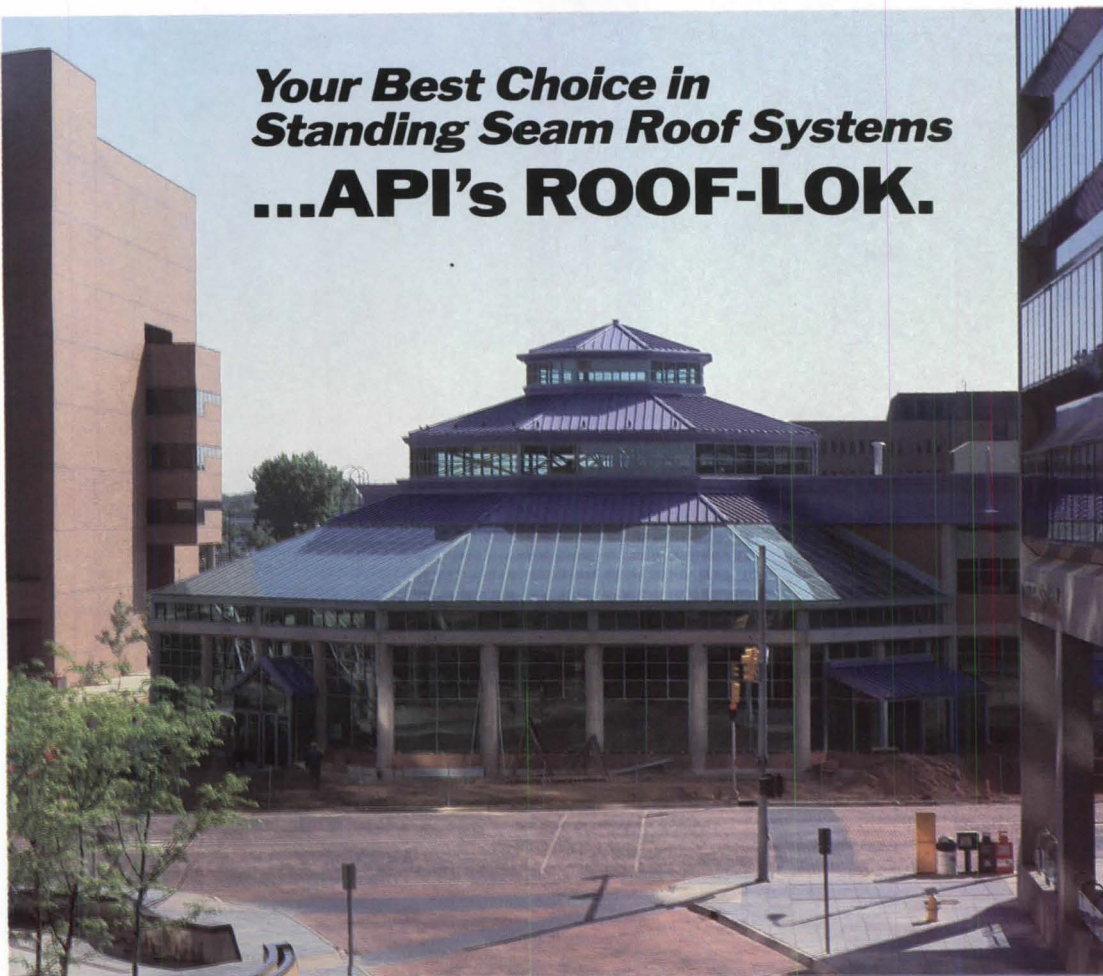
ever: replacing the dead load of water with a live load of vehicles made the bridge as constructed unstable. It was closed in 1980. Project architect John Belle plans to install a heavy roadbed, which will simulate the waterload and prevent swaying. The wooden framework that once supported the canal "tub" and towpath is to be reconstructed. Auto traffic will run along the base of the tub, but the tub sides will remain open for clear views of the river.



Robert Vogel

Essex County Courthouse, Newark, N.J. The stonework of this 1906 Cass Gilbert building is in such poor shape that the entrance and exterior staircase have been closed to the public. Essex County has commissioned a report by the Grad Partnership of Newark to determine the best course of restoration for the sculpture, which underwent an earlier renovation and enlargement in 1929, when some of the original murals were painted over. Restoration therefore has to be considered in terms of two eras—1907 for the rotunda, with its murals and stained glass domes by Tiffany, and 1929.

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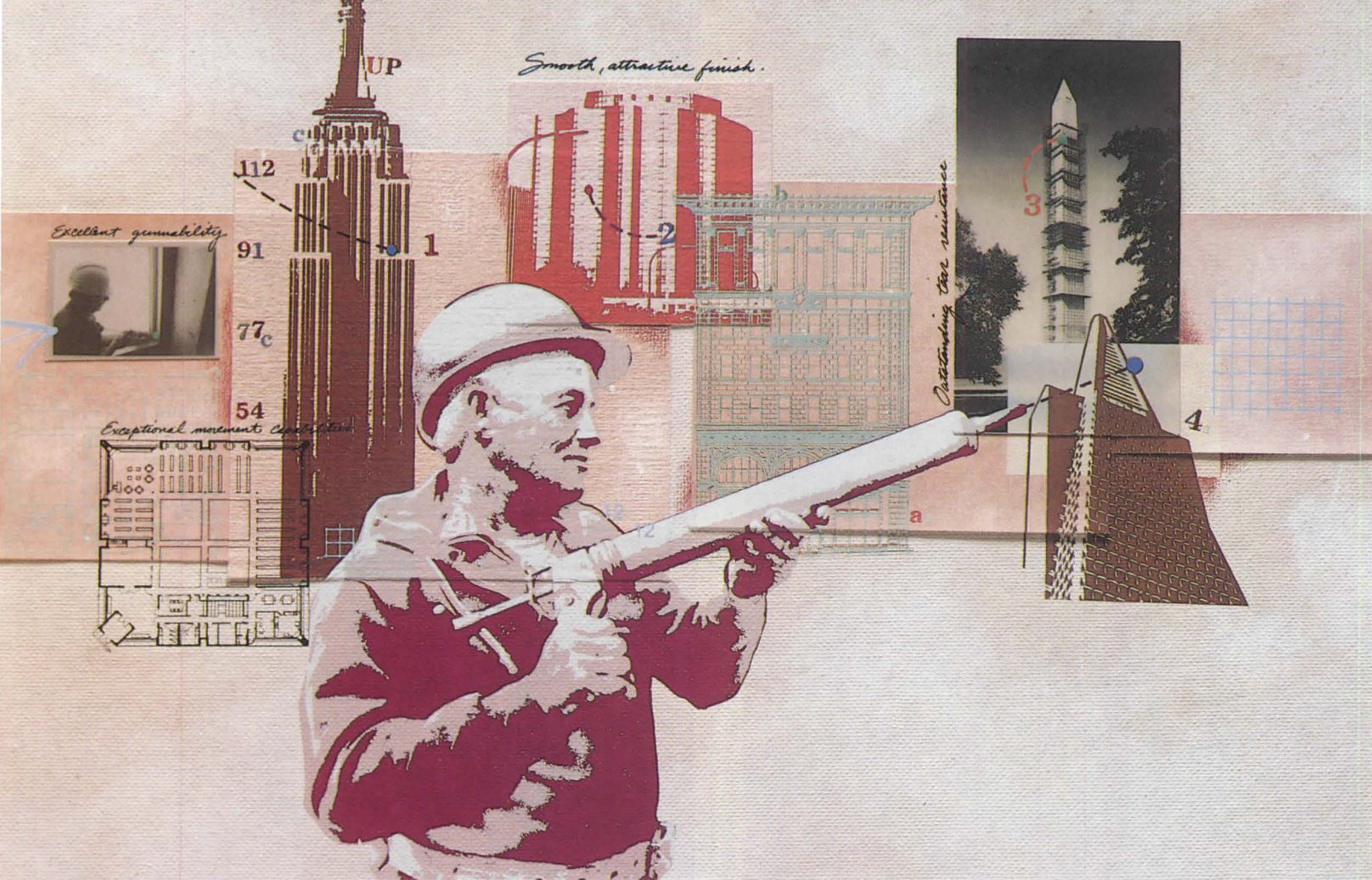
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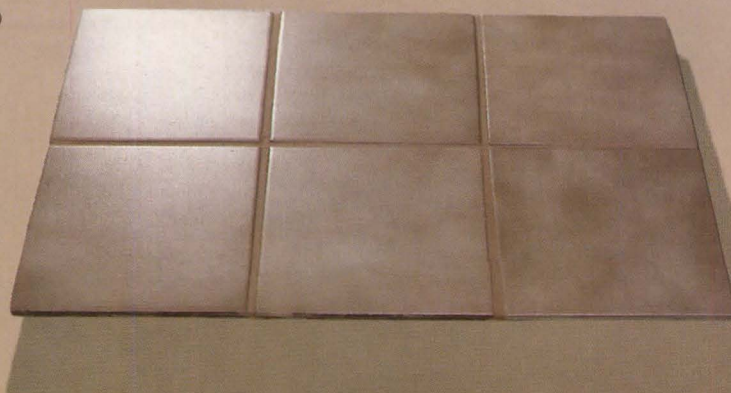
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Perspectives

The conversion of an abattoir to a public park on the outskirts of Paris moves towards completion with the opening of Reichen & Robert's Grande Halle.



The Grande Halle at La Villette, rehabilitated by Reichen & Robert.

Paris report: **Progress at La Villette**

"No, the President's projects are not a myth." So opened an article in the French weekly *L'Express* celebrating the inauguration of the Grande Halle at Paris's Parc de La Villette last spring. Although construction sites all over the city testify to President Mitterrand's architectural obsession, the Grande Halle was the first of a dozen major projects to be completed; given Mitterrand's present political problems, it may also be one of the last.

But politics alone do not define the significance of this particular project, the first piece in an ambitious program to transform La Villette, a former slaughterhouse grounds on the edge of Paris, into a public park for the 21st Century (see P/A, May 1983, pp. 26-27, and Jan. 1985, pp. 90-91). The Grande

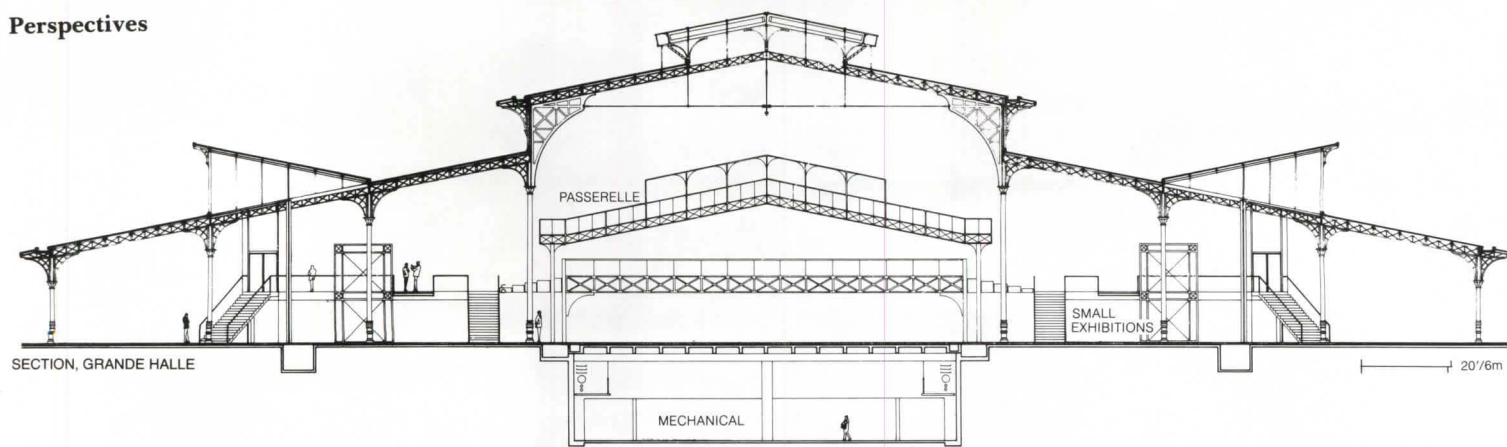
Halle, a former cattle pen, is one of the finest 19th-Century cast-iron and steel industrial structures still standing in Paris. Completed by architects Janvier and Jules de Merindol in 1866, the Halle's chief virtue is, simply, space—five acres of it, unobstructed. The task for Paris architects Bernard Reichen and Philippe Robert was to preserve the Halle's extraordinary transparency while providing for an ever-changing program. The Grande Halle was envisioned by its administrators as the ultimate multipurpose space, changing from fairgrounds to art gallery to concert hall as needed.

Reichen & Robert permitted no alterations to the building's exterior, but pulled new glass façades, accordion-pleated for acoustical reasons, back one bay from the edge of the building envelope. Inside, however, they worked with greater freedom, excavating the central bay to provide for "servant spaces"

(café, lecture hall, mechanical and storage spaces) below grade. New mezzanines along the longitudinal façades are connected by three elaborate "passerelles," movable bridges that also provide the framework for scenography and lighting. Although the mezzanines are detailed in a relatively straightforward, contemporary manner, these catwalks freely replicate the detailing of the original shed. It is likely that these "imitative" elements would have been disallowed in this country, where a more Puritanical attitude towards preservation prevails, thanks to the Secretary of the Interior's Standards. (See also Reichen & Robert's conversion of a factory to housing, p. 98.)

The provision of a flexible space does not, however, eliminate the need for appropriate programming. The recent Paris Biennale, staged in the Grande Halle for sentimental and symbolic reasons, proved the point. Jean

Photos: Donatella Brun



Nouvel's installation, designed to accommodate canvases large and small, plus an architecture section dependent upon the use of slides and videos, fought the transparent Grande Halle every step of the way.

Programming is of equal concern to a second major project in the Park—the City of Science and Industry, which opens next spring. Architect Adrien Fainsilber has done his best to preserve the extraordinary cavernous spaces of this contemporary slaughterhouse, abandoned before completion in 1970. But the program of a science museum, with its small scale, hands-on exhibits, videos, and gadgets, virtually demands the division of wide-open space into smaller cellular units. The separation of project architecture from interiors—to be designed by four exhibition specialists—does not bode well for this monstrous, but fascinating relic of French gigantism.



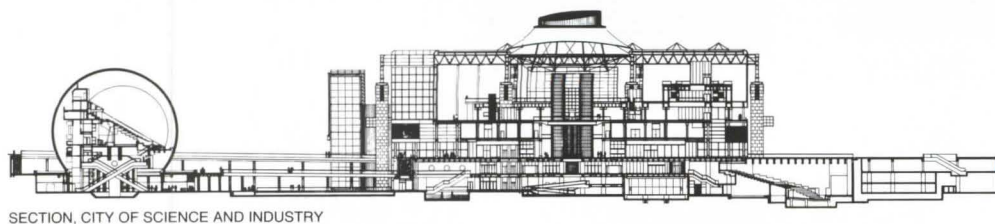
The former abattoir at La Villette; Grande Halle, left; Science City, right.



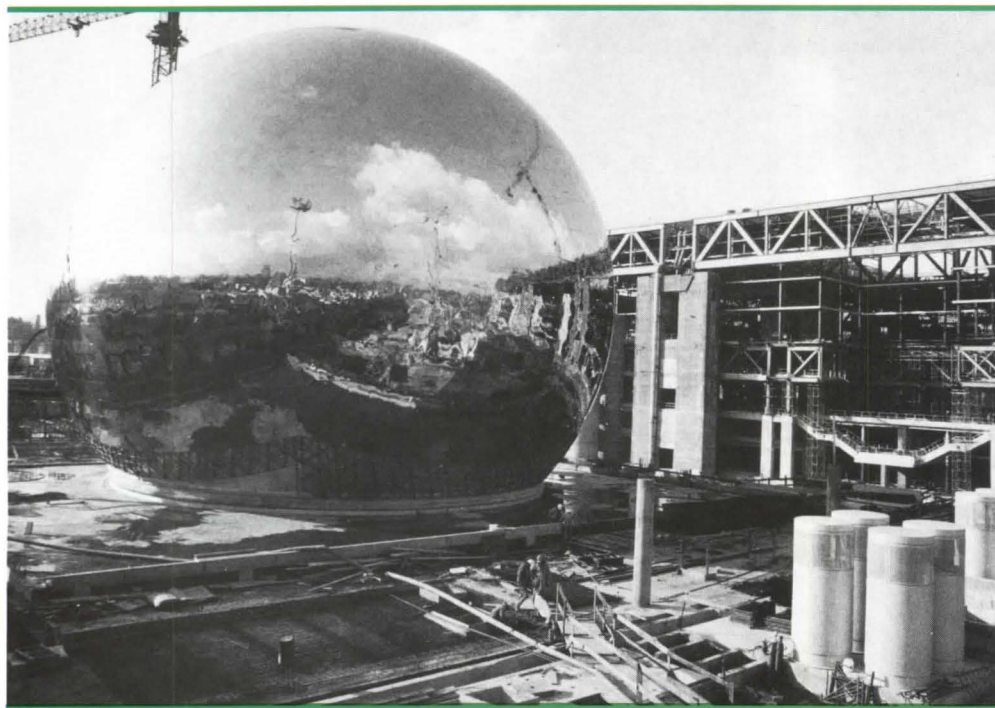
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The Science City and Geode.

The Geode, however, is all Fainsilber. The spherical OMNIMAX theater, which floats in a pool of water outside the Science building, is a scaleless, surreal contradiction in terms, its stainless steel skin offering no hint of the raw concrete "trees" within that support a 370-seat theater high under the dome. The first such theater in France, the Geode is, true to form, also the largest in the world.

The Geode, the Grande Halle, and a third structure—the Zenith, a tented concert hall designed by Chaix & Morel—stand like small, complete islands in the vast construction site that is the park at present. All slaughterhouses and assorted industrial buildings that are not to be reused (including a 19th-Century shed that stood adjacent to the Grande Halle) have been cleared. The site bears little resemblance to the cluttered, rather gruesome wasteland of a decade ago, and Bernard Tschumi's park plan is slowly—some say too slowly—rising. Christian de Portzamparc's City of Music, yet another element in the new collage, is still in design development.

Yet even as parkland, the site retains its curious separation from the city and stands aloof, its own island. Although well serviced by two metro lines, the park's physical and visual link to central Paris is weak. Future plans to clean up the canal basins that extend out from center city to La Villette could provide the missing link. Until that is accomplished, La Villette will remain, like La Défense, a curious satellite on the periphery of Paris. *Daralice D. Boles.* ■



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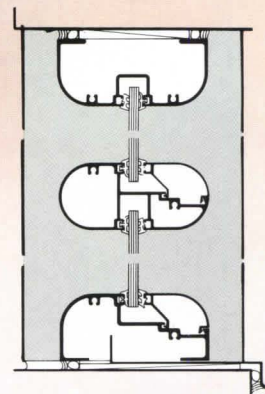
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P/A Calendar

Exhibits

Through November 27
Build Ye Cities: Israeli Architecture. Royal Institute of British Architects, London.

Through November 27
New + Now: Arts & Furniture. Novo Arts, New York.

Through November 29
The Work of Skidmore, Owings and Merrill. School of Architecture and Planning, University of New Mexico, Albuquerque.

Through November 29
The Work of Afra and Tobia Scarpa. Architects and Designers. Center Four, International Design Center, New York.

Through December 1
Siah Armajani: Bridges/Houses/Communal Spaces/Dictionary for Building. Institute of Contemporary Art, University of Pennsylvania, Philadelphia.

Through December 2
Athens: European Concern. Zappeion Megaron, Athens, Greece.

Through December 8
Mario Botta: Architettura 1960–1985. Scuola di San Giovanni Evangelista, Venice, Italy.

Through December 8
Paris Recorded: The Thérèse Bonney Collection. Cooper-Hewitt Museum, New York.

Through December 11
The Critical Edge: Controversy in Recent American Architecture. Ackland Art Museum, University of North Carolina, Chapel Hill; also **January 8–March 8**, University Art Museum, Berkeley, Calif.; **May 8–June 8**, Nelson Atkins Museum, Kansas City, Mo.

Through December 14
Tomas Taveira: Designs. Galeria Comicos, Lisbon.

Through December 15
The Knot: Arte Povera. P.S. 1, Long Island City, New York.

Through December 20
Masterpieces of Time: Wendell Castle. Alexander Milliken Gallery, New York.

Through December 28
Building Our National Image: Architectural Drawings for the American Republic, 1789–1914. National Building Museum, Washington, D.C.

Through January 1
Arthur Erickson: Selected Projects. Vancouver Art Gallery, British Columbia.

Through January 5
India! Metropolitan Museum of Art, New York.

Through January 5
The Statue of Liberty. New-York Historical Society, New York.

Through January 5
John Ostell: Architect, Surveyor. McCord Museum, McGill University, Montreal, Canada.

Through January 7
Contrasts of Form: Geometric Abstract Art. Museum of Modern Art, New York.

Through January 15
150 Years of Chicago Architecture. Museum of Science and Industry, Chicago.

Through February 16
High Styles: 20th Century American Design. Whitney Museum of American Art, New York.

Through February 23
The Golden Eye. Cooper-Hewitt Museum, New York.

Through March 16
The Treasure Houses of Britain. National Gallery of Art, Washington, D.C. Also **through April 6** The Architect and the British Country House. Octagon Museum, Washington, D.C.

November 8–January 25
Time Object. Gallery 91, New York.



A.H. Haig, half-timber house, 1873. At the AIA Octagon through April 6.

Drawings Collection, RIBA.

November 10–December 15
Arquitectonica: Yesterday, Today, Tomorrow. Sarah Campbell Blaffer Gallery, The University of Houston, Houston.

November 14–January 5
Alvar Aalto: Furniture and Glass. Montreal Museum of Decorative Arts, Montreal.

November 16–January 6
Memphis: Decorative Arts from Milan 1981–1983. Woodruff Arts Center, Atlanta College of Art, Atlanta.

November 24–January 4
Michael Graves and Robert Venturi. John Nichols Printmakers and Publishers, New York.

December 7–January 19
Contemporary Landscape—From the Horizon of Post-modern Design. National Museum of Modern Art, Tokyo.

Conferences

November 23–26
International Congress of Interior Design. Grand Palais, Paris. Contact Soyo Graham Stuart, 8, rue Weber, 75116 Paris (1) 45 00 64 04.

January 6–10
Second Century of the Skyscraper. Hyatt Regency, Chicago. Contact Chicago Committee on High-Rise Buildings, % SOM, 33 West Monroe St., Chicago, Ill. 60603, or Council on Tall Buildings and Urban Habitat, Building 13, Lehigh University, Bethlehem, Pa. 18015.

January 13–15
Solar Buildings Conference. Hyatt Regency Hotel, Washington, D.C. Contact MCC Associates, Box 7472, Silver Spring, Md. 20907 (301) 589-8130.

Competitions

November 25
Registration deadline, First Stage of Sesquicentennial Park Design Competition for downtown Houston. Contact Theodore Liebman, AIA, Professional Advisor, % Central Houston Civic Improvement, Inc., 2040 Two Shell Plaza, Houston, Texas 77002.

November 30
Registration deadline, May 4 Memorial Design Competition. Contact the May 4 Memorial Committee, Kent State University, Kent, Ohio 44242.

December 1
Application deadline, Pioneer Courthouse Square Weather Machine Design Competition. Contact Programming Director, Pioneer Courthouse Square, 701 S.W. Sixth Ave., Portland, Oreg. 97204.

January 1
Postmark deadline, International Aluminum Extrusion Design Competition. Contact Aluminum Association, Inc., 818 Connecticut Ave., N.W., Washington, D.C. 20006, Attention: Extrusion Design Competition.

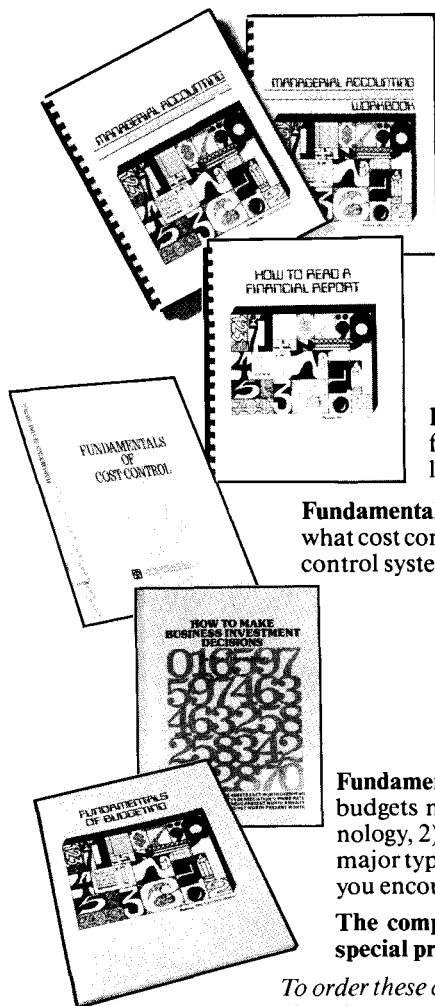
January 16
Submission deadline, P/A's Sixth Annual International Furniture Competition. See page 15 for information and entry form.

March 7
Submission deadline, 1986 Engineering Excellence Awards. Contact American Consulting Engineers Council, 1015 Fifteenth Street, N.W., Washington, D.C. 20005 (202) 347-7474.

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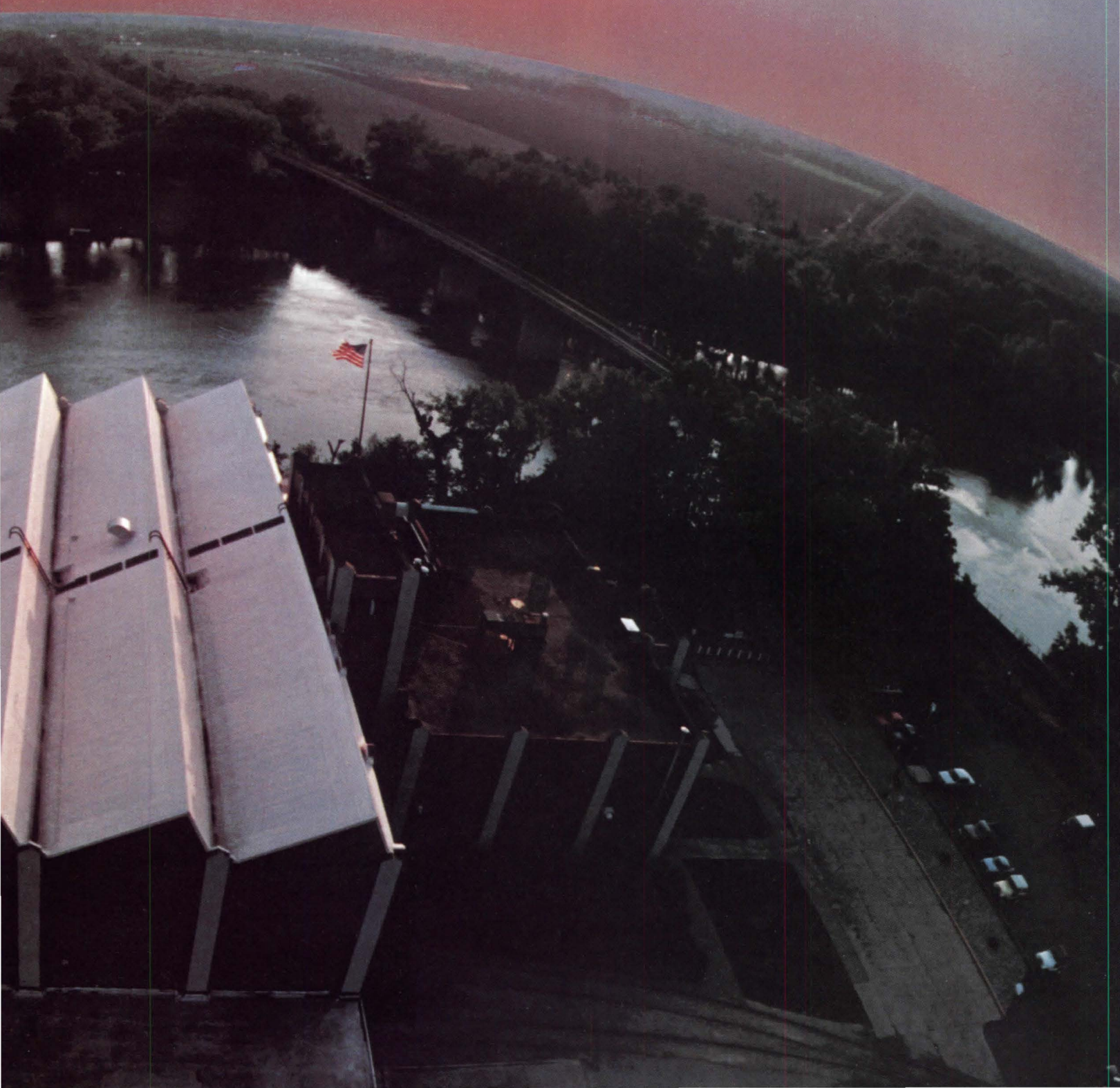
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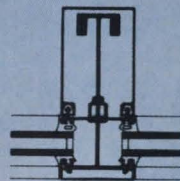
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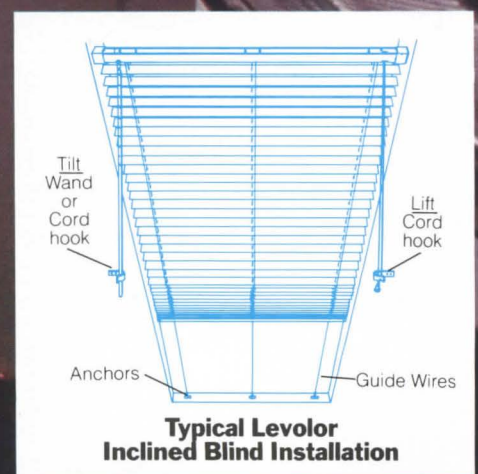
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Coordination is essential in all specification writing. Substrate tolerances for resilient flooring must be specified in the concrete section. The steel door specification must describe preparation for finish hardware. All must be correctly cross-referenced. Writing is more difficult when the documents will be issued in phased packages or awarded as concurrent separate contracts. But coordination becomes a real problem only when sections are being written by several individuals—and especially when coming from different offices.

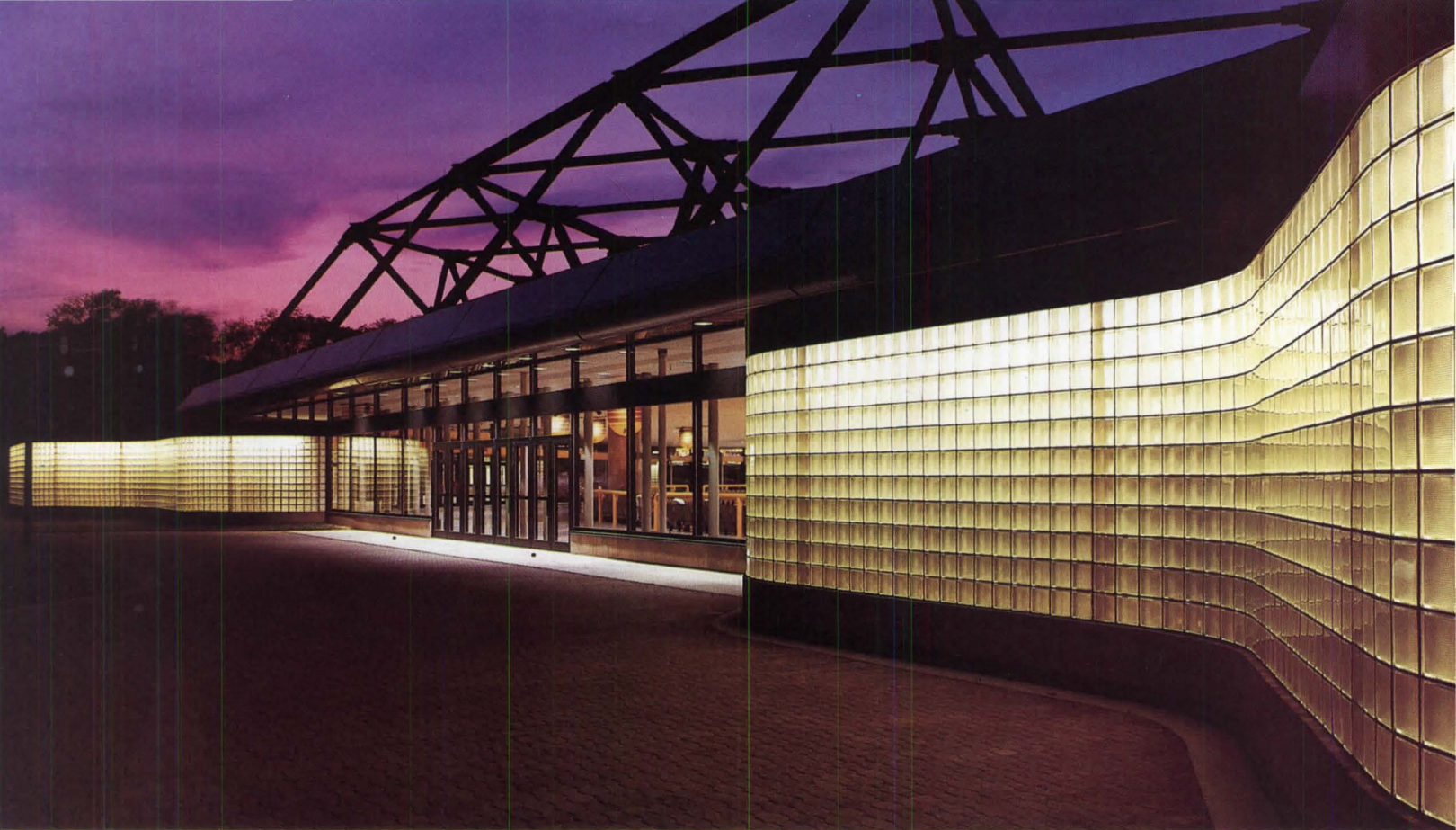
Most engineering firms (civil, structural, plumbing, HVAC, electrical, etc.) are familiar with the stringent requirements of good specification writing. But a large percentage of consultants for building specialties, such as elevators, food service and maintenance equipment, and security systems, are not. All must be spoon-fed, cajoled, and prodded by the architect. Their specifications must be reviewed. References to ASA standards, long since supplanted by ANSI, still appear.

Early discussion of specification requirements with consultants is essential. Review procedures for specifications are as important as review of drawings, so schedules, turnaround time, and date of final issue should be established as soon as possible. Exchanging lists of proposed final specification sections allows all specifiers to start tracking cross-references. Although such references are, at best, embarrassing when wrong, they can be effective checks during the writing process, and are a great aid to bidders. Some offices distribute detailed printed guidelines for preparation of specifications, describing organization of the project manual, section and page format, terminology, capitalization, and general relationship between drawings and specifications.

Consistency of the project manual is second in importance only to technical coordination. It is necessary in establishing the credibility of the document. Loopholes start with a lack of attention even to small details. Therefore, consultants should be required to prepare their specifications in the architect's (or client's) standard format, from para-

EXAMPLE OF SPECIFICATION COORDINATION CHECKPOINTS

Number	Title	Item
01300	Submittals	general submittal requirements, specific submittal requirements
01400	Quality Control	general testing requirements, specific testing requirements
01500	Construction Facilities and Temporary Controls	temporary fire protection, temporary heating, temporary plumbing, temporary power and lighting, temporary pumping, temporary ventilating
02200	Earthwork	base for concrete slabs, trenching
02660	Water Distribution	trenching, water utility
02680	Fuel Distribution	gas utility, trenching
02700	Sewerage and Drainage	site drainage, trenching
02780	Power and Communications	electrical utility, trenching
03100	Concrete Formwork	anchor inserts, base for slabs, concrete, formwork, reinforcement, sleeves
03200	Concrete Reinforcement	concrete, formwork, reinforcement
03300	Cast-in-place Concrete	base for slabs, concrete, concrete pads and bases, concrete sealers, formwork, general submittal requirements, general testing requirements, reinforcement, slab tolerances, specific submittal requirements, specific testing requirements
05100	Structural Metal Framing	cellular decking, field painting, fireproofing, general submittal requirements, general testing requirements shop primer, specific submittal requirements, specific testing requirements, steel elevator beams, steel erection tolerances, steel lintels
05300	Metal Decking	cellular decking, concrete, header inserts, header system, shop primer, steel erection tolerances
05500	Metal Fabrications	catwalks, convactor enclosures, field painting, pit ladders, shop primer, steel elevator beams, steel lintels
07100	Waterproofing	flashing for penetrations, sealing of penetrations
07200	Insulation	building insulation, fireproofing, mechanical insulation, roof insulation
07250	Fireproofing	building insulation, cellular decking, fireproofing, general testing requirements, sealing of penetrations, specific testing requirements, structural steel
07500	Membrane Roofing	equipment curbs, flashing for penetrations, general testing requirements, roof insulation, sealing of penetrations, specific testing requirements
07700	Roof Specialties and Accessories	equipment curbs, membrane roofing
07900	Joint Sealers	flashing for penetrations, sealing of penetrations
08100	Metal Doors and Frames	door louvers, field painting, finish hardware, preparation for finish hardware, shop primer
08300	Special Doors	access doors, coiling doors, cylinder locks, field painting, shop primer
08700	Hardware	access doors, coiling doors, cylinder locks, metal doors and frames
08900	Glazed Curtain Walls	anchor inserts, building insulation, convactor enclosures, curtain wall louvers, general submittal requirements, general testing requirements, shop finish coating, shop primer, specific submittal requirements, specific testing requirements, steel erection tolerances
09510	Acoustical Ceilings	ceiling system, lighting fixture frames, lighting fixtures
09650	Resilient Flooring	concrete sealers, slab tolerances
09900	Painting	duct identification, field painting, pipe identification, shop finish coating, shop primer
10200	Louvers and Vents	architectural louvers, blankoff panels, curtain wall louvers, door louvers, field painting, non-architectural louvers, shop finish coating, shop primer
10520	Fire Protection Specialties	fire control, fire hose cabinets
10750	Telephone Specialties	telephone enclosures, telephone system
11010	Maintenance Equipment	curtain wall system, equipment connections, general submittal requirements, specific submittal requirements
11400	Food Service Equipment	equipment connections, general submittal requirements, motor controllers, motors, specific submittal requirements
14200	Elevators	concrete pads and bases, elevator communications, equipment connections, field painting, general submittal requirements, general testing requirements, pit ladders, motor controllers, motors, shop finish coating, shop primer, specific submittal requirements, specific testing requirements, steel elevator beams



Carver Hawkeye Arena Location: Iowa City, Iowa Architect: C.R.S. Architects ESSEX® AA pattern

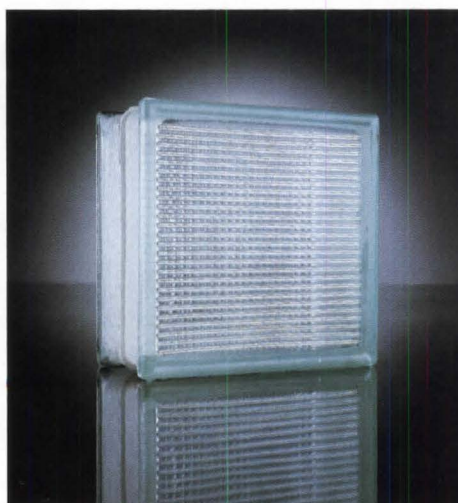
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graph numbering system to page layout. Their initial reaction will be one of resistance—after all, each consulting firm has its own standard. In fact, any office without word-processing equipment will find it difficult to modify its typical specifications. But it is worth the effort and easier after the first project. An early sample section demonstrating proper format is a useful guide. The format should be confirmed in the initial review period, when the documents are not more than 50 percent complete.

Review of specifications at 90 or 100 percent completion is mandatory. Format hassles should be past and the reviewer can concentrate on coordination of technical items, with adequate time to correct duplications, omissions, and ambiguities before releasing the documents. If not, addenda will have to be issued during the bidding period.

Some of the most critical coordination areas are identified in the box page 63. Underlines indicate the preferred location for specification of an item and other occurrences of the same phrase suggest appropriate sections for cross-references. Section numbers and titles are based on the CSI Masterformat. For instance, temporary utilities should be specified in Section 01500 and cross-referenced in the applicable Division 15 and Division 16 sections. Generally, sections should encompass "furnish" and "install" provisions for the specified work. Local practices and the demands of construction managers, however, may dictate splitting them into separate sections based on trade jurisdictions.

Certain areas merit special comment. Because of their complexity and cost, motors and controllers, fire protection components, heating elements, monitoring systems, and other items that cross mechanical and electrical lines create problems. For instance, coordination of mechanical and electrical services for specialty equipment requires clear decisions on location and extent of rough-in provisions and responsibility for setting the equipment and making final connections.

Doors for access to mechanical and electrical equipment stumble around in the project manual when they should be specified only in Division 8 and cross-referenced elsewhere. That is the best means of ensuring consistent finishes and a single supplier for doors of the same type. Since the exact quantity and eventual location of access doors is often unknown at the time of bidding, it is usually best to specify an allowance (in dollars or a stipulated quantity of each type) and obtain unit prices for deviations from the allowance.

Primers are another problem area. Shop primers should be specified in the same section as the component or material to which they are to be applied. But they must be compatible with and cross-referenced to the field-applied finish coatings specified in Division 9. A similar situation exists when stone, sealants, and glass for a curtain wall system are specified in separate sections. Ultimate performance of the system is at stake and it is wise to specify a single responsibility for the related work in the curtain wall section (with appropriate cross-references).

Perhaps the most complex assembly in today's construction occurs in a building automation system, where lighting and temperature control, fire protection, elevator

monitoring, and security functions are merged in a single console. Coordination of materials, provisions for display components, interface between independent control systems, and connections by many trades are involved.

Close coordination of specifications may not eliminate bidding and field problems but it can certainly minimize them.

William T. Lohmann, AIA, FCSI

The author is Specifications Manager for Murphy/Jahn, Chicago.

Law: Liability Insurance Crisis

In view of the increasing exposure to liability of the design professional, the availability of professional liability insurance at reasonable cost is highly important. The insurance industry, however, claiming that it expends more in claims than it earns in premiums, is shrinking the available market for such insurance and dramatically increasing its rates. Although the insurance problems of the medical profession have received great publicity and are in the forefront of public concern, the similar problems of the architectural profession have received little notice, although the profession is fast approaching a crisis in this respect.

Because of the desire of many insurance carriers to reduce their exposure by withdrawing altogether from this field, by reducing coverage, or by being highly selective in the acceptance of risks, many architectural firms are now unable to find any insurance company willing to offer them coverage, or to renew their policy under any terms and conditions. Those firms who can secure insurance find that premiums have been increased 50 to 300 percent and that insurance costs as a percentage of gross billings have jumped alarmingly. The impact on the profession of these increased costs has been devastating to many firms and promises to become worse as developing costs and losses continue to increase and the courts progressively extend the potential liability of the practicing design professional.

Much advice has been given to the profession on how to cope with this chaotic condition, but much of such advice, if followed, would have a peripheral impact, or is impractical, or would subvert the traditional role of the professional architect. For example, it has been suggested as one possible approach that the design professional should divest himself of his assets and practice without insurance. Another suggestion was to perform design only and avoid services of production. A third suggestion is to break up the architectural firm into insured and noninsured companies so as to avoid the cost of insurance which covers no or little risk.

A more practical, if partial, remedy that has been recommended is for the profession to incorporate in its contract documents a limitation of liability that would restrict an owner's claim, for example, to the amount of the fee payable under the contract. Such an approach would probably have to be promoted by the American Institute of Architects and reflected in its form documents in order to achieve general acceptance. Competition among architects and the difficulty of



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negotiating such a limitation would probably make it impossible for an individual practitioner, in most instances, to achieve a contract with such a provision. In any event, since such limitation would have no application to a claim by a party other than the client, it would afford only partial relief. Statistics indicate that over 50 percent of claims made against architects or engineers are asserted by contractors and other third parties and not by the client, and therefore a contractual limitation would be of only limited use.

Some architects have sought to reduce costs by switching carriers to take advantage of lower rates offered by one carrier as compared to another. Changing insurance companies, however, carries with it an additional set of concerns. A successor company, for example, will not provide coverage for a claim that the architect had knowledge of

when insured by his former company. Some policies also do not provide any retroactive coverage. Therefore, the professional who secured such a policy would have no coverage for errors or omissions that occurred prior to obtaining the new policy, even if no claim had been made at the time his former policy was in effect. When a new company comes into the field, it may not have the stability, financial resources, or the services that an insurer of long standing may provide. All of these factors and others must be analyzed before changing insurance carriers.

Probably the only relief of major significance that might be available to the design professional, and the one most difficult to achieve, is through legislation clarifying and limiting the rules of liability as applicable to architects or engineers, and perhaps controlling the fees or other benefits accruing to

those who promote or encourage litigation against the design professions. The great expansion in the parameters of the design professional's liability has developed from court decisions, and that trend can be slowed only by legislative action. For example, it is court decisions that have destroyed the concept of privity as a prerequisite to support a claim made against an architect (i.e., requiring a contractual relationship between claimant and architect as a condition of such claim), thereby opening the door to suits by contractors, bonding companies, subcontractors, workmen, and other third parties. Restoration of the privity doctrine, which would reduce claims and insurance premiums by a significant amount, could be accomplished only by legislation. Another source of concern is the impact of certifications, which the professional designer is so often required to provide, and indemnification agreements, mandated by the client in so many architectural contracts. Again this concern could be dealt with on a practical basis only through legislative policy restrictions. Similarly, the attempts of courts in some jurisdictions to hold the design professional to a warranty standard as distinguished from a standard of due care can be halted only by legislative action.

Obviously any program to obtain legislative relief would take a great effort by all members of the profession led by their professional associations. The first step in any such program would be one of education and public relations. For unless the public is made to understand not only the nature of the problem but that it is in its best interests to provide the design professions with relief, no legislative action is possible.

Norman Coplan, Hon. AIA

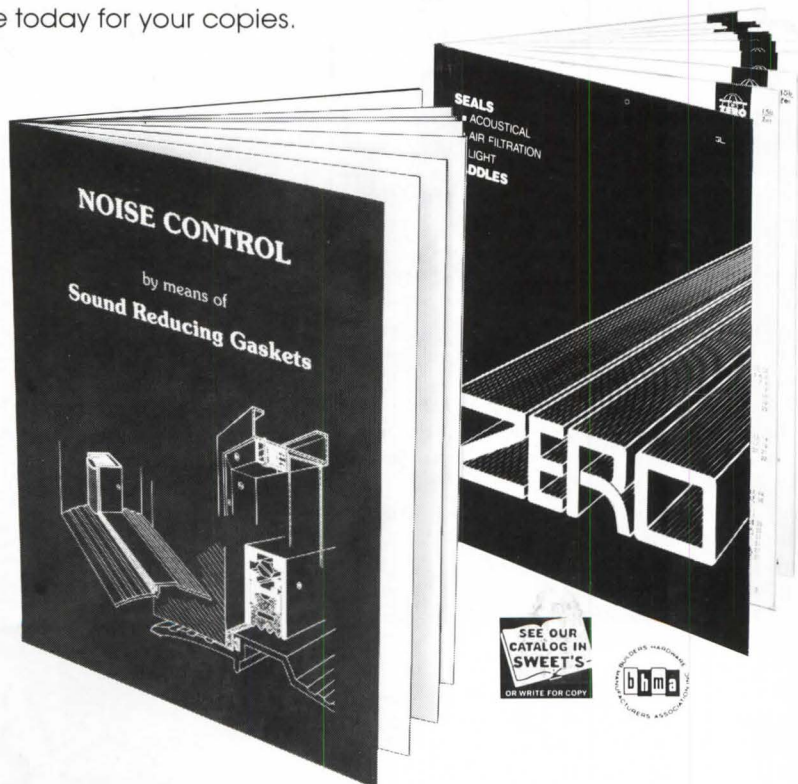
The author is a member of the law firm Bernstein, Weiss, Coplan, Weinstein & Lake, New York.

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Management: Earnings Insurance

How often have you heard from an insurance agent, "Your most important asset is your ability to earn an income"? The message makes sense. Unfortunately, it may have moved you to purchase the wrong kind of long-term disability coverage. Instead of concentrating on the *source* of your income—your occupation—disability insurance should protect the *result* of your occupation—the income. By covering income, rather than occupation, you have more protection against financial hardship.

Occupation Insurance

Many major writers of disability income insurance focus promotional and sales material on the advantages of "Regular Occupation to 65" benefits. Some even cite a "Lifetime Regular Occupation" benefit. This benefit is especially attractive to independent architects who have invested much of their lives in an occupational specialty. These individuals are sold on the premise that, "If you cannot do the job you have trained to do, you should receive total disability benefits."

The actual benefits vary from company to company. Some companies pay total disability benefits only when individuals are unable to do their "regular occupation" and are not



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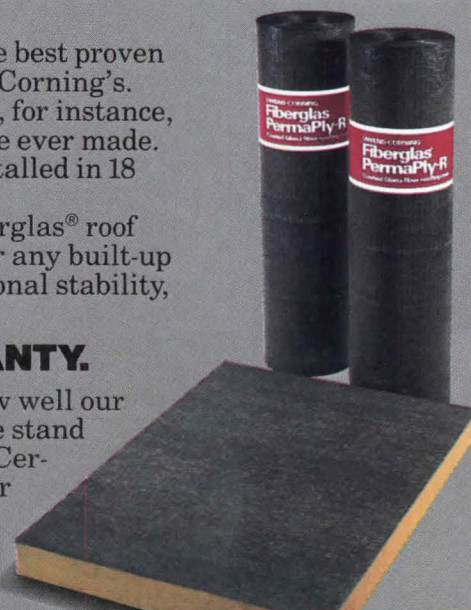
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performing any other occupation. For these contracts, the value of the "regular occupation" definition is simply to allow them the choice of not doing another job if unable to hold the regular job. Other companies have taken this a step further, although often just for their top class of policy holders. These companies will pay total disability benefits if the insureds cannot perform their regular job, even if they are engaged in another occupation.

These are attractive benefits that specifically address the ability to earn an income. However, "occupation insurance" may not provide the complete protection expected, or needed. Studies done by the insurance industry indicate that more than 99 percent of all insureds *do* return to their normal occupation following a period for which disability benefits were paid. For these people,

long-term "occupation" coverage was of minimal (or perhaps no) value, other than providing some peace of mind.

That peace of mind, however, can be shattered by events that are much more likely to occur. Following most prolonged periods of total disability, there is a significant and real risk of individuals' "economic recovery" lagging behind their physical recovery. Consider the following situation:

A 45-year-old architect operates a partnership in conjunction with another architect. They have three salaried employees. While on vacation, the architect is seriously injured in an automobile accident. He is in the hospital for three months and recovers at home for another three months. For those six months, his doctor, his partner, and he are not sure whether he will return to work again. While one partner is disabled, the re-

maining staff must juggle project completion dates and cancel appointments. Some clients are forced to go elsewhere or postpone their plans indefinitely.

After improving his physical condition at home, the architect returns part time to the office for 30 days. Finally, 90 days from the date of his disability, he is recovered fully. Under most disability income policies, his benefits stop. The architect has recovered physically. But has he recovered financially? Does the partnership have the same income/revenue strength it had before the accident? Most often, the answer is no.

Earnings Insurance

Earnings insurance recognizes the possibility, even the probability, that economic recovery will lag behind physical recovery. The return to work of individuals who have been totally disabled does not usually mean an immediate return to normal income (or at least earning power).

Earnings insurance provides pro-rata benefits based solely on the percentage of lost income that persists, even after the insureds return to work full time and perform all the duties of their normal occupation. The focus of earnings insurance is the restoration of income to the level prior to total disability.

Once back to work, whether it is in the original occupation or one for which the insureds are suited based on education, training, and experience, the only criterion typically required for an earnings insurance benefit is earnings loss. Disability status (that is, the inability to perform all of the normal duties of the insured's usual occupation, or the inability to do them for all of the normal amount of time) is not required to collect this benefit. This is the unique value of earnings insurance. Earnings insurance recognizes the long-term economic impact of a disability. When economic recovery lags physical recovery, only insurance that does not require continued disability and doctor's care will replace a portion of the reduced earnings or earnings power.

Earnings insurance, with its focus on economic recovery, can provide more valuable protection against income loss than a contract that protects only during disability. Occupation insurance may satisfy the emotional need for protection if people are unable to continue their regular occupation. But earnings insurance is the ideal way to protect the result of their ability to earn an income: the income itself. **William Wolff, CLU, CPCU** ■

The author is Assistant Vice President, Connecticut General Life Insurance Company.

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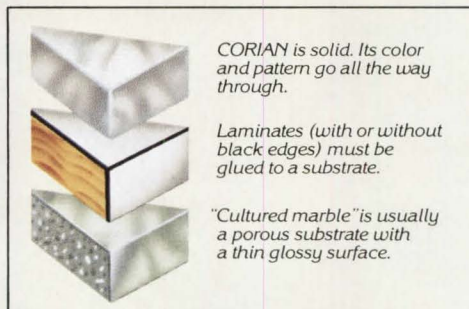
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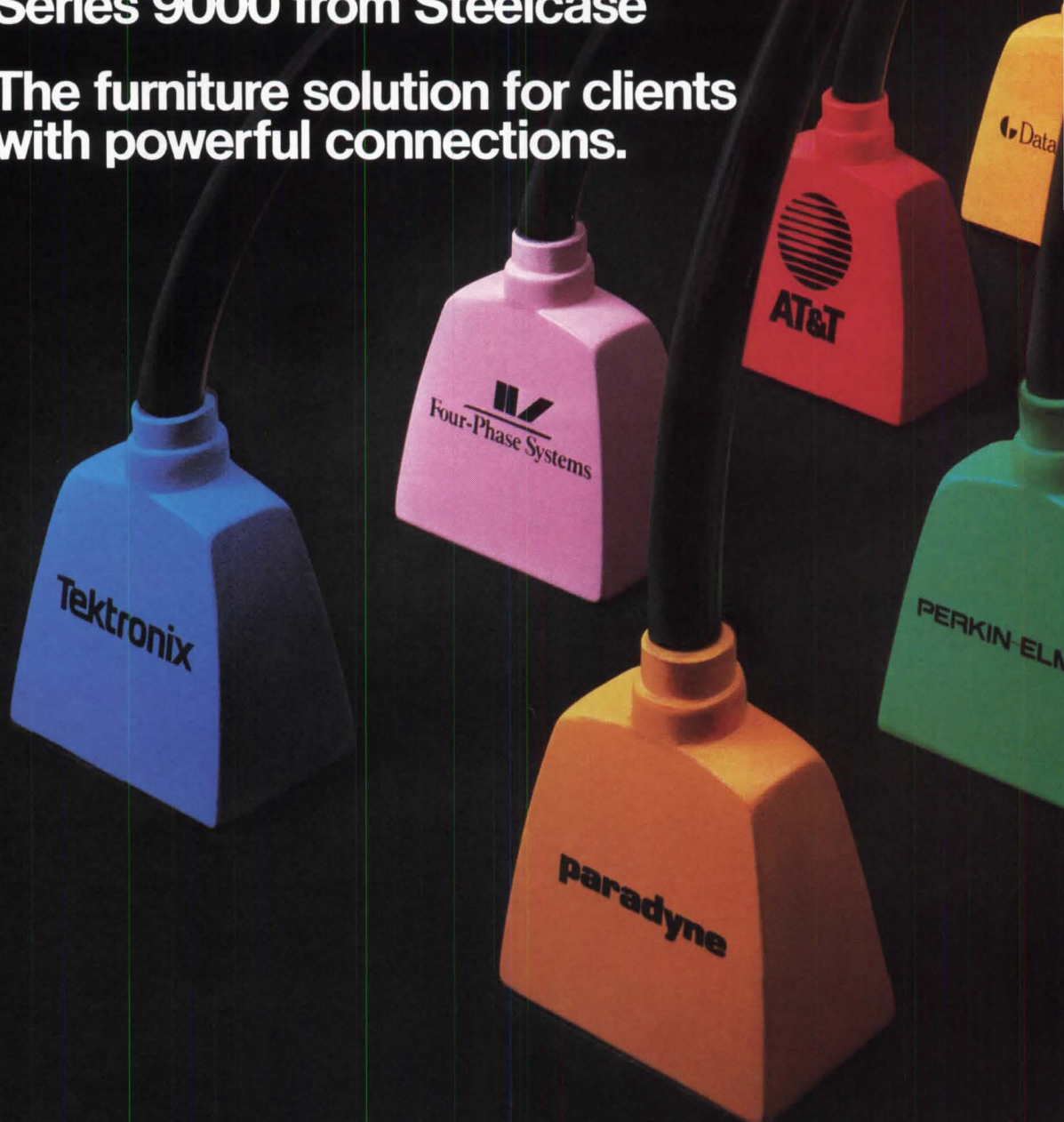
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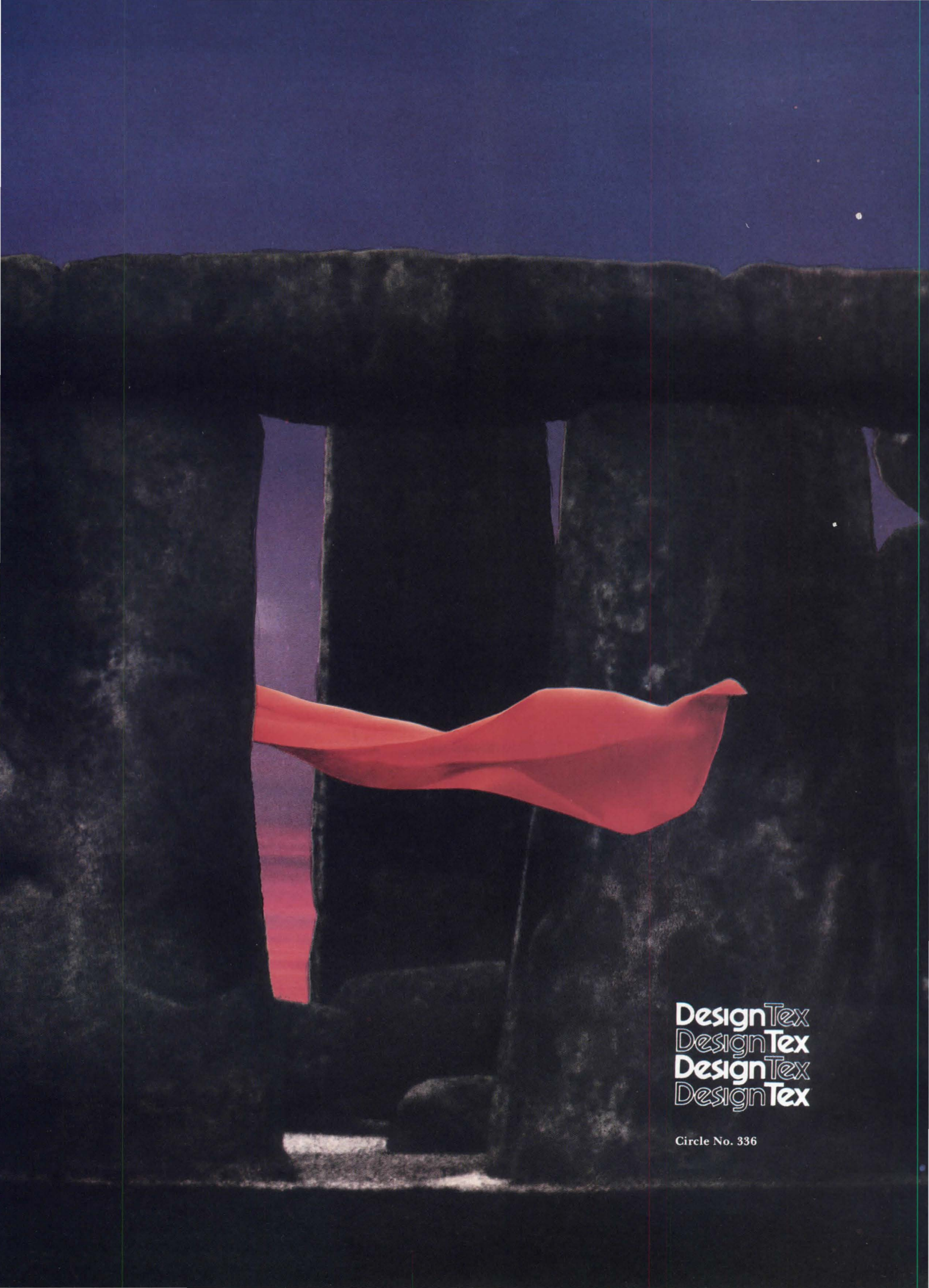
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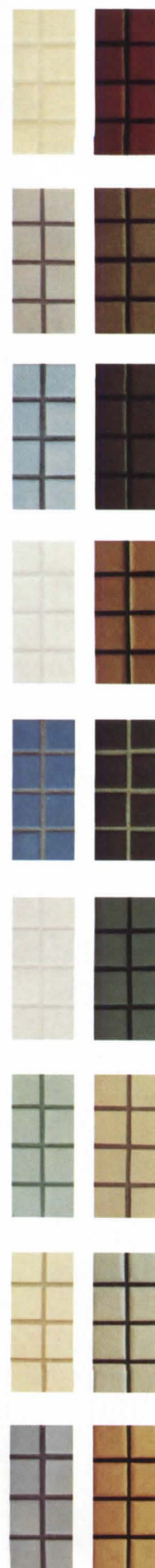


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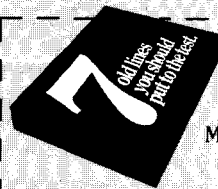
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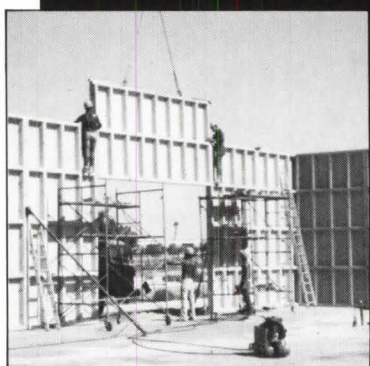
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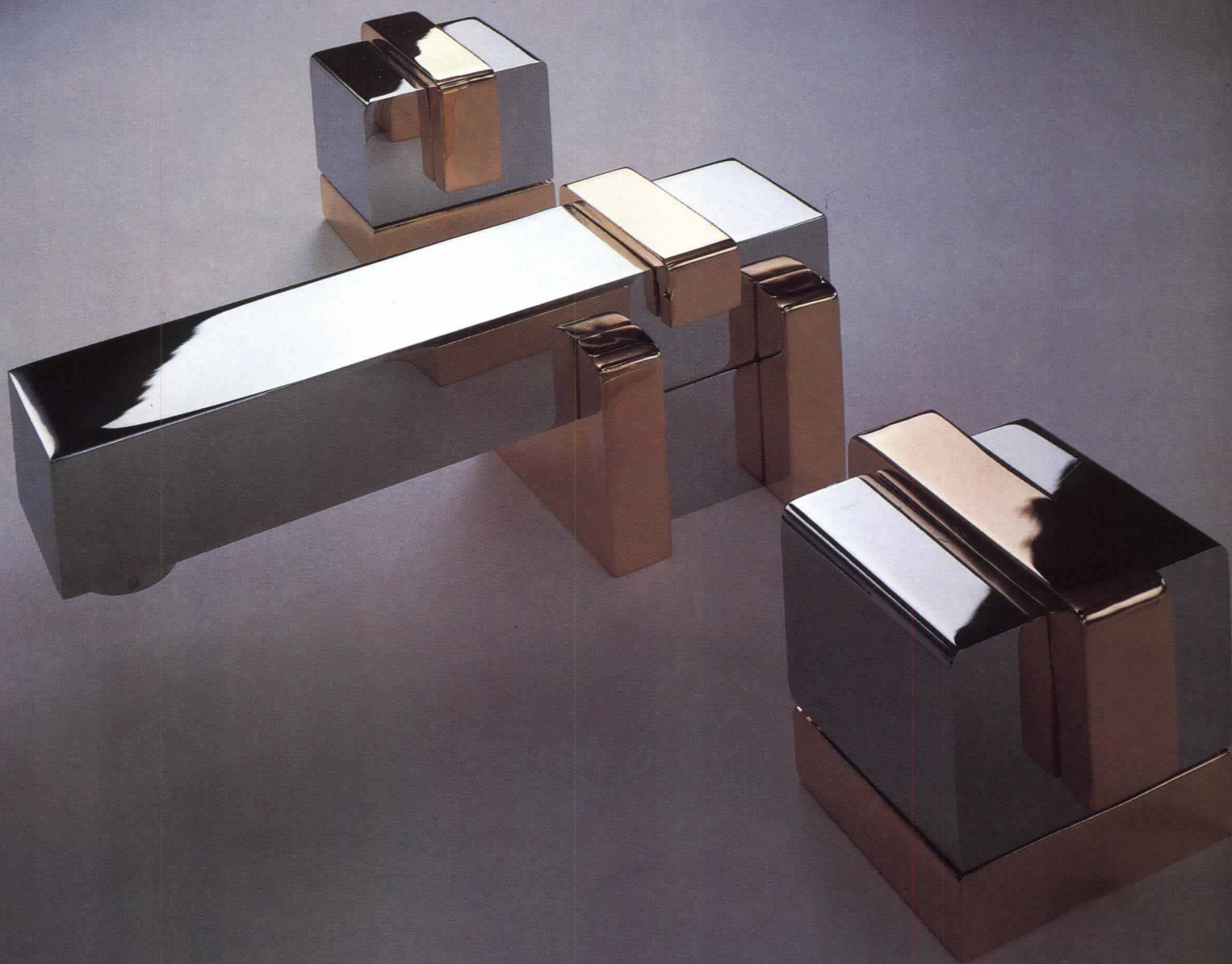
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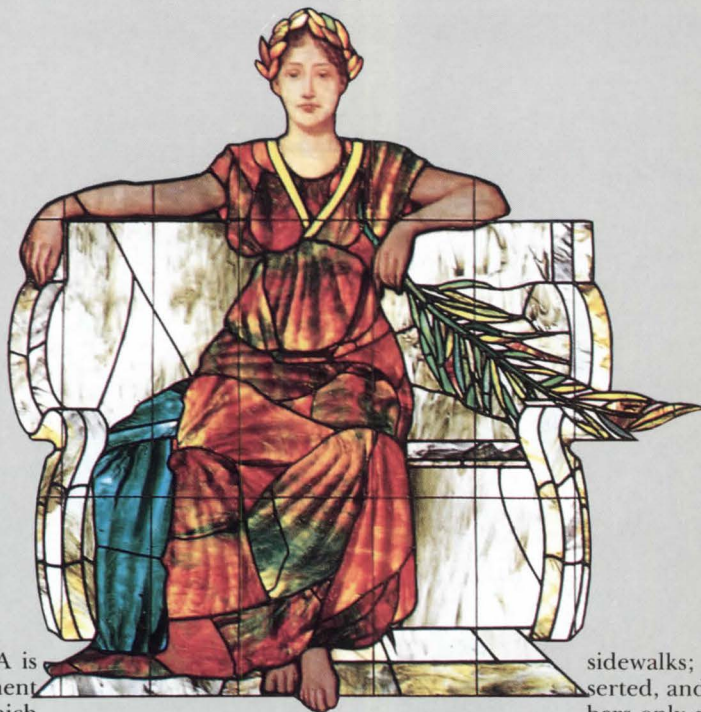
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Spirit of St. Louis



A major theme of this issue of P/A is the question of federal investment tax credits for rehabilitation, which the current administration in Washington wishes to abolish (see P/A Roundtable: The Federal Role in Preservation, p. 107). Most of the rehabilitation and reuse projects shown on the following pages could not have been accomplished without some form of federal assistance.

If anyone ever needed justification for keeping the tax credits in place, it is only necessary to look to St. Louis, where the nation's largest rehabilitation project of a historic building has just been completed. The project, which would have been inconceivable without the aid of the tax credits, is doubly important because saving the magnificent 90-year-old station not only meant preserving a National Historic Landmark, but it also meant bringing a renewed, vital infusion of activity and energy to a city that desperately needed it. As Gyo Obata of Hellmuth, Obata & Kassabaum says of his firm's rehabilitation of the station, "You have to realize that what we were doing was creating a city within a city... that's the important thing." One could take this further and suggest that what HOK has accomplished, along with financiers Oppenheimer Properties, The Rouse Company, and Omni International Hotels, as only the major players in this massive undertaking, is the actual re-creation of the city. For in a very important sense, St. Louis hardly exists as a city, that is, as a dense, urban environment with crowds of people on the sidewalks and traffic jams in the streets. In fact, there are hardly any people on the very clean

The grand 90-year-old Union Station in St. Louis has become a magnificent hotel and retail complex, but it could not have happened without the assistance of federal tax credits.

sidewalks; well-maintained parks are deserted, and cars appear in threatening numbers only during a brief rush half-hour—all attributable to the ills of past urban clearance and an accompanying exodus of the population to the suburbs. In recent years, St. Louis has made great strides in filling in the parking lots with new office—not residential—buildings. Consequently, few people still live in the center of the city.

If you really want to find people in St. Louis, though, you now can. In the train station, and in droves. This is no suburban mall moved to downtown; it is an intensely active and invigorating urban environment, even though its almost 150 retail outlets offer little more than novelty merchandising and recreational eating—the proven formula for these kinds of places, from Ghiradelli Square to Faneuil Hall Market Place.

In renovating and rehabilitating the 47.5-acre site and the buildings on it, the major problem, said HOK's senior project designer Hank Winkelman, was how to deal with something of such vast scale while converting it to new uses and maintaining its original identity. In other words, just what do you do with what was once the world's busiest train station, which includes the largest single-span train shed ever built, and an opulent headhouse that is 750 feet long and five stories high? "How," Winkelman says, "do you integrate modern hotel and retail facilities in a building that was built almost 100 years ago for trains?" Well, it wasn't easy, but the sleepless nights have paid off in truly spectacular results.

The Headhouse

The St. Louis station has been closed since 1978, but it was once the main midpoint connection for all cross-country passenger rail travel, and was equaled for activity only by the stations in San Francisco and New York (the three are symbolically depicted in the large stained-glass window over the main entry). In its heyday during the war years of the 1940s, 100,000 people a day passed through the vast terminal, which served 22 different rail lines.

The architect for the terminal was Theodore C. Link of St. Louis, who won an invited competition for its design in 1891. At the time, Louis Millet, who had been responsible for the interior of Sullivan's Chicago Auditorium Building, was working for Link. The influence of Sullivan on both designers is obvious in this building, and it is also accurately represented today, thanks to the unusual circumstance of the Rouse Corporation's employment of architecture historian Timothy Samuelson, a Louis Millet scholar from Chicago, who carried out extensive archival and field research for the building's restoration.

With construction finished in 1894, the huge Romanesque headhouse of Bedford (Indiana) limestone contained 70,000 square feet of waiting rooms, including the 76' x 120' Grand Hall with its 65-foot-high barrel-vaulted ceiling, in addition to a hotel, restaurants and dining rooms, countless shops and services, and offices. One of the most gratifying aspects of this rehabilitation is that many of those spaces, meticulously restored by the Conrad Schmitt Studios, continue to serve the same functions today. The spectacular Grand Hall, which must rank as one of the great rooms of America, is the lobby for the new Omni International Hotel, but it is also still very much a public space that continues to function as the formal entrance to the entire complex. Omni's 70 new "Classic Service" rooms surround the restored atrium of the old Terminal Hotel, and its main dining room and Adamesque private dining room with its Gothic vestibule have been refurbished for contemporary use.

The Midway

Immediately behind the headhouse, the 50-foot-deep midway stretches for 200 yards to form a connecting transitional area before the vast trainshed. It now no longer leads to 31 train tracks, but it does still function as a transitional space where escalators, stairs, and a bridge lead to the major components of the shed. The minimal amount of retail space is largely confined to kiosk-type structures that intensify the ambulatory and transitional nature of the area. The main point, says Henry Beer of Communication Arts, who were responsible for much of the finish detailing and general look of the retail areas, was to break down the space to create a street of intimate scale leading to the shed.

The Shed

Engineer George H. Pegram's gigantic train shed of 11.5 acres was, in a sense, both the main problem and the ultimate salvation for this project. Its sheer size seemed unmanageable for any kind of normal use, but because the shed was included in the station's National Historic Landmark designation of 1976 (the shed is also a Civil Engineering Landmark) everything constructed within it

could qualify for the tax credits. Consequently, 480 additional hotel rooms could be put under the shed, along with 160,000 square feet of retail facilities, thus making the whole project realistic.

The 606-foot-wide by 810-foot-long shed rises 140 feet, with the bottom of its 2730 tons of original butterfly trusses descending to a low point of 98 feet above ground. The space is a flattened vault divided longitudinally into five structural bays, of which the outer two are narrower than the others. Within the shed, the problem of scale was similar to that of the midway, but was greatly compounded because of the much greater size. Streets alone would not be enough here, so the area was divided into what the project designers call "neighborhoods." In allotting the space, three bays extending about halfway into the shed are devoted to the hotel, while the two bays alongside them are given to retail facilities. Further into the shed, a lake, plaza, and market occupy that portion not fully covered or enclosed. Each of these areas is made purposely distinct, with no space ever flowing into another, to maintain the boundaries of the "neighborhoods."

A major concern of everyone involved in the project was to respect the Victorian engineering marvel of the shed roof by assuring that nothing under it detract from its appearance of floating ("soaring" is perhaps more appropriate) over the entire space. Consequently, everything is made to hug the ground as much as possible. The two-level retail area, of cast-in-place concrete waffle-slab construction, is pushed to the low, extreme east side of the shed perpendicular to the midway. Its upper level becomes an "open" promenade deck as the major pedestrian space within the shed. The 480 rooms of the Omni Garden Hotel are terraced from the center of the space to the low west side, so that even at its highest, six-story level under the highest central bay, the hotel remains clear of the roof.

The hotel is, in fact, not particularly noticeable, considering its size, unless viewed from the lake. It is constructed of cast-in-place post-tensioned flat plate concrete enclosed by lightweight insulated wall panels of R-25 insulation and glass, and is broken down into parallel wings facing each other across channel gardens. The façades are further broken down by articulated surfaces (the 1200 panels were fabricated in 20 different shapes) and a four-color palette ("Dryvit," they say in St. Louis, "never looked so good").

The great roof over all of this was originally completely enclosed by wood. Its structure has been reinforced and its own wood, reused, has been combined with clear glass to give it a new surface and to make it more breathtaking than ever. The once dark, ominous space below is now animated by an exhilarating play of light that brings the whole complex to life. When you see it today, you're almost happy there's no longer any train service, because it's hard to imagine that it could ever have looked better.

While there are probably no other rehabilitation projects of this magnitude and magnificence waiting for funding now, the real tragedy is that in the future few such projects of any scope will ever see the light of day if federal assistance for them is abolished.

David Morton



The 90-year-old Richardsonian Romanesque Union Station in St. Louis has been meticulously restored.

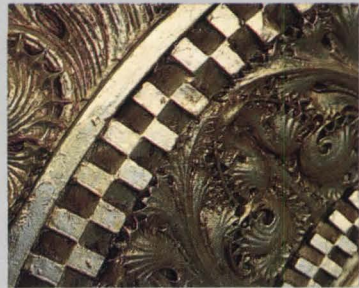
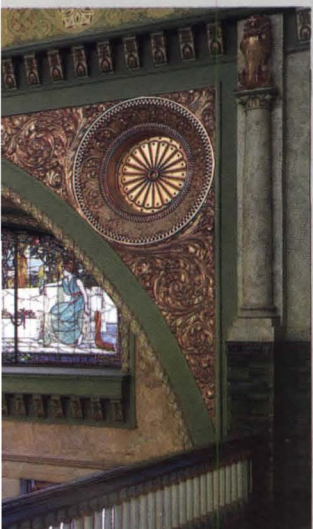
The headhouse (above) contains hotel, restaurant, and retail facilities. The station's former main waiting room (right), now called the Grand Hall, has been returned to its original colors. The 65-foot-high barrel vaulted space was decorated by Louis Millet, who had worked for Louis Sullivan in Chicago before joining Theodore C. Link in St. Louis. The room is now the main lobby for the new Omni International Hotel.





Louis Millet's decorative scheme for the 76-foot-wide vaulted Grand Hall is what might be called Sullivan-esque with some Celtic and William Morris mixed in. The female figures, seen here in relief around the arch and in the round below it, dramatize the new use of electricity at the turn of the century. The two freestanding figures and their twins at the opposite end of the room disappeared some years ago, after the station was closed in 1978. Fortunately, it was possible to negotiate, for a price, their return.





As unbelievable as it seems today, this room was painted over in a solid color within a decade after its completion. The main staircase at the entrance (mid-page, bottom) had been boxed in and partially removed. The stained glass window above it allegorically represents the three main U.S. train stations in 1894; from the left, San Francisco, St. Louis, and New York. The entry itself directly recalls Sullivan's Transportation Building of 1893 and his Old Stock Exchange, contemporary with the station.

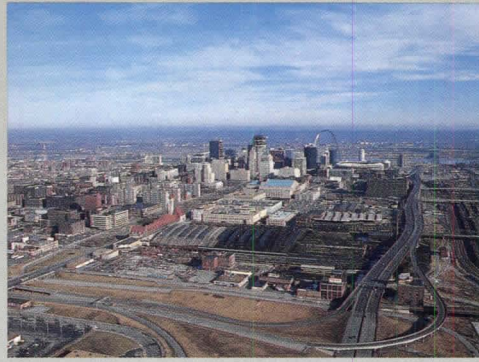


The atrium of the Terminal Hotel (top and above), which was original to Union Station, has been restored as one of the circulation areas leading to the 70 Omni International Hotel rooms in the old building. The floor of glass block and black-and-white glass mosaic tile rivals those of today's discotheques: it was designed at the turn of the century to be illuminated from underneath. The elevator in the original metal grille cage is now a fully automatic one with a clear glass cab.

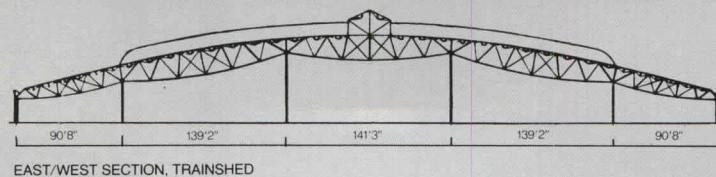


The main dining room of the new hotel (above) is only a pale reminder of its former glory, when the coffers and part of the walls were brilliantly stenciled, when column capitals were not up-lighting, and when gigantic brass (and brassy) lamps were not stalking through the room. The beautifully restored Gothic Hall (facing page) represents the third style, following Richardsonian and Sullivanesque, found in the building; it leads to an exquisite, small Adamesque private dining room.

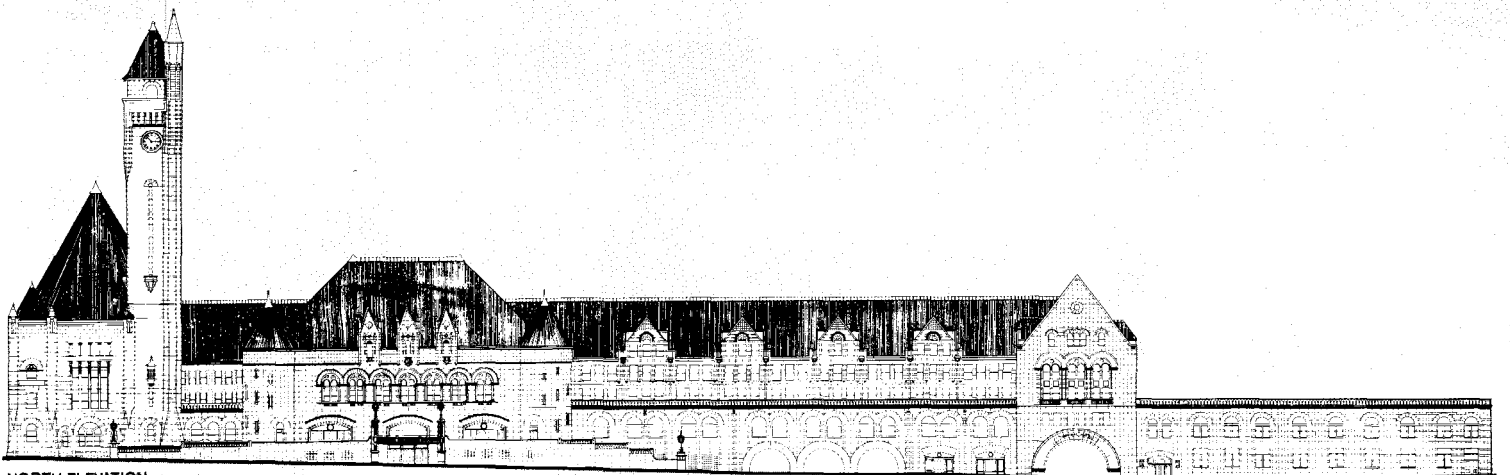
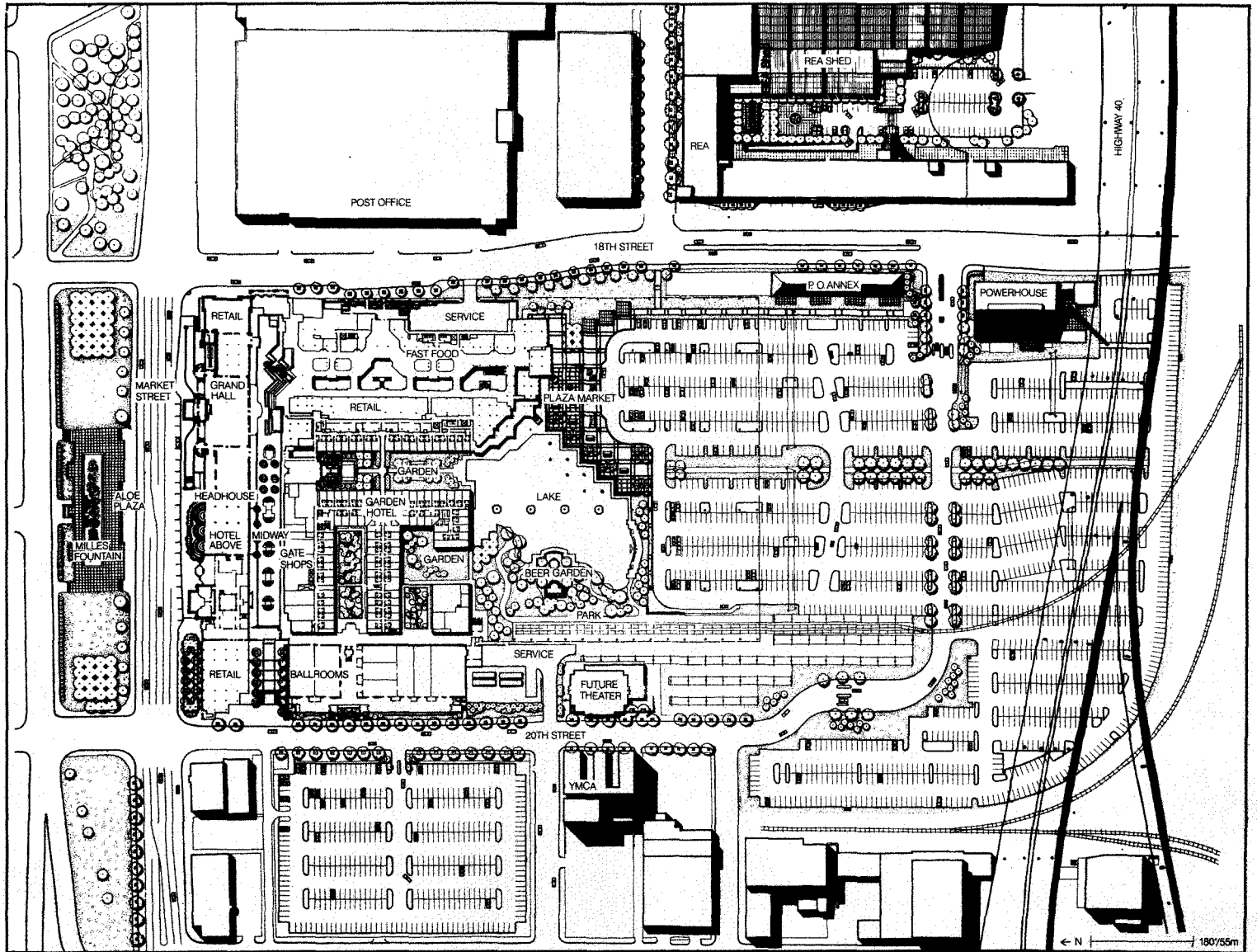
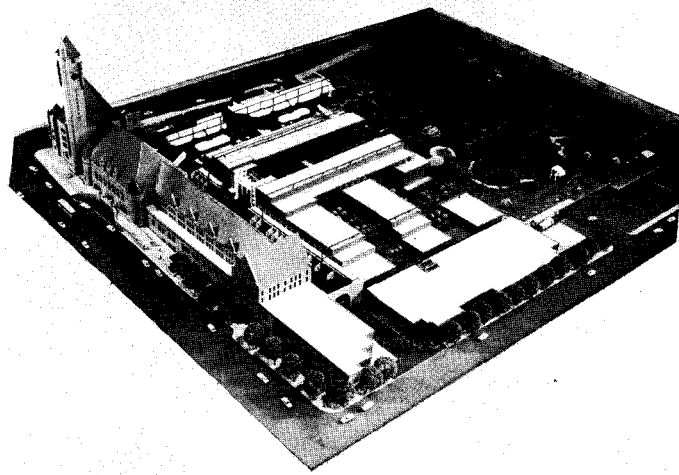




An aerial view of the station (top) shows its relationship to St. Louis and gives a good idea of its immense size. In the midway (middle) between the headhouse and shed, retail is mainly confined to kiosks to intensify the pedestrian nature of the space. Under the shed (above) is the rest of the 160,000 square feet of retail and food service space, which is on two levels at the east side. The accoutrements and furnishings in these areas are both contemporary and historicist, and very well done.



The headhouse of Union Station (right) faces Aloe Plaza (at extreme left of plan on facing page) where the nymphs of Carl Milles's famous water fountain frolic. Under the 11.5-acre train shed, the largest ever constructed, the 480-room Omni International Garden Hotel is located to the West of 160,000 square feet of retail and food facilities at the east side of the shed. Behind them, a one-acre artificial lake and plaza area is transition to the 2000 parking spaces that extend beyond the shed to the highway.



NORTH ELEVATION



Project: St. Louis Union Station, St. Louis, Mo.

Original architect: Theodore C. Link.

Architects: Hellmuth, Obata & Kassabaum, Inc., St. Louis (Gyo Obata, Hank Winkelman, Jim Agne, Peter Hammond, Princeton Clark, Jerry Sincoff, Gregory Palermo, John Ward, Jim Fetterman, John Best, Joe Drachnik, project team) ■



Consultants to the architect: Communications Arts, Inc., Henry Beer, design consultant; HOK/Planning, civil/landscape; Engineering Design & Management, Inc., John Sonderman, Mel Young, structural; Brady & Anglin Consulting Engineers, Gene Anglin, Bill Ehle, mechanical electrical; Codes Consultants, Inc., Greg Miller, life safety/codes. ■



The train shed is now roofed with reused wood and glass; Garden Hotel, above.

Client: St. Louis Station Associates, owner; The Rouse Co. of St. Louis, an affiliate of The Rouse Co. of Columbia, Md., developer.

Site: at edge of city, 47.5 acres includes 90-year-old headhouse, midway, and 11.5-acre train shed, plus power house, post office annex, and 2000 parking spaces.

Program: conversion to retail shopping complex with variety of eating facilities and 550-room hotel with attendant facilities.

Structural system: in limestone headhouse and midway, existing wood beams were reinforced with

steel flitch plates; new hotel under steel and glass butterfly train shed is cast-in-place post tension flat plate concrete; retail under shed is cast-in-place concrete waffle-slab; ballrooms have steel joists with steel beams and columns.

Major materials: Bedford (Indiana) limestone of headhouse and midway; lightweight insulated wall panels and glass for new hotel (see Building Materials, p. 158).

Mechanical system: chilled-water fan-coil units in hotel guestrooms;

self-contained water-cooled units in tenant spaces; central air-handling unit for public areas.

Consultants: Hirsch/Bedner & Associates (hotel); ADM Associates, interiors; Sachs Electric, Inc., electrical; Murphy Co., Inc., mechanical; Timothy Samuelson, historical restoration; Conrad Schmitt Studios, Inc., historical restoration contractor; Office of Phillip George, hotel restaurant design; Abrams & Tanka Associates, hotel food facility design;

Baring Industries, hotel laundry, dry cleaning; Centel Business Systems, hotel communications; Jules Fisher & Paul Marantz, Inc., lighting design; Associates & Ferren, performance spaces; Crystal Design, fountain; Adelphia Automatic Sprinkler System Co., Engineered Fire Protection, Inc., fire protection.

General contractor: HCB Contractors, St. Louis.
Photos: William E. Mathis, HOK Photography, except p. 84, p. 85, p. 86, 87 top, p. 88, p. 90 middle, p. 93 middle, bottom, Rion Rizzo/Creative Sources Photography, Inc.

New Products from Old Mills



Nick Wheeler

2a

The conversion of our silent factories to new uses has become a major subject of design effort—and of public policy, as well.

A century ago, we were already adapting archaic industrial buildings to uses that exploited their charm; consider all of those Old Mill restaurants. But the potential of the massive factories of the Machine Age was hardly recognized until the 1960s. In the years 1962–1967, an old chocolate factory in San Francisco was converted to the precedent-setting Ghirardelli Square retail/dining complex (Architects: Wurster, Bernardi & Emmons). In 1968, a neighboring plant was revived as the equally popular Cannery (Architects: Joseph Esherrick & Associates). In New York, conversion of the city-block Bell Laboratories into the Westbeth artists' housing was completed in 1970 (Architect: Richard Meier).

Some of the major design issues involved in reusing industrial buildings became clear in these pioneering projects. Ghirardelli exploited some picturesque structures on a dramatic site; once it had led the way, the initially less favored Cannery project was able to rely mainly on the brick toughness of the existing structures as its visual legacy. In both cases, rather freewheeling subtractions and additions were made to give the complexes appealing spatial qualities. At Westbeth, the original structures were accepted with little structural alteration, but old surfaces and new insertions were integrated by pristine, white surface treatment. In the ensuing years, it was the rugged, barebrick alternative that caught on.

As the revival of city cores has progressed since the 1960s, rising real estate costs have directed more attention toward peripheral areas where industrial buildings are often found, either abandoned or used for low-rent purposes such as dead storage. Sometimes whole districts, like the industrial area of Georgetown in Washington, D.C., lay in the path of economic revival, and the adaptive reuse effort that started there in 1970 with Canal Square (Architect: Arthur Cotton Moore) has replaced just about all the industry with offices, shops, and watering places.

Still, unrehabilitated industrial districts are often perceived as impediments to economic regeneration. But if the risk of adaptive reuse is taken, its impact is multiplied: The conversion of a forbidding obstacle into a new center of activity can redirect economic patterns. When a substantial mass of factories is given new activity, neighboring properties seem bound to increase in value (examples 3, 4, 10).

The principal design issues in such conversions stem from the gap in demands between industrial functions and the new ones to be housed. Industrial buildings tend to have very sturdy structures, but little insulation; they often grew haphazardly over decades, with little formal coherence; their forms are often casually related to public streets, from which there is usually no prominent public entrance. While they demand a lot in the way of improved performance, their exposed construction makes altering them relatively easy. But renovating them to meet federal standards for tax credits is another matter, because approval requires "minimal alteration of the building, structure, or site and its environment. . . ."

Successful reuse often depends on the possibility of removing parts or inserting new ones (examples 1, 4, 8, 9, 10). For residential and commercial use, it is often possible to

insert new floors within the original volume (example 10). Portions with large volumes, long spans, top lighting, and other exceptional features tend to be useful mainly for various kinds of public facilities (examples 5 and 6 on the following pages and Asphalt Plant, p. 100). One special use for which industrial buildings are particularly adaptable is to house showrooms of design centers; we already have the Ice House in San Francisco (1970; Architects Wurster, Bernardi & Emmons), the "DCDC" in Washington (example 8), and last month saw the opening of the International Design Center New York, which is being developed out of a cluster of factories in Queens (see page 36).

There remain vast amounts of industrial construction to be considered for adaptive reuse. A recent survey by *Building Design and Construction* indicates that there are more than 450,000 "professionally owned" industrial buildings in the U.S. Under current laws, any of them over 30 years old—logically, most of those that have lost their original functions—would be eligible for some form of tax credit. Relatively few, however, have the National Register status that would earn the full 25 percent credit.

On the impact of tax incentives on the reuse of industrial buildings, expert opinions vary. Architect Arthur Cotton Moore, who converted a number of industrial buildings before the tax credits, feels that repealing them will merely slow such activity, which he feels has been "inflated" by the tax policies. Ward Jandl, of the National Park Service (which rules on eligibility for credits) reports that two thirds of owners they have polled would not have proceeded with conversion projects without tax help. Maurice Finegold, of Notter, Finegold, Alexander in Boston, observes that the credits have countered the "clean slate" bias of developers and bankers. Architect David Beck of Philadelphia points out that the repeal of tax incentives will have its sharpest impact on conversions to housing, where that economic edge can be most essential.

Architects who have remodeled factories for new uses observe that the process changes their outlook on design. "It took us and aesthetically shook us," recalls Arthur Cotton Moore. Such commissions push architects toward specific responses, rather than generalized ones, he observes, and encourage them to "leave clues" to the history of the structure in the finished work.

John Morris Dixon

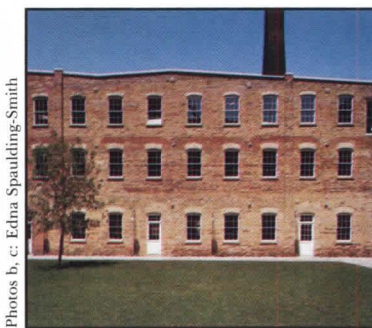
Following text by Thomas Fisher and Daralice D. Boles. Research by Melissa Brown, P/A editorial intern, summer of 1985.



1a



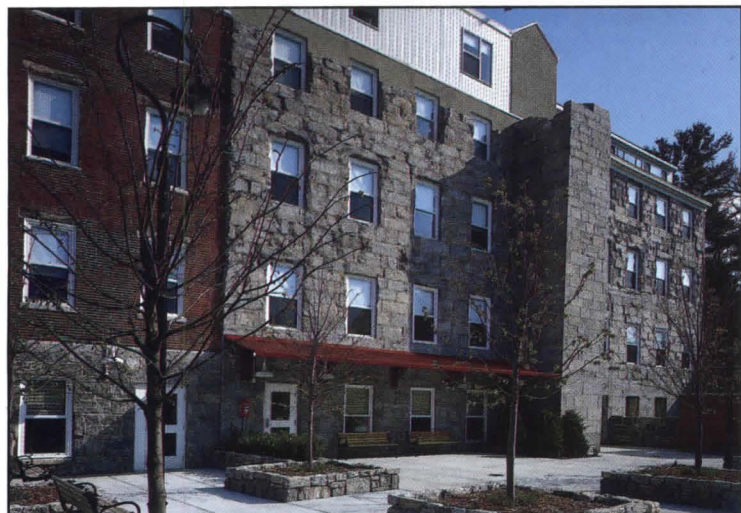
1b



1c

Photos b, c: Edna Spaulding-Smith

Berkeley Castle, Toronto, Ontario. Architects: A.J. Diamond & Partners, Toronto. The demolition of several one-story sheds (1a, b, c) restored the central courtyard of Toronto's first knitting mill. Conversion of the derelict landmark to office and retail use required the replacement of defective wood columns, deteriorated doors, windows, and cornices, and 50,000 broken or spalled bricks.



2b

Crown and Eagle Mill, Uxbridge, Mass. Architects: Bruner/Cott Associates, Boston, Mass. A devastating fire left this flagship mill no more than a shell of very shaky walls. Its low-cost conversion by a nonprofit community group to 62 units of housing for the elderly, funded by HUD, required that the ruins be stabilized in place, and the original walls tied back to a new internal structure that is entirely self-supporting. Although the mill lost its landmark designation as a result of the fire (its district has since been designated), the architects' approach parallels the philosophy espoused by the Standards, which require a clear distinction of new from old. While

the massing of the original has been reinstated and damage to the granite walls repaired, infill is executed in frankly modern materials and colors. For example, the white span above the central bay (2b), which replaces an enclosed catwalk connecting the two end wings (2a), would never be mistaken for the real item. The one-over-one replacement windows do replicate the mill's prefire (and presumably altered) appearance, but lack the detail common to mills of this era.



3a



3b

Baker Chocolate Mills, Boston, Mass. Architects: Boston Architectural Team, Chelsea, Mass. Converted into 133 units of moderate-income rental housing with the help of a UDAG grant, these Romanesque-revival industrial structures have been meticulously and imaginatively restored. Note especially the refurbished wood windows and reconstructed roofs (3a). The lobby's exposed brick walls, columns, and beams are de rigueur, as is the quarry tile flooring (3b).

Appropriate Use

It's not uncommon for older industrial buildings to be used for light manufacturing. But many are reused for nonindustrial purposes, including artists studios and galleries that benefit from the large amount of glazing (photos 5b, 10c), shopping and convention centers that benefit from the heavy construction and long spans (photos 6a, 10d), and offices and housing that benefit from the open floors and high ceilings (photo 3b). Windowless storage buildings rank among the hardest structures to reuse. Unless a use with similar demands can be found (photo 8a), their rehabilitation requires the insertion of windows—an expensive move that greatly alters the historic fabric.

Relation to context

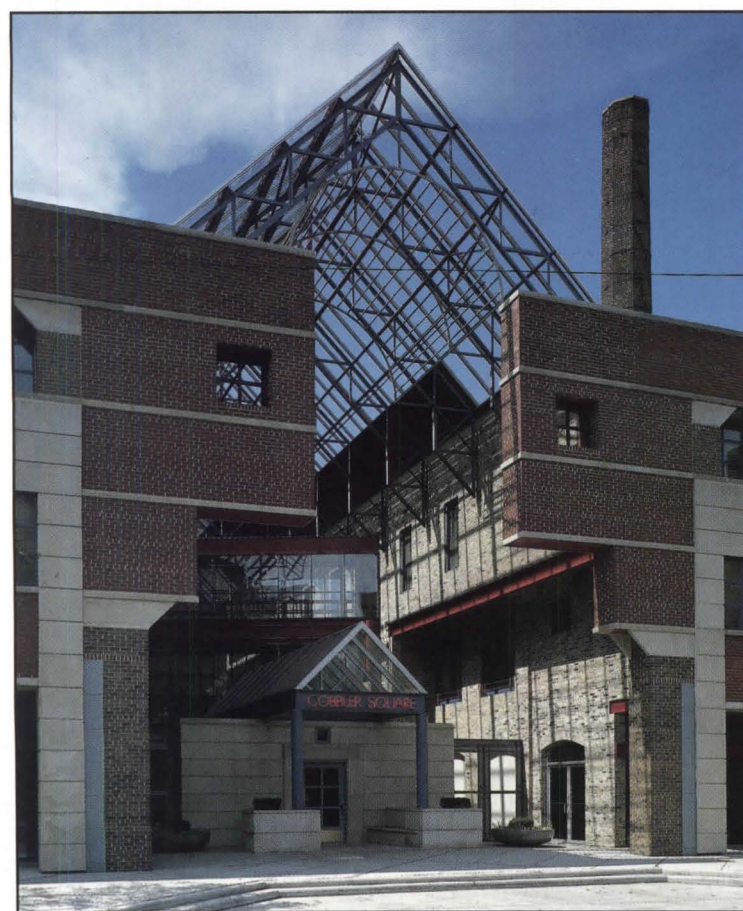
Many industrial buildings stand adjacent to residential or commercial areas. If the location is also visually important, a strong community voice can force major alterations to a reused industrial building so that it better fits its context. That can entail refacing the building in a material more compatible with neighboring buildings (photo 10b), altering the roofline to echo that of surrounding structures (photo 9a), or cutting back walls and widening entries to open the building to the street (photos 4b, 10c). This raises the question of what's more important: relating to the context or maintaining the building's integrity.

Landscape

The Secretary of the Interior's Standards recommend maintaining the relationship between rehabilitated buildings and their original environment. The hard surfaces of industrial environments, however, are not always appropriate for new uses. Some paved areas around factories can be used as parking lots (photo 7b) or repaved with new materials that retain the character of the original (photos 2b, 4c). But removing some of the pavement and planting grass and trees is often necessary, even if it is not historically accurate (photo 1c). Where the original building already has an attractive environment, the best approach is to interfere with it as little as possible (photo 2a).



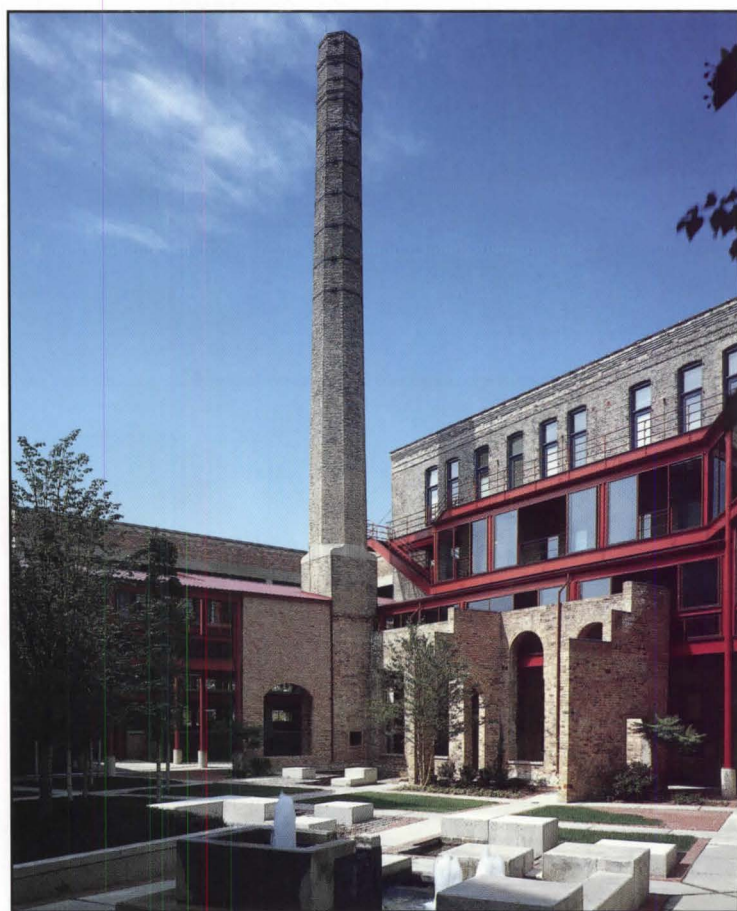
4a



4b

Cobble Square, Chicago, Ill. Architects: Kenneth Schroeder & Associates, Chicago. The former Dr. Scholl's factory consisted of 20 buildings dating from the 1880s to the 1950s. The process of consolidating these to 7 central buildings housing 295 moderate- and upper-income apartments, with ground-floor retail, required that some structures be demolished. The smokestack and corner walls of two boiler plants that filled the courtyard are left standing as picturesque ruins (4c). A new steel circulation system that rings the courtyard provides access to some units and required egress for all; weatherproof but not weathertight, the red corridors are used by tenants as outdoor terraces, with sliding

glass panels (4c). A third building was removed to open up the glazed entrance atrium (4b), and the new entrance is literally cut into the façade of the 1959 factory, at the site of a former loading dock (4a). Radical alterations to this wing, including the introduction of limestone fascia to break the strip window pattern in deference to small-scaled neighboring buildings, cost the project its bid for cultural landmark status, and with that the 25 percent tax credit.



4c

Photos: Abby Sadin

Additions

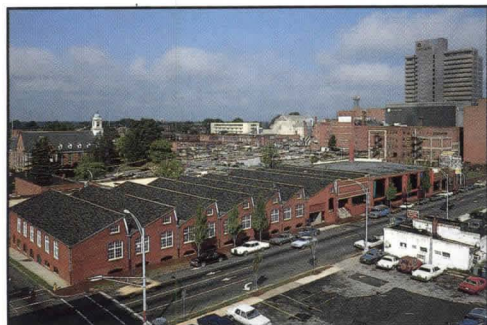
The Secretary's Standards also recommend that additions reflect the size, scale, mass, material, and fenestration pattern of the original building, but that they not duplicate the original's detail (photo 2b). That has caused much controversy of late (see page 107). Some architects want the choice of replicating the detail as well as the form of the original (photo 1c); others want the choice of extreme contrast, enhancing the original building by setting it off (photos 8a). Both options are easier than that recommended by the standard because they don't require detailed analysis and abstraction of the original design.

Exterior materials

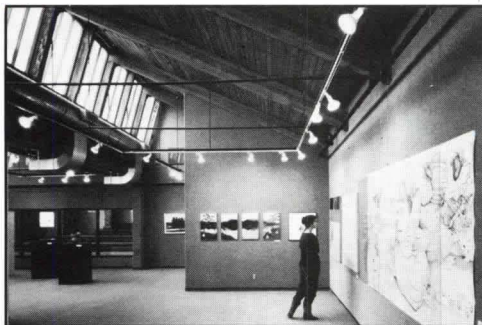
While most industrial buildings need cleaning and repointing, the desire to give a building a new image often results in too abrasive a cleaning or the use of too hard a mortar. That desire also tempts owners to remove everything that doesn't conform to the original, even if those elements have, themselves, become historic. An alteration that is very recent or of poor quality might better be removed (photos 1a, b, c). The preservation community is more divided on what to do when replacing a missing section of a building. Some people argue that the new materials should match the old. Others argue that they should be different, but compatible, to distinguish between the two (photo 2b).

Applied ornament

Many preservationists and designers part ways when it comes to the application of new ornament. The former often see that as an intrusion on the historical fabric; the latter, as a way of enlivening the sometimes severe elevations of industrial buildings. The application of ornament may entail nothing more than a coat of paint to highlight various features (photo 10c). Or it may involve constructing a whole new skin for the building (photo 10b) or applying ornament to the building's original skin (photo 4a). If the buildings are not architecturally or historically significant, and if the ornament is very well done, its application has a place.



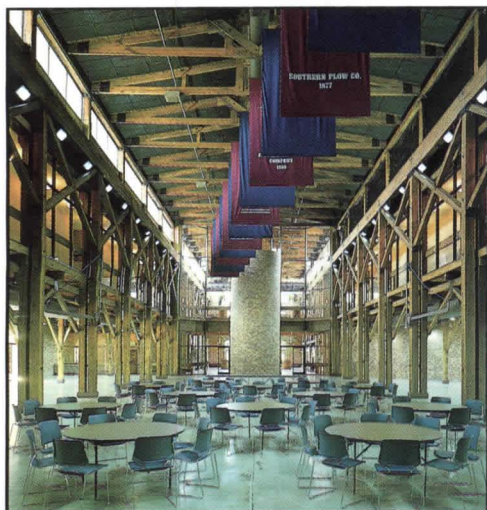
5a



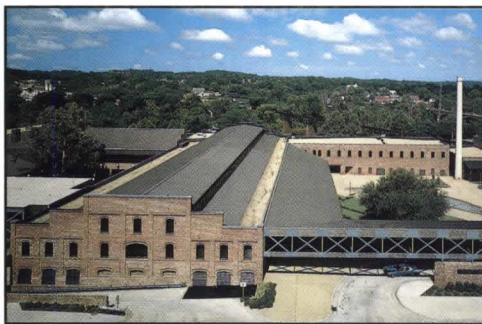
5b

Photos: Maxwell MacKenzie

Winston Salem Arts Center, Winston Salem, N.C. Architects: Arthur Cotton Moore Associates, Washington, D.C. Just as sawtooth glazing once provided excellent natural lighting for this turn-of-the-century mill, so now it provides an ideal source of north light for traveling exhibitions. The project, sponsored by a nonprofit civic arts organization, was not eligible for historic preservation tax credits.



6a



6b

Photos: Maxwell MacKenzie

Columbus Trade and Convention Center, Columbus, Ga. Design architects: Arthur Cotton Moore Associates, Washington, D.C.; architects of record: Pound Flowers Dedwylder, Columbus, Ga. This conversion of an abandoned 1850s foundry to new use as a convention facility allowed the retention of its most spectacular interior spaces as exhibition halls, an appropriate fit of new function to old form. All new additions, including the canopy entrance truss, are treated as modern "intrusions."



7a



7b

Photos: Nick Wheeler

San Antonio Museum of Art, San Antonio, Texas. Architects: Cambridge Seven, Cambridge, Mass. Conversion of the turn-of-the-century Lone Star Brewery into an art museum earned the architects a P/A Design Award (P/A, Jan. 1979, pp. 74-75). The brewery's large open interior is well suited to gallery use, but most windows have been bricked up. Those that remain are glazed with rather blank single panes. The glass bridge connecting two towers lacks the light grace of the suspension bridge it replaces.

Entrances

Industrial buildings often have a profusion of overhead or large sliding doors. If no longer needed, they can be made inoperable and walled over on the inside, or converted to a window (photo 1c). Yet, however profuse the doors, industrial buildings rarely have a main entrance grand enough for many public uses. Ways of enlarging the entrance include recessing the doorway behind the structural frame (photo 10c), cutting the exterior wall back at the entry (photo 9b), or covering a courtyard to serve as an entrance (photo 4b). A much less expensive way of emphasizing an entrance and one less damaging to the original building is the installation of canopies (photo 7b).

Windows

If the original windows must be replaced, the replacements should match in size, color, and muntin pattern (photos 1c, 3a). Given the number of high quality replacement windows now available, many of them in substitute materials such as extruded plastic or aluminum, matching has become much easier. Altering the size of the windows (photos 4a, 10b) dramatically alters the character of the building. Eliminating the muntins (photo 2b) or placing them on the inside surface of the glass changes the scale, texture, and shadow patterns of the façade. And filling in windows (photo 7b) makes the reused building look newly abandoned.

Energy conservation

Insulating the inside of the building's shell and installing storm windows or double-glazed sash are the simplest conservation strategies. Exterior insulation, unless the building originally had a very thick stucco facing, alters the appearance too much. Passive solar heating, cooling, and daylighting come easily to many industrial buildings because of their operable windows, skylights, massive construction, and open floors (photos 6a, 5b). The large, flat roof areas on most of these buildings also can accommodate, unobtrusively, active solar collectors. Trombe walls and other such visible solar devices are inappropriate and probably unnecessary.

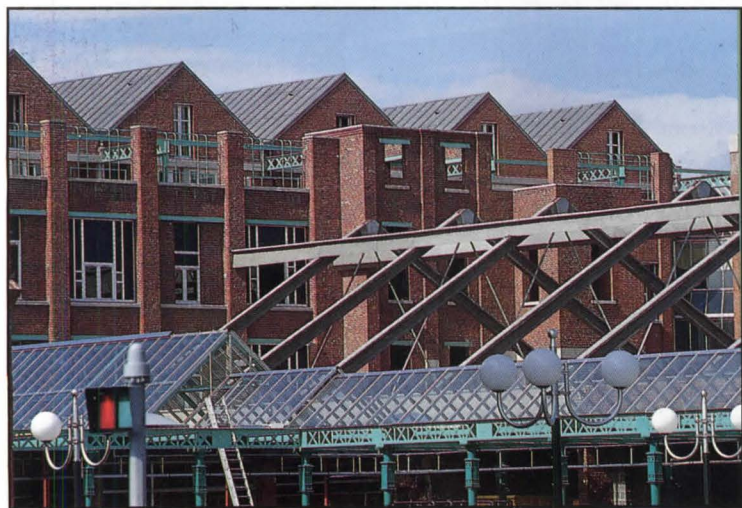


James Oesch

8

D.C. Design Center, Washington, D.C. Architects: Keyes Condon Florance, Washington, D.C. Design showrooms, which require little daylight and simple servicing, are a new use ideally suited to this 1920s refrigerated warehouse. A new addition attempts to echo the bay pattern of the original brick façade—unusual for Washington—in glass curtainwall of alternating reflective and pebble surface finishes and green

porcelain enamel string courses (more visible in some lights than in others). A new brick base connects new to old, and a new pair of masonry piers frames the main entrance on D St.



9a

Housing, Tourcoing, France. Architects: Reichen & Robert, Paris. French architects Reichen & Robert have made a career out of converting former industrial structures to new uses. (See page 47 for their renovation of the Grande Halle at La Villette.) American architects accustomed to working within the Secretary of the Interior's standards are likely to remark the comparative freedom of their European counterparts. The Tourcoing project is typical for France.

The conversion of this late 19th-Century factory to 150 apartment units and commercial space entailed the partial demolition of two buildings considered too wide for residen-

tial use and the free reconstruction of their façades. A third structure was completely demolished and a fourth cut down to the ground floor, which remains retail space, with a terrace and children's yard on the roof. New shed-roofed duplexes with private gardens are stacked atop one wing (9a), and new ornamental detail is used to mark the entrances (9c) and modulate existing façades (9d).



9b



9c



9d

Photos: Dahllette Sucheyre

Interior spaces

The interior space in older industrial buildings is typically horizontal, linear, and nonhierarchical. Multistory spaces are most easily created by removing sections of flooring within the structural grid (photo 10d). Making the long, narrow floors appear larger involves strengthening the visual link to other sections of a building by increasing the size of glazed areas, for example, or enclosing courtyards (photo 4b). Giving hierarchy to the regular grid of columns depends upon the careful placement of walls to set off columns that define, say, the corners of a space or a procession through the building.

Circulation

Because of the relatively long, narrow floors of many industrial buildings, circulation often occurs along single-loaded corridors. Placing the corridor outside the building and pulled away from the exterior wall can enhance cross ventilation and daylight (photos 4c, 9a). Point access from stair towers also avoids a one-sided exposure. Storage buildings or more recent factories often have wider floors, sometimes too wide for even a double-loaded corridor. There, the creation of a light well or atrium (P/A, April 1985, pp. 83–85) greatly enhances the interior spaces. Because industrial buildings are often complex, the circulation system should be clear, consistent, and well marked.

Interior surfaces

Because most of these buildings originally had exposed surfaces, they're one of the few building types in which leaving those surfaces exposed is considered acceptable rehabilitation practice; it's even encouraged by some because it minimizes the number of alterations to the original structure. But the bare brick, heavy timber look has become a cliché (photo 3b). It also creates problems with the thermal and acoustical properties of a space. If the original surfaces must remain exposed, it's best to restrict them to areas out of people's immediate reach to minimize the powdering of brick or the splintering of wood.



10a



10b



10c

Torpedo Factory, Alexandria, Va.
Architects: Keyes Condon Florance, Washington, D.C. The City of Alexandria sponsored a development/design competition for the old Navy Torpedo Factory complex on the Potomac River. Civic sentiment in 1978 favored the demolition of the dilapidated structures, which bore no relationship in scale or style to the adjacent historic neighborhood. The city, however, selected the one proposal that recommended restoration and reuse, in addition to new construction.

Architects Keyes Condon Florance handled the adaptive reuse of two waterfront factories (shown here); Metcalf Associates, also of Washington, designed a new garage and 100 condominium units. A group of artists had converted the older of the two factories to studios (left, 10b) as early as 1974, and the city chose to maintain possession of that structure as an arts center. The building was gutted and a new mezzanine added to expand available floor area for studios (10c). Industrial sash was replaced by larger lites of insulated glass, relieving artists of gridded shadows.

The new entrance was set back within the building envelope (10d),

and the exterior repainted to emphasize decorative elements of the 1918 original. The adjacent 1943 munitions manufacturing plant (right, 10a) was altered more drastically for use as office space by a private developer.

Partial demolition of the upper floor—cut back one bay in all directions—reduced the building's bulk and apparent height. The façades were completely reclad in red brick with a limestone base. New ornament (8" x 8" polychrome brick), fenestration, and a standing seam metal roof with green eyelash dormers were added to echo detailing of smaller scale buildings in the surrounding historic district. Ambitious plans to renovate the wharfside and build a new retail market and boat club are suspended while the developer and city discuss the terms of agreement.



10d

Mechanical systems

The exposure of mechanical ducts and other equipment in these buildings also has become a cliché (photo 5b), as well a source of noise, vibration, and dust. Only when the equipment is as carefully designed as any other visible part of the building does that strategy work (photo 7a). Concealing mechanical ducts above dropped ceilings may require sloping the ceiling up at the windows. Other options that avoid a dropped ceiling include using nonducted mechanical systems or placing the ducts in vertical chases within interior walls.

Codes

One of the major advantages of reusing industrial buildings is the strength and fire resistance of their structures, rarely requiring additional fire protection. When used for something other than manufacturing purposes, however, these buildings fall far short of other code requirements. Most lack sufficient toilet facilities, egress stairs, or electrical and mechanical systems. Rated corridors usually don't exist. And parking spaces are often insufficient for the new use. What makes the rehabilitation of industrial buildings tolerable is that, while they often contain ad hoc alterations and inconsistent dimensions, their structure usually is visible.



GEORGE AND ANNETTE MURPHY CENTER

Arch Support

A community group hires Pasanella & Klein/Hellmuth, Obata & Kassabaum to recycle a landmark asphalt plant.

WHEN a neighbor suggested to George Murphy in 1972 that he attend a meeting to protest the building of a dense high-rise housing scheme on New York's Upper East Side, Dr. Murphy was dubious. "I didn't think much of meeting-goers and protesters," admits the professor of pathology at New York Hospital-Cornell Medical Center. But he went to that meeting—and what followed is a story of community efforts that surpasses even the architectural story. And the architectural story is no mean one, being the enlightened recycling into an athletic and arts center of the 1944 Municipal Asphalt Plant designed by Ely Jacques Kahn and Robert Allan Jacobs, declared a New York City landmark in 1976 and listed on the National Register of Historic Places in 1980.

But in 1968, asphalt operations in the plant had ceased, and in 1969–70, plans were made to demolish the plant and build 1100 housing units and a school on the five acres comprising the asphalt site and the small park to its north. It was this scheme that activated George Murphy, who joined a group that came up with a number of findings: that housing was inappropriate because the neighborhood was already twice as dense as Manhattan as a whole; that a school was not needed because its elementary public schools were already underutilized; that there was an urgent need for open recreational space for youth; and that this was the last substantial piece of open space in the area.

For the next several years the Neighborhood Committee, with Dr. Murphy as chairman, struggled to stop the development plan and, instead, to recycle the asphalt plant into a sports and arts building. Throughout, the struggle to win not only approval but also funding from the City was intense, as were the attempts—ultimately highly successful—to raise funds from private and corporate sources.

In 1979, the City agreed to sponsor construction of the center in the Plant with \$1.6 million of Federal Community Development Funds from HUD, providing that the Neighborhood Committee operated and maintained the facility at its own expense. Pasanella & Klein, Architects, along with Hellmuth, Obata & Kassabaum, the successor firm to Kahn and Jacobs, were hired for the rehabilitation work.

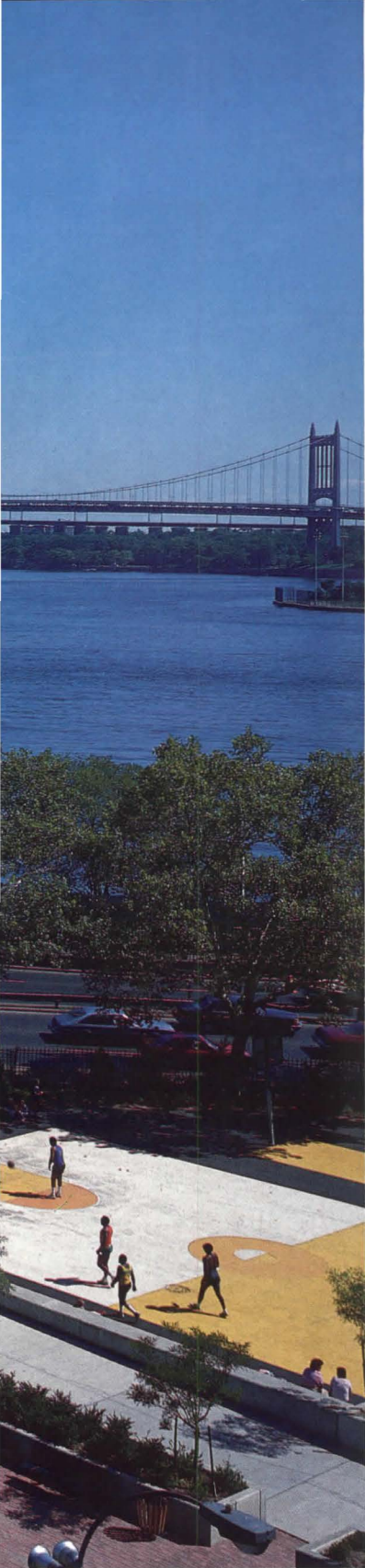
Meanwhile, the Committee was proving that it not only could have ideas, but could execute them as well. It established a popular marine biology/environmental study center in a nearby unused fire station, and wilderness and leadership training courses on Mill Rock Island.

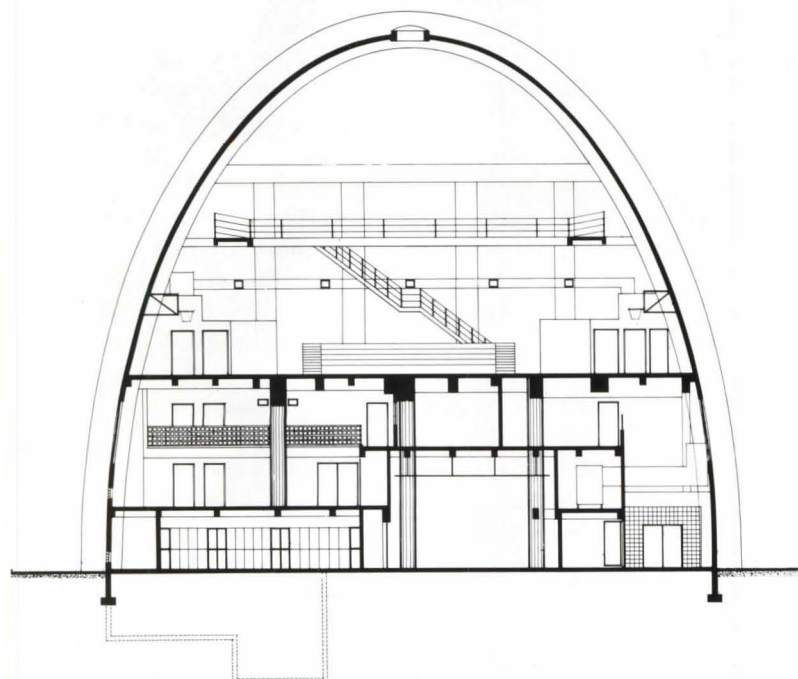
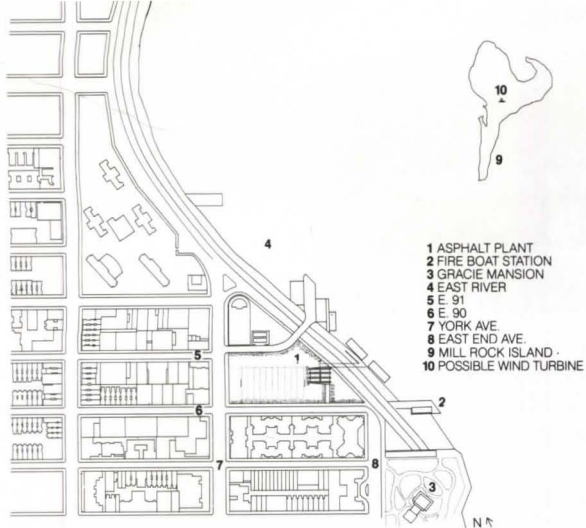
Last October, the sports and arts center in the Asphalt Plant was opened. It is already wildly successful. During the day, private schools rent the gymnasium, explains director Rory Morlos, while students from parochial and public schools take the Center's art, photography, and graphic design courses. Community youths use the facilities in the late afternoon, adults in the evening. Musical and theatrical events are held in the 93-seat theater designed by Harry Darrow and Wollens & Sachs. Many of the courses are funded by the New York City Youth Board or are offered by nearby institutions at no cost.

An artificial-turfed playing field, funded by City and private sources, is now being completed on the site. And Dr. Murphy is watching over countless other details, including seeing to it—by wielding his own spray can and hanky—that smudges are removed from the entrance hall wall. Such dedication on the part of a group of neighborhood people has guaranteed that an unusual piece of industrial architecture has been reused for great community benefit. *Susan Doubilet*

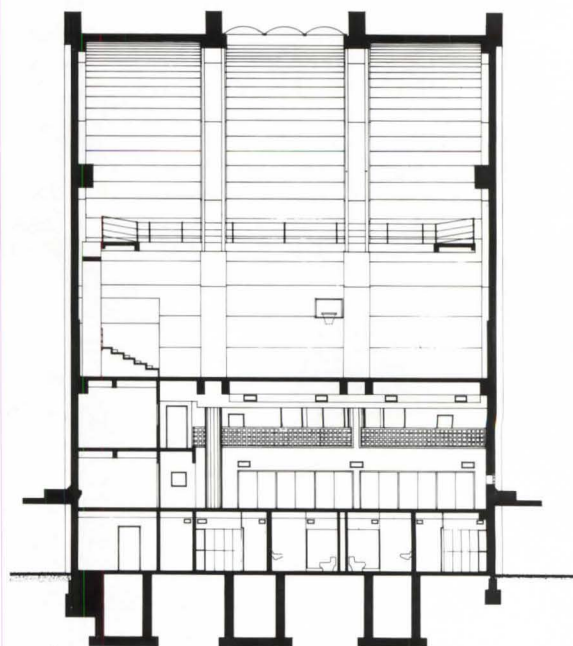
A five-acre site near the East River, on which an abandoned asphalt plant stood (left), was seen by the neighborhood as an opportunity for much-needed open space and recreational facilities in the congested Manhattan area. The community group had already established educational courses in a fire station (on the waterfront in small photo left) and on a nearby island. But the architectural story of the asphalt plant and its conversion is interesting

as well. When Ely Jacques Kahn and Robert Allan Jacobs were hired in the early 1940s to design a municipal asphalt plant, they were presented with the organizational diagram of the appropriate machinery. This organization (see drawing on the following page) suggested to them the parabolic form, which would result in no unused upper corners. According to research by community organizer Dr. George Murphy, Jacobs had become aware of the

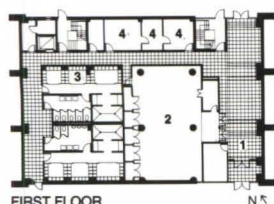




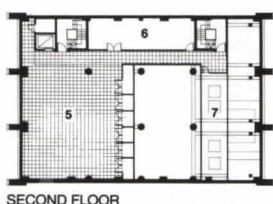
WEST/EAST SECTION



NORTH/SOUTH SECTION



FIRST FLOOR



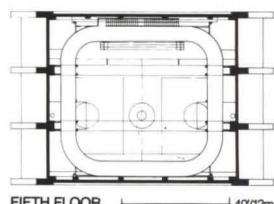
SECOND FLOOR



THIRD FLOOR



FOURTH FLOOR

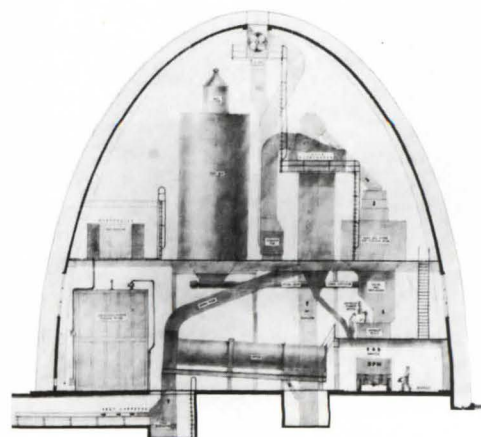


FIFTH FLOOR

- | | |
|-----------------|-------------------|
| 1 ENTRANCE HALL | 7 MECHANICAL ROOM |
| 2 THEATER | 8 ART STUDIO |
| 3 LOCKERS | 9 CLASSROOM |
| 4 OFFICE | 10 DARKROOM |
| 5 MINI-GYM | 11 MAIN GYM |
| 6 EXERCISE ROOM | 12 JOGGING TRACK |

potential of reinforced concrete, and had also noted the parabolic arch structure of the dirigible hangars by Eugene Freyssinet at Orly, when he was in Paris in the mid-1930s working in Le Corbusier's atelier. To simplify formwork and reinforcement, the architects used four lightweight steel ribs, prefabricated in three sections, which are 90 feet high and 22 feet apart and support a series of barrel vaults made up of concrete panels. Though criticized

by the likes of Robert Moses, the building was included in the Museum of Modern Art's book "Built in the U.S.A., 1932-44." In the operation of the plant, materials needed to fabricate the asphalt were transported to the mixing plant from the adjacent warehouse buildings, via both an above-grade bridge and underground conveyor belts. The asphalt was mixed on the upper level of the plant and dropped into trucks waiting below: a ground-level



Project: The George and Annette Murphy Center, New York.

Original architects: Ely Jaques Kahn and Robert Allan Jacobs.

Architects: Hellmuth, Obata & Kassabaum/Pasanella & Klein, Architects, New York (J. Arvid Klein, Graeme A. Whitelaw, management; Giovanni Pasanella, Harry S. Culpin, design; Tom Stetz, project architect; Michele Lewis, designer).

Client: New York City Department of General Services; The Neighborhood Committee for the Asphalt

Green, Dr. George Murphy.

Site: two city blocks on Manhattan's East River, with an abandoned mixing plant building.

Program: basketball gymnasium, running track, multipurpose room, art and other classrooms, little theater, lockers, showers. 22,580 sq ft gross.

Structural system: new metal deck and concrete slabs on existing and new steel framing within existing concrete shell.

Major materials: polystyrene insulation, cement plaster, glazed masonry units, dry wall partition (see *Building Materials*, p. 158).

Mechanical system: total power plant consisting of diesel generators (producing electrical power) with heat recovery. Auxiliary gas-fired boiler. Ducted ventilating and air-conditioning system. Chilled water storage pits.

Consultants: Pasanella & Klein, Architects, interiors; Robert Silman Associates, structural; Sidney W. Barbanel, mechanical; Incorporated Consultants, Inc., lighting.

General contractor: Series Contracting Corporation.

Costs: \$2,207,972 (1981 bid), including interior finishes and site work in the immediate vicinity of the building; excluding playing fields and exterior track.

Photos: Mark Darley, except as noted.



Photos: David Pickman

driveway passed directly through the building, with characteristic canopies on front and back façades.

It is this driveway that the restoration architects made the entrance to the facility. The wide truck entrances are partly infilled with glass block, but the high space is maintained (lower right). The shell itself was intact and received a waterproof coating on its exterior, insulation and cement plaster on its interior. The principal gym-

nasium (above) occupies the top floor of the plant, where asphalt was once mixed. While the project was already underway, Dr. Murphy noticed the "wasted space" below the peak (now skylighted, originally containing an exhaust fan), and suggested a jogging track be installed. Bleachers in the gym roll out to seat 140 spectators for competitive basketball games. Art and photography studios are on a mezzanine level overlooking the small gym

(upper right). Materials overall are kept simple: cement plaster, glazed masonry units, exposed metal. Square balustrade motif is inspired by the industrial sash.

The underground tunnels, which once carried asphalt materials, now store chilled water as part of an extensive energy conservation program using diesel generators with heat recovery, most of the equipment housed separately behind the building.

Warehouse Rebound



AT the top of the entrance stair in the new home of the University of California Press stands a boldly scaled marker bearing William Morris's words: "If I were asked to say what is at once the most important production of art and the thing most to be longed for, I should answer, a beautiful house; and if I were further asked to name the production next in importance and next to be longed for, I should answer, a beautiful book."

These words celebrating the conjunction of the worlds of architecture and books gain poignancy when we realize how few architectural commissions come from academic publishing houses. The story of the U.C. Press Building, winner of a 1983 P/A Citation (P/A, Jan. 1983, pp. 92-93), also offers a somewhat different perspective on the warehouse conversion scene.

After years of inhabiting three different locations, U.C. Press Director Jim Clark decided that the Press should consolidate. In 1981, after a two- or three-year search, the Press selected ELS Design Group to renovate a 1924 concrete warehouse, conveniently located just off the central Berkeley campus. A modest, matter-of-fact box, 90' x 90' on a regular 18-foot-column grid, its advantages were, simply, three floors, five bays square, of concrete frame construction supported by clean concrete columns with mushroom capitals. Though the structure showed its age a bit, load tests on the concrete floors revealed that additional seismic bracing—a devourer of budgets in the conversion of old buildings to new uses—would not be necessary. Thus the box could be used as a simple envelope for new contents.

The conversion of a 1924 warehouse into offices for the U.C. Press earned ELS Design Group a P/A Citation in 1983.

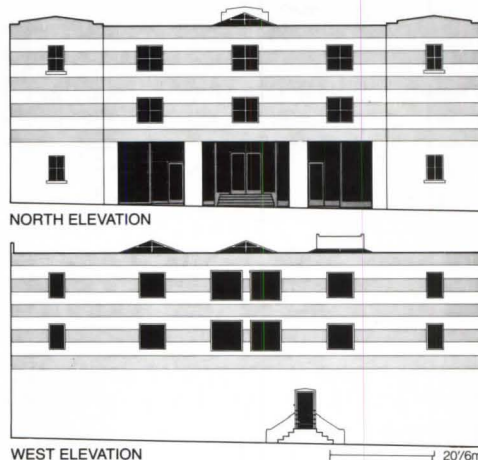
Inside the box, however, was a black cavern; with only a few windows, the major design issue quickly became how to open up the interior for light, circulation, and drama. The north, west, and south walls were punctured with square, steel-framed windows with vertically pivoting sash, and a new central atrium capped by a pyramidal skylight was cut through from top to bottom.

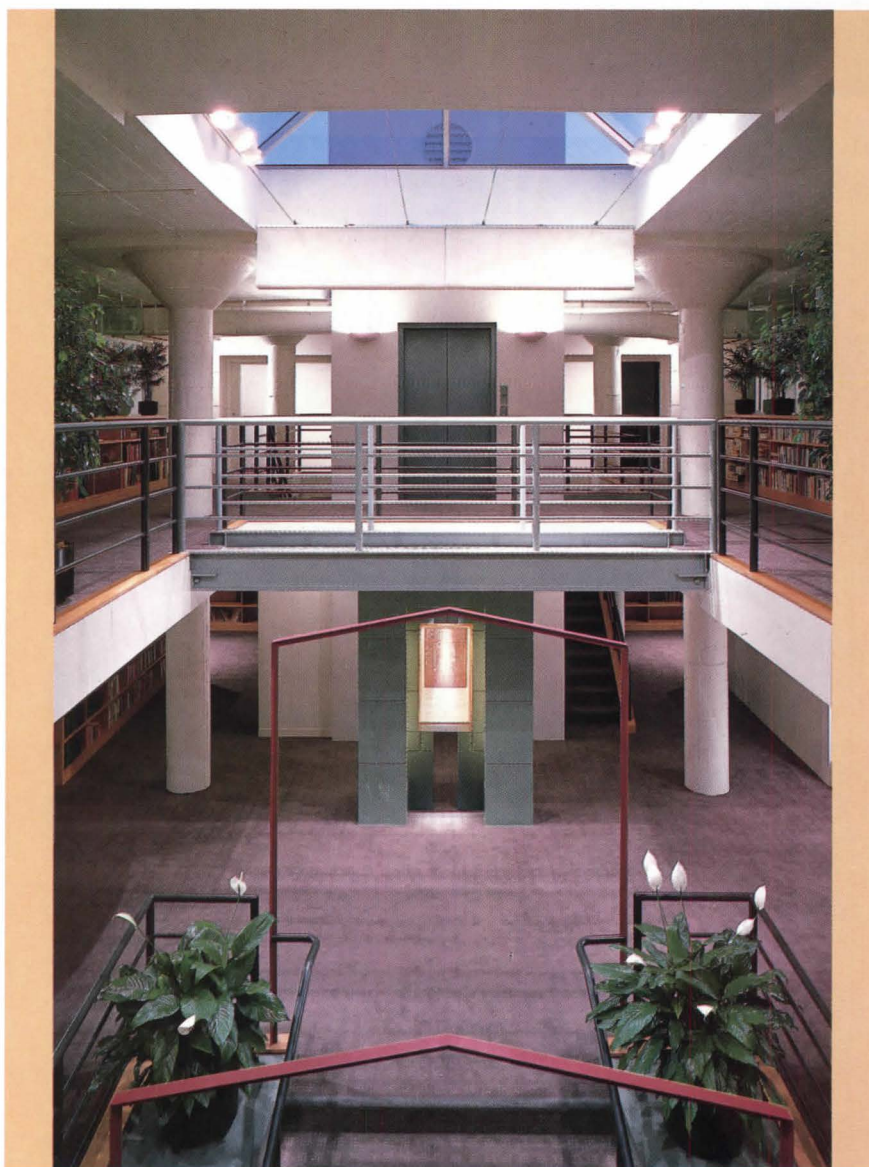
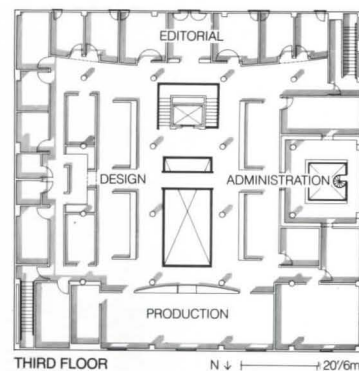
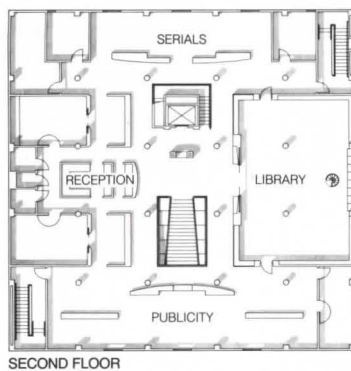
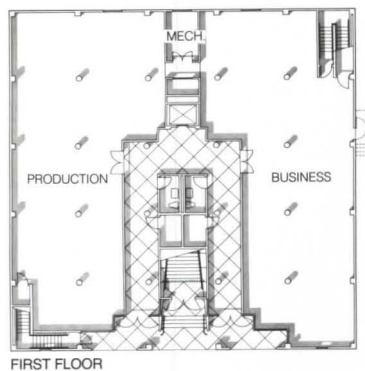
The use of most of the ground floor for rental space necessitated the separate entrance. Just inside the new doors, the grand stair, which tapers toward the top, is both efficient and dramatic, drawing the visitor toward the light-filled upper floors. Given the prevailing clarity, the thin metal arches over the stairs seem affected.

The second-floor reception area is the high point in the ceremonial experience of the building and demonstrates the economy with which institutional presence and dignity can be conveyed. Bookcases, set back from the atrium to provide for circulation, contain a reference library expressive of the press's purpose. Glass partitions set above the case-work, which forms the walls of the inner offices, give some privacy while permitting daylight to penetrate to the periphery.

The building's ventilation system has not proved adequate. (Air-conditioning was ruled out by university policy in Berkeley's usually benign climate.) The windows are of little help when the interior warms up, and the mechanical system is being upgraded.

Nevertheless, the U.C. Press Building is a striking affirmation of the potential that lurks in many, if not all, unlikely places. In the words of P/A juror Alan Chimacoff, "It's effortless and admirable." *Sally Woodbridge* ■





Symmetry and silhouette are all that remain of the original warehouse. By painting the exterior white with gray stripes (facing page) to define building volumes better, the architects have made the building pleasantly noticeable in an otherwise nondescript context. A color scheme of light, cool tones with dark accents for new interior elements is subtly distinguished from the warmer white color of the rough concrete envelope and mushroom-capped columns (above).



Most of the ground floor is rented out to independent tenants. The new Press entrance, carved into the original façade, opens to a grand tapered stair leading to the second-floor reception area (above). The bilaterally symmetrical plan (top) is efficiently organized around the central skylit atrium and stair. A smaller skylight and floor opening light the second-floor conference room where receptions take place (upper right in east/west section).



Glass-above-wood partitions on second floor (top) illustrate symmetry and openness of entire interior. Bridge over atrium is not demanded for circulation. View down main stairs (lower photo) shows procession of metal frames; skylight has retractable shades (see also preceding page).

Project: University of California Press Building, Berkeley, Calif.
Architects: ELS Design Group, Berkeley, Calif. (Donn Logan, principal in charge; Bruce Bullman, project architect; Carol Shen Glass, project manager; Alan Ohashi, project designer; Roger Olpin, Ken Yamamoto, Kurt Schindler, Ling Chen, project team).
Client: The Regents of the University of California and the University of California Press.
Site: 8750-sq-ft mid-block site on Berkeley Way.
Program: 25,000 sq ft open and enclosed office space divided among

five departments; library/conference room; book room; and support space.
Structural system: reinforced concrete columns, slabs, and exterior walls; flat slab construction.
Major materials: painted concrete, painted steel windows, aluminum skylights (exterior); painted concrete columns, ceilings, and perimeter walls, gypsum board partitions, natural oak casework, carpet, metal hand-rails (interior) (see Building Materials, p. 158).
Mechanical system: gas-fired boiler with hot water coils in terminal boxes; fresh air through high pressure ducts

to terminal boxes, low pressure secondary distribution, warm air purge exhaust.
Consultants: ELS Design Group, interiors; Johnson & Rutigliano, structural; Marina Heating & Air Conditioning; BRW Associates, electrical; Richard Peters and ELS Design Group, lighting; Sol Arc, energy analysis.
General contractor: Christensen & Foster.
Costs: \$1 million budgeted, 1982; \$1,025,000 actual.
Photos: Mark Citret, p. 104 and bottom, p. 106; John Sutton, p. 105 and top, p. 106.

What Price Success

TWENTY years after passage of the National Historic Preservation Act, the preservation movement has achieved remarkable success. But that very success is now being used by some as a justification for the withdrawal of federal support. Tax proposals set forth this year by the Reagan administration, challenges to the authority of the Advisory Council on Historic Preservation, criticism of the standards and designation process administered by the National Park Service, and reductions in federal funding for preservation activities have combined to mount a serious challenge to the preservation community.

Progressive Architecture and the AIA Foundation cosponsored a symposium convened at the AIA headquarters in Washington, D.C., to discuss the present and future place of the federal government in preservation. While all ten panel members are involved in preservation, they express widely divergent and sometimes conflicting opinions.

Daralice D. Boles, Thomas Fisher, Thomas Vonier

David Chase is an architectural historian and consultant. He has worked in the Rhode Island State Historic Preservation Office, and is on the review board for the Maryland S.H.P.O.

Maximilian Ferro is an architect and managing partner of The Preservation Partnership. He teaches historic building conservation at Boston University and the University of Vermont.

Thomas King directs the Office of Cultural Resource Preservation in the Advisory Council on Historic Preservation. He is an archaeologist by training.

Nellie Longworth is president of the lobby Preservation Action. She also serves as an adjunct associate professor in the Historic Preservation Program at Columbia University.

W. Ray Luce is the Ohio State historic preservation officer and chief of the Historic Preservation Division at the Ohio Historical Society. He has also held the position of historian for the National Register program.

William MacRostie is a preservation consultant with the development firm Langelier Properties, having worked previously in the National Park Service reviewing tax act projects.

Mary Means, president of the American Institute of Architects Foundation, formerly served as vice-president for program development at the National Trust for Historic Preservation.

Jerry Rogers is the associate director for Cultural Resources at the National Park Service. He was formerly chief of the Office of Archaeology and Historic Preservation.

Ian Spatz is a lawyer working for the National Trust for Historic Preservation. At the Trust, he has had several responsibilities related to the federal historic preservation program.

P/A: *The first question on the investment tax credits for rehabilitation and their proposed elimination by the administration is directed to Mr. Rogers. Our presumption is that, as a person lodged in the executive branch, you have some obligation to toe the administration's line on tax reform. Why might it be appropriate to withdraw the tax incentives? Can you counter some of the arguments advanced by the National Trust and others in their defense?*

Rogers: You are correct in the sense that *this administration has a position on tax simplification, one that would lead to the elimination of the historic preservation*



Plenary session

investment tax credit and all other forms of investment tax credits. The administration's purpose is to make the tax code more sensible and easier to use, and to produce what is believed to be a fairer distribution of the tax burden. I don't think that there is anyone in the administration who believes that the historic preservation tax incentive program has not been a good one. As a matter of fact, two Secretaries of the Interior, Judge Clark and Donald Odell, when the administration position was being put together, wrote to the Treasury pointing out the success of these credits, and urging that they be retained.

Spatz: I wish the Treasury proposal had been as forthright and honest as Mr. Rogers is in dealing with the merits of the tax credits. But the tax simplification proposal itself simply says that they had to be sacrificed in the interests of tax reform. It further raises several objections that are very unfair to the program as a whole, because it has done so well, and done so much good. *If the credits had been given due consideration, they might*

have been retained in the President's proposal, as others were.

P/A: *Mr. MacRostie, you've worn both hats over the course of the last five years or so. Would you comment on what the private sector has to say on this subject?*

MacRostie: The tax credits have been enormously successful in cities and towns around the country in encouraging the preservation of historic buildings. Congress recognized when these credits were put in place in 1981 that rehab is a high risk game. Rehab projects are sometimes more expensive than new construction; they are certainly less predictable in terms of the construction process. The tax credits sought to provide a vehicle to make it easier to raise capital for both large and small rehab projects.

The tax credits are doing exactly what Congress intended them to do. *If they were totally removed from the tax code, as the administration proposes and as certain other tax bills propose, it would have a devastating effect on rehabilitation around the country. For an investor choosing between a new office building, where the problems are relatively easy to predict, and a rehab project, where you run into all kinds of snafus and difficult situations, the prudent choice, without the added incentive of a tax credit, would be to go with new construction.*

P/A: *Your comments suggest that the preservation community is just another interest group lobbying for its cause. What public benefits were anticipated in the initial act? Have those public goals been satisfied? Is the job ever done? Some critics have observed, for example, that all the best buildings have indeed been saved, and that now it is the more marginal and less interesting projects that seem to qualify.*

Means: I would take issue with the comment that all the buildings that need preservation have been done, and that we're down to the second- and third-rate buildings. We may have seen a tremendous amount

of activity in Providence, Boston, and Philadelphia, but as someone who has been out in the smaller communities of America, I think it takes a long time for that information to trickle down. There's also the problem of trying to assemble capital in very small amounts for small parcels of property, where larger developers are not interested. The tax incentives have been quite instrumental in lowering the resistance to even the rehabilitating of an old YMCA downtown. They also have set a level of quality.

Ferro: First of all, I don't think that we've saved all the best buildings; on the contrary, there are a tremendous number of very good buildings that are still out there in desperate need of assistance, including many of our designated historic landmarks. I do feel, however, that there is indeed an identifiable interest at work on the part of developers and an identifiable interest on the part of preservationists, and the two do not necessarily coincide. The problem with the present tax credit system is that it lumps together a credit that is designed to encourage investment in existing, nonhistoric buildings (the 15 and 20 percent credits for build-

a much smaller initial investment and can be done in phases. Therefore, one could justify phasing out the 15 and 20 percent credits, claiming that the market is now ready to do that kind of basic rehab unaided.

Luce: In Ohio, both sets of credits have worked very well. I agree, however, that for many of us, the question of the sensitive rehabilitation of historic buildings is most important. That's where the tax credits are absolutely essential. Through them, we in the State Historic Preservation Offices get a first look at what is to be done with a historic building. Very often we can not only save the sponsors money, but talk about other solutions that are much more sensitive than those originally proposed. We see our voice as the one voice that speaks for the building's interest.

I would also agree with Mr. Ferro concerning the number of buildings that still remain to be rehabilitated. At least in Ohio, we have not begun to scratch the surface, even though a great deal of rehabilitation has taken place. Since 1982, we've reviewed 367 projects, but we have in our inventory 50,000 buildings.

percent credit instead and bypass the National Register process.

MacRostie: I would add, based on personal experience in talking with those in the development community, that perceptions of the difficulty, complexity, and time wasted in the certification process prompt developers to



Means, King, Rogers

choose the 20 percent credits as a less costly alternative to National Register listing and certifiable rehabilitation.

P/A: Let's presume, for the sake of discussion, that tax simplification indeed goes forward and that all of the credits are removed. What would happen? What would be lost?

Rogers: One can only guess what might happen in terms of how many historic properties around the U.S. might continue to be rehabilitated. I can't say that the control

All kinds of things have been tried to stop the deterioration of downtowns. The first thing that ever really worked was the investment tax credit program.

years that historic preservation grants to the states were no longer needed because the tax incentives represented the federal government's way of providing leadership in the preserving of historic properties.

Chase: In discussing the tax act, we haven't talked about the status quo before the tax act. There was, at that time, a federal grants-in-aid program—a bricks and mortar program—that was inadequate for the needs and different in focus from the tax act. That program ended. Today the federal government's participation in preservation is basically the tax act. If that is eliminated, the federal government moves out as an effective, meaningful partner in a national preservation program. That's a very serious turn of events.

P/A: Some would argue that the tide has turned; that, whereas it was at one time appropriate for the federal government to be acting in this manner, a shift in public attitudes has taken place that now means there is a less urgent requirement for federal involvement.

Chase: I don't think that there is any public sense of a less urgent need for federal participation. There has been a shift in the attitudes of policy makers in this administration about how acknowledged preservation goals are achieved. As in all administrations, there are conflicting goals. We are now faced with the conflicting goals of tax simplification and the desire to help preservation. One benefit of the tax act that would be lost is the encouragement given to private enterprise to provide products and services that are specifically geared to historically appropriate, certifiable rehabilitation. Before the tax act, for example, you could not even

If the credits were totally removed from the tax code, it would have a devastating effect on rehabilitation.

ings aged 30 and 40 years or older respectively) with a third credit, the 25 percent investment tax credit, which is designed to retain and encourage investment in what we call "historic" buildings. It has been very unfortunate for those credits to be lumped together.

One could make the argument that market forces have reached the point where I can prove to clients that, far from rehabilitation being a high risk situation as has just

Our biggest concerns, however, are the 15 and 20 percent projects, especially those involving buildings that would be eligible for the National Register. We have buildings throughout the state that have not gone through the review process, are not listed on the Register, but are rehabbed with the 15 and 20 percent credits in insensitive ways. I think these two parts of the tax act program are working at cross purposes.

P/A: Why hasn't the National Trust fought to retain the 15 and 20 percent tax credits?

Spatz: The Trust does support retention of the nonhistoric tax credits, but given our charter, we have to have as our primary interest the 25 percent historic tax credit. We also share many of the concerns that Mr. Luce has articulated about buildings that should be taking the 25 percent credit, but take the 20

that the National Park Service and preservation offices now have to assure proper rehab would disappear. It would become a matter of choice on the part of an owner to restore a property according to the standards or not, unless some other state or local law were available to influence them to use the proper standards and practices. The National Park Service would no longer be in a position to guide that process, as it does today.

We would still want to continue to produce technical information, but we might be cut off from an important source of that technical information. Finally, the Department of the Interior and the NPS would want to rethink their position on how historic preservation should be supported in the U.S. We've taken the position in the last several



King, Rogers, MacRostie, Ferro

been suggested, rehab has become a low risk situation in that it requires

get a custom window that was a decent replacement for a historic window. Because of the tax act, all of a sudden there are lots of commercial firms producing at competitive rates replacement windows, hardware, and all sorts of things. That influence on the private market would cease.



MacRostie, Ferro

Under the grants program, a relatively small amount of money went to a small number of particularly important projects, basically restoration projects. I regret the end of the grants-in-aid program; but that program could never do what the tax act can do: broaden the scope.

Ferro: I'd like to pick up on that. You told us to imagine that in fact tax reform will succeed. What happens next? *Every government in the world has only two ways to encourage public policy: one is to do it itself, and the other is to make it worthwhile for other people to do it. We've tried both.* Under the grants-in-aid program, the Office of Archaeology and Historic Preservation had a very direct influence on what was done. However, that affected only a very small number of buildings because give-away programs are always severely limited for cash. The advantage of the present program is that it has affected many more buildings; the disadvantage is that the Park Service has lost some control. Developers have learned the failings of the present program: you present to the Park Service evidence of the building as it was at the time of your purchase, together with drawings and specs for what you propose to do. The Parks Service compares those drawings and specs to the standards, which are very well written and very well intentioned. If you are successful in staying within the standards, you get your 25 percent credit. *There is nothing to prevent a developer who is smart from going through the building with a person like me and looking at all the things that are going to cost him money; before that developer passes papers he has the previous owner demolish all of the historic fabric—gut the building—then he buys the building, takes pictures, and does whatever he wants.* Is this a widespread phenomenon? I can take any of you for a walk in Boston's South End that went through the De-

pression and retained most of its historic fabric and show you dumpster after dumpster filled with mahogany, plaster, crystals, stained glass. The history of Boston is, in the name of these historic tax credits, ending up in dumpsters.

My suggestion is this: that if the incentives are canceled, if we do find ourselves in the fortunate position of being able to start over, that we blend the two approaches and create a program that is active rather than passive. The historic preservation officers and National Park Service could look at these buildings and determine those aspects of a restoration that are truly beyond what a developer can be expected to finance. *We could then base our tax credits not on the rehabilitation cost—not on the cost of all those new toilets and the new drywall partitions—but on an amount related to the restoration costs—the embossed wallpaper or fancy plaster.*

Rogers: One of the things we used to do is spot and report violations of that type. I will acknowledge that we do see rehab proposals in which the previous owner has removed important features of the historic building, and when that happens, the standards don't require a new buyer to replace them.

P/A: *Let's assume that the government decides no longer to use taxes as a public policy tool. Is the National Trust or are other groups looking at other vehicles for preservation? Do you see the states taking over some of the federal programs?*

Ferro: Massachusetts has been one of the first states to institute a state grants-in-aid program. It is very reminiscent of the federal grants-in-aid program in that it only provides half a million dollars for the whole state. It's woefully inadequate, and it would be very sad indeed if that's all we ended up with in the future.

Rogers: *There isn't any realistic hope for a meaningful grant program either at the federal level or in many states. It wouldn't have any impact, certainly not on the scale these credits have had.*

Luce: I think we're moving back to that basic question: whether or not we're going to have a federal preservation program. There may be some states that take up some parts of that program. In Ohio, we have an inner city venture program and other things, but those are by no means going to take the place of these credits. We'll have what amounts to a non-federal policy, which means that we'll

have a whole series of different standards implemented in different ways. There are particular kinds of buildings that are going to be lost: surplus schools, YMCA's, YWCA's, buildings that are very often pivotal to what a community is all about. *The loss of the tax credits would be a major step backwards, and the end result would be a major loss of the historic fabric of the country.*

Chase: I think it's wrong to focus on alternatives.

The history of Boston is, in the name of these historic tax credits, ending up in dumpsters.

At the federal, state, and local levels, we've got to have policies that deal with taxation, spending, and regulation. For example *we need a grant program at the federal level; it's a must. There are properties that are not covered by the tax incentives; in fact the majority of historic properties, let alone archaeological properties, are not.* All levels of government are participating more now than they have before. There was a tendency for many years to look to the local level for regulation and the federal level for financial support. Now we're looking at state governments to play a larger role, and many states are stepping in.

P/A: *Mr. Ferro's comments in particular describe a private sector that's willing to desecrate anything that comes its way. Are abuses inevitable when historic buildings are turned over to*



Chase, Luce, Spatz

a community whose primary interest is not preservation? Would developers turn a profit without these tax credits? Is it reasonable for a preservation organization to try and defend preservation on developers' terms?

Spatz: We have reconciled the interests of preservationists and developers through the tax incentives. We have to recognize that the people who know how to fix up historic properties in this country are called developers. The Trust preserves some of its own prop-

erties, but *the majority of buildings are fixed up by developers or home owners. We have to influence those people; we can't exclude them.* We can't say they have a different interest, so we don't want to work with them. Those are the only people out there who can purchase these buildings, who can rehabilitate them. If we wait for historic preservation groups, we're going to save only a handful of buildings. I don't think that's what the nation's historic

preservation program should be.

King: *There's no question that there is a private sector out there waiting in the wings to demolish whatever stands in its way, if the economics run in that direction.* The beauty of the tax act has been that it has turned the economics around and greatly relieved the pressure on federal regulatory functions. I have to take issue with Mr. Ferro's notion that there is abroad in the land some great public interest in preserving every little vestige of every historic building. I don't think that's what historic preservation is about in this country any more. While I can readily believe that there are people who are ripping out interiors before they seek their investment tax credit, I have difficulty believing that's happening in the majority of cases. *To expect that we should have a program in this country promoting historic restoration instead of historic rehabilitation for modern purposes is to apply too pure a standard.*

Ferro: I'm appalled to hear that "the people who know how to fix historic buildings are called developers." I always thought those people were called architects. Developers know how to shuffle money around and to fund a project. If we made it more advantageous for people to pour money into philanthropic organizations, which at the moment we have not done, we would find a great deal more money in historical associations. If we made it more advantageous for cities to collect taxes and to run their own landmark programs, then more cities would do so. I'm speaking about the programs affecting a very small percentage of the buildings in this country, the buildings desig-

nated as true landmarks by the National Park Service. I'm not suggesting that we start running around trying to save every piece of wood molding that was ever milled in the 19th Century.

P/A: What do you mean by a true landmark?

Ferro: What I'm saying is this: by some mechanism, as yet unwritten, Mr. Rogers or his delegates will go to a historic building that needs government help to save it. They will determine, by whatever guidelines are set up, whether that building is worthy enough as part of our national heritage to merit government financial support. They will then establish either tax support or direct financial support.

P/A: That process would presumably save a small number of historic properties that are crucial to the public interpretation of the country's history.

Ferro: Yes.

Chase: Let me just say: God forbid that we should ever get into such a foolish program.

Spatz: The majority of people in this country who support the goals of historic preservation have a much broader view of what we're up to. That view has broadened since the National Register was expanded in 1966 to include whole neighborhoods. Take a building in a National Register historic district that a community proposes to use for low-income housing. We can preserve our history and put a property to good use under that broader definition. That's the kind of project that's making our case on Capitol Hill.

P/A: Social activists have asked, when you consider the fact that 30 million Americans live below the poverty line, why the government should shelter the income of wealthy developers. They've also argued that preser-

vation in some cities has led to gentrification and the same kind of removal of the poor that urban renewal programs generated in the 1950s and 1960s. How do you



Chase, Luce

respond to the social activists' criticism of preservation?

Means: One could argue that the preservation movement has been elitist, for a long time. The preservation movement was the plaything of the gentry, because of the lack of capital available for others to participate. Not acknowledging that everybody had a past, we tended to save only the jewels. The public policy decisions of the 1960s to create a National Register of Historic Places, and to list on it more than just buildings of national significance, involved people all over the country in the preservation movement. That was a very significant first step. The second part was making capital available, so that all people could participate. The third step has been the real democratization of the preservation movement, which made capital available to developers and thereby made preservation much more widespread. Yes, people are making some money from it—but the federal government couldn't have achieved that level of democratization with direct grant programs. In terms of gentrification, certainly the federal largesse of the 1960s and the highway construction projects resulted in more displacement of the poor than this program has.

Chase: On this issue of social accountability, I must say I bristle at these questions. I have the feeling that the historic preservation movement is asked to justify itself more than any other endeavor. I don't think that it is fair to say, certainly not in 1985, that persons who are interested in historic preservation are any less interested in serious social issues than the public at large. Indeed, there are serious social issues that the government should be addressing. But it is not the province of those involved in historic preservation to turn themselves into St. Francis. You may as well ask why it is that people can have accelerated depreciation on any sort of property for any purpose, or why certain sorts of income are not taxed at the

same rate as others. One can say that the spinoffs from historic preservation, to some degree, assist in solving some social problems, much more directly than lots of other aspects of our nation's tax and investment policies. Housing needs are being met, to at least a small degree, by investment in historic properties. Much of this investment, of course, is not being done for low and moderate income persons, but some of it is, which can't be said for most other aspects of the federal budget.

Rogers: These credits have produced over 35,500 new housing units in the U.S., over 14,000 of which have been for low or moderate income occupants. The overwhelming majority of this has been done since 1981.

Longworth: We have problems in urban areas in part because the federal government has spent a great deal of money getting people out of the urban area. They built the highways and the shopping malls; they gave money for development and new construction that all went to the suburbs. Everybody who could possibly afford to do so immediately left the cities. What you had in the cities were all those people who could not afford to leave. Urban renewal, rapid amortization, low interest loans, all kinds of things have been tried to stop the deterioration of downtowns. The first program that ever really worked was the investment tax credit. It put the responsibility for rebuilding cities onto the shoulders of the private sector.

Members of Congress did not know what was happening with these rehabilitation credits. They knew about the revenue loss, but they didn't know that jobs were being created or that property tax had been returned to the city. In asking people to fight for these investment tax credits, we haven't said: fight because you're a developer who's making a great deal of money but because people can now invest their money in something that has great public benefit.

Ferro: If we provide legal services for those who can't afford it, we also have to provide architectural services and preservation services. What is happening because we don't? In New Bedford, developers from Boston are coming in; they sell, syndicate, and do funny things, and all of a sudden the local Portuguese population is being bought up. If that's what this law does, then we should recognize it, and not eliminate the law, but fine-tune it so that such excesses cannot happen.

P/A: Everyone here is in support of the tax credits. Yet we haven't yet heard a real defense of the 15 and 20 percent credits. Are you all ready to jettison that portion of the tax program? Will those credits be cut loose to save the remaining 25 percent investment tax credit for historic structures?

Longworth: We at Preservation Action have been talking to people lately to find out what they consider the bottom line. Almost everyone says, "We want at least one historic and one nonhistoric credit." That's a baseline. They may be willing to have a larger spread than the five percentage points allowed right now.

Means: I have a problem with the 15 and 20 percent credits. The 25 percent has an exquisitely crafted document called the Secretary of Interiors Standards, so there's a code of ethics about how we behave with those buildings. There's no such mandatory code for 15 and 20 percent buildings.

P/A: With respect to the standards: One group of critics claims they are too specific; another group, of architects mainly, argues they are too vague. Which is it?

Chase: I would agree with Ms. Means that these standards are right-minded and useful, and certainly there is a need for some sort of guideline. I've felt, however, for some time that two of the ten standards—and keep in mind that in order for a project to pass muster it must satisfy all ten standards—two of ten standards in my judgment are not producing optimum results. The standards that concern me are 3 and 9.

The standards are set up with a series of preferred methods or approaches and a series of corresponding thou-shalt-nots, or thou-shalt-avoids. Standard 3 requires that "All building structures and sites shall be recognized as products of their own time. Alterations that have no historical basis and which seek to create an earlier appearance shall be discouraged." That standard proscribes efforts to replicate the original detail of a building in new additions. Yet there are instances in which historic replication is a valid design option, and this option should be clearly available.

Standard 9 states, "Contemporary design for alteration or additions to existing properties shall not be discouraged"—a nice left-handed way of saying "encouraged"—"when such alterations or additions do not destroy

To turn the federal preservation program over to states or to local governments will mean some decline in evenness and quality.

significant historical architectural or cultural material and when such design is compatible with the size, scale, color, material, and character of the property, neighborhood, or environment." My quarrel with Standard 9 is that it excludes designs that contrast significantly with the historic fabric. *In some cases, the best thing to do is to set off the historic fabric—to not attempt to blend with it.* The combination of Standards 3 and 9 causes problems getting through the local design review, then the state review, then the federal review process. *You get timid solutions offered for fear that anything creative or innovative isn't going to make it. In too many instances, the safe thing is not the best thing.*

Ferro: I agree wholly that Standards 3 and 9, and only Standards 3 and 9, are at issue. In order to understand what they really mean, we first have to discuss what preservation is. Is preservation the management of an ever-changing environment? Or is preservation the actual preservation of some environments? At Canterbury Cathedral, there are something like seven exterior blocks that are original; everything else has

we knew exactly what the cross section was. So we built the ell back because we had to put in handicapped washrooms and stairs, fire stairs, and so forth. Now imagine a building of five bays, with a new one-bay ell. I could not put a 6-over-6 window in that bay, because it had to be a product of its own time. I was instructed by the Parks Service to put in a 1-over-1 window, the idea being that if you put in a 6-over-6, people will mistake it for a genuine part of the building. Never mind that the 6-over-6 is made of aluminum, as opposed to wood—apparently people are so stupid they can't tell the difference. But looking at that 1-over-1, after five 6-over-6's in a row, the public is appalled and says, why have you done this? How insensitive!

Rogers: I find these comments very interesting, and I'm certainly not prepared to defend the standards to the letter nor to defend their application to 12 or 13 thousand rehab projects. I'm sure we can come up with one or two that haven't been what they ought to be, and maybe even a couple that have been horrendous, but I do think it's important to look at the inten-

outdated as architects have got better at working in historic styles. Do you see the standards being re-written?

Rogers: I am not persuaded that those standards are outdated. But with the 20th anniversary of the National Historic Preservation Act of 1966 coming up, we will be looking at all our practices to see if it is time for an updating, one minor part of which might be reexamination of the standards.

P/A: *What happens to the standards in the event of a tax reform and the elimination of the investment tax credits?*

Rogers: I don't envision these standards disappearing. Even within the National Park Service, we would continue to rehabilitate and restore properties. Remember, we have standards for restoration, rehabilitation, and preservation; we have standards for documentation under the HABS program; and we have standards for survey and evaluation registration. I think those standards will continue; in fact, I'm determined that they will continue.

Ferro: *I think one of the dangers with Standard 9 is that it puts the government in a position to legislate architectural design and style. If you say that modern additions to historic structures must be a product of their own time, you put yourself in a position of judging what a product of your own time is. One of the great ironies is that a product of our own time has been largely interpreted as meaning the Modern or International Style, at a time when architects are turning their backs on it. Not only are we progressing into Post-Modernism, but some architects—Quinlan Terry, for example—are now turning back to literal revivalism, having gone through Post-Modernism and found it wanting. If we had hired Quinlan Terry to design the AIA headquarters, Georgian designs would have been submitted and*



Session with Longworth

the Park Service would have said: Oh, you can't possibly do that because it's not a product of your own time. He'd say, what do you mean it isn't? I'm the most avant-garde architect in England at the moment, and it jolly well is. I hate the thought of the Secretary of the Interior telling ar-

The processes involved in the federal historic preservation program are cumbersome. They involve too many tiers of redundant review.

chitects what's a product of our own time.

P/A: *Is the review process too cumbersome? Is it working against the best interests of preservation? What other alternatives might there be?*

MacRostie: The tax act review process is very well administered, especially given the volume of applications. I think the National Park Service and the state offices have been very successful in administering the program in a way that is fair to the development community and to the architectural community. There are, at times, frustrations in dealing with the process, and that is most often the result of too much volume for the amount of staff.

P/A: *Doesn't some of the frustration come from the double-tier review, where the state historical architect makes a judgment that the federal people may go against?*

King: I think the Secretary's standards are extremely important, and I would join with the rest of the panel in saying that we find them an absolutely necessary component of the process. But *I would hope that the kind of discussions going on here today will lead to some changes in the standards.* It's going to be very difficult for us at the Advisory Council to exercise a great deal of flexibility when the standards themselves were not written in a very flexible manner; and we have committed ourselves to using the standards in order to ensure some degree of consistency across the federal establishment. I know that the same sort of thing applies to the state historic preservation officers, who also feel themselves, quite properly, bound by the standards to adhere to a certain approach.

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There's always a great danger that we may fall back into the landmarks syndrome.

been changed not once but many times. There's a continuous replication that takes place, a rejuvenation. In Europe, they replicate like crazy. The confusion comes from the fact that European preservationists got together and produced something called the Charter of Venice after World War II, which decreed reconstruction—just after they finished rebuilding all of Europe. That was one of the great exercises of hypocrisy of the 20th Century. The Charter of Venice has come late to America, and really is the motivating factor behind Standards 3 and 9. When theory runs against common sense, something's wrong. Something has become too esoteric—the way Standards 3 and 9 are being applied right now, for instance.

To cite one example, I was restoring a little whaling mansion that had had an ell. We didn't know how long it had been, but

tion of the standards. Standard 3 is a prohibition on replication; it is directed toward new additions, not toward the replication of missing features. *If you're building a new addition and you make that new addition look exactly like the real historic building, you're not replicating. You're imitating, and you're confusing the viewer about what is and is not historic.* It's not enough to put a paper in a file somewhere or hide a little marker on the inside of the building that says: This was built in 1985. With regard to Standard 9, its intention is not to prevent people from accomplishing that rare example of setting off a historic building like the AIA headquarters does the Octagon House, but rather to prevent people from constructing structures that compete with the historic building.

P/A: *Some people argue that the standards, particularly Standards 3 and 9, have become*

Invisible Reweaving

FRANK Lloyd Wright's textile-block projects of the early 1920s represent his initial experiments with what he saw as a sure-fire system of building affordable houses. Plain and patterned, precast concrete blocks, "woven" together with vertical and horizontal reinforcing steel, could be made and assembled by unskilled labor, and the blocks could take on almost any pattern imaginable. This early experiment (which culminated in Wright's Usonian Automatic houses of the 1950s) produced four houses in and around Los Angeles, but it wasn't a practical success. Assembling the blocks turned out to be a job for *skilled* labor, thus increasing the cost of the houses. Moreover, these early versions of the block system haven't proven to be rock-solid; all four houses have been showing their age, at just over 60. But the second in the group, designed in 1923 for Dr. John Storer, has recently undergone an admirable restoration. A remarkable team, led by architect Eric Lloyd Wright (Wright's grandson), restoration architect Martin Eli Weil (president of the L.A. Conservancy), and interior designer Linda Marder, was assembled and coordinated by the energetic new owner of the house, film producer Joel Silver. A knowledgeable Wright enthusiast, Silver had his eye on the house for years before buying it in July 1984.

He knew he was in for a lot of work. The house, which is listed on the National Register of Historic Places, had not fared well over the years. Its original construction was supervised by Lloyd Wright (son of Frank, father of Eric), who also designed the landscaping. The house cost \$27,000 to build, almost double the budget of \$15,000. And after Dr. Storer sold it in 1927, a series of subsequent owners had, as Silver put it, "fought with the house." From the looks of it before restoration, they had won. The interior block walls had been painted, and later sandblasted. Even worse, both interior and exterior blocks were pockmarked with holes that had been drilled in them during two misguided "renovations." Blocks had been replaced or patched with a smooth, cold-gray concrete that didn't match either the texture or the warmer color of the original; other blocks were badly weathered. Redwood door and window frames were rotting, and the interior woodwork had been painted; the litany of abuse and neglect went on and on. Nonethe-



A 1923 textile-block house by Frank Lloyd Wright is meticulously restored by a team of patient perfectionists.

less, client and architects agreed to return the house, as closely as possible, to its original appearance. Since then, their work has combined careful restoration based on existing drawings and photographs, meticulous documentation of the house before restoration, and where no clear directions existed, appropriate improvisation. While Eric Wright had at least the benefit of having worked closely with both his father and grandfather, the team as a whole faced what he called "a lot of detective work."

The biggest problem was the restoration of the blocks themselves. At least 30 original plain blocks were found buried on the site, and about 50 new patterned blocks were made from a metal mold found in the garage

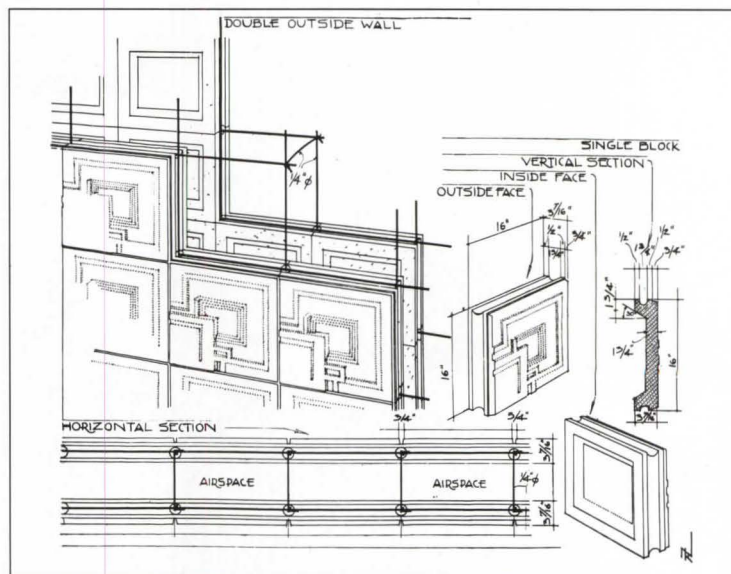
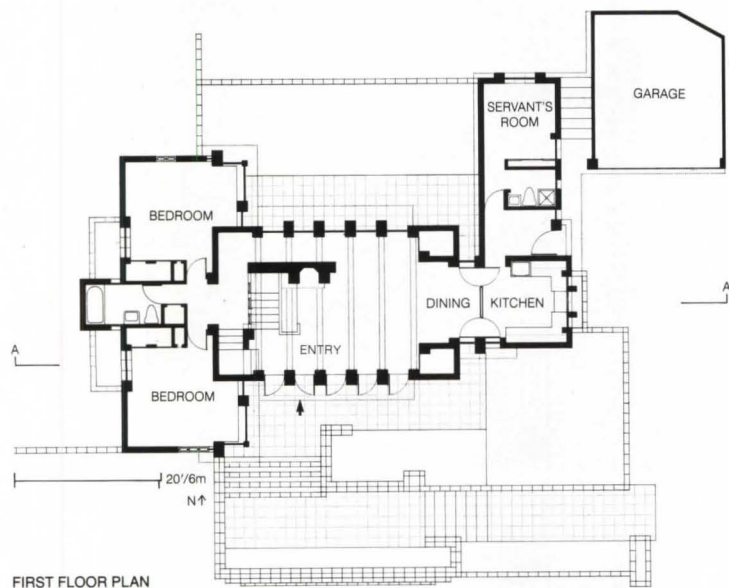
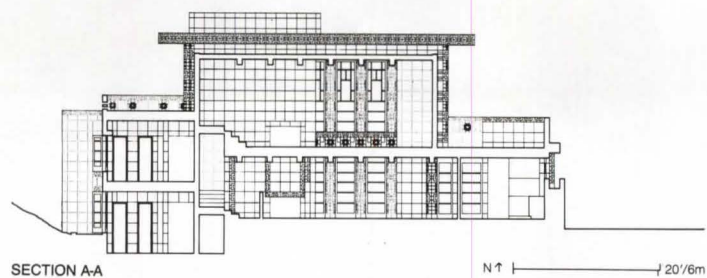
(of the three block patterns used in the house, only the mold for the perforated block survives). The hard part was matching the color and texture of the new blocks to those of the old. At least 20 recipes were tried and rejected before the architects, going by Wright's original proportions of cement to sand and the knowledge that the original blocks were made at the house, tried adding the decomposed granite they knew was on the site. It did the trick. Patching the holes and touching up the bungled previous attempts at repair proved an even bigger headache. But the patient, resourceful artistry of Peter Puren, who restored all the concrete, produced nearly seamless results.

The house now looks as if it has never received anything but loving care. Apart from a skillful, virtually invisible installation of new electrical, security, and audio-visual wiring, the only parts of the house that were not strictly restored were the bathrooms, which had been previously modernized, and the kitchen. The latter was a bone of contention, with the architects arguing for preservation and the client for renovation. The client prevailed, and under Linda Marder's direction, the new and improved kitchen remains sympathetic to the spirit of the original. Marder and Silver also continue to search out furnishings, by Wright and others, that suit the house, for which no furniture was designed, except for the bronze light fixtures that have been restored according to Wright's original drawings.

Further restoration of the house and grounds continues under Silver's perfectionist eye. He likens architecture to movie-making in its translation of ideas from paper to finished product, and by all accounts, his producer's skills at coordination and decision-making were crucial in getting so many people to accomplish so much so quickly. Silver is one of a small but growing number of architecture buffs who are buying and restoring houses by 20th-Century masters, reflecting the current interest in Modernist pioneers. These are private undertakings, with no tax credits from Uncle Sam to sweeten the deal; and the current costs of real estate, construction, and good craftsmanship are high. Granted, Silver obviously has the wherewithal to do things right, but for him, Eric Wright, Weil, Marder, and everyone else involved, the project was also a labor of love. **Pilar Viladas**



Tucked into a small lot on a Los Angeles hillside, the Storer house sits atop a series of steps and terraces that lead to the front door, which is neatly camouflaged among the tall south windows of the house's central mass, to the right of the bedroom wing (this page).



A section through one of Wright's textile-block walls illustrates the double-wall method of construction that creates identical interior and exterior walls, separated by an air space that provides insulation and moisture protection for the interior. The channels along the edges of the coffered blocks form joints that are filled with reinforced concrete and tied with horizontal rods.

The house consists of a cen-

tral pavilion that contains the entry and dining room on the first floor, and living room on the second, and which is flanked by the bedroom and kitchen/service wings. The vertical emphasis of the central mass creates the impression of a single, two-story space within. A photo of the house from the 1930s (above) shows the Wright-designed canopy over the east terrace; it will eventually be reproduced.



Peter Purenis



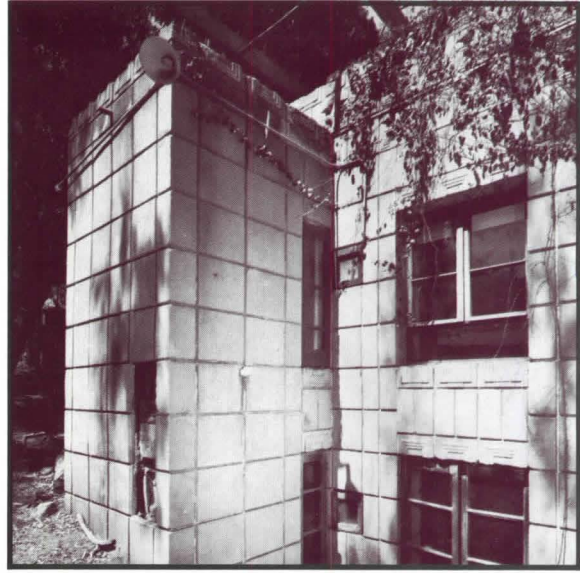
Peter Purenis



Peter Purenis

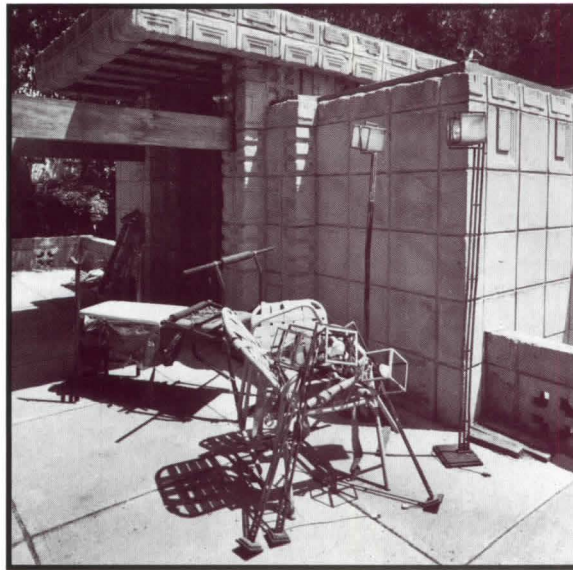


Carlos von Frankenberg, Julius Shulman Associates



Carlos von Frankenberg, Julius Shulman Associates

When Joel Silver bought the Storer House in 1984, signs of deterioration and neglect were everywhere. The block cornices over the kitchen and garage doors were sagging, and the soffit over the former was literally falling down (middle left). Rotting wood beams were replaced and reinforced (garage, top center), and the blocks were then simply reset. Elsewhere, blocks were missing (west wing, middle right) or badly weathered (south terrace parapet, top left), and dozens of holes had been drilled in both interior and exterior blocks (top right) during earlier attempts at "renovation." Previous repairs to the blocks had used a concrete that didn't match the original. Much of this was touched up in a painstaking process of sculpting, staining, and texturing to achieve a close match with the old blocks. When new blocks were manufactured, they were face blocks only, which were



Julius Shulman

carefully grafted onto the coffers of damaged blocks; it was decided that removing the entire block, coffer and all, from the walls was unnecessarily risky. Sagging retaining walls will have to be rebuilt entirely because water seepage has rusted the reinforcing rods. According to Robert L. Sweeney, president of the Friends of the Schindler House and author of a forthcoming book on Wright's textile-block houses, Wright failed to make the channel joints between the blocks sufficiently large to contain enough concrete to protect the steel from water damage.

The only furnishings that Wright is known to have designed for the Storer House are the bronze and glass hanging and standing lamps that were rescued from a junk pile on the site (left); they have been carefully restored according to Wright's original drawings.

Storer House

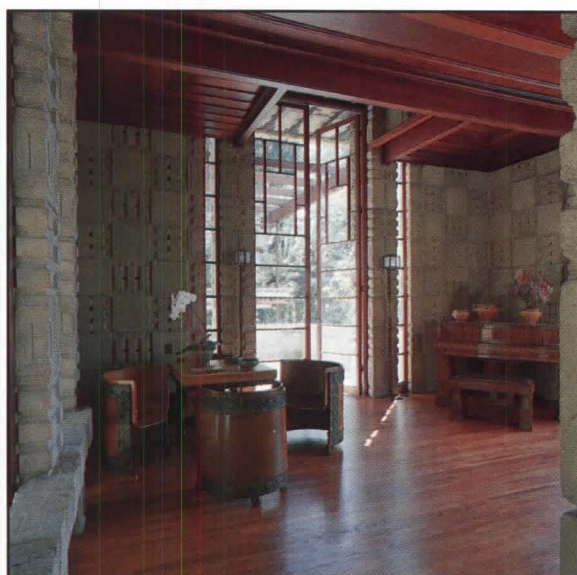
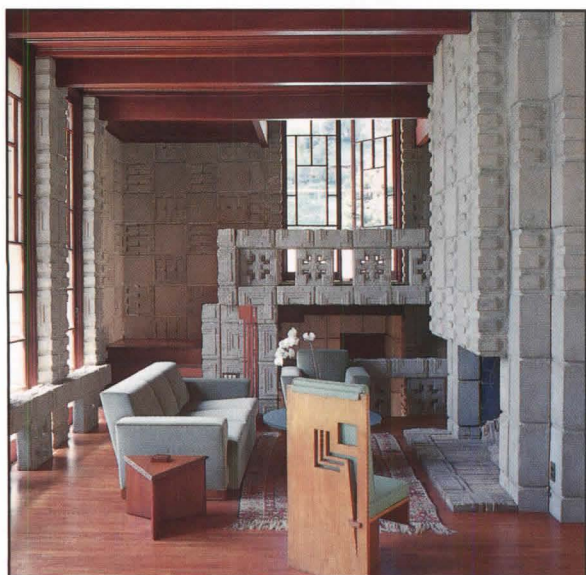
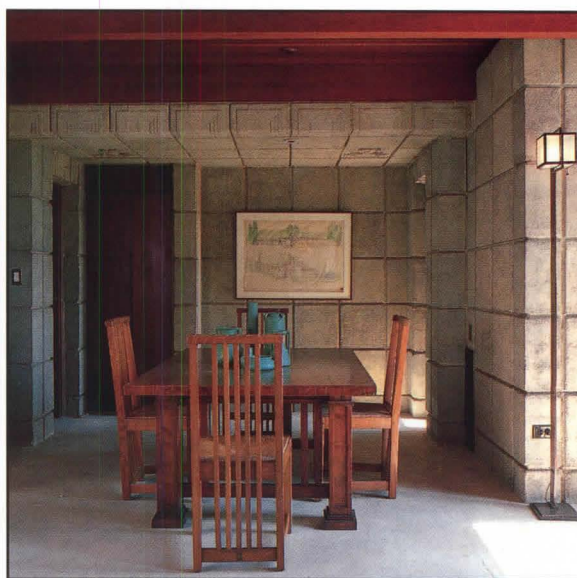
In the dining area (top right), a table designed by Frank Lloyd Wright for the 1908 Isabel Roberts house is surrounded by four Mission-style chairs produced by the Grand Rapids manufacturer Charles P. Limbert for the 1910 Canyon Hotel, Yellowstone National Park. The drawing behind the table is by Lloyd Wright; to the right is one of the restored bronze

lamps, the only furnishings Wright designed for the house. The Teco pottery, dating from 1886 to 1922, was produced by the Gates Potteries of the American Terra Cotta and Ceramic Company, Terra Cotta, Ill. Closely allied with the Prairie School, Gates asked many of its members, including Frank Lloyd Wright, to design Teco ware.

Grouped around the entry fireplace (top left) are a reproduction of a reclining chair designed by Wright for the Roberts house, and a reproduction of a 1928 sofa designed by Ilonka Karasz. Under a hanging version of Wright's bronze lamp is an original bookcase from his earliest and best known textile block house, the 1923 Millard Residence in Pasadena. The

sculptures are recent reproductions of pieces designed by Wright in 1924 for the unbuilt Nakoma Country Club and Winnebago Camping Ground Indian Memorial in Madison, Wisc.

In contrast to the low, sheltering quality of the first-floor entry, the second-floor living room (bottom left and right) is a tall, light-filled space. Around



Photos: Tim Street-Porter

the fireplace, a sofa and armchair were adapted from Wright's designs for the Imperial Hotel in Tokyo of 1916–22. The wood side chair is from Wright's 1956 Trier house, while the two low tables are part of the collection Wright designed for Heritage-Henredon in 1955. The standing wood lamp is a reproduction of a 1928 design by R.M. Schindler. At the other end of the living room, near the east terrace doors, are a

table and chairs from Lloyd Wright's 1926 Sowden House.

The only "non-restored" elements of these rooms are the numerous recessed downlights installed in the redwood ceiling by previous owners. Since they provide necessary light for the rooms in an unobtrusive way, they were left in place. New wiring was concealed between the double layers of the block walls, inside soffits, and behind original moldings in ceilings.

Project: Storer Residence, Los Angeles, Calif.

Original architect: Frank Lloyd Wright.

Architects: Eric Lloyd Wright, Malibu, Calif.; Martin Eli Weil, La Canada, Calif., restoration architect.

Client: Joel Silver.

Site: an irregularly shaped, 20,000-sq-ft hillside lot.

Program: restoration of an existing, approximately 3300-sq-ft house, and approximately 2500 sq ft of decks and terraces.

Structural system: reinforced concrete foundation; reinforced concrete block walls; wood beam roofs and second floor.

Major materials: concrete, redwood, glass (see Building Materials, p. 158).

Mechanical systems: gas-fired, forced-air furnace; electric wall heaters.

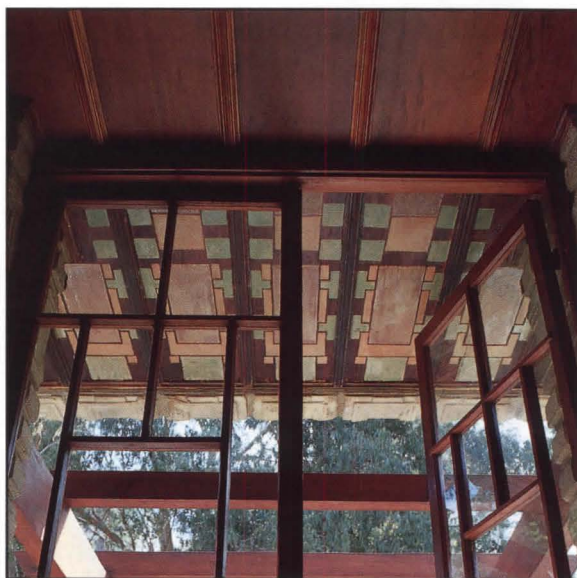
Consultants: Linda Marder, interior design; John Pilley, master carpenter; Peter Purens, masonry, concrete block restoration and manufacturing, tile installation and patina supervision; Thomas A. Heinz, Frank Lloyd Wright consultant; Richard Lucero, wood refinishing;

Dave Magee, electrical; Dick Lazzarevich, plumbing; Steve Thomas, landscape; Greg Bowman, Buffalo Studios, metals and lamp restoration; Dennis Boses, furniture restoration; Greg Cortina, security systems; Bruce Goldstein, audio/visual.

Costs: withheld at client's request.



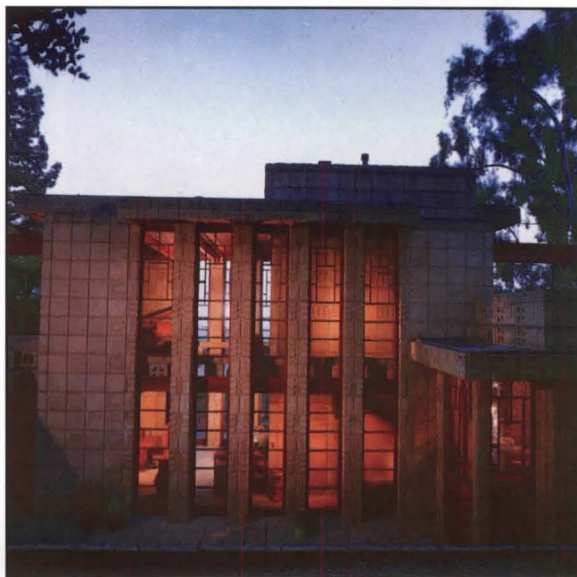
Julius Shulman



Tim Street-Porter



Tim Street-Porter



Julius Shulman

A view of the east side of the house (top left) shows the second-floor terrace (with sculpture by Los Angeles artist Guy Dill), restored kitchen entrance, and the redwood bifold garage doors that were part of Wright's original design but not built until the restoration. At ground level (bottom left), a single layer of perforated blocks creates a parapet. On the soffit above the east terrace (top right), the original stenciling had been

touched up—improperly—by hand; Wright's stencil design will be reproduced, and the similar soffits around the house will be restored. The north (rear) façade of the house's central mass (bottom right) is nearly identical to that on the south; when illuminated from within, its pavilionlike quality is even more pronounced. A swimming pool, designed for the house by Lloyd Wright, will be added in the backyard.

The Sincerest Form of Flattery

Substitute materials have lowered the cost of preservation—and raised the question: At what point is the integrity of historic buildings lost?



PRESERVATIONISTS have been busy fooling the eye—imitating one material with another. It's not some perverse pleasure that has driven them to such deception. It's necessity, born of the rarity or expense of original materials.

While many building products have emerged throughout history as substitutes for something else, most have only had to function like the products they replace. Initially, concrete construction only had to function like stone; steel, like cast iron; and brick, like adobe. The substitute materials required in preservation have an added twist: they must look like the original. It's a twist made all the harder by the modern stigma against imitation.

Ever since John Ruskin wrote that "the false representation of materials . . . (is) utterly base and inadmissible,"¹ modern architects have shunned imitation. "To be modern," said Frank Lloyd Wright, "simply means that all materials are used honestly for the sake of their own qualities."²

Modern architects sometimes veered from that ideology. "Modernists often used structural and painterly illusion," writes Barbara Flanagan in a recent *Metropolis* essay, "treat[ing] ordinary wood and stucco to look like metal, concrete, and other more industrial materials." Indeed, some of the materials most associated with the modern movement—gypsum board, for example, or veneered plywood—directly imitated the plaster or wood paneling that had become too expensive. The stigma against imitation simply meant that architects, until recently, didn't pay much attention to substitute materials, and didn't talk about it if they did.

What makes that lack of attention somewhat ironic is that the machine, so much a part of modern ideology, greatly facilitates the process of substitution. Economists depict that process as following an S-shaped curve. Every new material faces an early period of slowly rising acceptance, a middle period of rapid substitution for some older material, and an end period that tapers off as even newer materials emerge. With the advent of the machine age, the pace of substitution has increased to the point where the replacement or "improvement" of a new product begins soon after its introduction.

The Obsolete Original

The stigma against imitation aside, every effort should be made to use the original materials when preserving a building. Many original materials remain in production, and their costs remain competitive. The difficulties emerge when substitute materials have largely replaced an older product, making it more expensive or less available. Justifying the higher cost of original materials demands "value engineering," says Theodore Prudon of the Ehrenkrantz Group. "Life-cycle costs often show that original materials are as cost effective as their substitutes."

The lack of availability of original materials presents a more obstinate hurdle. Where substitute products have captured a large part of a market, an original material may be available only from a single manufacturer or, because "each new technology . . . turns its predecessor into an art form," as Marshall McLuhan once wrote, from artists or craftspeople. That can wreak havoc with

project schedules. Terra cotta, for example, "can take as long as one year from shop drawings to the delivery of the material," says Alvin Skolnik of Skidmore, Owings & Merrill. "What project can wait that long?"

Other factors working against original materials include the lack of skilled labor, the restrictions of codes or other regulations, even the problems of matching sizes, colors, and textures. But some of those same factors work against substitute materials as well.

Selecting a Substitute

Codes present one of the largest obstacles to substitute materials. Fiberglass cornices, for example, are not allowed in some cities if they occupy more than a small portion of an elevation. Fire codes also limit the use or require the intumescent coating of some polymer-based plaster substitutes in rated corridors.

Unions, too, can present a problem with some substitute materials. Hymen Myers of the Vitetta Group tells a story of two unions who argued about which one had jurisdiction over the installation of an epoxy substitute for plaster. "The carpenters claimed it because it went up like wood and the plasterers claimed it because it looked like plaster," says Myers. "Because it required carpenters' methods and tools, we settled on the carpenters." Unions also may determine whether to use a substitute material at all. "If it's a union job," says Myers, "you might want to use plaster. If it's nonunion, you might go with a substitute."

A lack of performance standards for some substitute materials presents another barrier to their use. Some materials are so new, or at least so new to the building industry, that no existing standards cover them, and some substitute material industries are so young that they have not had time to develop their own voluntary standards. "When using a largely unknown product," says Al Skolnik of SOM, "the risk should be identified to the client." He recommends, in such cases, investigating the company itself. "Go to the plant, spend a day looking at the equipment and talking with the people. Try to identify the company's level of knowledge, its financial resources, and its support for the product."

David Look of the National Park Service has listed some of the technical issues that architects should consider when selecting a substitution. In terms of its physical compatibility, the substitute material, unless used as a structural member, should have a strength equal to or less than the original, a coefficient of expansion and a porosity as close as possible to the original, and a chemical composition compatible with the original. Its dimensions, too, must be considered. "A thinner material," says Hymen Myers, "will expand and contract at a faster rate, even if its coefficient of expansion is similar to the original."

When weighing its visual compatibility, Look recommends checking the substitute material's color, texture, and reflectance when both wet and dry, to account for any differences in porosity. He also recommends marking the back of the material and keeping accurate records of the replacement components for future owners, and cautions against artificially weathering or antiquing the substitute material. "Future weathering and aging of the original and replacement

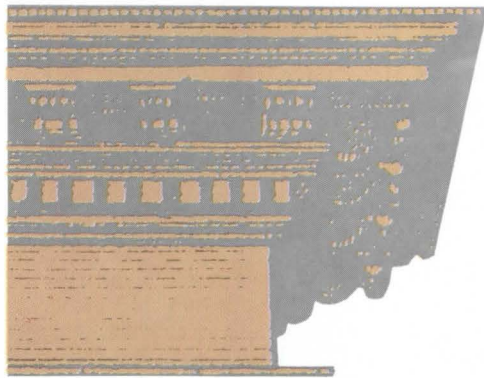
materials may make the antiquing extremely obvious."

Among the issues that affect appearance, "color-matching is the single biggest headache with substitute materials," says Michael Brennan of Panatech. "When providing a material supplier with samples of an original material to match, make sure that they have been cleaned in the same manner as the rest of the building and that they are representative of the original colors."

Another consideration, often overlooked, is the different static charges among materials. After the Vitetta Group had replaced missing granite ornament with epoxy in Philadelphia's City Hall, "the client called to tell us that the epoxy had discolored," says Myers. "What happened was that it had attracted more dust than the polished granite and lost its surface gloss."

Functionally, a substitute material should have the same durability, water-shedding capabilities, and maintenance properties and schedule as the original. Look also recommends installing the substitute material in a way that allows its easy removal in the future.

Of all the issues related to function, the durability of substitute materials most divides preservation architects. Some don't like the speed with which we embrace substitutions. "By the time we know how a substitute material behaves," argues Theodore Prudon, "we've abandoned it. We also don't account for the lag time between the development of a new material and the development of its detailing; too many suppliers don't know



how their materials work in a building." Prudon concludes that "the history of substitute materials is not a happy one. In general, they have more problems than the originals."

Max Ferro of The Preservation Partnership expresses the opposite view. "As an architect, I'm more pragmatic than most conservators. If a substitute material saves money and solves a problem, then use it, even if something better comes along ten or twenty years from now. If I'm dying and there's a drug that might save me, I'm not going to want to wait around while it's tested."

Submitting Samples: Terra cotta

Any review of substitute materials must be selective; too many different materials and different applications exist. Of all the areas in which substitute materials are being used, the replacement of terra cotta is certainly one of the most active.

As a cladding material, terra cotta emerged about a century ago as a substitute for stone and began to decline in use about

fifty years ago with changes in taste and the economics of building. While still produced, it suffers from a high cost, too few manufacturers, and long delivery times.

Cast stone, a form of precast concrete, may be the most familiar substitute for terra cotta. Using plaster or rubber molds made from the terra cotta, manufacturers tamp down an initial layer of cement and sand. To get a good color match with the terra cotta, they'll often use white Portland cement with various pigments and fine stone aggregate. While the procedures after that vary among manufacturers (some use the same cement throughout, others key that initial layer to a concrete backup) the result is the same: a dense, stonelike surface.

Cast stone has many advocates. Theodore Prudon, who specified cast stone as a replacement for damaged terra cotta on the Woolworth Building in New York City, lists as the material's advantages "a long history of use, structural capabilities, and a sizable production capacity among its manufacturers." Jerry Stockbridge of Wiss, Janney & Elstner also cites, as an advantage of cast stone, "its minimal shrinkage, and the ability of casting replacement pieces on site," as the Woolworth's owners now do.

But even its supporters admit to some drawbacks. "It's heavier than terra cotta," says Prudon, "and it presents problems matching the surface finish and color of terra cotta." Stockbridge adds that "it's particularly difficult to match a glazed terra cotta surface. Cast stone is not as shiny, and any clear coatings that might be added to the surface will wear off." Also, because of its different porosity, "cast stone will look darker than terra cotta after a rain."

Diane Kaese of the Ehrenkrantz Group enumerates other issues to keep in mind when using cast stone. "Air entrainment can create bubbles at the surface, and release agents in the molds can stain the surface. Some manufacturers, by carefully controlling their mix, have eliminated reinforcement, but that has led to problems with the cracking of units when lifted."

A related but much newer substitute material for terra cotta is glass fiber reinforced concrete (GFRC). Most of its manufacturers use compressed air guns to spray a 1:1 sand-cement slurry, containing chopped, alkali-resistant glass fibers at 5 percent by weight, into a mold. They then compact the cement using serrated rollers that also force the glass fibers into the mix. The result is a panel about one inch thick.

GFRC offers several advantages as a terra cotta substitute, with its thinness and lightness the most important. Those characteristics make the installation of the GFRC units easier, and unlike precast units, don't add any weight to the building's structure. "Another advantage is GFRC's formability," says James Magnuson, president of a company entitled GFRC. "It's easier replicating intricate terra cotta detail in GFRC than in precast concrete."

The very thinness of the material, though, requires that some care be taken in both its manufacture and detailing. "Some people claim," says Magnuson, "that GFRC has a different coefficient of expansion from precast concrete. It doesn't move any more than concrete, but, because it has less mass, GFRC



reacts faster to changes in temperature." The joint material must be able to withstand that faster movement. Other detailing issues to keep in mind include slightly rounding outside edges and spacing ribs far enough apart to ensure that the rollers adequately compact the cement, and providing tapered edges on the molds to ease the removal of units.

The issue that has most plagued GFRC is its embrittlement as the alkali in the cement slowly attacks even alkali-resistant fibers. "To prevent that," says Edward Knowles of Lafayette Industries, "most companies now modify the cement with polymers that improve ductility and reduce alkali attack."

A third substitute for terra cotta is polymer concrete, a material consisting of polymer resins and fillers. "The resins can be all polymers or polymer-modified cement," says Vance Stainer of Panatech. "With the fillers, their shape matters more than what they are. Rodlike fillers work better in tension; spheres, better in compression. Most composites contain hollow glass spheres to reduce density and increase compressive strength."

Casting the polymer concrete involves placing the resinous material into a mold and inserting boxlike plugs into the back of the mold to form the cavities and ribs of the units. Pigments, integral to the mix, allow the matching of any color.

Polymer concrete has the same advantages of thinness, lightness, and formability as GFRC, and has an advantage in being able to match glazed, even speckled terra cotta finishes. Still, some architects have expressed doubts about the material. Al Skolnik discovered, by conducting his own freeze/thaw, acid rain, and weathering tests, that the polymer concrete under consideration discolored considerably, chalked modestly, and warped in temperatures as low as 100 F. Other tests "at higher temperatures," says Dr. Stephen Carr of Northwestern University, "have shown no warpage but some yellowing of the material when subjected to ultraviolet light. In the field, however, the microscopic erosion of the material's surface maintains its original color."

Another reservation voiced about polymer concrete—and GFRC—has to do with their thinness when placed in a wall. "I'd hesitate," says Jerry Stockbridge, "replacing terra cotta, which can take a considerable load, with a thin material backed by an air space. Even when shelf angles support the replacement material, the forces in the wall will flow to either side, overstressing and possibly cracking the adjacent terra cotta. Non-load-bearing substitutes are fine for urns, ornament, and the like, but in the plane of the

wall, I'd use a load-bearing material."

Of the noncementitious substitutes for terra cotta, fiberglass is the most commonly used. Into an open mold, fiberglass manufacturers first spray a polyester resin gel-coat, containing pigments and various additives. When the gel-coat has become tack-free, they lay, by hand, laminations of glass fiber and polymer resin, which contains a monomer that chemically fuses with the back of the gel-coat. Some manufacturers add tubing to the fiberglass to increase its structural strength and decrease warpage. Fiberglass is not well suited for the replication of intricate detail because the glass fiber laminates cannot make tight curves. The unreinforced resin can crack.

Thinner and lighter weight than the cementitious materials, fiberglass finds its most use as a replacement for terra cotta cornices or other non-load-bearing elements. Attached with stainless steel fasteners or epoxy adhesives to its substrate, fiberglass is, as one manufacturer put it, "just a façade."

The controversy surrounding the burning of plastics has enveloped fiberglass. To retard its melting when exposed to flame, companies either use fire retardant resins, which cost slightly more than the standard resins, or add aluminum trihydrate, a fire retardant, to the gel-coat. "One problem," claims Theodore Prudon, "is that, as the fire resistance increases, the ultraviolet resistance of the fiberglass decreases."

Prudon, who has used fiberglass in some of the Ehrenkrantz Group's preservation projects, stresses "the importance of quality control. The thickness, fiber content, gel-coat—all affect its performance. Also, fiberglass has ten times the coefficient of expansion of masonry, so it must have room to move."

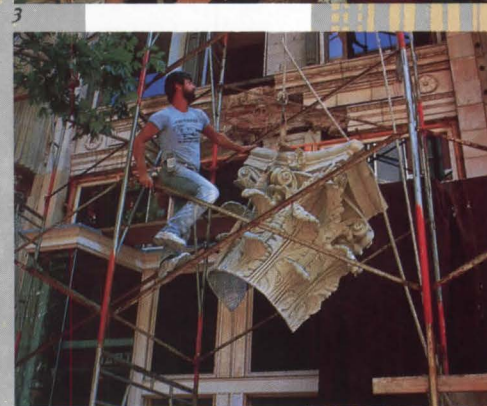
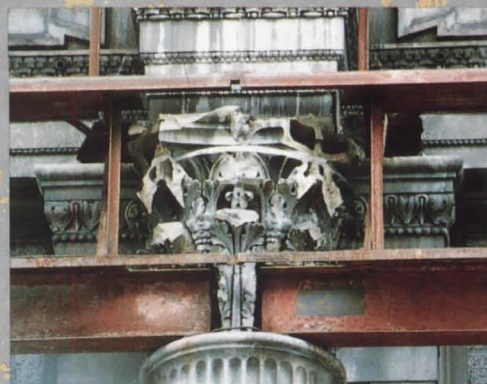
William Burgin, whose firm the Estes/Burgin Partnership used fiberglass to replace a terra cotta cornice, adds that the large caulk joints caused problems where the fiberglass and terra cotta met. "Because fiberglass is so dimensionally variable, the joint kept separating from the terra cotta," Burgin also notes the deformation in the fiberglass that can occur if the molds are reused too often. "What makes quality control so difficult," says Al Skolnik, "is that this is still a cottage industry, with no industry standards for buildings. I can't stress enough the importance of architects doing their own testing of these materials."

Wood

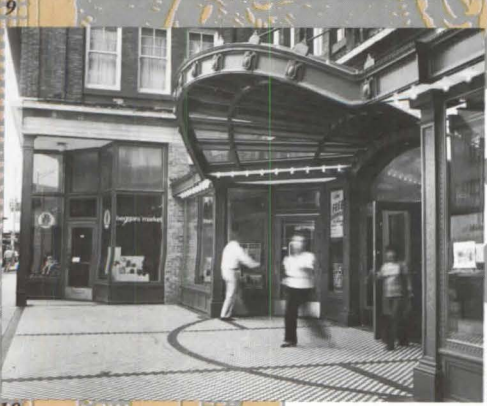
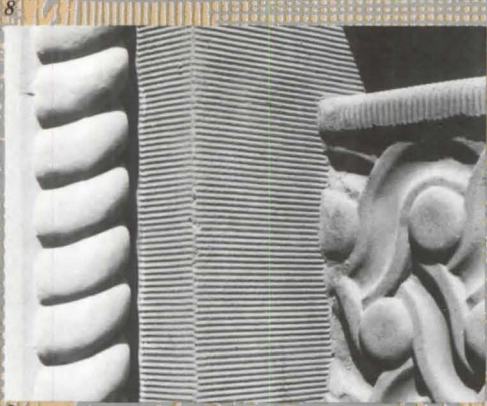
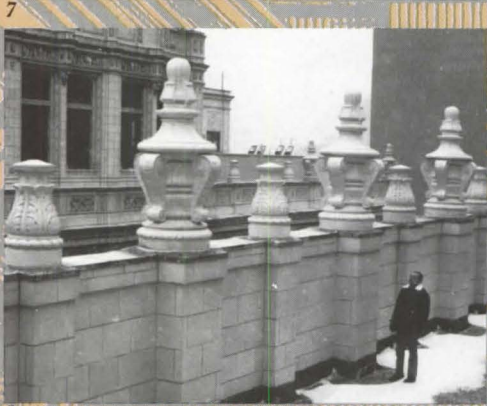
Some substitutes simply strengthen rather than replace the original material. The epoxy consolidants for wood fall into that category. Used where the removal of rotten wood in sills or plates, for instance, would be too expensive, or where the wood has some irreplaceable decorative or historical importance, epoxies can, at once, glue, consolidate, and patch deteriorated areas.

Most contain two-part epoxies and a filler material. The epoxies impart the adhesion, while the microballoon fillers increase the viscosity and workability of the material. Injecting the epoxy into the wood involves drilling a series of closely spaced, overlapping, ¼ to ½ inch holes and squirting the epoxy into the holes, working from one end of the wood to the other to prevent trapping air. The

The sequence of photographs (right) follows the process of making a fiberglass capital for the façade restoration of the Old Providence Journal Building in Providence, R.I., by the Estes/Burgin Partnership. The terra cotta clad, Classical Revival building had received a green metal front in 1954. The top photograph (1) shows the condition of the terra cotta capital after the metal front had been removed. Finding the terra cotta too expensive to match, the architects decided to use fiberglass for the cornices and capitals, cast stone for the walls, and limestone and granite for the base of the building. The first step in making the fiberglass capitals involved making a silicone rubber mold of the damaged capital, removing the cured rubber from the building, and taking it to a studio, where a fiberglass positive of the damaged capital was cast. Artists then added plasticine clay to that positive to fill out missing detail (2) and made a second rubber mold (3). Into that rubber mold, supported by a more rigid mother mold, the fiberglass manufacturer then sprayed a gel coat and a layer of chopped glass fibers and resin, followed by reinforcing struts, glass fiber matting, and a final layer of fibers and resin. Once the resin had cured and the molding had been removed, a final gel coat was applied to the surface. The lightweight fiberglass was then lifted into place (4) and attached to the sand-blasted metal brackets that originally held the terra cotta (5).



John Lovell



The photographs (left) show a range of substitute materials. As the Estes/Burgin Partnership discovered in the façade restoration of the Old Providence Journal Building, some older technologies, such as cast and carved stone (6), have become cost effective substitutes for terra cotta, a material that once served as a substitute for them. The terra cotta replacement at San Francisco's Fairmont Hotel, by Mario Gaidano Architects, involved glass fiber reinforced concrete (7), a lightweight cementitious material that gains its tensile strength from chopped glass fibers rather than steel reinforcing or fiberglass mats. Polymer concrete, used in the replacement of the finials on Chicago's Wrigley Building (8), combines polymers, resins, and hollow glass bead fillers to replicate terra cotta. Holabird & Root, in the façade restoration of the Marquette Building in Chicago, replaced damaged terra cotta with matching material, but substituted the missing cast iron storefronts with cast aluminum (9). Fiberglass allowed architect John Vinci to replace missing cast iron ornament on the façade of Scoville Square in Oak Park, Ill. (10)

wood should be dry and any cracks sealed prior to consolidation. Once set, the epoxy can be planed or coated like any piece of wood.

It sounds easy, but "this is not for amateurs," warns Michael Devonshire of the Center for Building Technology. "Respirators should be worn when working with the microballoons, and ample ventilation is required with the epoxy. The timing and temperatures also are critical." For that reason, it's best to hire an adhesive engineering firm that "will formulate a consolidant for the particular job and have their people install it," says Max Ferro. "That may seem expensive, but it isn't if it saves having to dismantle or jack up a building."

Roofing

Not every substitute material encompasses advanced fiber or polymer technology. Some, such as those used as replacements for wood, slate, or tile roofing, involve mainly low-tech materials: cement, metal, asphalt, and mineral fiber.

The asphalt shingles, meant as substitutes for wood or slate, have the lowest cost and lightest weight. But they have a shorter life than the other substitute materials and, at least close up, look the least like the original roofing. Cement imitations of wood and slate shingles have a longer life and offer a more realistic imitation than the asphalt shingles, but cement has the drawback of a higher price and a much greater weight. The cement tiles also have a thicker profile than most slates.

A third substitute for slate—mineral or asbestos fiber shingles—comes the closest to imitating particularly thin slate, at less weight and a considerably lower cost than the original. The concern most often expressed with this material is its asbestos content. Because silicone cement encases the asbestos fibers, which constitute only about 15 percent of the product, "the shingle must be literally pulverized," says Marilyn Mueller of Superdur, "to release the fibers." Still, the development of nonasbestos shingles is underway. "A likely modern substitute for it is fiberglass," writes Patricia Poore in the *Old House Journal*. "Unfortunately, fiberglass imparts a reflectivity (shine) that makes the shingles less convincing. Other . . . manufacturers have considered using polypropylene fibers."

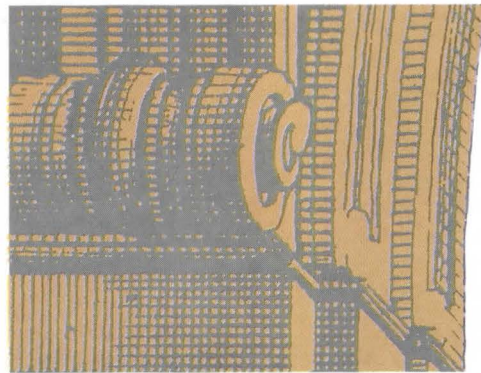
Cement and metal typically vie as substitutes for clay tile roofing. Both materials have a lower cost and easier installation than clay tile. The cement substitutes have a longer life and better fire rating, but a much greater weight than the metal. "The metal tiles," says Anthony Gillett whose company, Monier, makes both, "are best for roofs engineered for shingles. What most metal manufacturers struggle with is imitating the clay tile's appearance. Some companies coat the metal with bitumen and a granular surface, which eventually wears off; others paint the metal, but it tends to look too uniform."

Cast Iron

Metals also serve as replacements for other metals. Cast iron is one example. "Cast iron forms," says Joseph Sorrentino of the Vitetta Group, "are no longer available in large sizes, so you either have to use smaller iron pieces or go with a substitute." Aluminum offers

one option for replacing large pieces of cast iron. As John Waite writes in the National Park Service publication, *Metals in America's Historic Buildings*, "Aluminum weighs about half as much as cast iron but shrinks twice as much, at a rate of about $\frac{3}{8}$ inch per foot. Where aluminum is used, it must be isolated from the cast iron components by nonporous, neoprene gaskets and/or butyl rubber caulking to avoid galvanic corrosion."

Fiberglass offers another, nonmetallic replacement for cast iron. Architect John Vinci used fiberglass to replace the missing cast iron window trim in a historic Oak Park, Ill.,



building. "The fiberglass had the same dimensional properties as cast iron, allowed longer runs of ornament than is possible in iron, and had an integral color. The problems we've found with it are that fine cracks can develop and the heat can buckle it."

How Much is Too Much?

Is there a limit to the number of substitute materials or to the number that any one building can sustain? The answer to the first part of that question is an easy "no." If the history of technology is a history of substitutions, then any limit to the number of such materials seems as unlikely as an end to technology itself.

The answer to the second part presents more of a problem. Certainly a limit exists to the number of bad substitutes a building can sustain—materials that are unconvincing imitations, that can cause physical harm to the building, or that involve the destruction of the building's original features. But what of the good substitutes? If they offer a convincing imitation of a nearly obsolete material, at a lower price, without damaging the building in any way, why not use them?

Taken individually, good substitute materials seem harmless enough. Indeed, so few have emerged that truly fit the requirements of the preservation community that their numbers haven't been an issue. If we can assume, though, that many older materials will continue to increase in price, that the process of substitution will continue to increase in pace, and that the really good substitute materials will continue to increase in number, then the amount any one building can sustain will become a matter of concern.

Ruskin, like so many after him, saw the avoidance of all imitation as the only solution. It's an expedient course, but one that makes preservation more expensive and, thus, less viable. Yet, as more and more architects have put preservation over principle and embraced substitute materials, the questions remain: At what point does a building lose its

integrity? When does it become more substitute than real? Will we, with all the best intentions, someday have only polymers to preserve? **Thomas Fisher** ■

Acknowledgments

We would like to thank the following people for contributing to this article: Alvin Skolnik, Skidmore, Owings & Merrill; Hymen Myers, Joseph Sorrentino, Studio Four/the Vitetta Group; William Burgin, Estes/Burgin Partnership; Walker Johnson, Holabird & Root; Vance Stainer, Michael Brennan, Panatech; Fran Rappaport, Focal Point; George Balta, University of Pittsburgh; Ahmad Sleiman, Sleiman Studio; Edward Michaels, Fiberglass Tooling & Specialties; James Magnuson, GFRC; Theodore Prudon, Diane Kaese, The Ehrenkrantz Group; Michael Devonshire, Center for Building Technology; Max Ferro, The Preservation Partnership; Marilyn Mueller, Superdur; William Nuckel, Astraline; James Tyler, Lifetile; Wade Werry, Alcoa; Max Garcia, Garcia/Wagner; Anthony Gillett, Monier; Joseph Fritsch, National Certified Fire Retardant; Giles Ziolkowski, Wolverine; Soheila Burke, Miller Stephenson; Terry Lacer, Metal Sales; Dr. Stephen Carr, Northwestern University; Peter Bacchioni, GAF; Jesse Horvath, Joseph Chronister, Metz, Train, Youngren; John Vinci, John Vinci Architect; Jerry Stockbridge, Wiss, Janney, Elstner; Richard Bergmann, Richard Bergmann Architects. Edward Knowles, LaFayette Manufacturing.

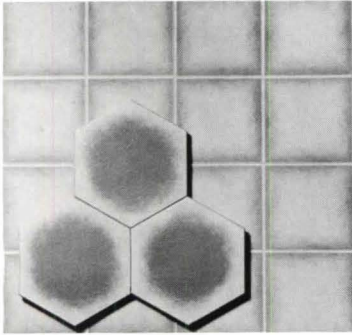
1 John Ruskin, *The Seven Lamps of Architecture* (New York: Farrar, Straus and Giroux, 1974), pp. 50–51.

2 From a speech Wright delivered in 1931 before the Michigan Society of Architects and the Grand Rapids Chapter of the American Institute of Architects, quoted in *An American Architecture*, ed. Edgar Kaufmann (New York: Bramhall House, 1955), p. 99.

Further Reading

No one source on this subject exists. *Epoxy for Wood Repairs in Historic Buildings* by Morgan Phillips and Dr. Judith Selwyn, is available from the National Technical Information Service (5285 Port Royal Road, Springfield, Va. 22161 (703) 487-4650). A.J. Brookes's *Cladding of Buildings* (Longman Inc., New York, 1983) has a chapter on GFRC. *The Old House Journal* (199 Berkeley Place, Brooklyn, NY 11217) has occasional articles on substitute materials. And *Guidelines for the Rehabilitation of Walls, Windows, and Roofing* (available from NTIS above) has information on the issues to consider when selecting substitutes.

Technics-Related Products



'Burnishings' laminated floor tile from the eden Collection has a shaded series of overlays that create the hand-rubbed, polished look of kiln-fired ceramic. The tile is available in nine color tones, which can be combined with the company's more than 1000 solid colors. There is a choice of seven surface textures, three beveled edges, and three sizes: 9" x 9", 12" x 12", and 8 3/4" hexagons. GMT/eden.

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Design-Cast® fiberglass laminates are available in both interior and exterior grades for non-load-bearing applications. In their natural state, they are white, but they can be mixed with almost any pigments. They can be moulded into any shape and can match the appearance of stone such as marble, granite, and sandstone; masonry; wood-grain or painted wood; and metals. The shapes are attached with mortar, adhesives, or mechanical fasteners. Design-Cast Corporation.

Circle 102 on reader service card

Roof tiles of concrete, in traditional configurations and in shake- and slate-look versions, are available in several colors. Each tile weighs about ten pounds; approximately 90 tiles are required to cover 100 square feet of roof area. Their density prevents water absorption and consequent weight gain. The tiles are completely incombustible and resistant to freeze-thaw damage. Monier.

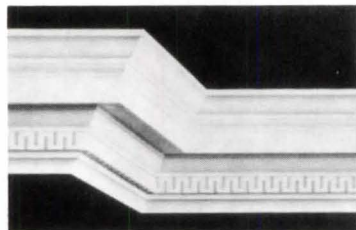
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Stile™ metal roofing is made from prepainted galvanized steel with the look of classic tile. The roofing sheets are screw-fastened in place. The galvanized roofing is primed and coated with DeSoto's Fluoropon®, which is chemically bonded to the primer. Colors are Spanish Clay, Riviera Sand, Tudor Brown, Slate Gray, and Ocean Blue. The roofing is described and illustrated in color in an eight-page brochure that provides assembly and installation instructions, maintenance information, and illustrations of accessories. Metal Sales Manufacturing Corp.

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ZROC glass-reinforced gypsum for interior and exterior applications is available in two grades. It is an inert material that can be moulded easily into column enclosures, corners, bullnose, coves, mouldings, and many other shapes. The surface can be painted, stained, or covered with wallcoverings, metal, or ceramic tiles. An eight-page brochure describes the material and illustrates shapes that can be produced. Architectural Shapes.

Circle 201 on reader service card



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Micro-Cotta™ polymer-based composite concrete can be used to reproduce terra cotta, brownstone, and other materials in restoration projects or new construction. It is resistant to fire and weathering and is colored throughout to achieve a nonyellowing color match. Its lighter weight means reduced installation costs, since it requires lighter scaffolding and lifting equipment. Typically, a Micro-Cotta block weighs 16 pounds, compared with 35 pounds for a terra cotta block. Simplex Products Div.

Circle 104 on reader service card

Glass Reinforced Gypsum (GRG) and Glass Reinforced Concrete (GRC) products, composed of noncombustible material, allow architects to incorporate unusual design elements economically. GRG is 1/8 inch thick; GRC is 1/4 inch thick, with lightweight metal channel reinforcement added where necessary. The products will accept standard painting techniques or they can be integrally colored during fabrication. A variety of textures are possible. Among products available are interior and exterior column covers, cove mouldings, column capitals, vaults, and ceiling coffers. Custom Castings.

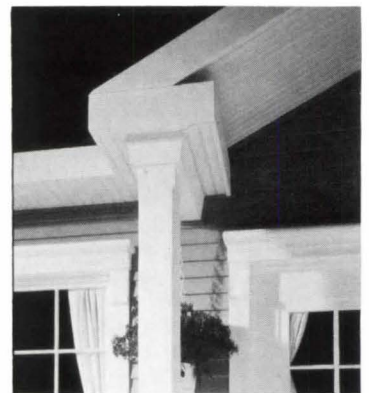
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Contour II vinyl siding is thicker than conventional aluminum siding. It has a wood-grained surface and integral color requiring only occasional washing. It is impervious to moisture, including saltwater spray, does not rot or corrode, and will not attract insects. Colors include white, almond, primrose yellow, willow green, gold, colonial blue, sandtone, and heritage gray. Alcoa Building Products, Div. of The Stolle Corp.

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Therma-Sill™ door sill is made from a dimensionally stable composite with a full thermal break. The wood grain finish with the look of natural oak can also be stained or painted. It holds screws, nails, and staples and resists solvents, acids, and other corrosive materials. Therma-Tru Corp., Insulated Door Entry Systems.

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Restoration Series Three™ includes beaded vinyl panels for exterior porch ceilings, eaves, and soffits or interior ceilings, walls, and wainscoting. The low-gloss finish looks and feels like wood and requires virtually no maintenance. Panels can be installed without special tools. A four-page brochure describes the panels, illustrates them in use, and provides general specifications. Wolverine Building Products.

Circle 203 on reader service card

[Continued on page 126]

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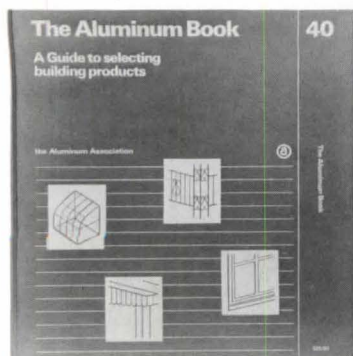
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The Aluminum Book covers aluminum products for residential and light commercial applications, with names, addresses, and phone numbers of suppliers. There are selected details that can be incorporated into working drawings. In loose-leaf format, the book consists of 86 pages organized by tabbed dividers, with space for the user to add related material. The book is \$25 and can be ordered from Publications Department, Aluminum Association, 818 Connecticut Ave., N.W., Washington, D.C. 20006.

Glass Fiber Reinforced Concrete (GFRC) Cladding, a 16-page brochure, explains the

material's composition and describes the forms in which it is used. Color photos illustrate and identify several buildings on which GFRC has been used and show the colors and textures available. Drawings illustrate construction details. Prestressed Concrete Institute.

Circle 204 on reader service card

Architectural Sheet Metal Products brochure describes and illustrates in color several types of roofs, wall panels, siding, and framing members. Metal roofing styles include tile-, shake-, and shingle-like shapes. The 32-page brochure provides a color chart of the several finishes available and includes construction details. Berridge Manufacturing Co.

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Micarta® woodgrain laminates reproduce graining and even imperfections of common and exotic wood species, ranging from light to dark shades. Technical data, applications, and fabrication information about Micarta laminates and color illustrations of the woodgrains available are included in a six-page

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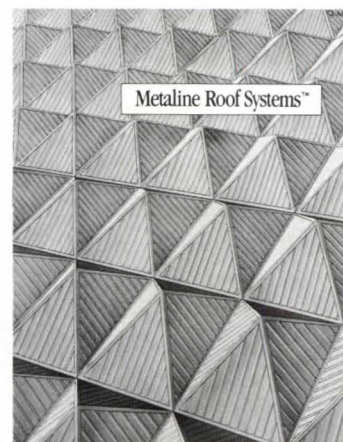
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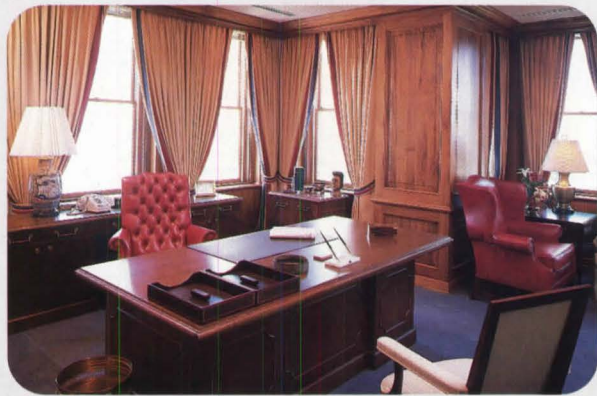
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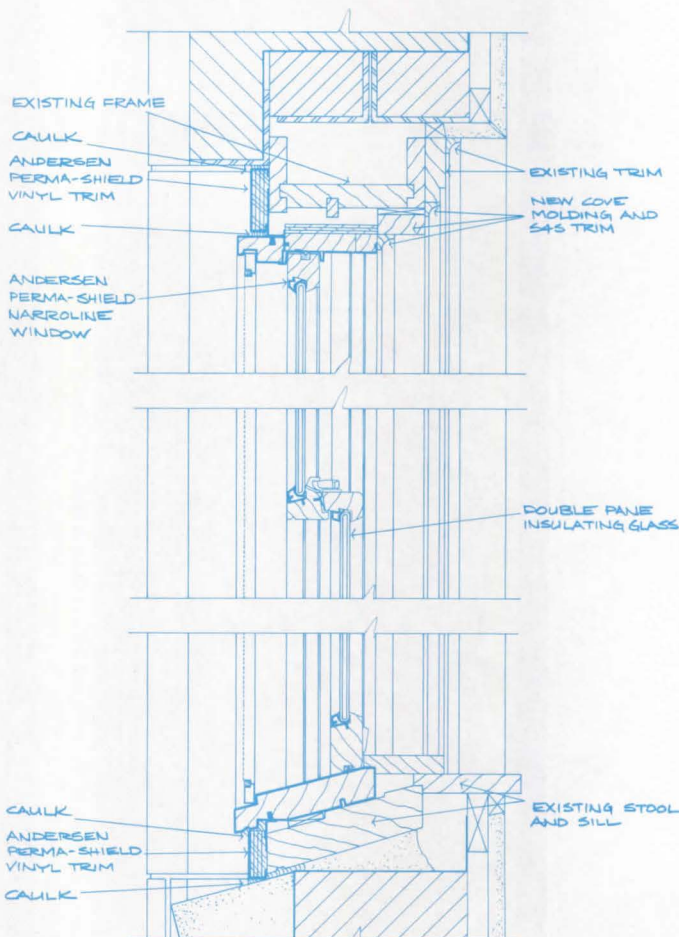
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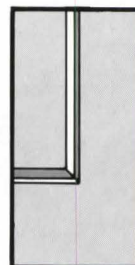


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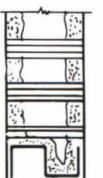
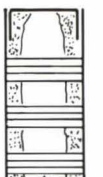
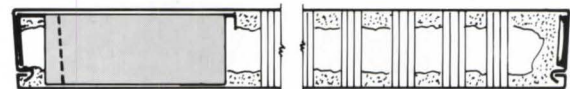
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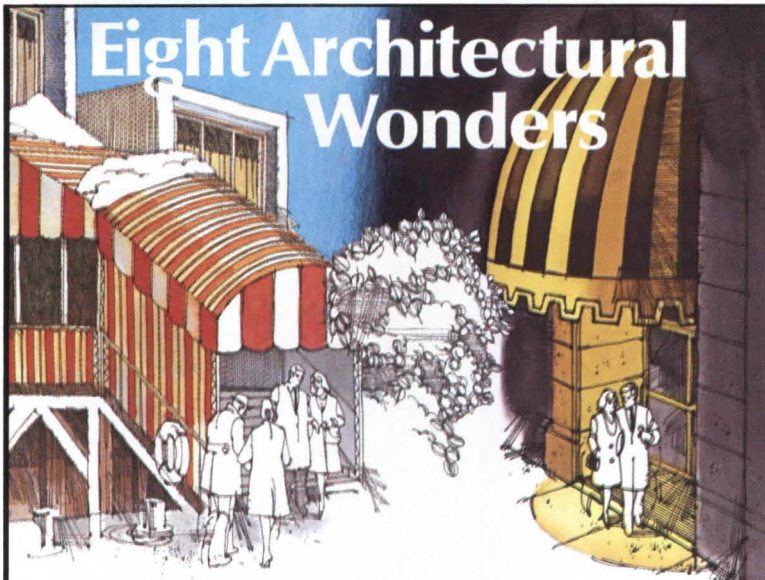
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Books

Architecture, Poetry, and Number in the Royal Palace at Caserta by George L. Hersey.
Cambridge, The MIT Press, 1983.
384 pp., illus., \$45, hardbound.

The Way to Caserta

Symbolism in architecture is the subject of this handsome, scholarly book about the Neo-Classical palace at Caserta, near Naples. Carlo di Borbone, the Bourbon King of the Two Sicilies who died Dec. 14, 1788, began a palace for himself in 1756 that was to be larger than Versailles, yet he would never spend a night under its roof. He worked closely from 1752 with its chief architect Luigi Vanvitelli who, in turn, was influenced by the recently deceased philosopher poet Giambattista Vico (1668–1744), whose ideas resulted in a three-dimensional extension of his unique theories of history, language, mythology, and the development of civilization.

This three-fold collaboration seems appropriately cyclical, for Vico's sense of history rests not upon a sense of linear progression so much as upon a cyclical process of repetition and renewal, or "Course and re-course (*ricorso*), as in the flow and ebb of the tides."¹ Vico held not only a chair in philosophy at the University of Naples but also had support from, among others, Filomarino, ambassador to the Borbone in Madrid, who then made the acquaintance of Vanvitelli, already a follower of Vico, who, in 1735 would become court historiographer to The Bourbons.

The building of Caserta and the plans for the unbuilt city of Caserta Nuova (which was to reeveque Campagna's ancient reputation as an earthly paradise surrounding the *nea polis*, Naples), as laid out by Vanvitelli, would be analogous to a *ricorso*² as described by Vico in the *New Science*: "Of the Recourse of Human Institutions which the Nations take when they Rise Again." This need to rise again describes the personal situation of Carlo when he assumed the throne in Italy, only to discover that all royal residences were virtually uninhabitable. The new capital was to replace the "degenerate" city of Naples.

Professor Hersey makes a comparison that emphasizes the project as symptomatic of *ricorso*: "If Caserta is read centripetally, as a Vichian poem of myth and number, the huge unfinished palace becomes the proposed Kremlin of Bourbon Absolutism. In its very size and universality, it is one of the earliest modern megapalaces, the forerunner of . . . buildings of the later British Empire, of Fascism and Nazism, and of America's enormous Classical temples in Washington, D.C." Caserta is an "early monument to central control," what nations stress when they strive to "rise again."

Hersey's book is valuable for its explanation not only of Caserta's physical history but

also of Vico's influence on his contemporaries. Though Vico's thought was indebted to various earlier figures including Tacitus, Bacon, Locke, and Leibniz, his views stood in opposition to those of the local Enlightenment writers who saw little importance in myth and found Vico's ultramonarchist views repugnant. The Bourbon court, however, embraced Vico's ideas as a defense against republicanism.

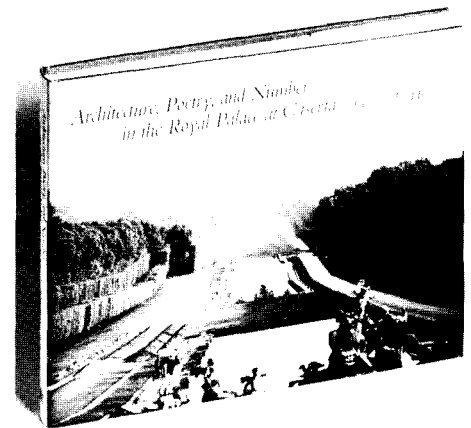
Vico is perhaps better known today for his influence on 19th- and 20th-Century aestheticians and writers such as Croce, Coleridge, Yeats, and Joyce. He is considered now to have been a precursor of modern thought, the inventor of a new way of philosophizing that integrates law, linguistics, and social science with mythology.

Vico's interest was in "considering this world of nations in its eternal idea, by that property of every science, noted by Aristotle, that science has to do with what is universal and eternal."³ The eternally renewing element of water, so central to Neapolitan myth, is, in *New Science*, an important metaphor, in the form of a river or the tides, for the development of thought and language whose process, in turn, was analogous to the historical stages.

The language of Caserta is quite obviously the heroic, or symbolic and figurative, and is used to justify and clarify Absolutism, which had the threefold support of mathematics, aesthetics, and mythological history. Thus is philosophy, and the architecture that it was to inspire, in the service of the political interests of the patron who must reestablish himself as Absolute Monarch.

The Palace of Caserta was planned as the climax of a ride north from Naples along a revived section of the Via Appia. But it can also be approached going south along a double avenue that flanks a carefully engineered river that flows from its wild underground origin in the hill known as Colina de Briano. This two-mile river-road is inspired by the River Styx, which was thought to connect Campagna with the mythical underworld. The river-road flows down toward the Palace through representations of the civilizing stages analogous to the three Vichian ages of gods, of heroes, and of men.

Vanvitelli's "obsession with water" included his immense aqueduct that brought water to Caserta. He planned it to carry the river right through the garden on the north, then under the palace, and in the form of twin canals flanking the Via Appia, south towards Naples. Plans were often interrupted and changed. An original three-pronged or trident-shaped plan for the canal gave way to plans for the twin canal bordered by road-



ways and punctuated by sculptured fountains illustrating mythological scenes, and suggested the idea of adding a Neptune fountain and making the river through the garden dip underground three times. Plans for an equestrian statue-fountain were dropped in 1763 in favor of a stepped ramp with jets and fountains; the idea of erecting a triumphal arch at that point was abandoned and later incorporated into the structure of the palace.

Carlo himself, trained in architectural drawing, took an active part in revising Vanvitelli's ideas after he had previously rejected as too ambitious the scheme of a younger rival architect, Mario Gioffredo, whose style and ideas Vanvitelli imitated (and who, in turn, was imitated by Gioffredo). The earlier, colossal scheme for a megalopolis of nine grids with a central staircase was reduced by Vanvitelli to a four-grid scheme which incorporated triumphal arches at the central north-south vestibule, under which the river-road was to run from its hillside cascade and pool, marked by a large marble group of Diana and Acteon, to dip underground and then emerge as a lagoon ending in a fountain of Venus, again going underground, again emerging to flow beneath a group of Ceres and her court, and finally to widen into a second waterfall and a vast fountain of Aeolus. The overall scheme along the river-road is a process from the huge rough rocks above Diana's grotto through stages of increasing urbanity and control, culminating in the Dolphin fountain and palace. The river-road, engineered every bit as much as were formal gardens, terraces, and palace, was to reify and integrate ancient and sacred with the present civil reality. The sequence in the garden of hunters, slaves, released winds, and finally rooftop figures silhouetted against the sky illustrates stages in a gradual liberation; the climax of that progress to-

wards freedom is of course the king who would, in Vico's words, appear to his subjects as "a simulacrum of a god," having the quality of "amiable ferocity," an eternal triumphant.

In Vanvitelli's *Declaration*, 11 of its 19 large pages of text are devoted to the river-road entrance system's figural poetry. Poetry resides in the decorative aspects of fountains and palace, and in the paintings and sculpture. To visit the king meant getting through a series of conduits and baffles rather like the water in the river-road. Ornament justified this long screening process and was meant to purify each petitioner's motives. Internally, the palace mirrors and is mirrored by the structure of the garden/river-road. The palace is a geometric temple of government so that no matter what the errand, one has to follow a labyrinth to the ultimate goal, the One, the Absolute Monarch.

The importance of the idea of "enlightened despotism" for Vico, whose values were mythic, geometric, and absolutist, must be appreciated in order to fully interpret the structure of Caserta. Theorists who perfected the concept of an enlightened despotism deriving from dynastic myth included Hobbes, Leibniz, Pufendorf and, most important, Vico whose philosophy, founded partly on Pythagorean geometry, lent itself to enhancement by visual arts. For Vico, "rule by the One," is founded upon 1: one principle, one goal, one source, one central figure like the number 1; his realms, subjects, and laws are like the numbers that arise

out of 1 and are grouped in accord with laws of mathematical relation. Thus, both equality and hierarchy in society are determined mathematically.

Entering Caserta through the southern portal, the visitor meets the axis of the river-road extending from the north portal. One has the sense of joining with the king's forebears in the lower vestibule at the statue of Hercules who presides over his underground domain at the center of the architectural whole. With a view of the subterranean river of time, the visitor is ready to be raised, like Proserpine, through the graces of the god, to the upper world of the living king.

An appreciation of this metaphorical process depends, of course, upon the visitor's prior knowledge of myth and acceptance of the almost unavoidable role in the process as imposed by the scheme of the palace/garden complex. The beholder must become involved as performer in that state of mind (induced by both metaphorical analogy and logical progression through time/space) that is referred to in the art and that is benevolently necessitated by it. Thus, one learns not only by the example *seen*, but with the whole person acting in three-dimensionality within architectural spaces, the poetic process that is augmented by numerical sequences and their relative proportions and balances. This total involvement turns the simple act of entering a building into a heroic reenactment of a mythic quest; the petitioner's particular mission (however banal) becomes universalized experience. Rather than being inten-

tionally intimidated by the heroic scale, one is given encouragement to overcome awe and press forward, testing the worthiness of one's case against the significance of mythic and allegorical personages such as Apollo, Venus, "Truth," "Justice," and Germanicus and Antinous (who figure prominently in Vico's own pantheon as, respectively, emperor-builder and loyal follower of Ulysses). Their analogy with Carlo and his subjects is difficult to avoid.

With Vico, we are concerned with *signification* rather than *communication*; his "sign system" conveys a set of values that reinforce a social contract of the time, rather than referring to a body of *facts* that have positive or negative truth value. Our experience of these values is poetic, personal, and timeless, and in no way implies that we must embrace as "true," or reject as "false," the particular values as supported by that system (e.g., absolute monarchy, the physical or religious reality of the gods). Caserta enriches, if nothing else, one's appreciation of the function of metaphor on a grand scale.

Alison Armstrong Jensen

¹Ricorso is "... a historical, not a purely natural, process." *The New Science of Giambattista Vico*, Ed. Bergin and Fisch (Ithaca: Cornell Univ. Press Paperbacks, 1979), p. 1; see also pp. 351ff.

²Ibid., p. 1.

³Ibid., Axiom XXII 163, p. 26.

The reviewer is a doctoral candidate in comparative literature at New York University who teaches in the Humanities Department at Cooper Union, and is coeditor of *Irish Literary Supplement*.

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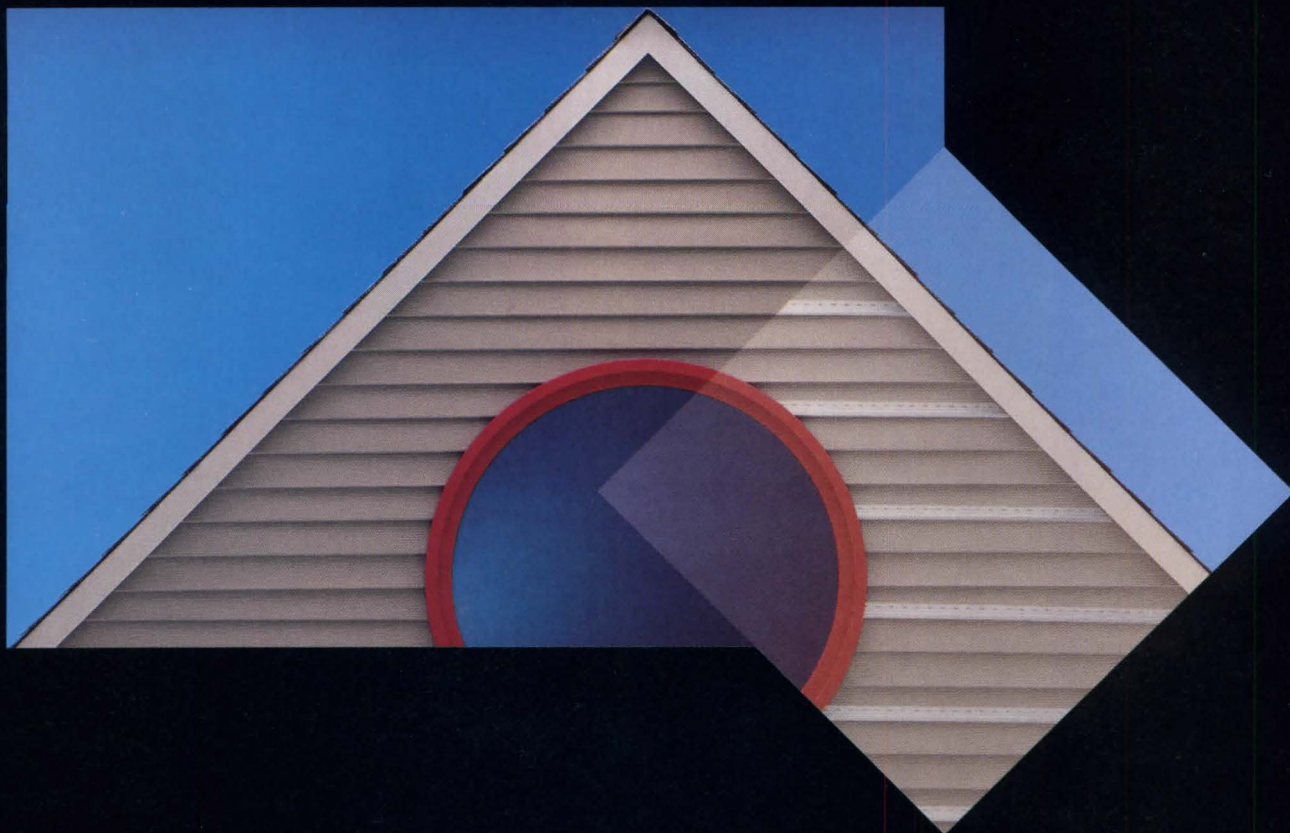
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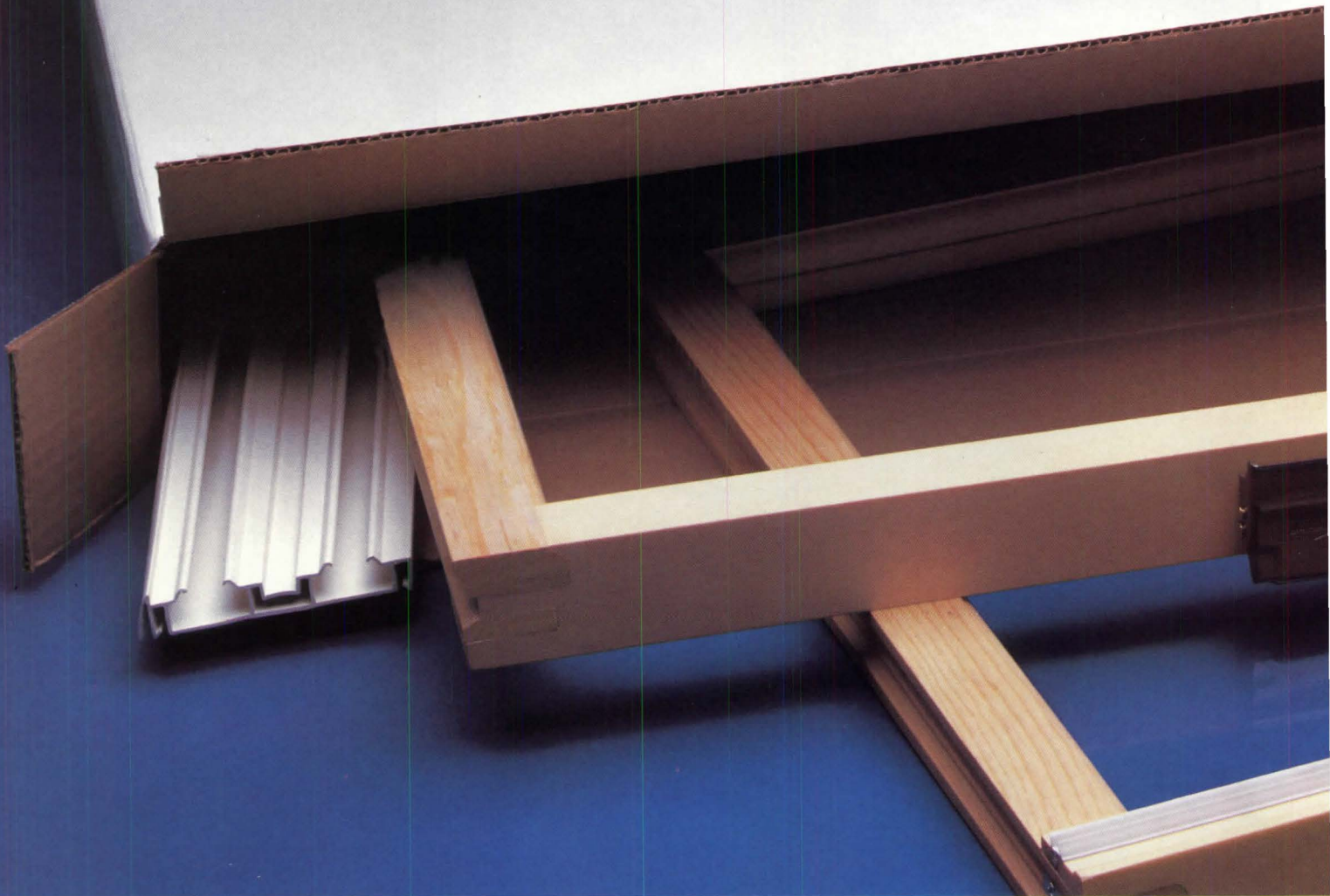


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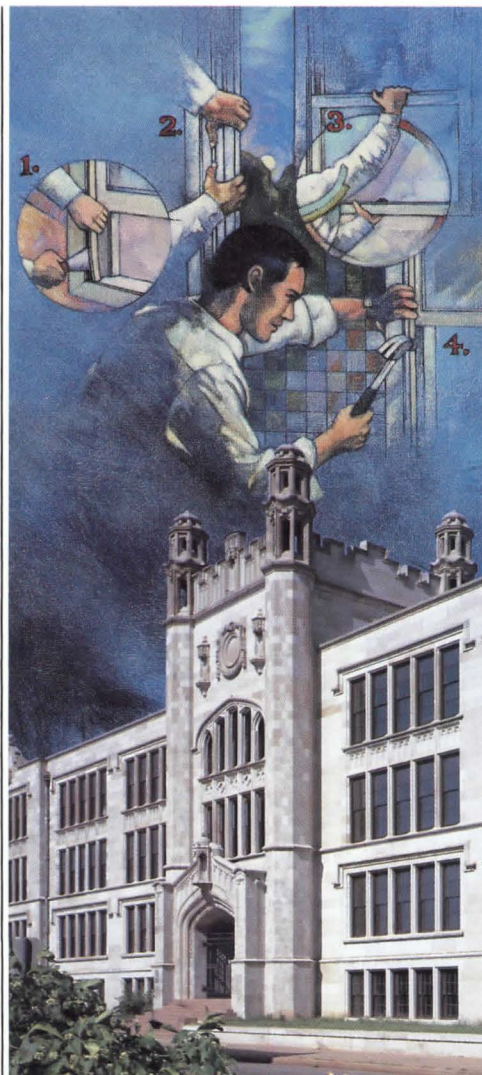
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I am not speaking for the Council when I criticize the tax act process, or any other review process, but I think, as an individual, that all the processes involved in the federal historic preservation program—the determination of eligibility process, the National Register nomination process, the Section 106 process, and the tax act process—are cumbersome. I think they involve too many tiers of redundant review. This is not to say that everything ought to be given over to the states. There has to be some way that state performance is monitored, some method for keeping the system under control and applying a standard across the country. But I seriously question the need to have each project and every set of plans and specifications reviewed at the same level of detail by the state historic preservation officer and the National Park Service, and if federal funds are involved, the Advisory Council. I can sympathize greatly with developers' complaints.

P/A: What can be done about it?

King: Some flexibility may be built in through regulation, but I think that, ultimately, change in the statutes governing

both the National Park Service and the Advisory Council will be necessary.

P/A: Mr. Luce, could the states handle the review of tax act projects by themselves with some federal overview, or is that just not feasible?

Luce: I think that's very feasible. It could be very similar to what has been done with the National Register program, in which early on, every nomination was reviewed by three or four different people. That process has been tremendously streamlined. The National Conference of State Historic Preservation Officers has been on record for some time as favoring a similar kind of process with the tax act, especially for projects that appear to have no problems. In other cases, where you're on the edge, it would become the states' responsibility to red-flag problems so that they could be looked at by the National Park Service. I think that most of the states would welcome that kind of process and I think it could help speed things up.

Rogers: A very important factor of the present process is that it is based on a standard. To turn any responsibility of the fed-

eral preservation program over to states or to local governments will mean some decline in evenness and quality. But having said that, let me say that the National Park Service claims authorship of the whole concept of decentralizing. As a matter of fact, the very position of state historic preservation officer was invented by the National Park Service. I assure you that we would be decentralizing further today if we could find it within our statutory authority to do so.

Longworth: There are big bucks that are coming out of the tax incentives. It can get very political. Most of the time, you're glad that there is a two-tiered system, that one level of government has a check on another level of government.

Luce: As we're talking about the retention of the tax benefits, we also should be talking about funding for this program. The present proposals would cut a million dollars from the states' budgets. Now, in the federal budget, a million dollars is not much. For the states, a million dollars is a great deal.

P/A: In conclusion, we'd like each of you to name what you consider the single most significant challenge facing preserva-

tion today.

Means: There's a tremendous amount of design review that's taking place, and in many ways, thanks to the Secretary of Interior's Standards, we have codified an approach to dealing with older buildings. The question is, given a generation of architects who have been schooled away from the past, how are we, on a very large scale, going to meet the design challenge of integrating new and old? We've focused for a long time on the single building, and a lot of the discussion today has focused on the single building. I'm therefore pleased to see the rising interest in urban design. The challenge, as I see it, is how to equip the profession, and the public officials who have to make design review decisions, to build structures equal in quality to the buildings that we've decided should remain with us as part of the ongoing heritage of the country.

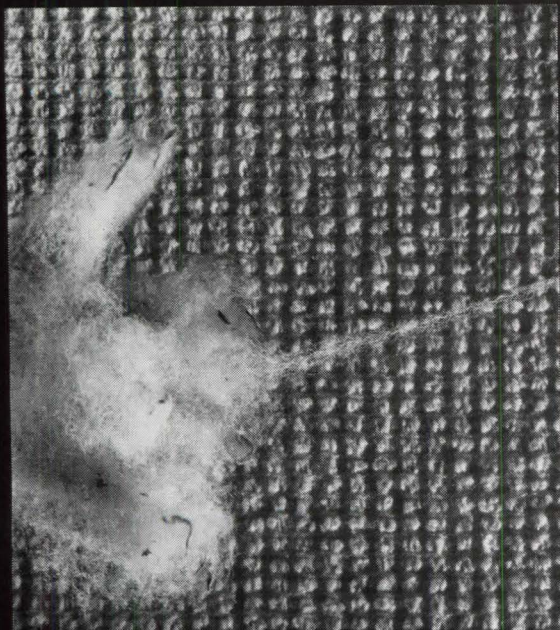
King: Perhaps the major challenge we have to face in the next few years is, in effect, the transformation of historic preservation into an integrated part of a larger program of im-

[continued on page 142]

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proving and managing the living environment through design review, urban planning, and land-use planning. *There's a constant tension within historic preservation between those who want to be part of something bigger, who see historic preservation as an integral part of designing, creating, and maintaining the environment for all people, and those who see it, for want of a better term, as something elitist, something designed to preserve that small segment of great landmarks that somehow embody the spirit of the nation, or that can be used to educate us about our country's past. There's always a great danger that we may fall back into the landmarks syndrome, because we can't really cope with the complexities of the larger context. But I would like to hope that we'll meet the challenge and see preservation evolve into part of something much bigger.*

Rogers: My response is very consistent with the two you've heard thus far. I think the challenge is how to keep preservation exciting, how to keep it dynamic, and yet at the same time, how to keep it from becoming so diffuse that it doesn't mean anything at all.

MacRostie: Over the last 20 years the idea of a preser-

vation ethic in this country has really matured. Those of us in the preservation movement, in the government, in the Trust, in Preservation Action, and in many other private and public institutions, should listen to the developers, and vice versa; those in the private sector should listen to those in the public sector, remaining open to change, to compromise.

Ferro: Public support and nonsupport, which of course ultimately will bless or condemn any program, is based on public perception of what that program is all about. *The most important challenge facing us here today is education. We've talked about guidelines, design review, publications, conferences, lobbying—all of these are educational activities. With all the money that has come into preservation with the tax act, we are beginning to be perceived as yet another big pork barrel that is giving a lot of public money away with questionable efficacy. If we are perceived that way, it is because the educational aspects of our programs have not kept up with the rise in money. Whatever we do to improve the tax credits and the standards, whatever we do to improve the mechanism of gov-*

ernment and of nonprofit or private sector organizations has to be directed to making our educational efforts more effective.

Chase: It is essential to internalize the sense that our physical heritage—natural and built environment—is part of what we are, and if we understand that history, it can improve the quality of our lives and draw us together in ways that are essential to any society. *Preservation, though it is a very small aspect of society, can and should articulate what society has been, should be and can be. I see that as a challenge in preservation and design.*

Luce: One of the major challenges, if not the major challenge, is the decentralization of the preservation process, providing the tools, the help, the assistance, and the education, so that on a local level sophisticated decisions can be made. *Buildings are not saved in Washington or in state offices; they're saved in the local community. Unless a local community cares for what it has, it's going to be lost.*

Spatz: The tax incentives have put historic preservation on center stage. No other policy ever in the past has done as much for historic preserva-

tion. Our challenge is to build on that. One example is the Main Street program, where we use historic preservation as one element of a broad program of community and economic development. Another is the inner-city ventures fund of the National Trust, where we've used historic preservation to provide opportunities for minorities and low-income neighborhoods. *We must try to make preservation more of a central organizing principle of urban policy at the federal, state, and local levels. We see the beginning of that in the recently adopted San Francisco downtown plan, where the principles of conservation have become central to a planning process that involves an entire city.*

Longworth: We've come from a reactive, bulldozer mentality to an active role in improving the quality of life for all people. In fact, you might say historic preservation has made it. *But that also means that one of our problems is not to become apathetic. It's a challenge to the whole preservation community to make all of these challenges exciting, something each citizen considers very important to being an American. I think that can be done.* ■

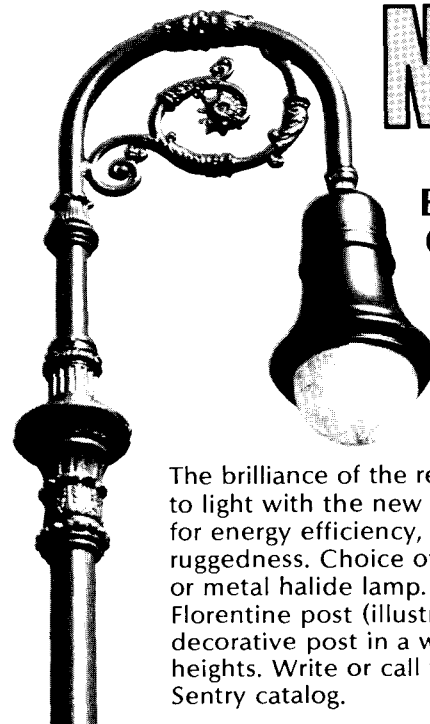
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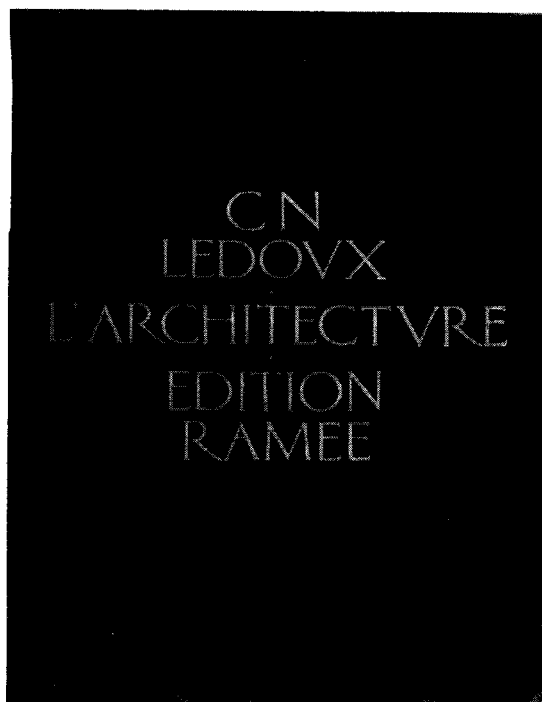
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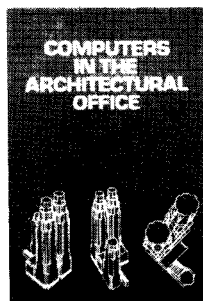
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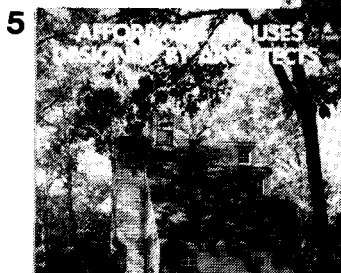
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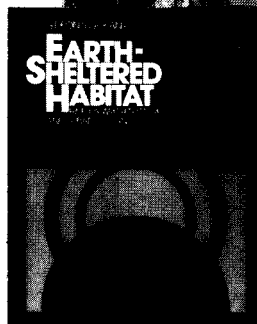
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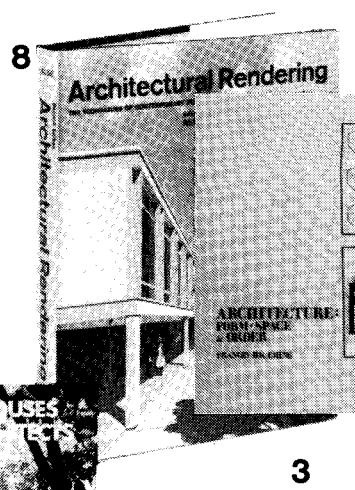
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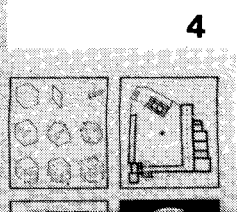
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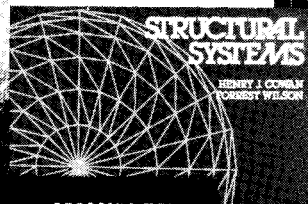
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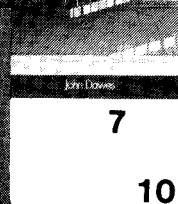
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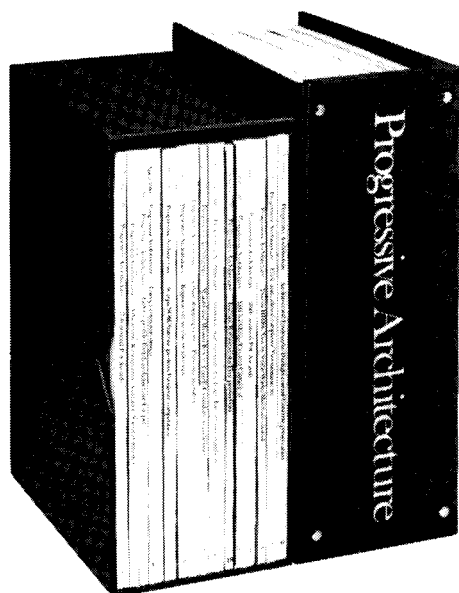
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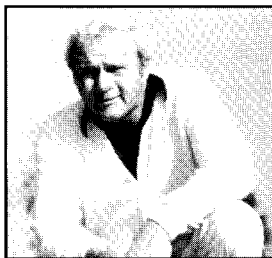
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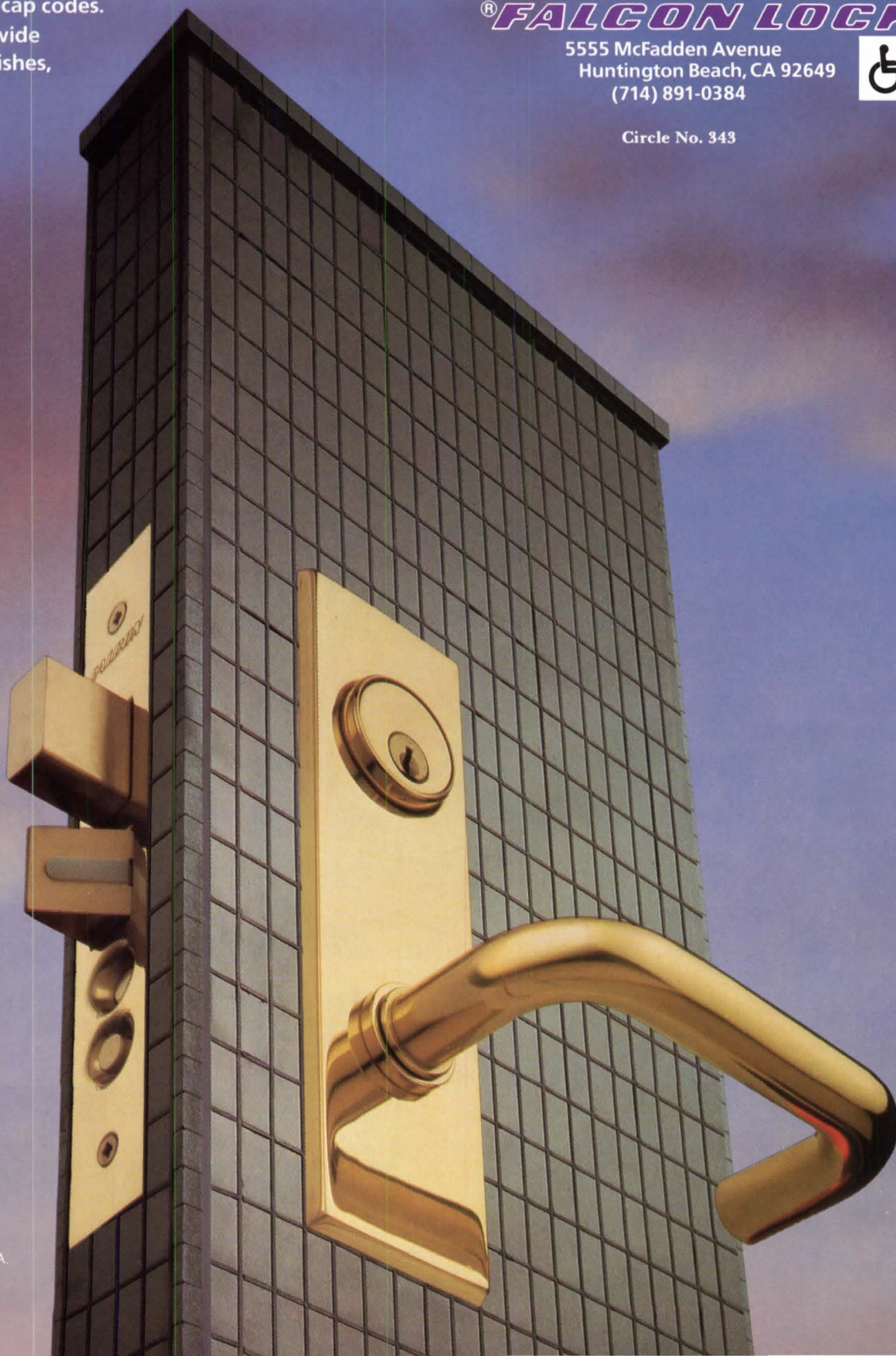
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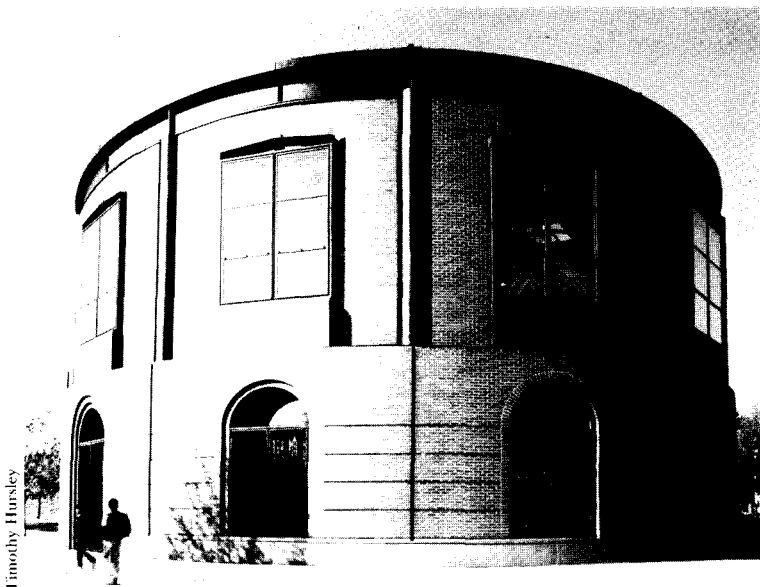


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6	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
7	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
8	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
9	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
10	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'

SELECTED WHITE BIRCH KONEKOR VENEERED FRONT DOORS

\$595 DELIVERED
HARDY PAIR 8' x 6'

\$680 DELIVERED
HARDY PAIR 10' x 6'

WE PREPAY THE FREIGHT

PRICES DELIVERED AT YOUR STATION

NO.	DOOR	DOOR	DOOR	DOOR	DOOR	DOOR	DOOR	DOOR	DOOR
1	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
2	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
3	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
4	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
5	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
6	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
7	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
8	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
9	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'
10	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'	8' x 6'

THE FOSTER MUNGER CO. WOOD CARPET.

Design C-1

THE FOSTER MUNGER CO. WOOD CARPET.

Design C-2

FRANKLIN & THOMAS, CHICAGO, ILL. STANDARD ROOFS.

DOOR AND WINDOW HARDWARE

THE FOSTER MUNGER CO. OUTSIDE PORCH NEWELS.

THE FOSTER MUNGER CO. PORCH BALUSTERS.

Trade Catalogs

Once considered worthless bits of advertising, trade catalogs are now recognized as a major source of information on material culture and a major resource in particular for practicing preservationists. The problem to date has been access to these ephemeral brochures, lodged in library collections. Two major trade catalog collections, from the Winterthur Museum of American decorative arts and the Avery Library at Columbia University, are now available for the first time on microfiche. The Clearwater Publishing Company brought out the 1885-title Winterthur collection in March of this year. The collection covers 30 subjects, ranging from architectural plans and materials to furniture and wallcoverings, all cross-referenced by manufacturer, geographic location, chronology, and subject matter. The collection and accompanying guide produced by the Mu-

seum sell for \$8900; although 75 percent of sales to date have been full collections, Clearwater will sell by subject, and individual titles are also available for \$8 each (approximately \$2.50 per microfiche). The Avery Collection of 2300 titles, available in April 1986, is more specifically architectural in emphasis, its subjects ranging from architectural ironwork to prefabricated buildings. The bulk of the collection dates from 1860 to 1950, with scattered earlier samples. All titles will be cataloged on the RLIN data base for library reference. Avery Library has also asked Clearwater to place 16 rare architectural periodicals in their collection, among these *Croquis d'Architecture* (1886-1898) and *Rassegna d'Arte* (1905-1919), on microfiche; these will be available by early 1986. Next, Clearwater hopes to place the early Sweets catalogs (1902-1950) on microfiche for distribution in mid-to-late 1986.

Circle 100 on reader service card



TCS

creative response in beauty and durability

Surrounded by cropland on the outskirts of a farming community, this private residence is, as stated by the architect, "a response to the historical and physical characteristics of its site. Its sloped roof areas are covered with silver gray TCS (terne-coated stainless steel), suggesting the color and form of traditional rural architecture."

In addition, TCS satisfied the owner's stated need for, "a maintenance-free roofing material that will last several lifetimes."

Architects everywhere are finding that TCS is singularly adaptive to all types of structures, superbly functional as a design component—important advantages which provide maximum creative latitude at relatively modest cost.

We will be happy to send you more detailed information about TCS.

Call us toll-free, 800-624-6906.

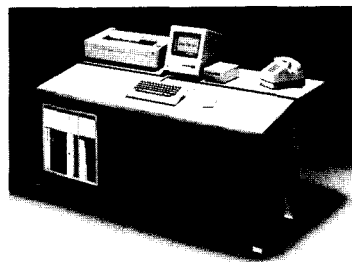
Lee Residence, Northeast Arkansas
 Architect: Polk, Stanley, Gray, Architects, Ltd.
 Little Rock, Arkansas
 Roofer: Gerald Rooks Contractor
 McCrory, Arkansas
 Photographer: Hursley & Lark

FOLLANSBEE

FOLLANSBEE STEEL CORPORATION
 FOLLANSBEE, WEST VIRGINIA

Circle No. 346

New Products and Literature



MacTable™ by Scandinavian designers Jacob Jensen and Derek Dennis is made for the Apple Macintosh computer. It will accommodate the Image-writer printer, keyboard, disc drives, and communication equipment. Cables and connectors are kept out of the way. Modular side cabinet includes a large drawer for papers, a locking drawer for discs, and space for binders and computer manuals. There is a shelf directly under the printer that will hold a carton of computer paper. Scandinavian Computer Furniture, Inc.

Circle 111 on reader service card

Light Wall™ exterior curtain wall panels are composed of an aluminum grid on which fiberglass-reinforced polyester panels are permanently bonded. Openings in the grid eliminate two thirds of conducting metal in the wall's I-beams, and UV-resistant membranes eliminate conductive air flow between openings, for energy efficiency. Natural light passing through the panels is diffused. Extech/Exterior Technologies, Inc.

Circle 112 on reader service card

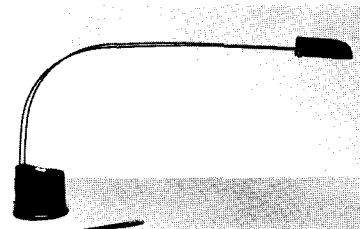
ArmorLink™ aluminized steel fence is made from steel wire that is hot-dip coated with aluminum before being woven into chain link fencing. It is then immersion coated with acrylic to seal ends and prevent rust formation. A four-page brochure reports results of testing galvanized steel and aluminized steel in five locations. Suggested specifications are also included. Page-Wilson Corp., Page Fence Div.

Circle 208 on reader service card

York® PoolPak™ heat recovery and humidity control system for indoor swimming pools extracts heat and moisture from the pool exhaust air and uses it to heat pool water and supply air, returning condensed water and pool chemicals to the pool. According to the company, the system can cut operating costs in half for most large swimming pools. Any excess recovered heat can be used to preheat water for locker rooms. Removing moisture and airborne chemicals from the air inhibits their destructive effects on the building. Borg-Warner Air Conditioning, Inc.

Circle 114 on reader service card

Inner-Bond® product information kit consists of a folder with ten individual technical data sheets about products for concrete and masonry construction and restoration. Products include Penetrant Hardener to restore surface strength to old concrete; Wall Seal for brick, block, natural stone, and concrete surfaces; Surface Sealer that will not darken or alter the appearance of white concrete or masonry surfaces. For a free copy of the kit, write on firm letterhead to Inner-Bond Products, Construction Chemicals and Services, Inc., P.O. Box 837, Richboro, Pa. 18954.



Jirafa halogen desk lamp, designed by Ezio Didone, has a diffuser cup in anodized aluminum with a protective black metal net cover. Power is conducted by black-painted brass arms without the use of conventional wiring. The base is high-gloss thermoplastic available in black and white. California Artup Corp.

Circle 115 on reader service card

Ceram-A-sil™ is a silicone polyester coating developed for galvanized steel and Galvalume™ building panels. It offers color stability, durability, and ease of application. The coating is virtually unaffected by UV light, pollutants, dust particles, and weather, according to the manufacturer. There is a wide choice of colors. Hanna Chemical Coatings Corp.

Circle 116 on reader service card



Kaleidoscope flooring combines Brazilian hardwood with contemporary colors. The oak flooring components are available in natural and 35 color stains and can be combined to create a variety of design configurations including borders. The flooring has a durable polyurethane finish. Stark Concepts Div., Stark Carpet.

Circle 117 on reader service card

Proper Vent polystyrene roof ventilation ducts install between rafters on the entire underside of the roof, above insulation, extending from the vents at the eaves or soffit to the peak of the roof. Natural convection of rising warm air draws air in at the eaves and exhausts it at the peak, carrying away moisture. Cathedral style roofs stay uniformly cold during the winter to prevent freeze/thaw cycles and ice build-up and cooler in summer to decrease air-conditioning loads. Poly-Foam, Inc.

Circle 118 on reader service card

Wood frame mouldings catalog contains over 1000 products ranging from classic ornate to modern pastel. Traditional styles are embossed, some with gold leaf, and with miniature leaves and flowers. A Swedish pine collection is hand-stained to bring color through the wood graining. The genuine wood veneers, such as birdseye maple, briarwood root, birch swirl, and ebony, are hand-polished. Bendix Mouldings.

Circle 209 on reader service card

Series IV fluorescent light regulators are designed to cut lighting costs by as much as 70 percent. By reducing refraction glare and adjusting individual lighting for specific tasks, they are also said to increase worker productivity. The regulators adjust fluorescent light output on a fixture-by-fixture basis, improving light quality, increasing ballast life, and lowering air-conditioning costs. Conservolite, Inc.

Circle 119 on reader service card

'Building Systems: Architectural Design and Planning Guidelines,' a 16-page booklet illustrated in color, is divided into four sections. The introduction explains how to use the guide. Section 2, Building Environment and Site, examines features of the community and discusses the importance of good site work and landscape. Building Exterior examines incorporating outside elements, choosing colors, patterns, finishes, roofs, windows, doors, etc. The conclusion discusses design and planning reviews and working with local planning boards. For a copy, send \$4 to Building Systems Institute, 1230 Keith Building, Cleveland, Ohio 44115-2180.

True divided lite windows, with authentic muntin bars and mortise-and-tenon system joining bars to sash, are built to conserve energy. Lites are available with 3/4-inch insulating glass with the option of an exterior-mounted full-lite removable glazing panel for added energy efficiency. Windows are double weatherstripped. Wood exterior has a factory-applied coating of latex paint; interior surfaces are unfinished natural wood, ready for painting or staining. Norco Windows, Inc.

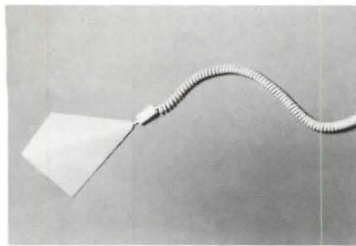
Circle 120 on reader service card



The Colonial Classic window of wood with individual divided lights has tilt-in sash for easy cleaning from the inside. It is primed on the exterior and has weatherstripping and a tubular bulb system on head jamb, rails, and sill to control air infiltration. The heavy wood frame is treated with water repellent preservative and insect toxicant. Caradco Corp.

Circle 121 on reader service card

[Continued on page 156]



Kite Lites, wall-mounted triangular lighting fixtures, have molded acrylic shades and matching spiral cords. Colors available are red, blue, yellow, black, white, and gray. Shades are 10" x 11" x 5½" deep. Mawa Design.

Circle 122 on reader service card

Eurocobble® modular cobblestone from Alpine quarries is preassembled in panels for easier transportation and installation. Used as ballast in sailing ships in the 19th Century, stone from the same quarries is still in use as streets and walks in U.S. coastal cities. Fishscale, square, and custom modules are described and illustrated in color in a brochure available from the company. Michael Vandever Associates.

Circle 123 on reader service card

EasyThree™ three-dimensional modeling software permits the visual identification of the limits of a project, helping to define design parameters. Multiple views can be shown simultaneously in display windows, with changes automatically updated in all displays. Any window view can be manipulated independently. BruningCAD.

Circle 124 on reader service card

Dataweave™ I, II, and III contract carpets of Du Pont Antron XL continuous filament nylon yarns are especially suitable for areas of heavy traffic. The carpets are available 12 feet wide and in a variety of weights, patterns, and colors. The Harbinger Co.

Circle 125 on reader service card

Half-round window Model HRW-4-OB, is designed for use over double-hung windows. It has a removable wood grille and there are optional interior casing kits in Colonial and Modern design. Factory-applied exterior finishes include terratone, white, and bronze. Outer frames are primer-sealed seamless molded urethane. Inner frames of Ponderosa pine can be painted, varnished, or stained to match existing interior treatment. Webb Manufacturing, Inc.

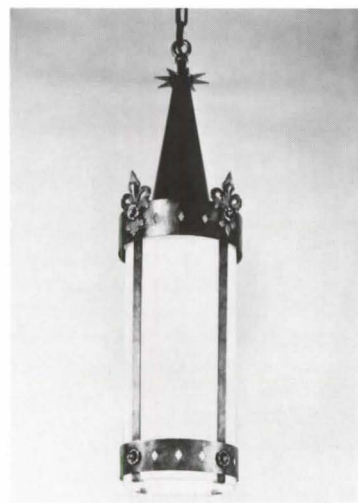
Circle 126 on reader service card

'Unistrut® Space-Frame Systems: The Functional Medium for Renovation' is an eight-page brochure of case histories of building reuse and expansion using space frames. Among examples are development of a downtown area into a mall, conversion of a warehouse into an engineering facility, and reuse of a supermarket as a transit facility. Unistrut Space Frame Systems.

Circle 210 on reader service card

Catalog of Ceiling Designs is a 28-page color brochure showing a variety of ceiling treatments including banners, pipe and junction, coffers, and metal panels with the look of Victorian ceilings. There are contemporary and traditional designs, luminous and mirrored surfaces—in all, 20 different designs. Integrated Ceilings, Inc.

Circle 211 on reader service card



Classic hanging lanterns in eight styles developed during the past 80 years have been redesigned for current lighting applications. The lanterns, for use in churches, public areas, auditoriums, hotels, and corridors, are illustrated in a 16-page brochure. There is an explanation of the heritage of each design and a description of the finish. Dimensions, photometric data, supporting fixtures and fittings, and other lighting equipment are included. Rambusch Company.

Circle 212 on reader service card

Form-A-Gage profile gage consists of a series of rods in a magnetic field. Once a contour has been recorded, it can be locked in place for precise measurement. PRG.

Circle 127 on reader service card



Washmobil wash basins from Italy, of enameled steel with enameled tubular steel frames, can be either wall hung or free-standing. Among features are a mirror, towel bars, faucet, soap dish, and glass holder. Storage unit on wheels fits under the basin. Colors are red, yellow, white, and matte black. Hastings Tile & Il Bagno Collection.

Circle 128 on reader service card

Borescope and fiberscope inspection of structures is the subject of an eight-page manual. It describes the instruments and how they are used for non-destructive internal inspection using small, easily repaired holes in walls, ceilings, floors, panels, columns, and soffits. Olympus, Industrial Fiber Optics Dept.

Circle 213 on reader service card

Galleria bathroom fixtures are made of high-fired vitreous china, except for the tub, which is constructed of high-gloss acrylic. There are both pedestal and countertop lavatories, and the tub can be equipped with a whirlpool. The suite comes in ten colors and white and includes the five Whisper Colors. American-Standard, U.S. Plumbing Products.

Circle 129 on reader service card

Wood flooring products catalog covers residential, commercial, and sports flooring. The 48-page catalog includes solid and laminated plank and parquet, and custom designs shown in color photos. The text explains the way logs are cut and methods of installation of solid and laminated flooring. There are a glossary of terms, descriptions of preservation and maintenance products, and an explanation of grading standards. Hoboken Wood Floors.

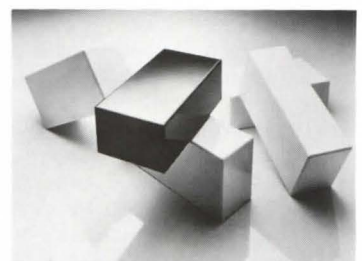
Circle 214 on reader service card

Table tops of natural mineral stone offer easy maintenance, a range of 25 colors, and custom sizes. Among stones used are sodalite, dolomite, serpentine, calcite, and onyx. The tops have a highly polished natural finish; while some stones are harder than others, most are resistant to abrasion and stains. Tops can be supplied alone or with brass or stainless steel bases. MileStone Products.

Circle 130 on reader service card

Architectural and commercial skylights catalog describes structural barrel vaults, walkway covers, pyramids, lean-to, and curb-mounted skylights, and heat and smoke vents. The 32-page catalog includes reproducible line art of detailed product views, specifications, and typical applications. Wasco Products, Inc.

Circle 215 on reader service card



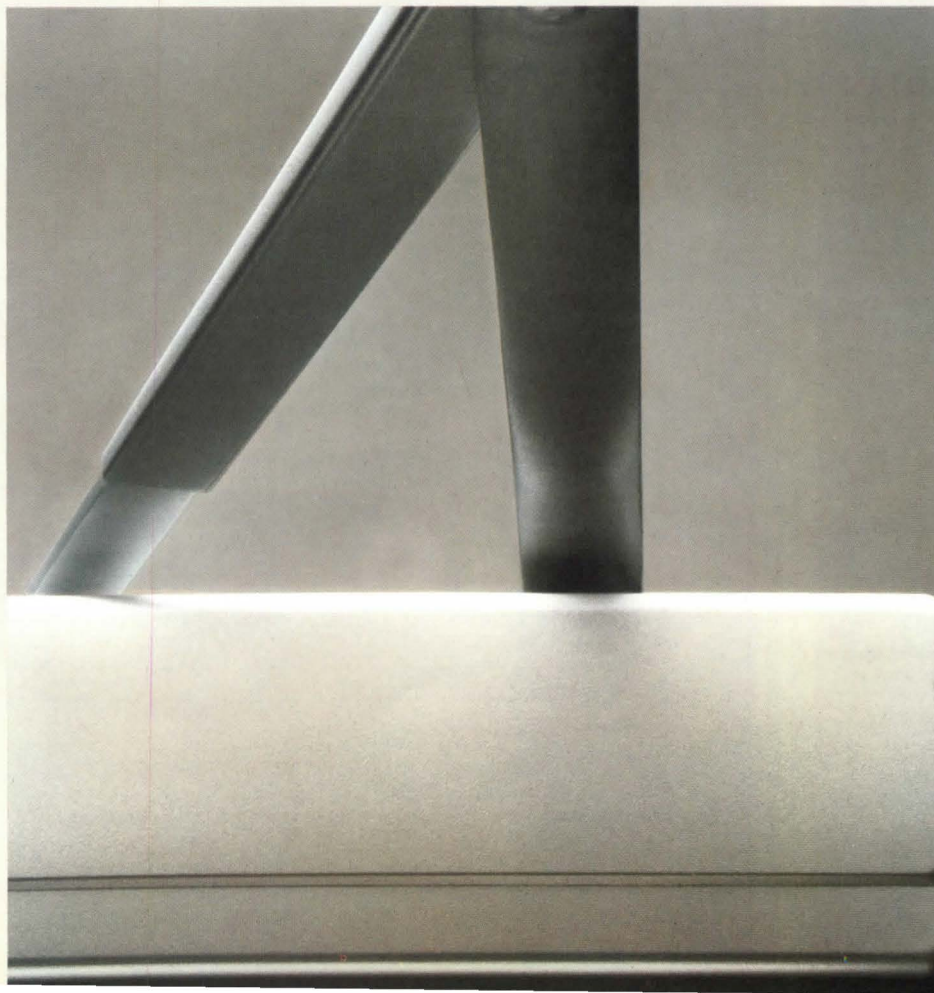
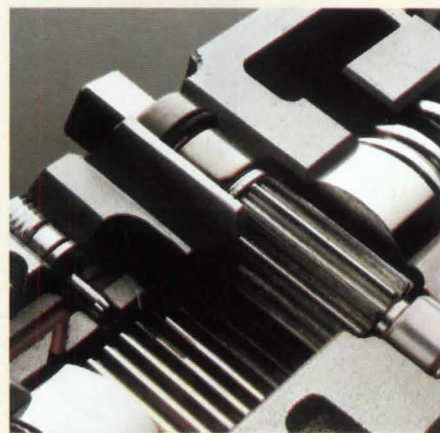
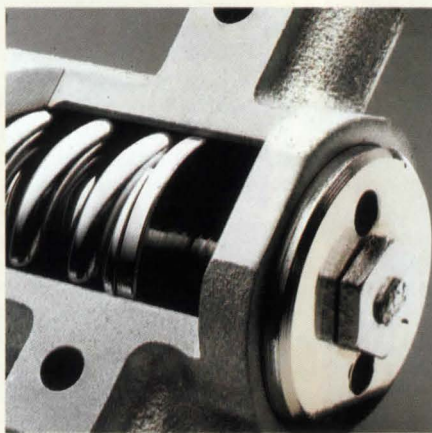
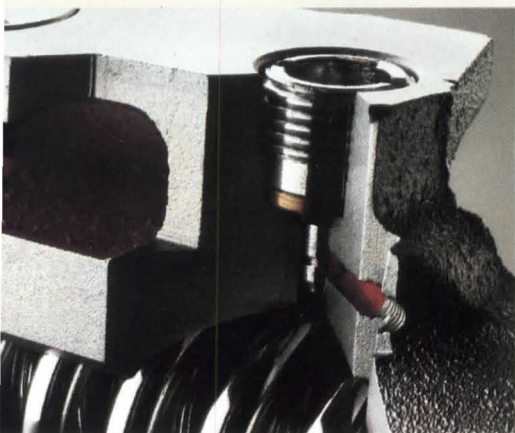
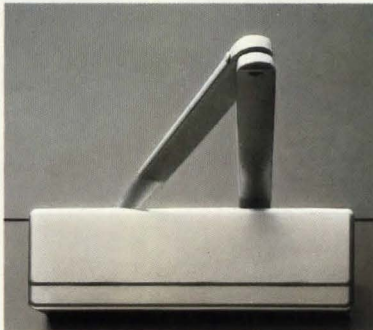
Polished Colorcore® surfacing material, with solid color throughout, has a high-gloss, lacquerlike finish that is said to be more durable than lacquer. Polished Colorcore is available in white, desert beige, almond, black, and vanilla, with more colors to be added. Sheet sizes are 4' x 10' and 4' x 8'. Applications include custom furniture, vertical wall panels, low-wear horizontal surfaces, doors, casework, and signage. Formica Corporation.

Circle 131 on reader service card

Contract Furniture Buyer's Guide provides specifications and prices for contract furniture and systems—seating, desks, files, tables, etc. It is compiled from information provided by the manufacturers and is indexed according to product or service. The guide is published quarterly. Photos of seating and drawings are included for easier selection. A single issue is \$50; annual subscription price is \$195. For further information write to DesignNetwork International Ltd., Publications Div., P.O. Box 10129, Chicago, Ill. 60610.

[Continued on page 158]

Sargent Door Closers:
250/251 Series • 1250/1251 Series • 1230 Series



**At Sargent,
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In nature, every detail is important and perfect. Every time. At Sargent, perfection is the only standard we'll accept. Which is why we pay such close attention to everything you see — like the precision afforded each manufacturing operation. And we're perfectionists about the things you can't see — like our commitment to making deliveries on time. Every time.

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Sargent, New Haven, Connecticut 06511
Sargent (Canada)

Brownstone Russet sandstone has properties that make it suitable for interior or exterior cladding, paving, or modular tiles. It is ideal for restoration and renovation of brownstone structures, according to the company. It is available in veneer, cubic, and tile forms. Vermont Marble Co.

Circle 132 on reader service card

Super Wonder-Lite® projection screen has a lenticular surface that distributes projected light horizontally and controls the vertical beam spread for a brighter image over a wider viewing angle. Screen types include tripod, wall/ceiling mounted, or Fast-Fold® portable. Da-Lite Screen Co., Inc.

Circle 133 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.

St. Louis Union Station, St. Louis, Mo. (p. 83). Architect: Hellmuth, Obata & Kassabaum, St. Louis, Mo. Reinforced concrete columns, post-tensioned con-

crete slab, post-tensioned concrete: Inryco Steel. Exterior wall surfacing: Dryvit Corp. (Out-sulation®), Starline Window Manufacturers. Windows: Loughman Co. (Headhouse restoration), Duratherm (Headhouse replacement), Winco Ventilator (Greenhouse), Starline Window Manufacturers (closure below train shed). Skylights: IBG International, Starline Window Manufacturers. Doors: Starline Window Manufacturers, Dallas Door & Supply, Superior Fireproof Door Co., Atlas Fire Door. Exterior paving: Rocamat, Gail Ceramics. Roofing: Plymouth Rubber Co. (EPDM membrane), U C Industries (Foamular insulation). Waterproofing: Tremco. Thermal insulation: Manville. Folding partitions: Richards-Wilcox. Paint: Porter Paints. Hardware: Hager (hinges), Yale, Ving Card Locks (card locks), LCN (door closers), Von Duprin (panic exit). Thresholds: National Guard. Elevators, escalators: Westinghouse Elevator. Ornamental staircases, special ornamental design: E.M.E. Steel Fabricators.

University of California Press Building, Berkeley, Calif. (p.

104). Architect: ELS Design Group, Berkeley, Calif. Steel window wall: Carmel. Steel vertical pivoting windows: Hope. Aluminum skylights: Collier. Steel doors: Carmel. Chrome locksets: Schlage. Elevator: Dover. Lighting: Lightolier. Carpets (Antron IV nylon fiber): Harbinger. Workstations, desks, files, and cabinets: Steelcase. Tables: Custom designed by ELS.

The George and Annette Murphy Center, New York (p. 100).

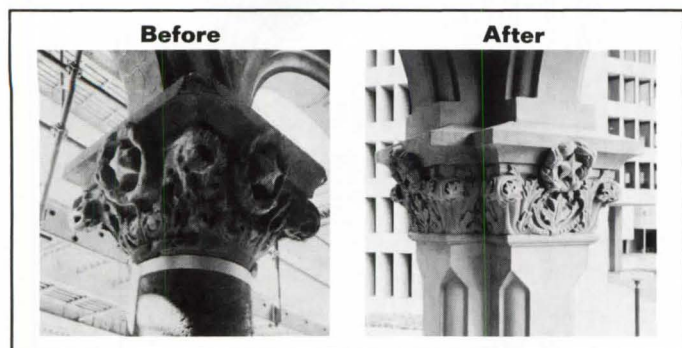
Architect: Hellmuth, Obata, Kassabaum/Pasarella & Klein, Architects, New York. Floor structure: Roll-form Products (metal deck), Hercules Cement Co. Glazed masonry: Nabco/Astraglaize. Gypsum board: US Gypsum. Steel sash windows: A&S Windows. Glass block: Pittsburgh Corning. Aluminum/Acrylic skylight dome: Naturalite. Hollow metal doors: General Fireproof Door. Glazed flooring tile: Country Floors. Vinyl composition tile: Armstrong. Poured polyurethane floors: Surfacing Systems-Versaturf. Liquid applied roofing membrane: Polythane. Caulking: Sonneborn (NP II). Polystyrene insulation: W.R. Grace. Paint: PPG. Hard-

ware: Stanley Works, Schlage, Dorma Door Controls, Inc. Stainless steel sign: US Bronze Sign Co. Elevator: Hardwick Elevator Co. Stairs and handrails: Bernardini Iron Works. Lighting: Edison Price, Abolite. Plumbing fittings: American-Standard, Acorn Engineering, Flush-metal, Basco, Hawes. Boiler: Cleaver-Brooks. Heat exchanger: Hydroflo. Chiller: Trane. Pneumatic controls: Thomas S. Brown Associates. Diesel generator: Kohler.

Storer Residence, Los Angeles, Calif. (p. 112). Architect: Frank Lloyd Wright. Restoration architects:

Eric Lloyd Wright, Malibu, Calif.; Martin Eli Weil, La Canada, Calif. Locksets: Baldwin. Door closers: Glynn Johnson. Kitchen cabinets: Poggenpohl. Appliances: Gaggenau. Security system: Silent Knight Control Equipment. Sofa and armchair upholstery fabric: Stroheim & Romann. Wright and Karasz reproduction pieces available through Fifty/50 Gallery, New York. Pottery from Buddy's California and American Art Pottery, Los Angeles. Wright sculpture reproductions available from Hubbard Associates, Aspen, Colo.

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Nothing tops a Hi-Tuff™ roof.



Building owner: Ross Laboratories, a division of Abbott Laboratories; Architect: Anderson Debartolo Pan, Inc.; General contractor: Kitchell Contractors, Inc.; Roofing contractor: Universal Roofers, Inc.

This 10-acre Hi-Tuff roof will give Ross Laboratories' new Similac* infant formula manufacturing plant in Casa Grande, Arizona, constant protection and significant energy savings for years.

Reducing air conditioning costs was important to Ross. Yet of the five roof systems it evaluated, only Stevens Hi-Tuff offered documented energy savings. It cuts cooling costs by reflecting up to 80% of the sun's heat. And tests show Hi-Tuff retains its properties after years of exposure to desert sunshine.

A water spray system, which automatically mists the Hi-Tuff roof when it gets hotter than 85°F, cuts cooling costs further. This constant soaking could be a problem for other single-ply systems, but not Hi-Tuff. It's based on Du Pont Hypalon** synthetic rubber, which has a 30-year success record in severe weathering exposures. Hi-Tuff is hot-air welded into one piece on the roof. Its fused seams are watertight for the life of the membrane.

Hi-Tuff is mechanically fastened and 10 times lighter than the average ballasted roof. And it's backed in writing by Stevens, one of America's largest corporations.

If you want a single-ply roof nothing can top, not even the sun, specify the system Abbott's Ross Laboratories did: Hi-Tuff! For information and a welded sample, write to J.P. Stevens & Co., Inc., Stevens Elastomerics/Roofing Systems, Easthampton, MA 01027, or call 413/527-0700.

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To register and receive a registration kit, send a check for \$85.00 made payable to CAAPB/State of Minnesota by Monday, January 20, 1986 (postmarked) to:

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The publisher of PROGRESSIVE ARCHITECTURE is Peter J. Moore; the editor is John Morris Dixon; and the managing editor is Valerie Kanter Sisco. They are located at 600 Summer Street, Stamford, Connecticut 06904.

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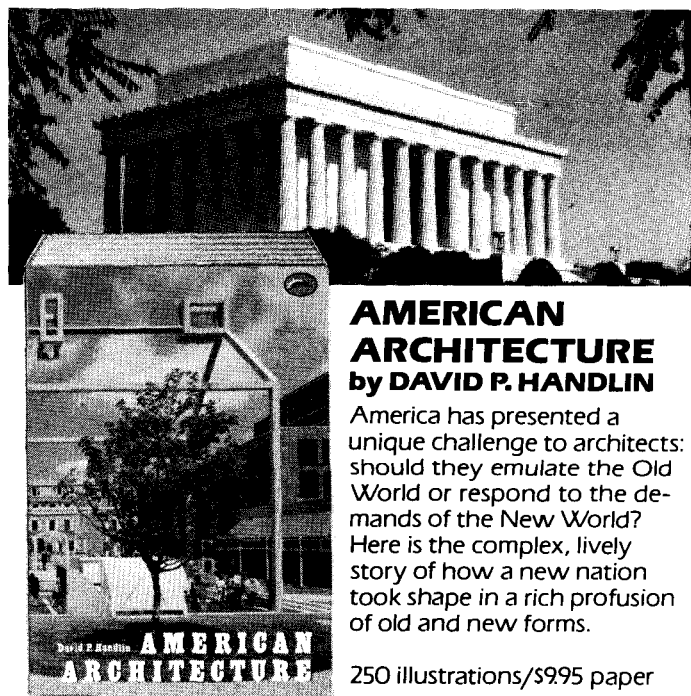
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