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.

73

76

84

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ractice	23 29 129 130 139	Calendar Products Feature Products and Literature Computer-Related Products			
echnics Topics: The San Francisco Earthquake echnics Feature: Foundations, Radon Roundup	9 11 23	Editorial: The Way to a Design Education Views News			
echnics		Departments			
Swan Statues/Walt Disney World Swan Hotel		γ , αι μ Ι αμαγογί ες, .			
elected Detail					
Approaches to (and from) Italian Fascism					
Urban issues: Atlantic City					
rspectives Interview: Thomas Beeby Controversy: Paternoster Square					
esign/Projects Feature: To Be Continued New buildings and projects by Murphy/Jahn · Jim Murphy					
	tropolitan .	Architecture/Amsterdam North, Holland - Thomas Fisher			
The Newark Museum/Michael Graves, Archited	ct/Newark	, New Jersey · Peter Papademetriou			
habilitation Feature: Four Not-so-easy Pieces					
esign Feature: Steel Industry Enshrined Historical Center of Industry and Labor/Michae	el Graves,	Architect/Youngstown, Ohio • Philip Arcidi			
Design Feature: Story Time Walt Disney World Swan Hotel/Michael Graves. Architect/Lake Buena Vista, Florida • Mark Alden Branch					
ase Study: Michael Graves Introduction: Michael Graves, Architect: Growt Critique: Placing Graves · Sylvia Lavin	h and Dive	rsity • John Morris Dixon			
esign Editor in charge: Ziva Freiman					

Julie Meidinger			
Art Director			
Derek Bacchus Associate Art Director	88	Rehabilitation Feature: Four Not-so-easy Pieces	
Lisa M. Mangano	00	The Newark Museum/Michael Graves, Architect/	
Assistant Art Director			
Kristin L. Reid	96	Design Feature: Logic and Will	
Contributing Editors		Ij-Plein urban design and housing/Office of Metro	
Norman Coplan, Hon. AIA, Law William T. Lohmann, AIA, FCSI,	102	Design/Projects Feature: To Be Continued	
Specifications		New buildings and projects by Murphy/Jahn · J	
Walter Rosenfeld, AIA, CSI,	113	Perspectives	
Specifications Eric Teicholz, Computers	115	Interview: Thomas Beeby	
Correspondents			
Sally Woodbridge, San Francisco		Controversy: Paternoster Square	
Peter Papademetriou, AIA, at-large Thomas Vonier, AIA, Washington		Urban issues: Atlantic City	
Monica Pidgeon, Hon. FAIA, London	118	Books	
Donatella Smetana, Milan		Approaches to (and from) Italian Fascism	
Jane Holtz Kay, Boston Joel Warren Barna, Austin			
Cheryl Kent, Chicago			
Daralice D. Boles, at-large Donald Prowler, AIA, Philadelphia			
		19	
Vice President—Editorial Perry Pascarella			
reny rascalena			
Vice President and Publisher	119	Selected Detail	
Robert J. Osborn Business Manager		Swan Statues/Walt Disney World Swan Hotel	
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Promotion Director	39	Technics Topics: The San Francisco Earthquake	
Jack Rudd	43	Technics Feature: Foundations, Radon Roundup	
Production Manager Gerry Lynch Katz			
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Evelyn S. Blum		Desetion	
Vice President—Circulation Gloria Adams		Practice	
Circulation Manager			
Jodi Guba-Svenson	53	Law: After Accepting a Bid	
Circulation Marketing Manager	55	Marketing: When the Economy Turns Down	

Products: Electronic Markets

55

Joanne M. Improta

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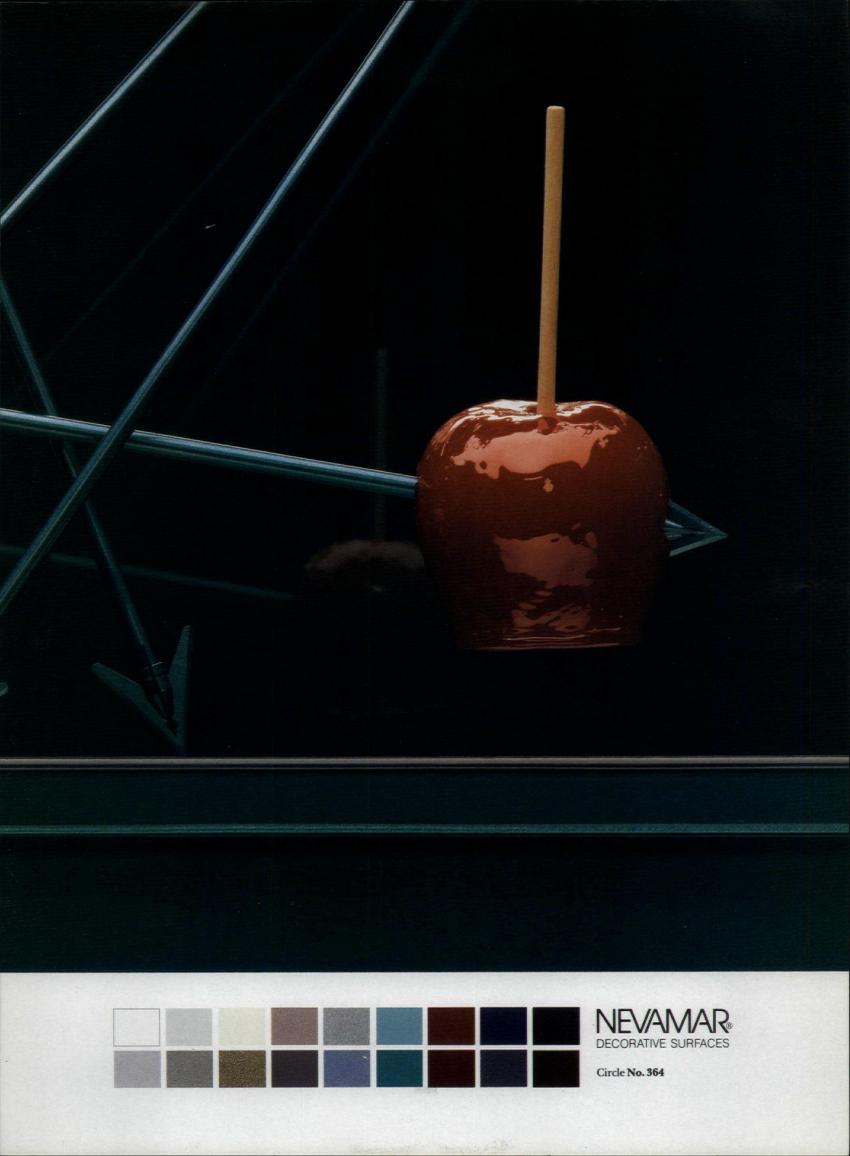
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- **Technics-Related Products** 140
- **Building Materials** 144
- 148 P/A Classified
- 151 Furthermore...
- 152 Advertisers' Index
- **Reader Service Card** 153

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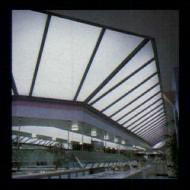
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Where are the great architects, as opposed to the noted architects, of today? Where is the Louis Sullivan, Frank Lloyd Wright, or LeCorbusier of our own time, whose vision is as fresh and philosophy as all-encompassing? When such questions are asked, the response frequently heard is that such visionary architects are not what our society wants or needs right now – which is no answer at all. With nihilism all around us, we need such architects now more than ever, but we may have set up a system, knowingly or not, that works against their development.

In the winter issue of the American Scholar, John Aldridge, a professor of English at the University of Michigan, criticizes the many creative writing programs that have arisen in universities for turning out students whose work is "technically conservative, stylistically bland, and often extremely modest in intention." Noting that our best writers never formally studied writing, Aldridge further claims that these writing programs work against the strong beliefs, iconoclastic ideas, and feelings of estrangement that he thinks prompt the most creative work. Collective critiques, he says, leave student work "denuded of individual character" and the students themselves "hardly . . . disposed to take any risks." Aldridge concludes "that while universities may be adequate institutions for the study of literature, they are clearly not constituted to train its potential creators."

There are, of course, important differences between the teaching of creative writing and of design, but the relevance of Aldridge's criticism to architectural education is clear. Design, like creative writing, is generally taught in studios and evaluated in juries, which, as I have observed as an architecture student and now as a frequent juror, leave most students cowering beneath the barrage of criticism. As Aldridge says of those in creative writing programs, architecture students frequently seem to "have been well taught . . . to avoid taking risks or indulging in the kind of technical experimentation that might provoke an accusation of originality and to concentrate instead on the slight, safely manageable effect."

It is no coincidence that some of the greatest architects of our century – Sullivan, Wright, Corb, Mies – either did not attend or did not finish a professional architecture program. As with our best writers, those architects, who for lack of a professional degree would now face considerable difficulty practicing at all, wanted to change not just architecture, but the world. Each, in his own way, felt estranged from the system of values and the built environment as he found it. And each had strong, idiosyncratic beliefs that might not have stood up before the collective critique of his superiors, but that sustained and enriched his architecture. Form, for each of them, followed a definite philosophy.

Aldridge does not admit that creative people can sometimes overcome the adversities of their education, and that is a weakness in his argument. There is some evidence of that in architecture. Louis Kahn and Alvar Aalto are two acknowledged masters in this century who were formally educated in design, although we now gauge their genius by the degree to which they rebelled against that training.

But Aldridge is right in spotting the fundamental difference between the needs of creative people and the typical structure of a university education. The latter has proven itself well suited to conveying information, developing theory, and organizing research. There is little proof, however, that a university education is the best way to foster great designers.

Historically, apprenticeship under a master has proven to be the most fertile environment for brilliant architects. Yet, unlike budding writers, aspiring architects have little choice in most states but to secure an accredited degree if they want to become licensed to practice their art. Since 1984, the National Council of Architectural Registration has made it a requirement if practitioners want to become licensed in another state. This not only has closed off proven educational alternatives, but has shackled the schools, notes Jack Hartray of Nagle Hartray & Associates, "with preparing students for practice rather than fulfilling their mission in the university." Some have made it through the mill of design education to become great architects, but one wonders about those who did not or those who despaired of even trying. **Thomas Fisher**

Architectural design began to be taught in our universities over a century ago, but should university education be the only entry into architecture?

9

Editorial



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Views

P/A Awards Foresight

To me, it was as though I were witness to the Soviet Politburo presiding over an election of Party officials as they watched the returns come in - the results known to everyone even before the ballots were cast.

Progressive Architecture's 37th Annual Awards [January issue] was a farce. William G. Green William Green & Associates Architecture New York [The P/A jury spent three days

reviewing, discussing, and voting on these winners. If someone with foreknowledge of the winners had been here, they could have saved much effort. - Editors]

P/A Positive

I have just read your editorial in the P/A awards edition [January] and wanted to say thank you. You have sustained good work over the years, and you are to be commended. P/A has been a constant source of inspiration and education for me, and I appreciate your diligence, persistence, and ongoing high quality. Thank you. Michael S. Kohn Drafts & Jumper/Architects West Columbia, South Carolina

Hold the Post-Modern

I do not wish to hassle you about that which may or may not represent ART in 1990. The message I get from you is that you only want to publish that which no other publisher will print. I have trouble accepting that there is so little good building happening that you are unable to find reasonable subject matter to publish. When my subscription expires, I can comfortably say that I will not miss your unending treatises on "Post-Modern," nor will I miss future issues of Southern California slum/custom/disorder housing.

I hope you recover your wits in time to save Progressive Architecture. It was, in times past, a nice effort. L. Gale Abels

L. Gale Abels Associates, Architects Boulder, Colorado

[Much of what we publish is, in fact, sought after by the other magazines, which sometimes get the privilege of publishing that Southern California stuff before P/A. But we are sorry that any reader perceives us in these terms. - Editors]

Women's Memorial Insights

First: Some corrections are needed to Mr. Vonier's remarks in his News Report article, "Women's Memorial Design Chosen," in the January issue [p. 30]. While the reportage and the publication of photos of the winner and first alternate are appreciated attention, the impending review process will be sensitive to these inaccuracies. The program spaces will be behind and on grade with the existing Hemicycle wall and entered from on-grade, not via the new stairs. The new stairs through existing niches, an approach within the vocabulary of Beaux-Arts design, will provide access to the upper terrace, planned to be refurbished within the budget of this project. The Weiss/Manfredi design was the only entry under consideration that effectively related the Hemicycle wall and the upper terrace, restoring it to prominence as a viewing "platform" from which to enjoy the eastern vista, toward monumental Washington, and the western view, up the grassy hillside of Arlington Cemetery, patterned with simple white headstones. Rather than a dead end to this important axis, the McKim, Mead, and White design becomes truly the Memorial Gateway to Arlington National Cemetery.

Second: The lighted tetrahedrons planned for the upper terrace have no intent to be "spectacular at night." Such a description is inaccurate and misleading. The photograph of the model was unfortunately taken from the "helicopter view" and thus shoots down into the light source, magnifying the effect to an inappropriate level. In reality, this entry proposes locating the light source below the level of the terrace. The competition program addressed the constraints on lighting this site in carefully considered detail, discussing the John F. Kennedy Memorial midway up the hill beyond the (continued on page 13)

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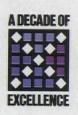
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(continued from page 11)

competition site and the Custis-Lee Mansion (Robert E. Lee Memorial) at the top of the hill. The goal was to place the three memorials in harmony, lighting the Hemicycle to eliminate the dark void, which currently terminates Memorial Drive. The Weiss/Manfredi design, as recognized by the jury, addresses this issue admirably. The spires are clear glass, which "captures" light only subtly and primarily along edges. At night from Memorial Bridge and Memorial Drive one will see a delicate tracery of light outlining the spires against the dark background - a memorable image, but not "spectacular" in the sense of inappropriately dominating this historic view.

Third: The conclusions and remarks regarding the "phallic aspects of the design" and caption below the photographs describing the "ladies choice" are sexist, patronizing, and deeply offensive. The jury's choice was the Weiss/ Manfredi entry. While high-rise buildings are regularly reviewed and described in Progressive Architecture, reference is seldom, if ever, made to any phallic aspect of these vertical silhouettes. What about the Washington Monument? At best, the use of "phallic" is without content in journalism and criticism of architecture. At worst, it is serious disrespect of a project for which pains have been taken at every step to uphold the responsibility concomitant with such a prominent, historic site and with a cause as worthy as recognition of women's service in the military. [Programs for both stages] were prepared with great care. The design criteria were approved by several of the agencies with review jurisdiction over this project. The jury, first and second stage, was composed of professionals outstanding in their fields who, and speaking as the observer and the only observer of the jury process, deliberated with utmost seriousness the selection of finalists and ultimately that of the winning design by Weiss/Manfredi. (While Mr. Vonier affirms I was not the source of his remark, "an observer of the jury process, who would not speak on record," what was printed gives participants the clear impression it was I . . . a regrettable untruth that blemishes my credibility as professional advisor.)

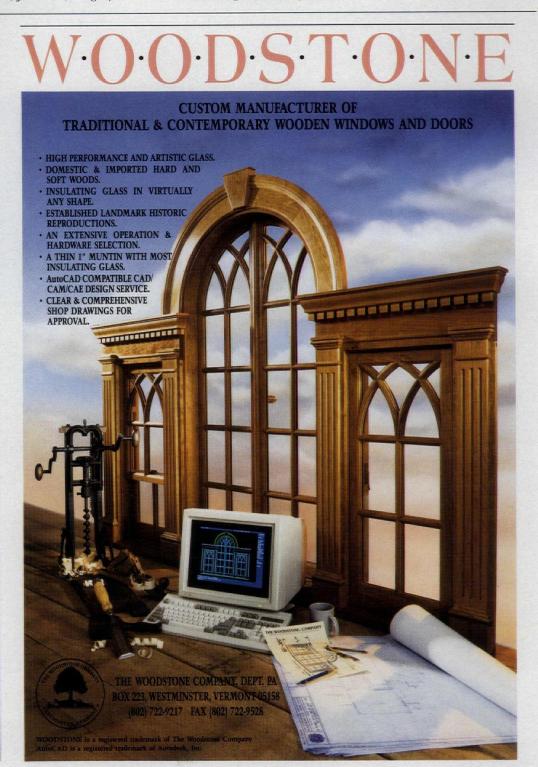
While the jury was in fact "divided" along gender lines at one stage in the discussion, the division had nothing to do with gender and nothing to do with any purported phallic symbolism. What the article says is this: "The phallic aspects of the design apparently gave the jurors pause. . . ." This is Mr. Vonier's unwarranted, blatantly sexist and wrong conclusion - his assumption – from the fact that the jury was divided along lines that happened to coincide with gender division, at one point along their way to a decision. His statement diminishes the professionalism of the jurors in a most offensive way and apologies are due to Robert Campbell, Lillian Dunlap, Jeanne Holm, Jaan Holt, Gregory K.

Hunt, and Mary Miss. Would this assumption and such remarks have been made were there not women on the jury, and if the project were not a memorial to women's achievements? I don't think so, gents. Progressive? Maybe 30 years ago. Carla I. Corbin, AIA **Professional Advisor** Washington, D.C. [Our coverage of the competition results was not meant to disparage the winning scheme or imperil it in subsequent reviews. We regret the misinterpretation of the plans, which put the programmed spaces on the wrong level. By "spectacu-

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lar" we did not mean to imply that the scheme would compete inappropriately with other landmarks. The "observer" we mentioned was definitely not Carla Corbin, but someone else, who claimed to have witnessed this disagreement. P/A's editors and author Thomas Vonier have no inclination whatsoever to demean women and try to avoid anything that might be characterized as sexist. In some of its tone and wording, this article did not meet our standards, and we apologize. – Editors]

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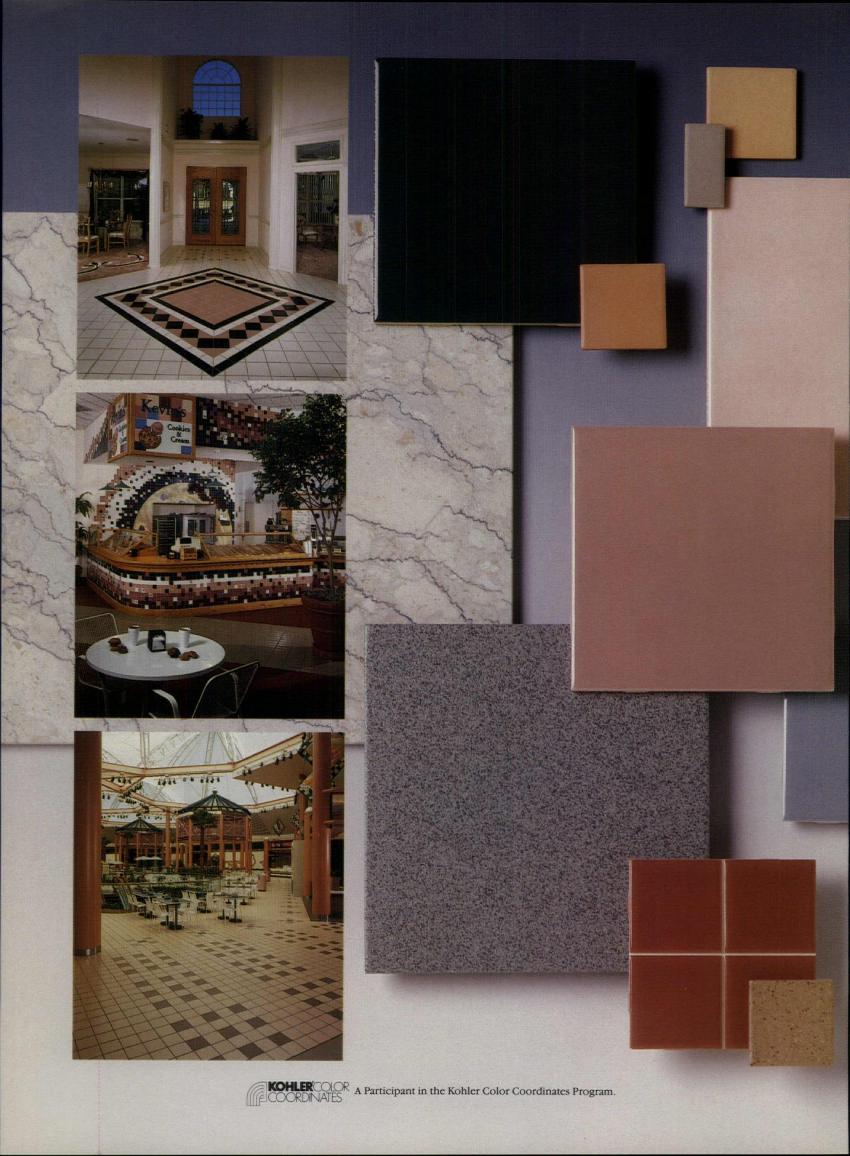
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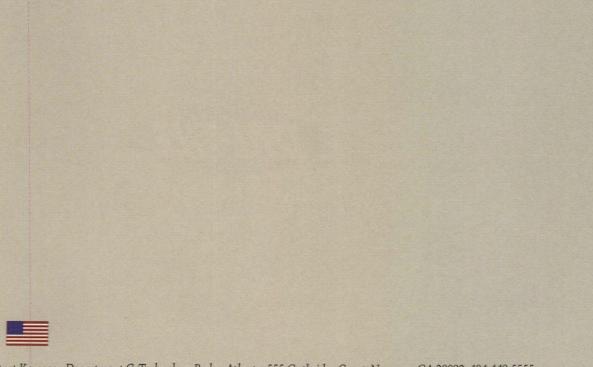


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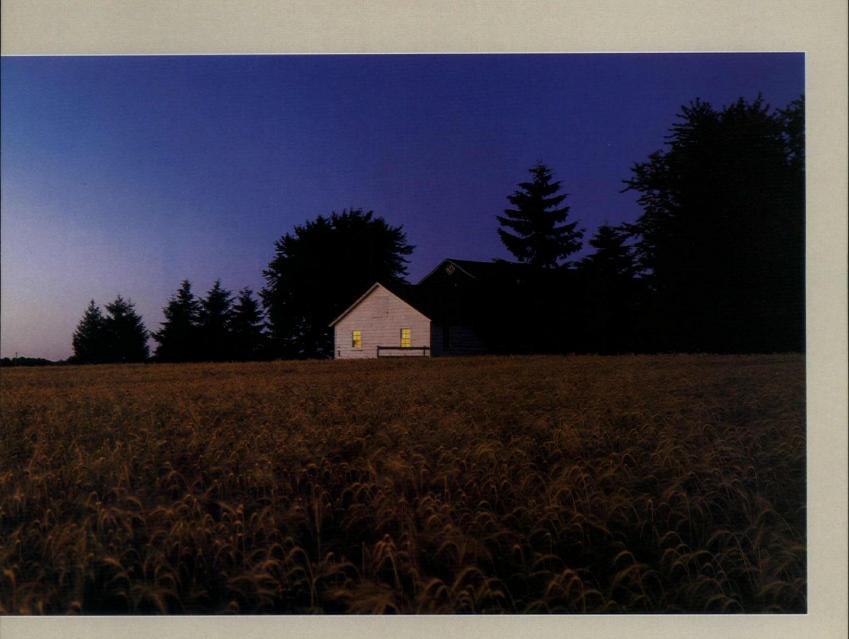
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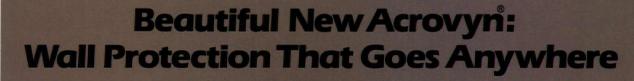
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THEC SGROUP

Lewis Mumford, critic of architecture, urbanism, and society, dies at 94. See page 24.

Kimbell Plans Ambushed in New York

The late Louis I. Kahn's Kimbell Museum is in Fort Worth, but the capital city for opponents of Mitchell/Giurgola & Thorp's proposed expansion of the museum (P/A, Oct. 1989, p. 27) may be New York, if the January 22 forum held there is any indication. Architect Romaldo Giurgola and Kimbell director Edmund Pillsbury, invited by New York's Architectural League to present their controversial plan, were greeted with audience reaction that ranged from polite criticism to open hostility.



Model of Kimbell Museum with proposed additions to its ends.

Announced last summer, the plans call for a new wing to be added to each end of the 1972 museum; these wings would essentially duplicate the series of cycloid vaults in the existing structure, increasing its size by two-thirds. The announcement provoked angry reactions from many admirers of the building. A letter from a group of architectural establishment figures led by Philip Johnson (P/A, Jan. 1990, p. 9) called the plan "mimicry of the most simple-minded

Rare Wright Drawings in Phoenix

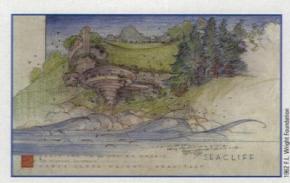
"Masterworks" is an appropriate subtitle for the "Frank Lloyd Wright Drawings" exhibit at the Phoenix Art Museum until April 8, a retrospective that spans his prolific professional life, 1887 to 1959. With 303 drawings – including 188 never shown or published before – it is a dazzling feast of the architect's art. To be able to walk up to the original drawing of the audacious "Mile-High Illinois" project is a visceral experience: The stacks of gold ink ridges that delineate 528 floors in an eight-foot drawing cannot be well photographed or reproduced. It is an unprecedented opportunity to stand next to so many Wright originals.

Float-mounted in blue-gray mats and waxed alder frames, they hover, in undistinguished white rooms, exuding spiritual conviction. It is a collection in nine subject areas by a curator whose only agenda was to sample from the archived hegemony of over 21,000 drawings. The earliest drawing is the scintillating house elevation in pencil that Wright prepared as a test piece to get hired by Sullivan. "Drawing Shown character" and charged that it would cause the building to "lose its intrinsic purity."

Leading off for the defense at the forum, Pillsbury sought to explain the need for expansion by citing figures that indicated that the museum as built has substantially less gallery space – largely for financial reasons – than originally intended. He showed slides of Kahn's earlier, larger schemes to prove that the architect had considered any number of combinations of vaults (and, thus, that his final solution was not the definitive whole opponents claim it was). Pillsbury and Giurgola turned the opposition's issue of "purity" on its ear by asserting that any new space of a different character would violate the "continuity of the architectural experience," and that "stripping the building of some of its functions means subtly destroying it."

Their presentation was followed by a questionand-answer period characterized by a great deal of comment but very few questions. Vincent Scully (who proposed "wings, as far away and as different as possible"), Kenneth Frampton, and Robert A.M. Stern called for rethinking the project, as did Sue Ann Kahn, the architect's daughter ("It looks like a shopping mall with an underground parking garage.") and Esther I. Kahn, his widow. In the end, not one of the nearly 300 attendees had endorsed the scheme.

Although both Pillsbury and Giurgola went to great lengths to defend their scheme, they also stressed frequently that "everything related to the implementation of the plan is being thoroughly reevaluated." Giurgola and the Kimbell directors could develop another plan, or, as Pillsbury suggested may happen, decide to make do with their current facility. **Mark Alden Branch**



Wright's proposed house for V.C. Morris, San Francisco.

to Lieber-Meister" already shows the masterful merging of landscape and architecture that characterized Wright's "organic" commitment; his buildings seem locked to their sites in these drawings. The last drawing is a hard-edged site plan for the Fine Arts Center at Arizona State University, "prepared posthumously . . . based on the architect's sketches," according to the splendid catalog (available from Harry N. Abrams, (continued on page 24) Bigness was no problem for this year's AIA Honor Awards jury; among the winners was Pei Cobb Freed & Partners' First Interstate Bank Tower, Dallas. See page 26.



In the battle over Paternoster Square, London's most sensitive redevelopment site, Prince Charles and the Classicists have won the upper hand. See Perspectives, p. 115.



And lead us not into rational temptation, but deliver us from modernist evil.

Pencil Points

Mack Scogin of Scogin Elam & Bray Architects, Atlanta, has been named chairman of the Department of Architecture at the Harvard University Graduate School of Design, replacing Rafael Moneo. He will begin his term on July 1.

Eisenman Architects's scheme for Carnegie Mellon University's **Pittsburgh Technology Center, a** Citation winner in the P/A Awards (P/A, Jan. 1990, p. 104), will not be built; the University has cited budget problems and difficulty in securing tenants for the irregularly shaped building as reasons for canceling Eisenman's project. CMU has agreed to become a tenant in a building on the same site to be designed by Kohn Pedersen Fox Associates and Pittsburgh-based **Damianos Brown Andrews.**

Frank Lloyd Wright's Marin County Civic Center in San Rafael, California, escaped the threat of a proposed "box-like" jail as its neighbor when the Marin County Board of Supervisors agreed last month to reconsider plans to build a new jail underground, thus maintaining the Center's prominent posture. The County had planned to build a jail on land adjacent to the Center until local architecture-activists rallied against the scheme.

24

Perkins & Will have been commissioned by Trans World Airlines to prepare schematic designs for a \$350 million, multiphased expansion program for the TWA terminal at JFK International Airport, New York. The announcement comes amidst a flurry of work scheduled for the entire airport complex; schemes by Pei Cobb Freed & Partners, and Helmut Jahn are in various stages of work.

Craftsman Farms, Gustav Stickley's home in Parsippany, New Jersey, once destined to be a centerpiece for a proposed residential development designed by Robert A.M. Stern, has been given a new lease on life: The township plans to turn the farm into a center for the Study of American Arts and Crafts Movement.

Wright (continued from page 23)

New York) by curator Bruce Brooks Pfeiffer.

Fastidious scholars may note that labels do not credit draftsmen; such documentation was impossible, according to the catalog. In some cases several may have worked on one drawing; in others (when Wright had no assistants, for example), he drew conceptual sketches, studies, and even presentation drawings himself. Typically others did most of the drawing – even the red square that marked his sheets from 1893 – to Wright's approval. But they were only complete when reviewed and signed by the master.

The consistency of technique, through countless draftsmen and through almost seven decades of vast architectural variety, is surprising. Early on, Wright



Lewis Mumford at Harvard, 1983.

Lewis Mumford 1895-1990

At his rural home in Amenia, New York, Lewis Mumford, the preeminent critic of the modern city, died on January 26. Mumford, whose health had been in decline in recent years, was 94.

Mumford, who was known as a philosopher, social historian, and literary critic, turned his generalist view to the fields of architecture and urban planning at various times in his life, most notably in his work in regional planning in the 1920s, his "Skyline" column in the *New Yorker* from the 1930s to the 1950s, and in his 1938 book *The Culture of Cities*. A critic of the dehumanizing aspects of technology, he nonetheless had a Modernist's faith in large-scale planning efforts. He opposed the specifics of Robert Moses's work in New

New York City Schools: Small is Better

New York City has had its share of infrastructure ailments, from cracked bridges to exploded steam pipes, but there is a much dearer problem within the city's social infrastructure: The public school system is overcrowded and its building stock crumbling. While the City of New York has appropriated \$4.3 billion to remedy the situation, the Architectural League of New York and the Public Education Association have teamed up to produce "New Schools for New York," a hypothetical design study project and exhibition extolling the benefits of small schools integrated with family services – from health care to daycare – to create community focal points.

The League and PEA, in consultation with community representatives and education experts, came up with programmatic agendas for six sites around the city. Chosen as examples of real issues facing the Board of Education today, the programs ranged from the reconfiguration of an existing school in Prospect established a studio rendering style that proved highly adaptable. The laying on of closely spaced colored lines and the repetitive pointillist pattern of dots give both atmospheric depth and lively sparkle.

The exhibition will not travel. "Many of these drawings have not been seen for 50 years and probably will not be seen for another 50," says Pfieffer. The reasons are visible. Many are exquisite renderings on cheap tracing paper with torn edges, their golden tones the visible evidence of aging. Their fragility explains why so many are so seldom exhibited, and why you must go to Phoenix for this stunning experience. Jeffrey Cook

The author is Regents Professor of Architecture at Arizona State University and an author on organic architecture.

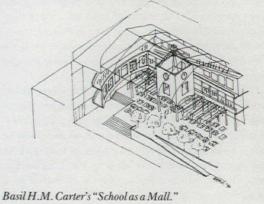
York City, however, and wrote as early as 1943 of the modern expressway's role in the decay of the city.

Mumford was a native of New York, born in Queens on October 19, 1895, and raised in Manhattan. He attended Columbia University and the New School for Social Research, and after service in World War I began writing on urban affairs and housing. He and his wife Olivia, after their marriage in 1921, moved from Manhattan to Sunnyside, Queens, the garden-city housing complex by Clarence Stein and Henry Wright. Mumford was a founder of the Regional Planning Association, which sponsored the Sunnyside experiment and worked for the New York Housing and Regional Planning Commission.

In 1936, the Mumfords moved to the country, buying a house in New York's Dutchess County. From there, Mumford continued to write about the city, and became increasingly critical of the overbuilt and market-driven environment he had feared.

Mumford's brand of architectural criticism focused on larger social issues more than aesthetics, not because of his lack of formal architectural training but because of his belief that the work of architects was to change and improve the condition of the city. While his contention that rational planning and large-scale intervention were the city's salvation has been challenged – most notably by Jane Jacobs – his insistence on architecture as an act of social responsibility rings as true as ever in these profit-driven times.

Heights, Brooklyn, into four distinct "academies" – for business skills, culinary arts, human services, and honors study – to a small middle school to be housed on one floor of a planned mixed-use building in Flushing, Queens. All 59 entries submitted are displayed, each shown on two 30" x 40" foamcore boards.



A scheme for a site in Morrisania, the Bronx – calling for a new building divided into three schools for kindergarten to 12th graders – by Basil H.M. Carter Associates, "School As A Mall," brings a bit of suburbia to school design. Interior ramps and balconies around a central atrium replace stairs and hallways, and a "food court" diversifies the cafeteria experience.

Somewhere between feasibility and fantasy is Hitano Amano's "Mobile Mini-Schools" scheme for Washington Heights – a program to house preschoolers to second graders and various family services. A long, low-rise school "headquarters" is divided into "sub-schools" by pavilion-like structures. "Mobile Mini-Schools" are vehicles meant to expand education beyond school walls.

While the idea of smaller, more intimate school environments is an appealing one, the notion of social and health service activities being performed with school children in close proximity is a bit disturbing; the connection between such services and neighborhood unity is unclear.

Although there are no plans to implement the designs generated for "New Schools," the exhibition has initiated a much needed public discourse on what might be done to revitalize a school system in decay. Abby Bussel



Paul Kennon.

Paul A. Kennon, FAIA 1934-1990

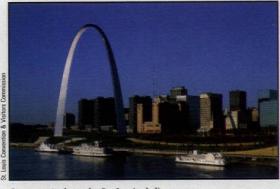
Only six months after he was designated as Dean of the Rice University School of Architecture, Paul Kennon, FAIA, died suddenly of a heart attack on January 8, 1990.

Kennon, a native of Louisiana, was a 1955 graduate of Texas A & M University and received a Master's degree from Cranbrook Academy of Art. Upon graduation in 1957, he joined Eero Saarinen and Associates, where he participated in the design of the TWA Terminal at John F. Kennedy Airport, New York; Dulles Airport, Virginia, and other projects.

In 1964, he was brought to Rice University by the late William W. Caudill as an Associate Professor; concurrently, he was appointed Ford Foundation Resident Advisor in Santiago, Chile, serving also as Visiting Critic at the Universidad de Chile and Universidad de Catolica. From 1966 to 1968, he returned to teaching at Rice, and as Associate Director expanded the school's Preceptorship Program from regional to international status. He joined Caudill Rowlett Scott as Associate Partner and Senior Design Director in 1967, establishing its Los Angeles office in 1970. He returned to Houston in 1976, as Design Principal and President of CRS's architecture division. His career at CRS, and subsequently Caudill Rowlett Scott Sirrine (CRSS), was marked by distinctive design for projects typical of mainstream practice. These included Desert Samaritan Hospital, Mesa, Arizona (P/A, July 1974, p. 80), Fodrea Elementary School, Columbus, Indiana (P/A, May 1974, p. 84); the Leavey Center at the University of Santa Clara, California, then the world's largest permanent airsupported structure (P/A, May 1976, p. 94), and the Indiana Bell Switching Center, Columbus, Indiana, recipient of a 1976 P/A Award (P/A, July 1979, p. 66). His recently completed group of townhouses in Tokyo for Ota Shoji Ltd. was named "Paul Kennon House."

While his work commanded numerous state, component, and national design awards, Kennon actively served the profession and schools of architecture as a speaker and frequent juror. He was also a board member of the Institute for Architecture and Urban Studies and Davenport Chair Professor at Yale University in 1984.

Behind Kennon's image as an enthusiastic workaholic, who thrived on design charrettes, was a thoughtful and caring personal side. To his many friends, his honesty, integrity, and commitment to a quality environment made him a role model and a professional. **Peter C. Papademetriou**



Gateway Arch on the St. Louis skyline.

Gateway Arch Wins 25-Year Award

Calling it "a symbolic bridge between east and west, past and future, engineering and art," the AIA Honor Awards jury (see p. 26) has selected Eero Saarinen's St. Louis Gateway Arch (1964) as this year's recipient of the AIA 25-Year Award. The award is given annually to a building between 25 and 35 years old that is judged to exemplify "a design of enduring significance that has withstood the test of time."

The arch, the result of a 1947 competition for a monument to westward expansion, has long appealed both to architects and to the general public; its simple, distinctive form has become an instantly recognizable symbol of St. Louis.

The arch is the fifth Eero Saarinen project to be cited in the 22-year history of the award, joining the Crow Island School, Christ Lutheran Church (these two done with his father, Eliel Saarinen), General Motors Technical Center, and Dulles Airport. Wood Design Award Winners

The American Wood Council has recognized 15 projects in its 1989 Wood Design Awards; all were praised for "clarity of intention and sense of restraint." Of 305 entries submitted, seven were given Honor Awards, five received Merit Awards, and three received Citation Awards. Honor Award winners were:

- Mildred B. Cooper Memorial Chapel, Bella Vista, Arkansas, by Fay Jones + Maurice Jennings, Architects, Fayetteville, Arkansas;
- Ward House, a residence on the coast of Great Cranberry Isle, Maine, by Peter Forbes & Associates, Boston;
- a "lambing shed" with a capacity for 600 ewe sheep in Paragonah, Utah, by The Gardner Partnership, Cedar City, Utah;



Gardner Partnership's lambing shed.

 Camp Tweedale, Lower Oxford Township, Pennsylvania, by Susan Maxman Architects, Philadelphia;



Camp Tweedle by Susan Maxman.

- Johnson Turnbull Winery, Oakville, California, by William Turnbull Associates, San Francisco;
- Lake Harriet Band Shell, Minneapolis, by Bentz/Thompson/ Rietow, Minneapolis;



Lake Harriet Band Shell.

Berggruen Residence, Rutherford, California, by Fernau & Hartman Architects, Berkeley, California.

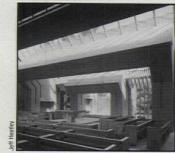
(continued on page 26)

25

Vews Report

. Wood (continued from page 25)

- Merit Award winners were: The Bridge House, Bainbridge Island, Washington, by James Cutler Architects, Winslow, Washington;
- Gates of the Grove Synagogue, East Hampton, New York, by Norman Jaffee, Bridgehampton, New York;



Gates of the Grove Synagogue.

- a remodeled poolhouse in suburban Connecticut by Chad Floyd, Centerbrook Architects and Planners, Essex, Connecticut;
- Bye Residence, Hilicong, Pennsylvania, by Jeremiah Eck, Boston;



26

Vews Report

- Eck's Bye Residence.
- Saint Andrew's Episcopal Church, Hanover, Massachusetts, by Ann Beha Associates, Boston.
- Citation Award winners were: Fama Restaurant, Santa
- Monica, California (P/A, Sept. 1989, p. 88), David Kellen Architect, Santa Monica, California:
- Thom Residence, Bowen Island, British Columbia, by Thompson Berwick Pratt & Partners, Vancouver, British Columbia:
- Veverka/Kruse Residence, San Francisco, by Massey + Veverka Architects, San Francisco.

The jury for this year's awards program included Walter F. Chatham, New York; George Hoover of Hoover Berg Desmond, Denver; Margaret McCurry of Tigerman McCurry, Chicago; Paul M. Sachner, Executive Editor of Architectural Record, New York; and Cathy Simon of Simon Martin-Vegue Winkelstein Moris, San Francisco.



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Arne Bystrom's Sun Valley House.

AIA Honor Awards

The AIA announced in late February a group of 19 Honor Award winners that are, once again, as catholic as the jury that selected them. The awards were unveiled this year at a banquet that was part of the AIA's Accent on Architecture celebration, a four-day series of events designed to capture public and media attention for the profession and the institute. Also announced at the February 22 banquet, which featured an address by the Prince of Wales, were the 25-Year Award (see p. 25) and the Firm Award, which went to Kohn Pedersen Fox Associates of New York.

In recent years, Honor Awards juries, partly because of the careful stylistic balance within them and partly because of the nature of the program and the institute itself, have tended to cite a diverse group of buildings of widely acknowledged quality instead of making a stylistic or philosophical statement about design. Chairman Stanley Tigerman, Chicago, saw this jury's choices as representative of the profession's current pluralism, saying the awards reflect "the essence of American hybridization as architects continue to seek an authentic American architecture."

Last year's AIA jury (P/A, May 1989, p. 23) wrestled with the question of size and chose to recognize only relatively small-scale projects, finding that the large-scale submissions lacked the required "uniform degree of perfection and consistency." This jury was clearly more comfortable with work at varying scales; their selections range from skyscrapers to houses.

Jurors, besides Tigerman, were Peter Eisenman, New York; George Hartman, Washington, D.C.; Samuel Mockbee, Jackson, Mississippi; Rob Wellington Quigley, San Diego; industrial designer Henry Beer, Boulder, Colorado; Associate AIA member Thomas Vriesman, Indianapolis, Indiana; and AIAS past president Matthew W. Gilbertson, Bloomington, Minnesota.

The winning projects are, in alphabetical order by architect:

- Lake Harriet Band Shell, Minneapolis, by Frederick Bentz/Milo Thompson/Robert Rietow, Inc., Minneapolis (see Wood Awards, p. 25);
- Software Engineering Institute, Carnegie-Mellon University, Pittsburgh, by Bohlin Powell Larkin Cywinski, Pittsburgh, and Burt Hill Kosar Rittelman Associates, Butler, Pennsylvania;
- Sun Valley House, Sun Valley, Idaho, by Arne Bystrom Architect, Seattle (P/A, April 1987, p. 86);
- Recreational Sports Facility, University of California, Berkeley, by ELS/Elbasani & Logan Architects, Berkeley;

- Schnabel Residence, Los Angeles, by Frank O. Gehry & Associates, Santa Monica, California (P/A, Dec. 1989, p. 74);
- Clos Pegase Winery, Calistoga, Calif., by Michael Graves, Architect, Princeton, New Jersey (P/A, Feb. 1988, p. 82);
- Wohnanlage mit Atelierturm, West Berlin, by John Hejduk, Riverdale, New York with Moritz Muller;
- Light of the World Catholic Church, Littleton, Colorado, by Hoover Berg Desmond, Denver (P/A, Feb. 1986, p. 82);



Hoover Berg Desmond's Light of the World church.

- Pinecote Pavilion, Picayune, Mississippi, by Fay Jones & Maurice Jennings, Fayetteville, Arkansas (P/A, May 1987, p. 104);
- Becton Dickinson Headquarters, Franklin Lakes, New Jersey, by Kallmann McKinnell & Wood, Boston:
- Observatory House, San Diego, by David Killory, San Diego;
- Trinity School, Atlanta, by Lord, Aeck & Sargent, Atlanta;
- House, Westchester County, New York, by Richard Meier & Partners, New York;
- First Interstate Bank Tower, Dallas, by Pei, Cobb, Freed & Partners, New York, with Harry Weese & Associates, Chicago;
- Capital High School, Santa Fe, New Mexico, by Perkins & Will, Chicago, and Mimbres, Inc., Santa Fe (P/A, Aug. 1989, p. 78);
- Nelson Fine Arts Center, Arizona State University, Tempe, Arizona, by Antoine Predock Architect. Albuquerque, New Mexico (P/A, June 1989, p. 65);
- House at Tanglewood, West Stockbridge, Massachusetts, by Schwartz/Silver Architects, Boston;



Schwartz/Silver's House at Tanglewood.

- Mexx International Headquarters, Voorschoten, Netherlands, by Robert A.M. Stern Architects, New York, with Henk van der Meent Architects, Alphen aan der Ryn, Netherlands;
- Sea Ranch Employee Housing, Sea Ranch, California, William Turnbull Associates, San Francisco.

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New Schools for New York Through March 15

Arthur Cotton Moore Through March 31

Charles and Ray Eames Through April 1

Wright Drawings Through April 8

Scogin Elam & Bray Through April 14

Christopher Wren Through May 8

Airport Architecture March 7–April 19

Tadao Ando March 13–April 6

Tod Williams/Billie Tsien March 14–May 18

AIDS Center Registration deadline April 2, Submission deadline June 1

Japanese American Veterans Memorial Submission deadline April 9

Paris Prize Registration deadline April 27 New York. Entries in a design study program for small public schools, sponsored by the Architectural League and the Public Education Association, are on exhibition (see p. 24). Urban Center Galleries.

New York. Moore's industrial-style ornamentation of Classical forms is documented in "Industrial Baroque," an exhibition of paintings, furniture, and details from the massive Portals project in Washington, D.C. Barbara Fendrick Gallery.

San Francisco. An exhibition of seminal designs by the Eameses is enhanced by an installation of 20plus prototype parts made for the "Intermediate Desk Chair." Museum of Modern Art.

Phoenix. A retrospective of drawings and sketches done between 1887 and 1959, celebrates Wright's vision (see p. 23). Phoenix Art Museum.

San Francisco. While the Atlanta firm's work is difficult to categorize, their diverse design sensibility from project to project and use of materials as a stage for experimentation rarely lacks excitement. Art and Architecture Exhibition Space.

Washington, D.C. Christopher Wren's legendary design for St. Paul's Cathedral, completed in 1711, will be documented in an exhibition of rarely seen original drawings and plans, manuscripts, and artifacts. The Octagon.

New York. The ill-fated competition (P/A, Jan. 1990, p. 27) held to replace an aging terminal in the town of East Hampton, Long Island, produced 102 submissions from the likes of Frank Israel and 1100 Architect. Forty entries – including the five shortlisted schemes – are on show. National Institute of Architectural Education.

Cambridge, Massachusetts. Recent work by the Osaka-based architect (P/A, Feb. 1990, p. 83) will be on view. Harvard University Graduate School of Design.

New York. The architects use the "Architecture Tomorrow" exhibition as a laboratory for "practical and visionary propositions regarding the utilitarian, interpretive, and constructive possibilities of the home." The exhibition originated at the Walker Art Center (P/A, Feb. 1990, p. 24). Whitney Museum at Federal Reserve Plaza.

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Competitions

San Francisco. This competition calls for a design to house an AIDS Service Provider Network and provide a permanent space for The AIDS Quilt. Architects, designers, artists, students, and other interested parties are eligible. An exhibition and publication will include all entries. Contact Jonathan Pearlman, Competition Advisor, 2338 Market Street, San Francisco, California 94114 (415) 626-0931.

Los Angeles. A memorial to Japanese-Americans who served in World War II is to be located at the First Street Plaza in Los Angeles. Contact 100th/ 442nd/MIS World War II Memorial Competition, 1888 Century Park East, Suite 330, Los Angeles, California 90067.

New York. "Ezekiel's Vision in Anticipation of a Messianic Age" is the ethereal topic of the 77th competition. "The creation of a place to house our longings, our aspirations... our international contemporary order" is the more accessible program outline. Entrants must be recipients of a first professional degree in architecture from a U.S. school between June 1987 and December 1990. Contact National Institute for Architectural Education, 30 West 22nd Street, New York 10010. *(continued on page 31)*

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Calendar

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Calendar (continued from page 29)

GE/AIAS Registration deadline May 1, Submission deadline May 11

Moscow Theater Arts Center Entry deadline May 15

Yokohama Urban Design Entry deadline May 21

NCGA '90 March 19–22

Westweek 90 March 21–23

SAH Annual Meeting March 28–April 1

EDRA 21 April 6–9

Lightfair April 10–12

ACSA/European Schools Conference April 19–22 Washington, D.C. "Silhouettes of Helsinki" is the third international student design competition cosponsored by the AIAS and GE Superabrasives. Designs for a hypothetical Museum of Modern Art in the center of Helsinki, Finland, must use granite as the primary aesthetic and structural material. Participants must be full- or part-time students at the time of judging – May 18. Contact AIAS, 1735 New York Avenue N.W., Washington, D.C. 20006 (202) 626-7472.

Moscow. A two-stage competition for the Chamber Theater Arts Center in Moscow is open to architects, senior architecture students, and teams of architects and scenographers and/or theater technicians. Eight entrants, chosen from the first stage, will be given study tour awards and compete in the second stage, from which a design will be chosen for development and implementation. Contact Architectural Commission of the Soviet Center OISTAT, USSR Union of Architects, Schusev Street 3, Moscow 103889 USSR.

Yokohama, Japan. "Revitalization of the Waterfront" is the theme of the second annual ideas competition sponsored by the city of Yokohama and other organizations. Prizes totaling 2.5 million yen will be awarded. Contact Yokohama International Design Exhibition, Urban Design Section, Urban Planning Bureau, the City of Yokohama, 1-1 Minato-cho, Naka-ku, Yokohama 231, Japan, tel. 45 671 20230.

Conferences

Anaheim, California. The National Computer Graphics Association's 11th annual conference and exposition is being held at the Anaheim Convention Center. Contact NCGA, 2722 Merrilee Drive, Fairfax, Virginia 22031 (800) 225-NCGA.

Los Angeles. Members of the contract furniture industry will convene once again at the 15th annual Westweek (P/A, Feb. 1990, p. 135). "LA 20/21: Design. Business. The Next Century," to be held at the Pacific Design Center, will focus on Los Angeles as an influential venue of American architecture and design. Contact Pacific Design Center, Marketing and Design, 8687 Melrose Avenue, Los Angeles, California 90069 (213) 657-0800.

Boston. This year's annual meeting of the Society of Architectural Historians, to be held at Boston's Park Plaza Hotel, coincides with the 50th anniversary of the society. A celebration of the SAH's founding will include a meeting in the Harvard Faculty Club, talks, walking tours, and exhibitions. Contact SAH, 1232 Pine Street, Philadelphia, Pennsylvania 19107-5944.

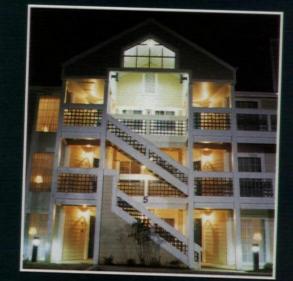
Champaign, **Illinois**. "Coming of Age," the 21st annual conference of the Environmental Design Research Association, will examine the maturation of environmental design research as well as the evolution of EDRA itself over the past two decades. Contact Robert I. Selby, Conference Chair EDRA 21, School of Architecture, University of Illinois at Urbana-Champaign, 608 East Lorado Taft Drive, Champaign, Illinois 61820 (217) 244-6514.

New York. IESNA and IALD are sponsoring this conference and exhibition "to bring together the international lighting community for the exchange of innovative ideas, new products, and technology." It is to be held at the New York Hilton. Contact Hope Schultz, Communications Manager, 240 Peachtree Street N.W., Suite 2200, Atlanta, Georgia 30303 (401) 220-2107.

Athens, Greece. A conference of ACSA members and students and faculty of European architecture schools will be hosted by the National Technical University of Athens. Contact Spiros Amourgis, ACSA International Relations Committee, % College of Environmental Design, Institute for International Studies, California State Polytechnical University, Pomona, Calif. 91768 (714) 869-2691 or Professor N. Kalogeras, National Technical University of Athens FAX 30 1 36-08-484.

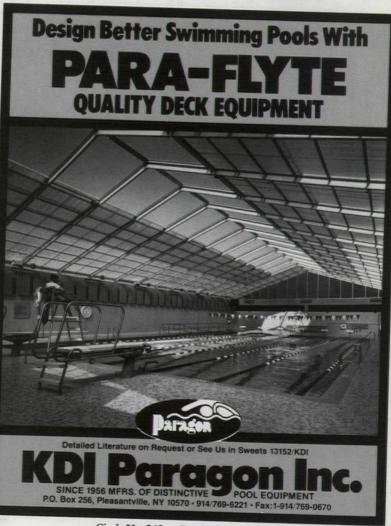


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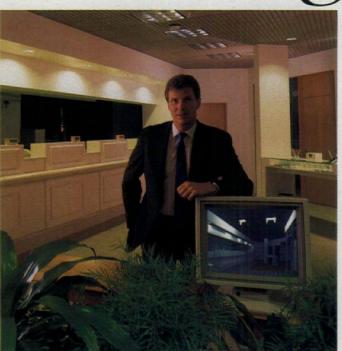
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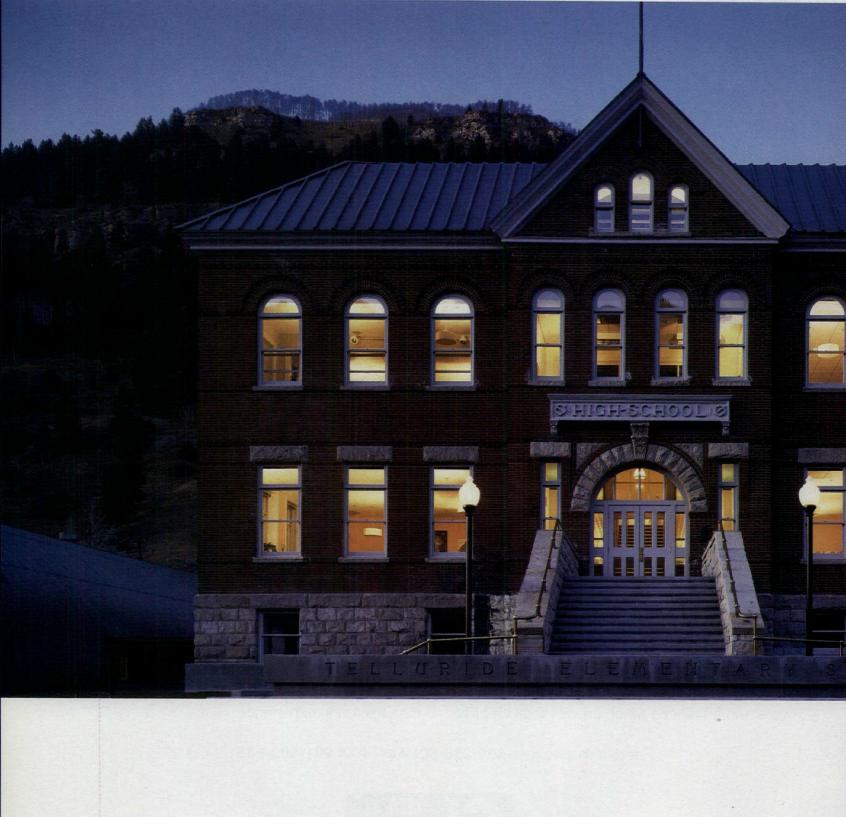
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Exterior Cement Board System





Technics Topics.

Architectural and engineering professionals share their observations about last fall's California earthquake.

Loma Prieta, October, 17, 1989: **Comments on the Earthquake**

The following observations about the recent California earthquake were solicited in writing from a number of practitioners who either experienced the quake or subsequently studied it.

Peter Calthorpe, principal, Calthorpe Associates, San Francisco: Without television to focus and amplify the event, the earthquake seemed more a shudder than a jolt. ... Its most shocking quality, for those of us not in the midst of serious damage, was just how instantly disruptive that 15 seconds had been.

Mark R. Hornberger, design principal, Hornberger, Worstell & Associates, San Francisco: The morning after the quake I took . . . a walking tour through the center of San Francisco to assess, first hand, the earthquake damage. I found there to be surprisingly little. . . . For all the media coverage which had focused our attention on the devastation in the Marina and at the Cypress Structure, I was walking through a densely developed downtown area virtually intact.... Modern building codes have achieved their primary objective.



Cracked terra cotta on the Broadway Building, Oakland.



"Soft" first story, in a four-story Marina-District apartment building.

... In spite of continuing "state-ofthe-art" advances, seismic engineering continues to be at least as much art as precise science.

Randolph Langenbach, Assistant Professor, Department of Architecture, University of California, Berkeley: The vast extent of the damage only became noticeable over time. ... As the months have passed, however, the full scope of damage to Oakland downtown was slowly revealed . . . by the inexorable creep of the chain link fence through the urban landscape. . . . It now promises to be a long time before things turn around. . . . In Santa Cruz, many of the damaged buildings were demolished quickly after the quake, and now many people are wondering if such hasty action was necessary, realizing that many of the qualities that made Santa Cruz special have been lost in the rush.

Rene W. Luft, principal, Simpson Gumpertz & Heger, San Francisco: The collapse of buildings in San Francisco showed us the effect of the confluence of soil amplification [amplification of earthquake movement occurring over a deep soil site], liquefaction [a quicksand condition that occurs from shaking loose, fine sands saturated by groundwater], and soft first stories [many four-story wood frame apartment buildings devoted the

ground floor entirely to garages with few columns and walls]. . . . The collapse of the Nimitz Freeway in Oakland should not have occurred about 70 miles away from the epicenter, [but was caused by] soil amplification on bay mud and a non-ductile reinforced concrete bridge design.... If a liquefactionsusceptible sand lies over a deep soil that amplifies the ground acceleration . . . the amplification creates the conditions of a huge earthquake and extensive liquefaction occurs.

David M. Cho, structural engineer, DMJM, Los Angeles: We found that structures designed to modern codes performed very well and sustained little structural damage. ... [Limited because of the ground accelerations away from the epicenter] the high-rise buildings were not considered to be truly put to the test. . . . In one instance a low-rise building withstood the quake but was threatened by an adjacent high-rise building that was collapsing. This is a new issue.

M. Arthur Gensler Jr., President, Gensler & Associates/Architects, San Francisco: Although most of our seismic design has been focused on the horizontal movement of buildings, the structural parts that seemed to fail with this earthquake were caused by a vertical movement of the earth, something that

Technics	
Technics Topics	39
Technics Feature	43
Technics-Related Products	140

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Tech Notes

Ventilation for Acceptable Indoor Air Quality, the new ASHRAE Standard 62-1989, increases outdoor air flow rate from 5 cfm to 15 cfm, and drops the distinction between smoking and non-smoking areas. ASHRAE (404) 636-8400, \$42.

Resinous Flooring (09705), Castin-Place Concrete (03300), and Ornamental Metal (05700) are new SpecGUIDES providing background information on materials, design considerations, references, and resources. CSI (703) 684-0300.

Your Home, Your Health, and Well-Being by David Rousseau, Dr. W.J. Rea, and Jean Enwright is a valuable introduction to environmental illness and irritating furnishings, building materials, and heating appliances. Ten Speed Press (415) 845-8414 in the U.S.; Hartley and Marks, Ltd. in Canada (604) 738-0644.

The Second Symposium on **Roofing Research and Standards** Development will be held in San Francisco, June 17-20, under sponsorship of ASTM. Papers will be available at the meeting. **Contact Thomas Wallace at** ASTM (215) 897-6253.

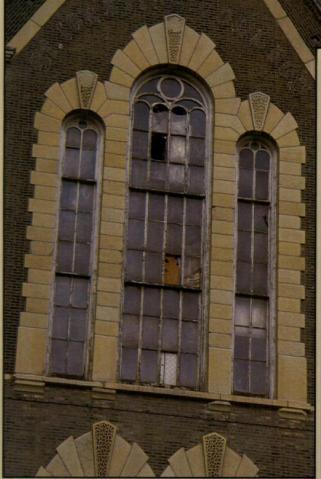
Repair and Replacement of Historic Wooden Shingle Roofs, Preservation of Historic Barns, and Repairing Historic Flat Plaster are Preservation Briefs 19-20 from the National Park Service. **NPS Preservation Assistance** Division (202) 343-9578, \$1 each.

Atmospheric Ecology for Designers and Planners by William Lowry contains diagrams, graphs, and sketches in the manner of Geiger's classic Climate Near the Ground, to which it is a worthy successor. Peavine Publications, Box 1264-R, McMinnville, Oreg. 97128, 435 pp., \$30.

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39

HISTORY REPEATS ITSELF



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Soft" first story, in a West Oakland house.

engineers and architects will have to address more seriously.... Damage, mostly minor, did occur to some buildings when adjacent buildings made contact after moving laterally in opposite directions. . . As in past earthquakes, buildings with unreinforced masonry bearing walls experienced substantial damage.... One disconcerting realization is how much better buildings fared than the freeway system.... One of the fallouts will no doubt be significant public opposition to two-level freeways.

Jelena Pantelic, Assistant Director. National Center for Earthquake Engineering Research, State University of New York at Buffalo: Typical single-family houses in Watsonville ... suffer from structural deficiencies, which are relatively inexpensive and easy to repair, but which in earthquakes prove to be lethal: Their frames were not securely bolted to the foundations, or the "cripple walls" (walls enclosing the space between the foundations and the ground floor) were insufficiently braced. Thus in severe ground shaking houses moved

horizontally two to three feet and, unrestrained by bolts, slipped off their foundations onto the ground.

. . The residential hotels [in Oakland almost exclusively] catered to the low-income clientele. These buildings were usually old . . . unreinforced masonry or non-ductile reinforced concrete structures.... They all performed poorly, and the residents had to be evacuated. [Architects and planners] should ... learn that the old building stock is extremely valuable and that its hazards must be reduced. This is especially important for the numerous examples of historical architecture or urban ensembles that are old and vulnerable, and that quickly fall prey - first to ground shaking and then to demolition crews. . . . Damage and huge . . . costs of collapsed residences were preventable.

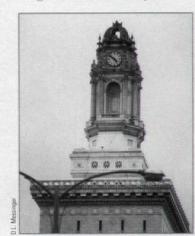
James Diaz, principal, Kaplan/ McLaughlin/Diaz, San Francisco: Had one of our urban centers been closer to [the epicenter], I am certain that the damage would have been inestimable.... There is a need for more care in the design,



"Cripple wall" collapse of a house in West Oakland.

construction, and maintenance of water and sprinkler pipes, large areas of suspended acoustical tile ceilings, boiler restraints, joints where there will be differential movement, and the fastening of shelving, files, and computers to walls and desk tops. . . . The social and economic cost of repairing, strengthening, and perhaps replacing the older unreinforced unit masonry buildings throughout the city will be staggering.

Marcy Li Wong, architect and engineer, Berkeley: It appears that the sentiment that preservation is essential (particularly of historic civic buildings) will prevail even if upgrading would probably be more expensive than a new building.... [The Oakland City Hall, which sustained a level of damage beyond acceptable occupancy,] is actually a very heavy building with the granite and brick only nomi-



X-shaped cracking on the Oakland City Hall belltower.

nally anchored to the frame. Exacerbating the heavy nature of the building materials is the configuration of the building, which steps inward as it rises culminating in an unreinforced masonry clock tower above the 16th floor . . . susceptible to whiplash action . . . as shown by the classic X-shaped shear cracking in its shaft.... The October 17 earthquake, which was not the "Big One," served as a warning that cities and private citizens had better face up to the hazards of seismically dangerous buildings and do something about them despite the daunting economic costs and inconveniences.

Henry J. Lagorio, Professor of Architecture, University of California, Berkeley: In the Marina . . . thousands of residents are still struggling with the disaster and

attempting to sort out their basics for recovery. It is believed by many planners that wholesale clearance of the Marina District isn't even a choice open for consideration. . . . Past experiences . . . indicate that comprehensive proposals to rebuild the Marina in its present location will be considered and adopted.... Already an ordinance has been adopted that will allow owners in the Marina to rebuild to the same size.

Richard N. Wright, Director, Center for Building Technology, National Institute of Standards and Technology: While [the Loma Prieta quake] was the largest earthquake to strike Northern California since the great San Francisco earthquake of 1906, earthquakes of similar or larger size are expected to affect 46 of the 50 states. . . . The areas affected by the earthquake are among the few best prepared in the United States. . . . Californian efforts to develop, adopt, and enforce up-to-date seismic design and construction practices for buildings and lifelines deserve great credit for [their good performance.]

Ronald A. Altoon, principal, Altoon & Porter Architects, Los Angeles: [Both the San Francisco and the December 7, 1988 Armenian earthquakes were] of significantly high intensity, yet the damage and resulting recovery were and are directly derivative of the respective socio/economic-political systems that have produced and controlled them. . . . Most telling of all is that [in Leninakin] every building constructed in the past 15 years was demolished; quite the opposite was true in the Bay area. The damage itself suggests that there is something inherently beneficial about a system that continues to scrutinize itself at every level and to foster the concern for safety and human life.



Typical damage to wood-frame house due to lateral movement.

41

Technics Topics

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High-grade Subgrades

Principles of building science and computer technology offer new insight and recommendations for the thermal design of basements.

In the energy-conscious years of the 1970s, much attention was focused on solar design, insulation, shading, ventilation, and thermal mass effects. By the early 1980s, a large body of research literature and guidelines for thermal design of the superstructure had been amassed. But, as one wag put it, we were designing "today's building on yesterday's foundation." The Department of Energy recognized this, and since 1983 much effort has been directed towards understanding and improving the thermal performance of foundations. One of the best aspects of this new work is its basis on principles of building science. These principles explain and predict thermal and moisture conditions within walls in a way that allows the ramifications of design and detailing decisions to be studied clearly and systematically.

Nature of Problem

Basements are endemic to northern states and are thermally designed in response to winter conditions. The theory of steady state two-dimensional heat flow has been supported well enough by field measurements and by computer simulations to use it as a basis for describing the nature of the winter thermal design problem. This theory - the same used by mechanical engineers to predict design heat loss for sizing heating equipment - explains that heat leaving the basement wall travels along a circular path centered on the intersection of the grade with the foundation wall. The rate of heat loss is greatest above grade and diminishes with depth. Although soil has a unit R-value (resistivity) ranging between R-0.9 and R-1.6 per foot thickness (depending on soil type and moisture content), the curvilinear geometry of the heat flow from the basement wall to the surface gives the soil an insulating effect that increases with depth at a greater rate than simply multiplying the unit resistance by the depth. A soil with a moderate resistivity of R-1.3 per foot acts like a wedge of insulation that increases in R-value by a factor of about R-2 per foot depth. At basement floor level, therefore, the effective resistance of the soil is roughly twice the depth of the floor (in feet) below grade. Because no resistance is offered by the soil at grade level, the effective R-value of the entire soil mass acting over the depth of the subgrade wall is roughly equal to the depth of the basement floor in feet (the average of zero and twice the depth of the wall). This practical rule of thumb means that the lineal design heat loss of the subgrade wall can be figured as the temperature difference between the basement and outdoor air (taken as weekly averages during mid-winter) divided by the sum of the wall assembly R-value and the depth of the wall in feet. The accompanying sidebar explains the theory and application in mathematical terms.

Theoretically Optimal Insulation

To this understanding of the wintertime behavior of the soil can be applied a theory set forth by the Swedish researchers Johan Claesson and Bengt Eftring. They claim to have proved mathematically that the most efficient use of insulation is that which produces the same rate of heat loss over the entire surface area of the basement wall. This means that if it were desirable to insulate the above grade portion of the wall with three inches of rigid foam at R-15, for example, then the foam could taper off by R-2 per foot to nothing at a depth of 71/2 feet. The taper could be approximated by stepping R-5 boards in 30-inch-high courses. This is fussy work in execution and, while many researchers accept Claesson and Eftring's theoretical premise, neither the cost effectiveness nor the increase in thermal efficiency has been evaluated. The principle is important, however, because it explains why it rarely makes sense (in the U.S.) to insulate under basement slabs, and why insulating just the top half of the wall is often recommended. In theory, the taper is more important when the wedge it forms accounts for most of the insulation used, as opposed to the tapered wedge being applied on top of several inches of uniformly thick insulation. Because the above grade section of the wall has no protection from the soil, it demands the most insulation and attention in detailing.

In principle, Claesson and Eftring's theory of equalizing heat loss applies to the entire building envelope and can be used to determine how much insulation should be used on foundation walls, with reference to that used throughout the superstructure; this application of theory must also account for the temperature differences between the basement and the occupied space above, since the heat loss rate is governed by temperature differences (see Architectural Graphic Standards, 8th edition, page 709). The theory strictly applies, however, only when the installed cost of the various insulation materials used in the building is the same, which is hardly ever the case. Instead, most current guidelines and energy conservation code standards are based on the cost-effectiveness of foundation insulation as an investment on its own terms, without reference to the insulation levels used in the superstructure.

Insulation and Condensation

The most interesting and difficult thermal design issues for light-frame structures occur at the transition from foundation to superstructure. Breaks in continuity of the insulation are inevitable with many types of construction. In some cases, thermal bridges promote condensation that, in rare cases of prolonged moisture, may lead to rot in wood members or corrosion in some others. In less severe cases, intermittent condensation may cause water staining or support the growth of mildew. Severe damage from condensation seems to be very unusual and occurs less often than simple conduction analysis methods predict. Air leakage through joints around the condensation areas may have a drying effect, although the amount and effects of such leakage are difficult to estimate. Soil as Insulation

Through the above grade portion of the wall, the heat loss may be figured as the difference between the indoor and outdoor temperature divided by the overall R-value (i.e., including the indoor and outdoor air film coefficients):

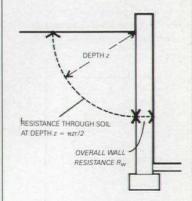
$$Q_{sf} = (T_i - T_o)/R_w$$

where T_i and T_o are the indoor and outdoor air temperatures (Fahrenheit), respectively, R_w is the reciprocal of the U-value (including the indoor and outdoor air film resistances) and has dimensions of ft²(hr)F/Btu, and Q_{sf} is the heat loss in Btu/(ft²)hr.

For the below grade section of wall, the resistance of the soil through which the heat passes on its circular route to the surface must be combined with the resistance of the wall. When the grade is nearly horizontal, the length of the path through the soil is one-quarter the circumference of a circle, or $\pi z/2$ for a radius (at a depth below grade) of z. The R-value of this path is the length $\pi z/2$ times the thermal resistivity of the soil, or $\pi z r/2$, where r is the thermal resistivity. (Thermal resistivity is the R-value per unit thickness. It is the reciprocal of thermal conductivity, and has dimensions of ft(hr)F/Btu.) The rate of heat loss out through the wall at depth z is,

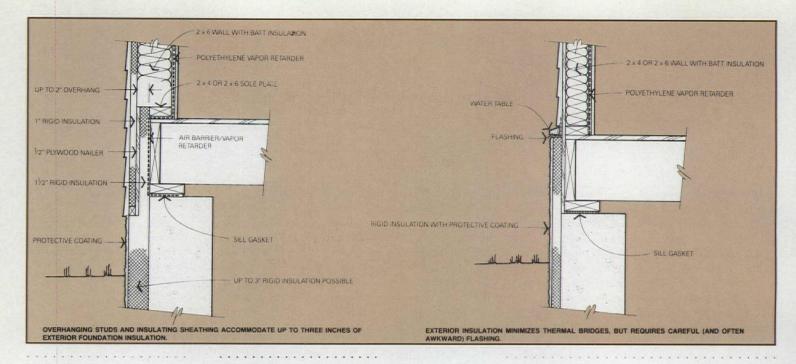
$$= (T_i - T_o)/(R_w + \pi z r/2).$$

Qu



The large thermal mass of the soil averages out daily temperature variations, so the indoor and outdoor temperatures T_i and T_o should be weekly averages.

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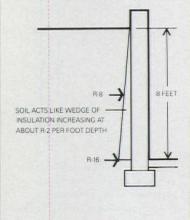
The thermal resistivity of soil varies widely with soil type and moisture content, but design values can be assumed in the range of 0.9 to 1.6 ft(hr)F/Btu. Substituting in a value of 1.3 for *r*, and rounding off,

$$Q_{sf} = (T_i - T_o)/(R_w + 2z)$$

At the surface (z = 0), the expression is the same as given previously for the above grade wall. At a depth of one foot, the soil offers a resistance of R-2, and this continues to increase by R-2 per foot depth. At eight feet below grade, the soil adds a resistance of R-16, or very nearly that of a six-inch fiberglass batt, to the wall. This rate of increase of R-2 per foot leads to the simple rule-of-thumb that the effective R-value of the entire mass of soil averaged over the depth of the (subgrade) wall is roughly equal to the depth of the wall in feet. The lineal heat loss from the wall can be written.

$$Q_{l} = (T_{i} - T_{o})/(R_{w} + d)$$

where *d* is the depth of the floor level below grade in feet, and Q_j is the heat loss in Btu/(ft)hr per hour.



Design Against Condensation

If R_w is the overall thermal resistance of the wall, and R_x is the sum of R-values of materials on the exterior side of location x, then,

$$T_x = T_o + [R_x(T_i - T_o)]/R_w,$$

where T_o and T_i are the outdoor and indoor (dry-bulb) air temperatures. Condensation is expected at location x if T_x is lower than the indoor dew point - unless the materials on the indoor side of x freely transmit water vapor. This is essentially true if x is the indoor surface of the band joist, and the only material inboard of it is an unfaced fiberglass batt (see Example 1). Under such conditions, the band joist temperature will be very close to that of the outdoor air, and the insulation contributes to the likelihood of condensation. This analysis points out the wisdom of installing a vapor retarder on the room side of the batt, or using a vapor resistant rigid foam insulation in lieu of batts.

The temperature T_s of the interior surface facing the room (wallboard or an exposed band joist) is figured in the same way as T_{x^2} except the only thermal resistance acting on the indoor side of the finish surface is the indoor air film, which is typically assumed as R-0.65 ft²(ar)F/Btu:

 $T_s = T_o + [(R_w - 0.65)(T_i - T_o)]/R_w.$

Example 2 shows that condensation will not occur on an uninsulated band joist with an outdoor temperature of 5F and an indoor temperature of 65F, with a relative humidity of 40 percent. It is likely under the same conditions, but with an indoor relative humidity of 80 percent. There has been little investigation of condensation problems, ostensibly because poorly insulated buildings of the past have not suffered much damage. Because the location of insulation greatly influences where and when condensation may occur, interest in how insulation may promote or prevent condensation is increasing as insulation levels increase. Although infiltration affects thermal and moisture conditions within the wall, it is usually ignored, and conditions are analyzed in terms of thermal conduction alone. While this gives conservative guidance, the analysis is simple and should be understood by all architects with detailing responsibilities.

Condensation occurs on surfaces with temperatures at or below that of the surrounding air. The dew point can be read from the psychrometric chart (see *Architectural Graphic Standards*) if the dry-bulb temperature and relative humidity are known. The temperature of any surface within the wall section is directly proportional to the location of the surface with respect to the thermal resistance of materials flanking it. The surface temperature can be calculated by the methods described in the sidebar.

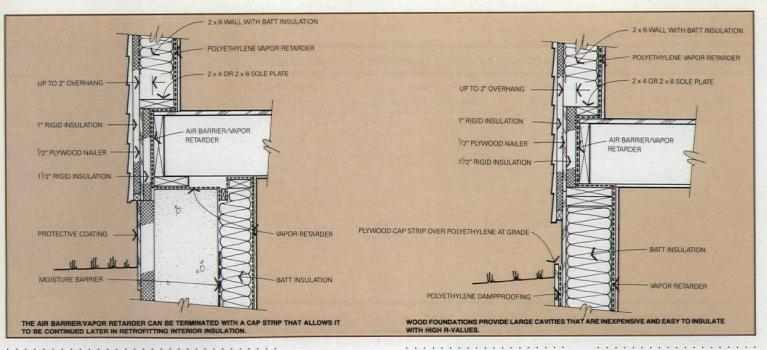
The examples described in the sidebar reveal how condensation can be expected on the inboard face of a band joist under one set of temperature conditions, but not expected with the same temperatures and a lower indoor humidity. The second example shows how insulating at the inboard side of the band joist with fiberglass batts greatly depresses the band joist temperature and increases the likelihood of condensation on the joist - and thereby indicates the need for a vapor retarder. In the third case, the mathematical expression has been rearranged to determine how much insulation is required to maintain the band joist above the dew point temperature. The examples show that the required insulation thickness is very sensitive to the indoor dew point and that condensation can be avoided under even fairly severe temperature and moisture conditions with only an inch or two of rigid foam insulation outside the band joist.

Insulation Location

The location of insulation – whether at the interior or exterior side, or within the wall – generally has little effect on energy performance. Most exceptions occur as a result of thermal bridges where the

44

hermal Foundations



superstructure meets the foundation wall. Exterior placement of insulation can eliminate thermal bridges in wood frame construction, as shown in the accompanying details. Half wall interior insulation is especially inefficient when applied to hollow concrete masonry: Air within the block cells carries heat from the uninsulated bottom half of the wall at the inside to the uninsulated top half at the outside. Thermal bridges seem to be unavoidable with brick veneer, although some compromises are possible, as shown in the accompanying detail.

Many advantages and disadvantages of exterior and interior insulation placement can be cited. Although exterior placement has many more favorable attributes according to building physics, it is generally more costly to install than interior insulation, and many protective treatments don't weather very well. Interior insulation, while theoretically inferior on many counts, seems to perform adequately in general use and is popular by dint of its economy and convenience. The suitability of each should be evaluated on a job-by-job basis, using the accompanying table as a guide.

The most cost effective foundation insulation depends on many factors, including climate, soil thermal properties, setpoint temperatures and operating schedule, thermal coupling with other building zones, HVAC system efficiencies, installed cost of insulation, long term costs of fuel and financing, payback period, tax status of the owner, resale value of the insulation as a selling feature, and depth, size, and shape of foundation. In order to make usable generalizations, values have to be assigned to all the physical and economic factors listed above. The recommendations presented here have been formatted for P/A by the University of Minnesota from a data base prepared by the University and others for the Department of Energy's Building Foundation Design Handbook. Some of the assumptions made in the analysis are summarized under the tables. Many other foundation types and insulation configurations were studied and are presented in the Handbook, along with typical foundation and superstructure details that also consider waterproofing, drainage, radon, and termite control issues.

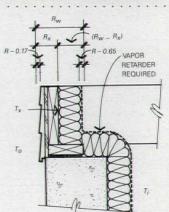
This same set of relations can be rearranged to determine how much insulation should be placed outside an exposed band joist to prevent condensation from occurring on its indoor surface, under some set of design conditions. The first step is to find the required R-value R, of the overall wall section, excluding the indoor film coefficient. This is determined by the relation,

$R_s = [0.65(T_{dew} - T_o)]/(T_i - T_o)]$ T_{dew}),

where T_{dew} is the indoor dew point temperature selected for design purposes. The required insulation to be added outside the band joist must be equal or greater than R_s minus the R-value of the uninsulated wall section, including the outdoor air film resistance but disregarding the indoor film resistance. In Example 3, an indoor dew point temperature of 60F - representing 85 percent relative humidity at 65F - was arbitrarily selected. The analysis shows that R3.7 of insulation is required to prevent condensation under these conditions. This can be satisfied with an inch of most rigid plastic foams. Under the same conditions, but at 90 percent relative humidity (60F dew point), R-8.9 of insulation is required, or two inches of a high density foam.

Case Studies: Condensation

Design conditions for all examples: Indoor temperature Ti = 65FOutdoor temperature $T_o = 5F$



Example 1. Interior Insulation Condensation is expected when temperature T_x within the assembly falls below the indoor dew point temperature:

$$T_x = T_o + [R_x(T_i - T_o)]/R_u$$

Outdoor air film 0.17 Clapboards 0.80 Plywood sheathing 0.60 Band joist (2x) 1.90 3.47 R. 11.00 Fiberglass batt (31/2") Indoor air film 0.65 R 15.12 $T_x = 5 + [3.47(65 - 5)]/15.12$

 $T_x = 19F$

A dew point temperature of 19F corresponds to a relative humidity of less than 20 percent at 65F. Condensation can be expected whenever indoor relative humidity exceeds 20 percent.

45

hermal Foundations

Foundation Insulation Recommendations

Recommended Insulation Levels for Conditioned Basements (heated and air-conditioned)

	Foundation Type and	Low Fuel Price ¹		Medium Fuel Price ²		High Fuel Price ³	e ³
Climate Zone	Insulation Location	Best Case	Savings	Best Case	Savings	Best Case	Savings
8000-10000	Concrete: Exterior	R-10 (8ft)	0.45 MBtu/lf	R-15 (8ft)	0.48 MBtu/lf	R-15 (8ft)	0.48 MBtu/lf
Heating Degree Days	Wood: Within Wall	R-19 (8ft)	0.21 MBtu/lf	R-19 (8ft)	0.21 MBtu/lf	R-19 (8ft)	0.21 MBtu/lf
6000-8000	Concrete: Exterior	R-10 (8ft)	0.35 MBtu/lf	R-10 (8ft)	0.35 MBtu/lf	R-15 (8ft)	0.38 MBtu/lf
Heating Degree Days	Wood: Within Wall	R-19 (8ft)	0.17 MBtu/lf	R-19 (8ft)	0.17 MBtu/lf	R-19 (8ft)	0.17 MBtu/lf
4000-6000	Concrete: Exterior	R-10 (8ft)	0.29 MBtu/lf	R-10 (8ft)	0.29 MBtu/lf	R-15 (8ft)	0.31 MBtu/lf
Heating Degree Days	Wood: Within Wall	R-19 (8ft)	0.14 MBtu/lf	R-19 (8ft)	0.14 MBtu/lf	R-19 (8ft)	0.14 MBtu/lf
2000-4000	Concrete: Exterior	R-5 (4ft)	0.16 MBtu/lf	R-10 (8ft)	0.24 MBtu/lf	R-10 (8ft)	0.24 MBtu/lf
Heating Degree Days	Wood: Within Wall	R-11 (8ft)	0.09 MBtu/lf	R-19 (8ft)	0.11 MBtu/lf	R-19 (8ft)	0.11 MBtu/lf
0-2000 Heating Degree Days	Concrete: Exterior Wood: Within Wall	No Insulation No Insulation	-	No Insulation No Insulation	1	R-5 (4ft) R-11 (8ft)	0.04 MBtu/lf 0.02 MBtu/lf

Recommended Insulation Levels for Unconditioned Basements (not directly heated or air-conditioned)

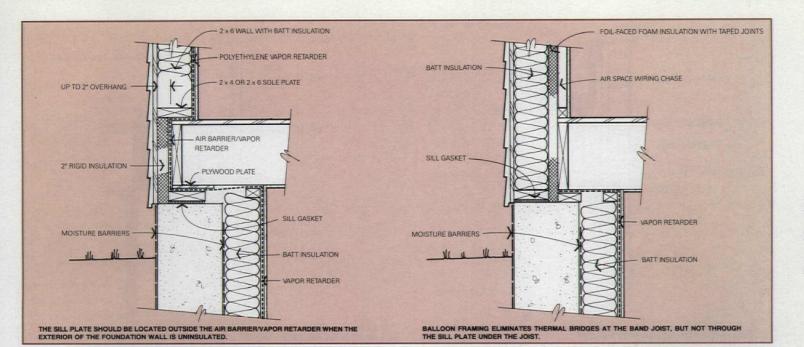
8000-10000 Heating Degree Days	Concrete: Exterior Wood: Within Wall Concrete: Ceiling	R-5 (4ft) R-11 (8ft) R-30	0.08 MBtu/lf 0.07 MBtu/lf 0.03 MBtu/sf	R-5 (4ft) R-19 (8ft) R-30	0.08 MBtu/lf 0.08 MBtu/lf 0.03 MBtu/sf	R-10 (8ft) R-19 (8ft) R-30	0.13 MBtu/lf 0.08 MBtu/lf 0.03 MBtu/sf
6000-8000 Heating Degree Days	Concrete: Exterior Wood: Within Wall Concrete: Ceiling	No Insulation R-11 (8ft) R-30	- 0.05 MBtu/lf 0.02 MBtu/sf	R-5 (4ft) R-11 (8ft) R-30	0.06 MBtu/lf 0.05 MBtu/lf 0.02 MBtu/sf	R-5 (4ft) R-11 (8ft) R-30	0.06 MBtu/lf 0.05 MBtu/lf 0.02 MBtu/sf
4000-6000 Heating Degree Days	Concrete: Exterior Wood: Within Wall Concrete: Ceiling	No Insulation No Insulation R-11	- 0.01 MBtu/sf	No Insulation R-11 (8ft) R-11	0.03 MBtu/lf 0.01 MBtu/sf	R-5 (4ft) R-11 (8ft) R-30	0.04 MBtu/lf 0.03 MBtu/lf 0.02 MBtu/sf
2000-4000 Heating Degree Days	Concrete: Exterior Wood: Within Wall Concrete: Ceiling	No Insulation No Insulation No Insulation	-	No Insulation No Insulation No Insulation	-	No Insulation No Insulation No Insulation	-
0-2000 Heating Degree Days	Concrete: Exterior Wood: Within Wall Concrete: Ceiling	No Insulation No Insulation No Insulation	-	No Insulation No Insulation No Insulation		No Insulation No Insulation No Insulation	-

Recommended Insulation Levels for Crawl Spaces (2 foot high walls)

8000-10000	Concrete: Exterior	R-10	0.09 MBtu/If	R-10	0.09 MBtu/lf	R-10	0.09 MBtu/If
Heating Degree Days	Concrete: Interior	R-10	0.09 MBtu/lf	R-10	0.09 MBtu/lf	R-10	0.09 MBtu/If
	Wood: Within Wall	R-19	0.04 MBtu/If	R-19	0.04 MBtu/If	R-19	0.04 MBtu/If
The second second	Ceiling (vented)	R-19	0.04 MBtu/sf	R-30	0.05 MBtu/sf	R-30	0.05 MBtu/sf
6000-8000	Concrete: Exterior	R-5	0.06 MBtu/lf	R-10	0.07 MBtu/lf	R-10	0.07 MBtu/lf
Heating Degree Days	Concrete: Interior	R-5	0.07 MBtu/If	R-10	0.07 MBtu/lf	R-10	0.07 MBtu/If
	Wood: Within Wall	R-19	0.02 MBtu/lf	R-19	0.02 MBtu/If	R-19	0.02 MBtu/If
	Ceiling (vented)	R-19	0.04 MBtu/sf	R-19	0.04 MBtu/sf	R-30	0.05 MBtu/sf
4000-6000	Concrete: Exterior	R-5	0.04 MBtu/lf	R-5	0.04 MBtu/lf	R-10	0.05 MBtu/lf
Heating Degree Days	Concrete: Interior	R-5	0.05 MBtu/lf	R-5	0.05 MBtu/If	R-5	0.05 MBtu/lf
	Wood: Within Wall	R-11	0.01 MBtu/lf	R-11	0.01 MBtu/If	R-19	0.02 MBtu/If
	Ceiling (vented)	R-19	0.02 MBtu/sf	R-19	0.02 MBtu/sf	R-19	0.02 MBtu/sf
2000-4000	Concrete: Exterior	No Insulation		R-5	0.04 MBtu/lf	R-5	0.04 MBtu/If
Heating Degree Days	Concrete: Interior	R-5	0.03 MBtu/lf	R-5	0.03 MBtu/If	R-5	0.03 MBtu/If
	Wood: Within Wall	No Insulation		No Insulation		R-11	0.02 MBtu/If
	Ceiling (vented)	R-11	0.01 MBtu/sf	R-11	0.01 MBtu/sf	R-19	0.02 MBtu/sf
0-2000	Concrete: Exterior	No Insulation		No Insulation	-	No Insulation	-
Heating Degree Days	Concrete: Interior	No Insulation	-	No Insulation	Sec. 1	No Insulation	-
	Wood: Within Wall	No Insulation		No Insulation		No Insulation	-
	Ceiling (vented)	R-11	0.01 MBtu/sf	R-11	0.01 MBtu/sf	R-11	0.01 MBtu/sf

Notes 1. Low fuel price represents natural gas at 37.4¢/therm, oil at 52.7¢/gallon, propane at 34.4¢/gallon, and electrical resistance heat at 1.9¢/kWh. 2. Medium fuel price represents natural gas at 56.1¢/therm, oil at 79.1¢/gallon, propane at 51.6¢/gallon, and electrical resistance heat at 2.8¢/kWh. 3. High fuel price represents natural gas at 84.2¢/therm, oil at \$1.19/gallon, propane at 77.5¢/gallon, and electrical resistance heat at 4.2¢/kWh. General note: Recommendations are based on a mortgage and life cycle analysis period of 30 years.

general inflation rate of 5%, fuel inflation rate of 7%, down payment of 10%, finance rate of 12%, discount rate of 10%, heating system efficiency of 68%, and installed costs based primarily on data from the National Association of Home Builders. The "best case" is figured on both heating and cooling season performance. "Savings" indicates total heating season energy use savings (for the heating system) in millions of Btu per lineal foot of foundation or per square foot of basement or crawl space ceiling, as compared to the same construction, uninsulated (this value also embodies a heating system efficiency of 68%). **Source:** Prepared by the University of Minnesota and others for the Department of Energy.



Interior and Exterior Insulation Attributes

Exterior Insulation Advantages

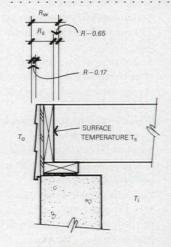
- · Eliminates most thermal bridges.
- Reduces condensation potential.
- Simplifies detailing by eliminating need for vapor retarder.
- Minimizes seasonal thermal expansion and contraction in wall.
- Maintains waterproofing close to indoor temperature (keeps elastomeric materials more pliable).
- Prevents moisture within wall from freezing.
- May serve as protection board for some waterproofings.
- Is more efficient for half-height application on masonry walls.
- Couples thermal mass of wall with interior space (not usually important).
- Does not subtract from indoor floor area.
- Serves as capillary-breaking membrane.
- Some products have drainage capability.
- · Lowers relative humidity within wall.

Exterior Insulation Disadvantages

- Material cost is higher than interior insulation.
- Exposed area above grade needs protection from physical abuse and sunlight.
- Boards may be dislodged by frost heaving in backfill.
- · Boards may be dislodged by settling of backfill.
- Detailing is awkward except with overhanging 2 x 6 studs or exterior sheathing.
- · Thick insulations are hard to accommodate.
- Plastic foams may be attacked by, and conceal entry into the superstructure by ants, termites, and other vermin.

Interior Insulation Advantages

- Suitable materials (batts and EPS "beadboard") are inexpensive.
- Furred-out cavity is convenient chase for utilities.
- Can be installed at any time (convenient for retrofit).
- Is convenient if furring is required for finish material.



Example 2. Surface Temperature. Condensation is expected when surface temperature T_s falls below the indoor dew point temperature:

 $T_s = T_o + [(R_w - 0.65)(T_i - T_o)]/R_w$

Outdoor air film	0.17
Clapboards	0.80
Plywood sheathing	0.60
Band joist (2x)	1.90
Indoor air film	0.65

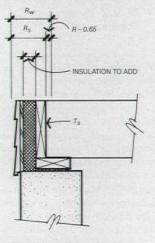
=4.12

 $T_s = 5 + [(4.12 - 0.65)(65 - 5)]/4.12$

 $T_{s} = 55.5 F$

R.

A dew point temperature of 55.5F corresponds to a relative humidity of about 72 percent at 65F. Condensation is not expected unless indoor relative humidity exceeds 72 percent.



Example 3. Condensation Prevention

The amount of insulation required outside the band joist is the difference between R_s at the selected dew point and the sum of resistances of materials outside the exposed band joist surface. Assuming a relative humidity of 85 percent for the basement (a dew point temperature of 60F):

$$R_s = 0.65(T_{dew} - T_o)/(T_i - T_{dew})]/R_w$$

 $R_c = 0.65(60 - 5)/(65 - 60)$

 $R_{\rm s} = {\rm R} - 7.15$

Sum

The uninsulated resistance of the assembly is: R-values of materials:

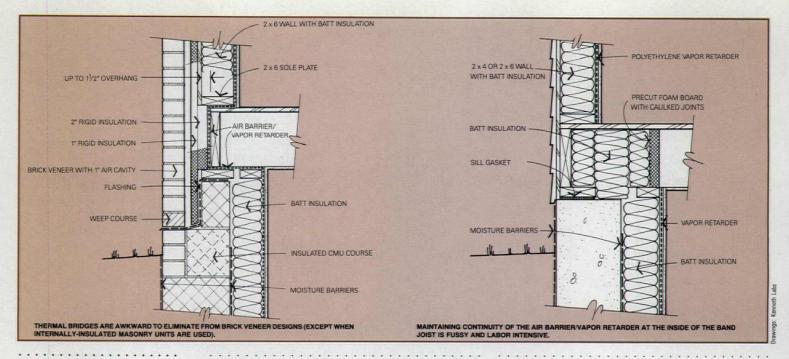
Band joist (2x)	1.90
Plywood sheathing	0.60
Clapboards	0.80
Outdoor air film	0.17

= 3.47

The required insulation to add must have an R-value no less than 7.15 - 3.47 = R-3.68.

47

hermal Foundations



Revised Masonry Requirements

Thermal performance and insulation isn't the only subject of new standards for basement design. BOCA's 1990 National Building Code incorporates by reference the Joint ACI/ASCE Committee 530 Masonry Code. Adoption has been proposed for CABO as well, but the earliest this could appear - if passed would be in the 1991 Supplement. The 530 Code contains new, more conservative standards for empirically designed (nonengineered) foundation walls. The requirements for ungrouted hollow concrete masonry work out to a convenient rule of thumb: The depth of unbalanced fill in feet must not exceed one-half the thickness of the wall in inches. The Committee 530 report, Building Code Requirements for Masonry Structures and Specifications for Masonry Structures is available from the American Concrete Institute (313) 966-2600.

The problem of buckling in masonry foundation walls – which this code change should help to reduce – was discussed by University of Illinois researcher William Rose in the March 1988 issue of the Journal of Light Construction (800) 345-8112. Rose called attention to the need to know more about the shrinking and swelling properties of backfill soils.

Interior Insulation Disadvantages

- Thermal bridges are difficult to avoid at top of wall.
- Vapor retarder is required.
- Wall is exposed to outdoor seasonal temperature change and resulting thermal expansion and contraction.
- Wall thermal mass is uncoupled from the interior (not usually important).
- · Subtracts from interior floor area.
- Not recommended for half-wall applications on hollow concrete masonry.
- · Conceals termite infestations.
- May promote adfreezing and tangential frost heaving with hollow concrete masonry in severely cold regions.

Translation Into Detail

When the band joist is insulated at its exterior, a membrane vapor retarder is theoretically unnecessary, but it still serves as an air barrier. Some experts argue that an air barrier can be created by installing gaskets in joints between plates, subfloor, band joist, and foundation wall. While sound in principle, this approach has no performance history.

The sidebar methods can be used to evaluate the effect of insulating both sides of the band joist. One rule-of-thumb states that the R-value added inboard of the vapor retarder should not exceed one-third of the total section resistance. As a rule, also, the vapor retarder should be routed by the warm side of thermal bridges. The details show the vapor retarder on the top of sill plates on a cold foundation wall, but under the plate (where it is physically better protected) when the wall is insulated at the exterior.

Conclusion

While fundamental precepts of building science have long been used by engineers and diagnostics investigators, architects have largely relied on "standard practices" and details passed on from one office to another in various ways. As practices and materials of the past give way to demands for greater efficiency, economy, and performance, architects may find it increasingly useful to turn to physics to inform their decisions about design and detailing. In the case of foundations, simple theory provides guidance for detailing and determining advantages and disadvantages of different insulation location alternatives. It also suggests a new practice – tapered or stepped insulation – that merits further study. And the methods described will not become obsolete with new materials or new demands. **Kenneth Labs**

Recommended Reading

Building Foundation Design Handbook, K. Labs, J. Carmody, R. Sterling, L. Shen, J. Huang, D. Parker, University of Minnesota, Underground Space Center, Minneapolis (612) 624-0066, 1988.

Simplified Design of Building Foundations, 2nd ed., J. Ambrose, J. Wiley and Sons, Somerset, NJ (201) 469-4400, 1988.

Guide to Residential Cast-in-Place Concrete Construction, ACI 332R-84, American Concrete Institute, Detroit (313) 966-2600, 1985.

Joints in Walls Below Ground, CR059, Portland Cement Association, Skokie, Ill. (708) 966-9559, 1982.

Basement and Foundation Walls, TR68-A, National Concrete Masonry Association, Herndon, Va. (703) 435-4900, 1975.

The Permanent Wood Foundation System: Basic Requirements, National Forest Products Association, Washington, D.C. (202) 463-2700, 1987.

Acknowledgments

P/A would like to thank John Carmody of the University of Minnesota's Underground Space Center for extracting from their database the insulation recommendations in the tabular format presented here. Development of the database was sponsored by the Department of Energy, Jeff Christian, contract manager, and Sam Taylor, program manager, as a task in the preparation of the Building Foundation Design Handbook. Much of the article is based on prior research by the author, under sponsorship of the Department of Energy and appearing in the Handbook and in Assessment of the Energy Savings Potential of Building Foundations Research, R. Sterling, G. Meixel, L. Shen, K. Labs, and T. Bligh, Oak Ridge National Laboratory ORNL/ SUB/84-00240/1, 1985, and "Earth Coupling," Chapter 5, Passive Cooling, J. Cook, editor, MIT Press, 1989, produced as part of DOE's Solar Thermal Energy Conversion Technology Status and Assessment.

Radon Roundup

Radon has been in the news for several years now, but the first quarter of 1990 brings a clutch of new publications and activities. There are new developments going on behind the scenes that may emerge in the form of building codes, but for the moment, compliance with recommended standards is still voluntary.

Single-family houses have been the subject of most radon mitigation research and retrofit activity because houses are more closely coupled to the soil, have higher occupancy rates (in hours per day), and account for a larger percentage of the building stock than other building types. While attention is shifting toward non-residential buildings – especially schools, which are also closely coupled to the soil and which house a population of special public concern – most available literature about reducing radon entry in construction is aimed at homeowners and house designers and builders.

Design and Construction Guidelines

The Environmental Protection Agency in August 1987 issued *Radon Reduction in New Construction: An Interim Guide*,¹ developed in cooperation with the National Association of Home Builders Research Center, and widely distributed through federal and local agencies. The radon control chapter of the Department of Energy's *Building Foundation Design Handbook*² was based largely on recommendations provided by the EPA concurrent with production of the *Interim Guide*, although it is formatted for architects and contains some details and practices not found in the EPA/ NAHB document.

The NAHB has just released its *Radon Handbook* for the Building Industry.³ While this is an excellent reference on its own terms, it is unmistakably aimed at builders, as its chapter on radon liability and contract provisions reveals. The NAHB also maintains a Radon Information Clearinghouse and radon "hotline" at (800) 638-8556.

Also prepared by the NAHB Research Center (and released almost simultaneously with their own booklet) is the National Concrete Masonry Association's *Building Radon Resistant Foundations: A Design Handbook.*⁴ While there are many expected similarities between the two guides, the NCMA publication is more masonry-specific and contains additional details. The National Forest Products Association's *Radon Reduction in Wood Floor and Wood Foundation Systems*⁵ appeared in 1988 and applies the principles of the EPA's *Interim Guide* to wood foundation detailing – with review by EPA and NAHB staff.

Radon Reduction in Schools: Technical Guidance⁶ is EPA's first guidance publication aimed at non-residential buildings. While it does not fully address the architect's needs, it is required reading for school designers and remodelers.

Codes and Standards

The EPA has been mandated by Title III, Section 304, of the Toxic Substances Control Act to develop model construction standards and techniques for controlling radon level in new buildings and to make them available by June 1, 1990. These are intended for use by model code writing organizations or adoption by local government. The technical content of the forthcoming standards is not going to differ significantly from the Interim Guide and its progeny. It will address (1) sealing of cracks and joints; (2) providing a soil gas/vapor retarder under floor slabs and at the exterior of below grade walls; (3) installing the rudiments of a subslab depressurization system that can be completed at a later date if conditions warrant; (4) techniques that reduce the movement of air between the foundation and superstructure.

Task Group E06.41.09 of ASTM is working on several draft standards on radon control in new and retrofit construction. A draft of *Radon Control Options for New Low-Rise Residential Buildings* will be discussed at the E06 Committee meeting in New Orleans, March 25–29. Architects interested in participating or following the committee's work may contact David Bradley at ASTM (215) 299-5504.

The Washington State Energy Office, under sponsorship of the Bonneville Power Administration, meanwhile, has published the *Northwest Residential Radon Standard*.⁷ This is a model code that offers alternative performance and prescriptive paths of compliance and contains useful annotations on many of the code provisions.

Radon Research

While the EPA is expected to publish a national map delineating regions where elevated indoor radon levels have been consistently reported, the National Institute for Standards and Technology has been exploring methods of characterizing radon source potential on a site-by-site basis through a combination of field and laboratory soil tests for radium activity, dry density and porosity, and dry gas permeability. Although even a small cost for field testing might exceed that of providing minimal control measures for a single dwelling, researchers speculate that the field test could pay for itself many times over in multiunit developments, when no mitigation efforts are warranted. Although the initial effort has concluded that soil tests of radon source strength are feasible and practical, much work remains to be done before procedures are standardized in a workable way.

Research continues to evaluate the effectiveness of mitigation techniques and to fine-tune current practices. The state-of-the-art was discussed last month at EPA's 1990 International Symposium on Radon and Radon Reduction Technology. Proceedings will be available within the next few months and may be obtained through the National Technical Information Service (703) 487-4600. Kenneth Labs

Current References

1. Radon Reduction in New Construction: An Interim Guide (EPA), National Association of Home Builders National Research Center, Upper Marlboro, Maryland, (800) 638-8556, 1987.

2. Building Foundation Design Handbook (DOE), University of Minnesota, Underground Space Center, Minneapolis, (612) 624-0066, 1988.

3. Radon Handbook for the Building Industry, National Association of Home Builders National Research Center, Upper Marlboro, Maryland, (800) 638-8556, 1989.

4. Building Radon Resistant Foundations: A Design Handbook, National Concrete Masonry Association, Herndon, Virginia, (703) 435-4900, 1989.

5. Radon Reduction in Wood Floor and Wood Foundation Systems, National Forest Products Association, Washington, D.C., (202) 463-2700, 1988.

 Radon Reduction in Schools: Technical Guidance, Environmental Protection Agency, Washington, D.C., (202) 475-9605, 1989.

7. Northwest Residential Radon Standard, Bonneville Power Administration, Residential Technology Section, Portland, Oregon, (503) 230-5488, 1989.

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Practice

Robert Greenstreet discusses the precautions to take once a contractor has been selected. Frank Stasiowski outlines four rules that will help a firm weather a down-turning economy.

Michael Chusid describes advances being made in computerizing product information.

Law: After Accepting a Bid

The previous article on contractor selection (P/A, Dec. 1989, p. 49) reviewed the strategies available to the architect to ensure that bidding procedures are effectively carried out. However, the selection process is not complete when the lowest responsible bidder has been identified, and great care still needs to be taken to provide a smooth transition from the design to the construction phase.

After the Selection

Most bidding procedures hold contractors to their bid for a minimum length of time. Although a bid, once accepted, forms a binding contract, it is nevertheless advisable to counsel the owner on the option of releasing a contractor if the latter attempts to withdraw the winning bid on the basis of a mistake. In a number of cases, the courts have allowed contractors to withdraw if they could prove a substantial bona fide mistake. For example, where a contractor inadvertently omitted to factor in one sheet of subcontractor's bids totaling \$696,000, the court held that he could not be held to the erroneous bid but could perform the work at the intended price, which was still below the next lowest bid.1 However, if the new bid had been higher than the next lowest bid, it may have been wiser to let the contractor withdraw instead. Similarly, when an addition error of \$115,000 was discovered by a contractor the day following the bid opening, his prompt notification of the honest mistake ensured that the State Court of Appeals gave him the right to withdraw his bid without forfeiting the bond.²

In most cases, courts seem unwilling to enforce a contractual agreement if it is likely to cause economic hardship for the contractor and give unfair advantage to the owner who tries to hold the former to the mistaken bid. The notion of fairness may even extend further, establishing a duty on the part of the owner to verify a questionably low bid and to exercise fair play in the dealings with bidders. Also, the practical problems of working with a contractor forced to operate with a mistaken bid should be recognized. Not only is there the possible unfavorable findings of the courts should legal action be taken, but there is the unappealing prospect of working with a reluctant contractor whose projected profit, if any, has been drastically reduced.

When the owner is willing to allow changes to the bid, great caution should still be exercised to ensure that it does not appear to the other bidders that favoritism or collusion exists. Changes in the contract originally advertised also should be handled with utmost care and legal counsel involved where appropriate. In a recent case, a low bid was submitted by a joint venture of three parties. When it was discovered that one of them had once been found guilty of bid rigging, casting doubt upon his legitimacy as a responsible bidder, he assigned his rights to the other two, who formed a new venture. The state client agreed to the arrangement, and the next lowest bidder sued. The court held that the contract was improperly awarded and the public authority had no right to stray from the initial bidding requirements.3

The Selection of Subcontractors

AIA procedures allow for a rigorous examination of the contractor's background, experience, assets, and financial capability. If these steps are taken, the risk of bankruptcy or poor performance can be minimized. However, remember that the contractor is unlikely to complete the project singlehandedly and may employ subcontractors who are also prone to the vagaries of economic shortfalls or poor working experience. For this reason, the General Conditions provide for an inspection of the list of subcontractors by the architect as soon as the contract has been formed between the contractor and the owner and the right to demand substitutions, if

any, if the names are unacceptable (AIA Document A201 S.2.1.). This safeguard can help eliminate unsuitable subcontractors from slipping into the process after a rigorous review of the prime contractor. Yet it is estimated that only 5 percent of architects who actually use AIA procedures (by no means all of the profession) bother to utilize the subcontractor's provision.⁴

Architects should not be afraid to exercise the right to reject subcontractors if they feel adequate reasons exist. Where an architect advised a public authority against using a subcontractor, even though the name was included on a "prequalified" list included in the bidding material, the courts supported the architect.⁵ However, the power of rejection should not be used arbitrarily, and the same caution should be exercised by architects in rendering opinions on the abilities of subcontractors as with contractors, given the heightened possibility of defamation suits. Subcontractors have shown equal propensity for suing architects for slander as they have for being rejected for incompetence or lack of skill.⁶ **Robert Greenstreet**

The author is chair of the School of Architecture, University of Wisconsin, Milwaukee.

 Iversen Construction Corporation v. Palmyra-Macedon Central School District 539 N.Y.S. 2d858
 (N.Y. Sup. Ct. 1989).
 First Baptist Church of Moultre v. Barber Contracting Company, 377 S.E. 2d. 717 (Ga. App. 1989).
 DeFoe Corp v. Larocca, 488
 N.Y.S. 2d 532 (Sup. Ct. 1984).

4. Kaskell, R. "How Do I Protect Myself from Suits by the Contractors" in *Avoiding Liability in Architecture, Design and Construction* (Cushman, R., editor) (John Wiley

Interscience 1983). 5. Heritage Pools, Inc. v. Foothills Metropolitan Recreation and Park District, 701 P.2d. 1260 (Colo. App. 1985).

6. WHC, Inc. v. Tri-State Road Boring, Inc., 468 So. 2d 764 (La. App.a 1985).

Practice	
Law	53
Marketing	55
Products	55
Computer Products	139

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Practice Points

The Tennessee Initiative for **Environmental Sensitivity in** Construction is requesting local, state, and federal officials to require the use of safe materials in construction projects. The group is creating a list of products - from CFC-laden insulation to tropical rainforest woods that should be barred from construction because of their adverse environmental effects. They also provide recommendations for environmentally sound alternatives. For more information call the Trust for the Future at (615) 297-2269.

The Business and Institutional Furniture Manufacturer's Association is also acknowledging the need to protect the rainforest by supporting "managed sustained yield programs," which allow only selective cutting of tropical trees and reforestation programs to minimize the environmental impact of using tropical wood such as teak or mahogony.

The cost of maintaining an architectural office in the United States has increased by approximately 10 percent in the last two years according to *The Architect's Office Management Administration Report.* The publication compares architectural cost changes by region and up-todate information on architectural practice topics. For more information call (212) 244-0360.

Small budgets, lack of a strategy, and dearth of creativity are the main limitations of the advertising conducted by the nation's architecture firms, according to a report prepared for the Boston Society of Architects. These findings are the result of a survey of advertising practices of the nation's 200 largest architecture and engineering firms. For more information call Capelin Communications (212) 353-8800.



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Circle No. 347

Marketing: When the Economy Turns Down

Architecture is a cyclical industry sensitive to every nuance and fluctuation in the economy. When a firm is hit by loss of business, the marketing initiative it chooses can make the difference between success and failure. Adopting a complacent or defeatist attitude - waiting for things to get better - will most likely lead to continued erosion of the client base. The firms that will weather the storm are those that are astute enough to judge the situation accurately. creative enough to recognize new opportunities, aggressive enough to go after them, and flexible enough to implement them.

In a softening market every penny counts. The first rule of thumb is to preserve existing client relationships: You stick with who brought you to the dance. Initially, you must assess the status of your best existing clients. Survey them. Get out and talk to them. Use everybody: project managers, principals, marketers – make your presence and your visibility felt. You'll get a good barometer of the marketplace; you'll know where you stand, and you'll protect your client base.

"Service" is a marketing tool and "service" sells. This is when you should over-service your existing clients. For example, you can offer one day of free consulting service to your top ten clients (and you would certainly let each client know that he's among the top ten). The client can choose his own consultant from within your staff. And because there are very few problems that can be solved in one day, more work will be generated at billable hours. You might consider investing in beepers for your staff, so that every phone call can be returned within the hour (or you'll allow yourself to be penalized by buying lunch). Car telephones for your more peripatetic professionals also keep them within reach. Take your clients to breakfast on a regular basis. Remember their kids on birthdays. Instead of imprinted greeting cards or standard yearend, mass-purchased tokens, send small personal gifts. Serve clients well, and they'll respond.

Try to think beyond the norm. What other services can you offer instead of just the traditional ones? Rather than focusing on new construction, for instance, you may find a ready market in maintenance or renovations of existing buildings. One architectural firm that has managed such a transition is ADD, Inc., in Cambridge, Massachusetts. They're in a down-turning market, and their specialty has been office buildings for developers. They responded by hiring a former architect, currently a real estate professional, to go out and search for new opportunities opportunities that would work on two levels. First, he looked for small projects that the firm could handle itself. Second, he sought larger projects that he pursued as if he were a developer. If the projects made sense, the firm then took them to their developer clients. Once alerted to projects they may or may not have heard about, the clients were appreciative enough to offer what work might be available. Sometimes contractors were brought in, and the work was pursued on a design/build basis. The strategy was far more productive than simply calling and asking for work. In this case, as in many others, awareness was key to

"Don't pour money into glitzy new brochures. Don't waste your resources by conducting image surveys. Don't go after the long shots."

recognizing opportunity.

A Tennessee A/E firm, Allen & Hoshall, recognized an opportunity when Hurricane Hugo devastated the East Coast. They immediately launched a telephone campaign to the regions that still had phone service, contacting agencies such as the Army Corps of Engineers and the United States Navy and offering emergency restoration of utilities and buildings. To enlarge their capabilities, they established an ad hoc partnership with a contractor and promised a full-service, turnkey approach. Their guarantee was that within 72 hours of contact they would mobilize their team and go to work.

In other words, don't continue to define services as they've been defined in the past. Keep up with what's happening around you, and be sensitive to opportunities or expanding markets: natural or manmade disasters, the environment, energy, waste disposal, testing laboratories, municipal infrastructures. Then go after them.

Everyone must be involved in the marketing effort. All of your people should be networking locally, talking with people in the community, renewing old friendships, joining membership organizations. This is grass-roots marketing, and it pays off. If you've been building commercial structures and such building is down, discover what the developers who were building those structures are doing now. Learn what new needs have surfaced; hear about possibilities while they are still in the early stages of planning. The old adage, "Seek and ye shall find," is appropriate and central to the marketing effort.

In a softened economy, there are also certain "don'ts" that apply. Don't pour money into glitzy new brochures. Don't waste your resources by conducting image surveys. Don't go after the long-shots, making cross-country trips to court new clients while the old ones in your backyard are ignored. This is not the time to enter competitions or throw everything into proposals that have little chance of success. All of these endeavors are frills when you are tightening your belt, and you can't afford them.

If your overall marketing strategy must be refined and redefined during economic down-turns, its basic elements can be summarized:

- 1. Go back to your good clients.
- 2. Over-service your existing clients.
- Expand beyond traditional services.
- Involve your entire staff in networking efforts.

This process is just as valuable in good times to keep things from getting bad.

Within the parameters of these four rules, find what you need to ride out the downturn and preserve the mission of your firm. Remember that the seeds of opportunity may be hidden in perceived threats, and for the aware and creative design professional prepared to take advantage of them, prosperity may well be right around the corner. Frank Stasiowski

The author is an architect and President of Practice Management Associates in Newton, Massachusetts. Products: Electronic Markets

Computerized building product databases are like the radio stations during the early years of FM broadcasting. When few listeners had FM receivers (the hardware) there was little incentive for advertisers to sponsor new stations (the software). In turn, the shortage of software discouraged the public from buying hardware. Ultimately, both hardware and software reached a critical density, which fueled a rapid growth in radios and broadcasting alternatives. In the construction industry, computer hardware and software are rapidly reaching critical density. Just as FM radio created a new marketplace for consumer goods, computerization is creating an electronic market for building products.

Over 100 building product manufacturers now publish diskettes containing design tools, specifications, CAD details, or other product information. This represents a nearly ten-fold increase in product software during the past year, a growth rate that appears likely to continue.1 But the proliferation of product software offered by individual manufacturers will create several problems. Few architects, for example, will be able to store all the available product software on their hard disks. Each manufacturer's program also has a different look and feel, requiring each program to be learned individually.

The next stage in this technology is the creation of databases with information about competing products - platforms on which information about all producers of a given product type will be included.² These systems will allow users to find and compare alternative products in less time and will stimulate more competitive selection. This may distress suppliers who currently jockey to be the primary or sole source of product information to a design or contracting firm. But ultimately the more open flow of information will benefit the construction industry; when competing shopkeepers cluster together within a shopping district, consumers have more options and the merchants have more traffic.

Many lighting fixture manufacturers, for example, currently distribute diskettes with photomet-

hy 500 visitors wake up each day with a better view of Milwaukee.

That's because they wake up in the Marc Plaza Hotel, one of Milwaukee's oldest hotels. And look out on the city through Season-all windows. D But windows affect something even more important than an outlook on the city. They affect how people view the Marc Plaza Hotel. Replacing the windows restored beauty and authenticity to the architectural style of the 63 year old hotel, as well as comfort and adding peace and quiet for its patrons. Retaining the architectural integrity of the hotel was a major concern without compromising functional requirements. with Season-all windows, you never have to compromise. Because we specialize in historical window replication. We can work with you to match the color, shape, and style of your original windows. Whether they've been registered with your hotel for 20 years or 200 years. No matter how many nights they've spent there.
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For the Marc Plaza Hotel, we custom-made 1200 single-hung tilt-sash commercial windows in beige to complement the hotel's red brick exterior. And those 1200 windows offer a better outlook on the city of Milwaukee and one of its oldest hotels.
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ric data on their products.3 While the Illuminating Engineering Society has created standards for electronic organization of this data,4 each manufacturer's disk still has a different user interface and has to be loaded individually. A database with information on all manufacturers would obviously offer a significant advantage to a designer. A step in this direction is CALFS (Computer Aided Lighting Fixture Schedule). This program, developed by Rosser/FABRAP, an architectural and engineering firm, lists fixture information from a number of manufacturers to aid in the creation of fixture schedules.⁵ Similar examples are spreading to other categories of building materials. For ceramic tile and other flooring products, **BOSS** Telecommunications is developing an online information system that will link flooring specifiers, contractors, distributors, and manufacturers to improve the distribution of product information, bidding, and order entry.⁶ Information on the leading systems furniture manufacturers is included in CD-ROM databases available from Computer Aided Planning, Inc.7 and ECLAT.8 And mechanical and electrical products

tribution will force us to reexamine traditional relationships within the construction industry. Since a computerized information and communication system will enable contractors to identify suppliers, obtain competitive prices, and enter orders directly with manufacturers, the job of sales representatives and distributors may have to be redefined, especially for commodity products.¹² It is likely, for example, that contractors and developers will increasingly hire subcontractors for labor only, and purchase materials themselves. On the other hand, distributors who are able to adapt to an information-intensive environment may have a competitive advantage. For example, Truitt and White, a Berkeley, California, lumber yard, has a computerized bulletin board to provide commercial customers with pricing and product availability. Called Modem to Load'em, the program lets contractors enter or check on an order without having to leave the job site.13 Even architects, who act as midwives between owners and contractors, will be affected by this changing web of relationships.

A Wall Street analyst recently suggested that the dominant

"Specifications will no longer be required to summarize product requirements because complete product information will be available within the computer model of the project."

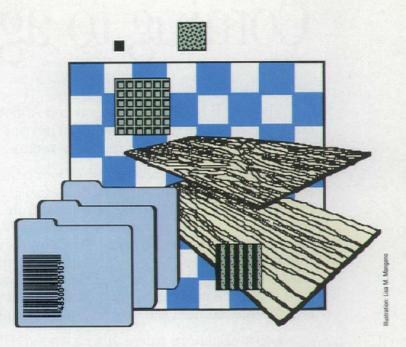
will be included in two databases currently under development, one by Cadis and the Construction Specifications Institute⁹ and another by ECLAT.

Electronic markets have significant implications for architecture. If we recognize that information is an intrinsic feature of a building product - that information about the product's performance, availability, price, and delivery is as important to the success of a design as the tangible aspects of the product - then we can understand how computers are stimulating new channels of distribution for building materials. For example, Peachtree Windows sells a CAD library of its window details through AutoCAD dealers.¹⁰ Other manufacturers have started exhibiting at computer trade shows like A/E/C Systems to gain exposure among computerized design firms.11

Computerized channels of dis-

theme of economic development in the 1990s will be "codes."14 He cites, for example, the tremendous economic benefits to be derived from decoding human genes. Electronic construction markets will require a similar effort to code the millions of products and product variables used in buildings. This code will lead to sophisticated programs capable of communicating and controlling the flow of all the materials required for construction. No less complicated than the genetic project, this task has already been started.

The electronic market will also change the way construction documents are prepared. Instead of drawings and specifications, buildings will be designed as three-dimensional databases with working models of the actual construction. As products are selected from electronic data files, the pertinent contents of the files will be ap-



pended to the project database. Specifications will no longer be required to summarize product requirements because complete product information will be available within the computer model of the project. Estimating and bidding will also be streamlined because pricing and selection data will be online. For standard items, requirements for product data submittals will virtually be eliminated. And customized products will be produced by computeraided manufacturing processes taking numerical control data directly from the computerized building model. Just-in-time delivery of components will be scheduled in the computerized building model and products will arrive on the site with bar-coded labels keyed to erection sequence and facility management inventory requirements. All the pieces of this scenario exist today and will become integrated as the new electronic markets evolve. Michael T. Chusid

The author is a marketing consultant to building product manufacturers and computer system developers.

1. For more information on software offered by building product manufacturers, see "Productware" (P/A, Dec. 1988, p. 45).

2. Yates, Malone, Benjamin, "The Logic of Electronic Markets," Harvard Business Review, M/J 1989, pp. 166–172.

3. Holophane, Guth, Lighting Technologies, Sterner, Peerless, etc.

4. Illuminating Engineering

Society, 345 E. 47th St., New York, N.Y. 10017, 212-705-7926.

5. Rosser/FABRAP, P.O. Box 54860, Atlanta, Ga. 30308-0680, 404-876-3800.

6. BOSS Telecommunications, P.O. Box 27-6040, Boca Raton, Fla. 33427-6040, 407-393-5076.

7. Computer Aided Planning, Inc., 169 Monroe, N.W., Grand Rapids, Mich. 49503, 616-454-0000.

8. ECLAT Intelligent Systems, Inc., 14470 DooLittle Drive, San Leandro, Calif. 94577, 415-483-9238.

9. CAD Information Systems, Inc., P.O. Box 5302, Englewood, Colo. 80155, 303-799-1311.

10. Peachtree Doors, Inc., Box 5700, Norcross, GA 30091, 800-447-4700.

11. A/E/C Systems, One Farron Dr., Chadds Ford, Pa. 19317.

12. The role of building product salesmen is by no means over. They will still play an important role in creating brand loyalty, closing deals, and providing customer support.

13. Truitt and White Lumber Co., 642 Hearst Ave., Berkeley, Calif. 94710, 415-841-0511. 14. Gianturco, "Insights," Forbes, Jan. 8, 1990, p. 304.

Coming to agreement.

Shepley Bulfinch Richardson and Abbott designed a multimillion dollar addition to a large medical facility. They specified a flooring they had used many times before for the operating rooms.

Shortly after installation, the floor began to bubble. The hospital was forced to close its operating rooms because of risk of infection, and was understandably upset at the loss of revenue. Although it was unclear what the problem was, the hospital wanted Shepley Bulfinch to side with it in a lawsuit against the contractor. The architectural firm was apprehensive that it would somehow get drawn into the suit, even though its relationship with the hospital was excellent. Shepley Bulfinch was also reluctant to line up against the contractor, since it felt the contractor had performed in a responsible manner and was actively seeking a solution to the problem.

Leo McEachern called Jim Raymond, DPIC's Eastern claims manager, and after some discussion of the situation, Jim asked if Shepley Bulfinch would be willing to try mediating the dispute. He explained the nature of the non-binding procedure. Leo said yes, and Jim put him in touch with a mediation firm DPIC has used successfully many times.

The mediation firm worked hard to assemble the parties to the dispute: Shepley Bulfinch, the hospital, the flooring manufacturer, the flooring subcontractor, and the general contractor. They met at 10:00 one morning in the architect's office. The mediator asked everyone to state his case individually in an open forum. He then met with each party in a private session.



Jim Raymond is manager of DPIC's Eastern Division office in Clifton, New Jersey. He has over a dozen years of experience in handling professional liability claims.

He suggested a settlement in which each of the parties involved contributed a proportionate sum toward the approximately \$200,000 the hospital needed to remedy the problem. By 3:00 that afternoon, agreement had been reached, all parties were satisfied, and all that remained was obtaining releases from all parties. No lawsuit was ever filed.

James Ray money

Claims happen. It's what you do when they happen that shows the stuff you're made of.

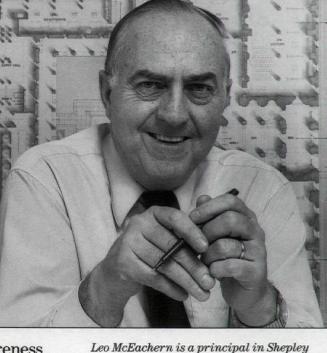
"F

Liveryone went away reasonably happy. It was our first exposure to mediation and it was a good one. I can't speak for others, but I would certainly opt for mediation as a first try. If it doesn't settle, it doesn't impair your other avenues of action.

The mediation cost—in the range of \$5000-6000 for all parties—was not a great sum when you relate that to the potential cost of litigation and all of the lawyers involved. Not to mention the time of the parties involved answering all the questions and providing documentation.

I meet on an informal basis every month with managerial people from some of the larger architectural firms in the greater Boston area, and one of the things we often talk about, of course, is professional liability and the trends associated with it. I notice that more and more of our peers are now in

DPIC's stable. There is more of an awareness about DPIC, what they do and the benefits that accrue to the firm by going with DPIC. The educational programs, the loss prevention —they've all been very much interested in that. They are all faced with the same concerns that we have."



Leo McEachern is a principal in Shepley Bulfinch Richardson and Abbott, a 138-person, 115-year-old firm based in Boston, Massachusetts. He is responsible for the firm's financial and business operations. We value our relationship with his firm and thank him for his generosity in talking about an important subject for design professionals. Progressive Architecture 3.90

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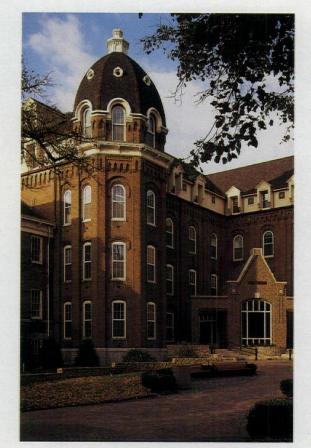
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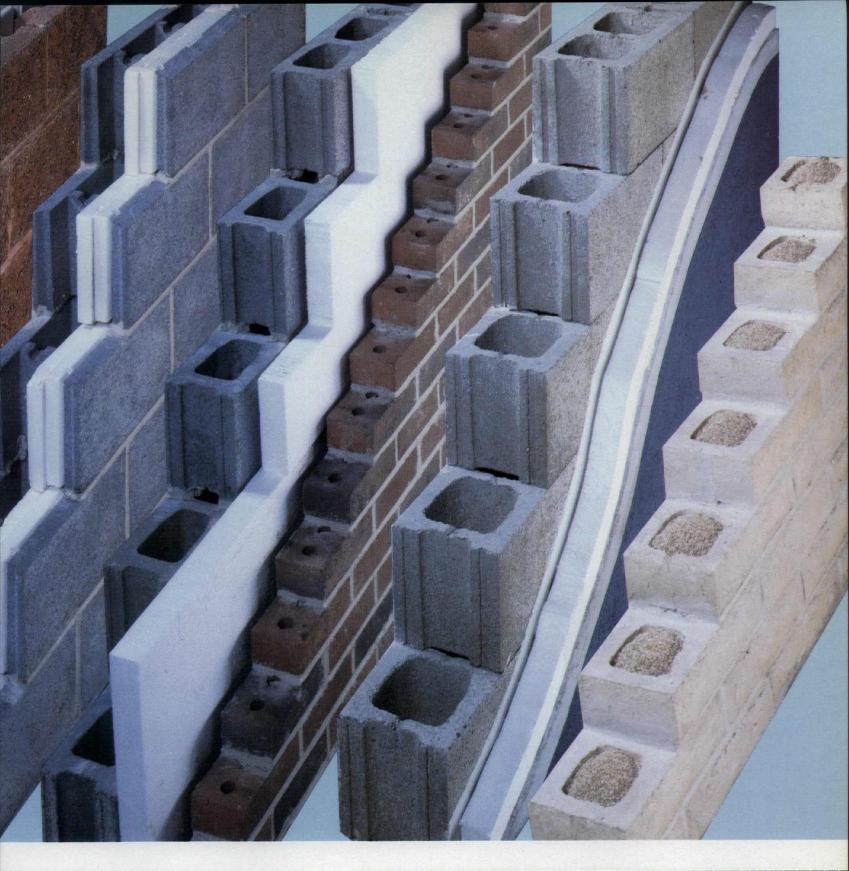




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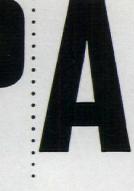
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REQUEST FOR SUBMISSIONS



Young Architects Issue July 1990

Progressive Architecture invites

recent graduates and designers to

submit portfolios and resumes to

be judged for possible publication

in an issue on young architects sched-

uled for July 1990. The editors are

interested not only in exemplary

architectural design but also in un-

built projects and alternative careers.

 Submissions will be considered in any of three categories:

 Built work, constituting commissions undertaken for a verifiable client. Projects submitted must be completed by April 1, 1990.

 Unbuilt work, constituting designs undertaken for a verifiable client.

 Alternative careers for architecture graduates in other fields of design or in education, government, business, non-profit organizations, or other endeavors.

 Eligibility is limited to those with a bachelor's or master's degree in architecture or a bachelor of art in architecture, received not more than 10 years prior to July 1990, or who have been practicing as designers for no longer than 10 years, as of July 1990.

 Work done for academic credit is not eligible.
 Work done while employed at an established firm must be accompanied by a letter from a principal of that firm stating that the entrant had primary responsibility for the project.
 Collaborative efforts among qualified entrants are welcome.

 Selections will be made by the editors of P/A. Their decision is final.

- Submissions must include a one-page firm profile, and one-page resume for each entrant, in English, describing education and experience.
- Graphic material, slides, and photographs included must be submitted in binders which shall not exceed 17 inches in either direction. Enclose a brief description of each project and the ideas underlying its development.
- Anonymity is not required. All submitted material must be labeled with applicant's name, address, and phone number.

There is no fee for entry.

- Submissions will be returned only if they are accompanied by an adequately sized and stamped self-addressed envelope. P/A will take every precaution to return submissions intact but accepts no liability for loss or damage. Please do not submit original material.
- Selected entrants will be notified confidentially by April 30, 1990.
- If the entry is selected for publication, the entrant agrees to make available further material as needed, but at no undue expense.

Deadline: March 30, 1990

Address all questions and submissions to Young Architects Issue, Progressive Architecture, 600 Summer St., P.O. Box 1361, Stamford, CT 06904.

'oung Architects

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direction.

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It's all in your mind.

Employee cafeteria, Computer Associates International, Inc., Las Colinas, TX. Design by Scott Strasser, CRS/Sirrine, Inc. Dallas

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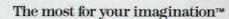
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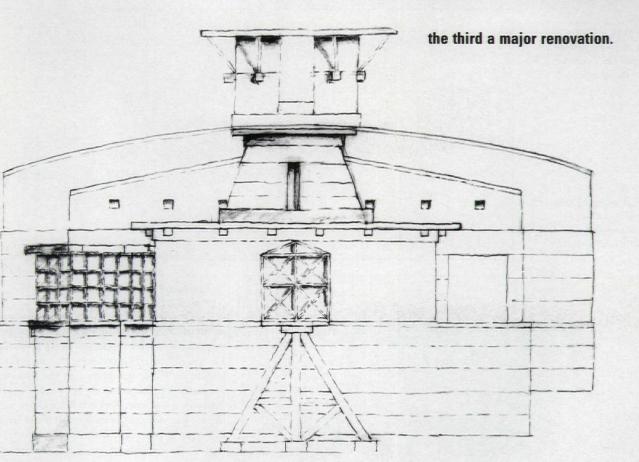
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Design	
Case Study: Michael Graves	73
Design Feature: Koolhaas	
Housing	96
Projects: Helmut Jahn	102
Perspectives	113
Books	118
Selected Detail	119

Michael Graves, Architect, has just completed three significant building projects,



two of them new buildings honored in the P/A Awards program,

Youngstown Museum preliminary sketch by Michael Graves.

Michael Graves, Architect: Growth and Diversity



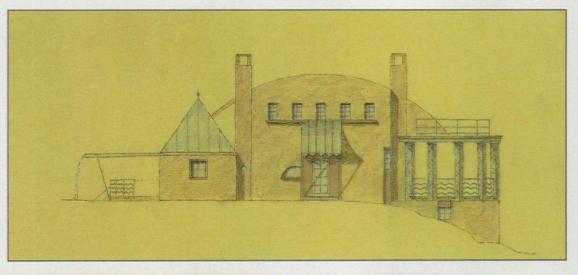
Michael Graves, drawing.

The design for the Henry House, Rhinebeck, New York, a 1989 P/A Citation winner, shows the stripped Classical forms and plain surfaces now prevalent in the firm's work. Inside a pair of historic houses on the main street of Princeton, New Jersey, over 80 professionals handle the abundant commissions of Michael Graves, Architect, a practice that has broadened to include furniture, product, and graphic design. Among the several building projects completed over the past few months are the three buildings featured in this issue – two of them P/A Awards honorees of recent years, the third a remodeling/renovation effort accomplished over a period of several years.

The design of Graves buildings has evolved since the major landmarks with which he is identified – the Portland Building (P/A, Feb. 1983, p. 108) and the Humana Headquarters (P/A, July 1985, p. 21). In contrast to the complex envelopes and varied surface treatment of those buildings, the firm's recent structures featured here are more unified and homogeneous. The Swan Hotel is something of an exception, its flat color patterns a response to the Disney World setting; the abstracted Classicism of the Youngstown museum is more representative of current thinking. At the Newark Museum, the few exterior elements by Graves have a similar sedate character.

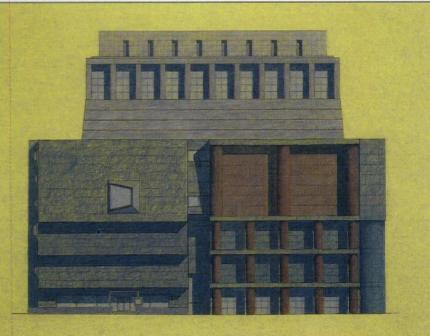
In the development of interior spaces, Graves's strategies remain remarkably constant, from job to job, decade to decade. (And they consistently refute the old complaint that his work is "two-dimensional.") There are always processions of discrete spaces along axes – their volumes varying with their plans, to the extent that overall building configuration allows.

The accompanying essay by the young architectural historian Sylvia Lavin introduces the three featured buildings with a discussion of Graves's place in current architectural design. John Morris Dixon



74

The latest proposal for the Whitney Museum addition, New York, is virtually as severe and ahistorical as the Breuer building to which it is attached.



Critique: Placing Graves

As the 21st Century dawns, two observations made about the architecture of Michael Graves are ossifying into almost useless clichés. The first is that he is a Post-Modernist. The second is that he is not a Deconstructivist. While ten years ago the first designation propelled him into center stage of the "avant-garde," the second has more recently led some to suggest that his work is now on the fringes of, if not irrelevant to, new critical concerns. Although architectural debate moves quickly enough to accommodate - perhaps cause - this reversal of fortune, architecture itself moves at a slower pace. The sheer magnitude of buildings Graves is currently producing makes him a force to be contended with. More important, these buildings compel us to reconsider the clichés through which we have come to perceive him.

As if to dispel the monolithic nature of the categories into which his work is slotted, Graves himself emphasizes that the design now emerging from his office varies widely in character. He suggests, for example, that the Historic Center of Industry and



The current scheme for the University of Virginia law school hews closely to the Classical Revival style of Jefferson's campus.

Labor is of a humanized industrial character, a weekend house in New York is "characteristic of eclectic rural vacation" architecture, and a projected classroom and office building for the University of Virginia is both academic and domestic in character. The particular characters Graves has chosen – focusing on humanism and contextualism – reaffirm his long established interest in the semantics of architecture. But using the notion of character at all, rather than emphasizing the fact that his new buildings differ significantly in scale, siting, and program, may reveal other interests.

Character, as a theoretical concept in architecture, became particularly significant during the late 18th Century, the period that gave rise to what can be called Modern architecture in the largest sense and to which so many of Graves's designs make formal reference. At that time, architects still deeply invested in the Classical tradition were challenged by myriad new types of buildings - from stock exchanges to national monuments to public schools. The difficulty, as they defined it, was that this variety exceeded the expressive range of Classical architecture as determined by the orders. To give these new building types distinct yet still legible expression, a process of abstraction began to transform the "masculine" Doric order into a more generically conceived "strong" character. Ultimately, the idea of character established a varied and flexible system of expression so thoroughly abstracted that it could often function without the orders at all.

The full impact of Graves's construction of an architecture of character cannot be realized without seeing it in both a historical and contemporary light. His recollection of the period when architectural character was invented reminds one that even in its most primitive form, the development of Modernism was accomplished at the cost of figurative reference and produced a literally dehumanized architecture. In the current context of a declining Modernism, on the other hand, Graves's re-creation of an architecture of character hopes to do and succeeds in doing the reverse: It explicitly evokes figuration in general and anthropomorphism specifically. By using the concept of character to embrace both the rise and fall of Modernism - a notion made visible in columns that appear suspended between the orders and pilotis, between surface and structure, for example - Graves creates an architecture placed ambiguously between humanism and mechanism, between history and temporality.

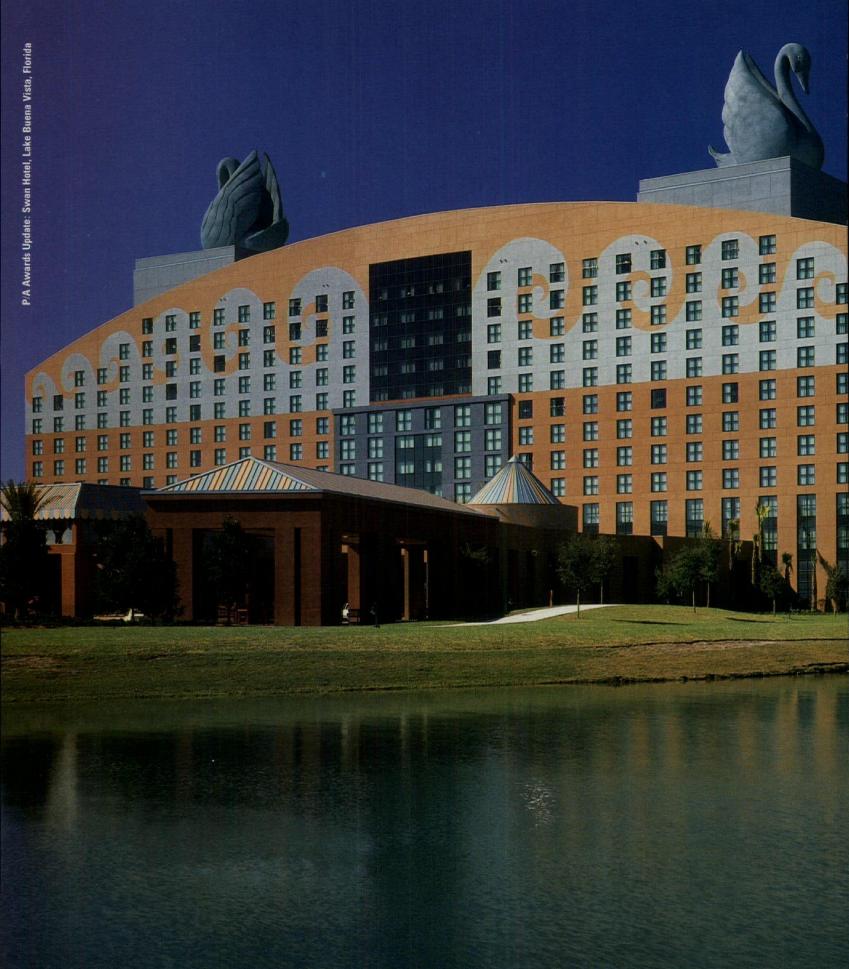
Graves's complex use of the word character reveals one aspect of his attempt to soften what might be called the Modern architects' categorical imperative. This effort is even clearer in his reconsideration of Modernism's approach to the idea of architecture as social reformer. When taken to extremes by the more zealous Modernists, this idea led to the rather paradoxical notion that the more rigorously autonomous and pure the architectural form, the greater its contribution to society. Reassessing both the dogmatic and moralistic aspects of this tradition, Graves defines the relationship between architectural autonomy and social engagement more equivocally, a tentativeness visible in his recently completed Newark Museum. The building might at first appear to be a kind of cultural utopia for this far-from-utopian landscape and to express the hope that such an intervention will encourage these two extremes of the social spectrum to converge. If the museum's dialogue with the City of Newark ended with this perhaps naïve view of the relationship between architecture and society, the building would surely become fodder for those who refuse to recognize the social content of Graves's work. But the dialogue Graves has created is more complex than that, and he not only confronts the issue, but does so directly and provocatively. More important, he is to be praised for not doing so simplistically. No matter how engaged the architecture of the Newark Museum might be with the physical aspects of its urban context, no building could mask the degree to which such an institution is isolated from Newark's social context. In fact, the more elegant and powerful the design for the Newark Museum, the more disquieting contrast it makes with its undernourished and underprivileged environment. By embracing rather than avoiding this dilemma, Graves has managed to convey both a desire to reform and a sad loss of faith in architecture's capacity to do so alone.

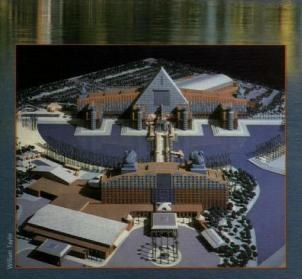
Graves's ability to encompass conflicting elements without overpowering their differences lends his architecture a character of profoundly poetic ambiguity. Ironically, an architecture of ambiguity, of building the space "in between" as Peter Eisenman has said, is precisely what the so-called opposing camp of Deconstructivist architects lays claim to. Leaving aside the matter of which of these two systems is preferable, both have chosen ambiguity and openness as a means of combatting what is perceived as the absolute singlemindedness of many aspects of the Modern Movement. But if ambiguity indicates where these "isms" interconnect, the objects of their ambiguity explain how they differ. Deconstructivism, through a kind of radical surgery, has exposed the fallaciousness of assuming that because architecture is both socially functional and engineered it is capable of functioning as a social engineer. Post-Modernism, on the other hand, seems to question less architecture's capacity to fulfill this task than the clarity of the task itself. Given that we as a society do not make clear how we define the function of post-functionalist architecture - Do we want architecture to heal, to represent or to subvert? Are architects responsible prophets for the environment or its products? Should architecture rattle us with the truth or soothe us with fiction? - Graves's use of the metaphors of poetry and the complexity of character to transform social indecision into creative ambiguity seems not a marginal but a clear and necessary contribution to contemporary debate. Sylvia Lavin

The author, an architectural historian, is currently a fellow at the Getty Center for the History of Art and the Humanities in Los Angeles.

Story Time

The Walt Disney World Swan Hotel manages to create a true fantasy amid the period pieces for which Disney is known.





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> On its entrance side, the Swan presents a flat, billboard-like image to visitors, but the swans themselves – 47 feet high – grab all the attention. Guests enter through the porte-cochère at center left. The triangular form of the Dolphin, now nearing completion, looms behind. The scale of the buildings is so other-worldly that photographs of the finished product are not always easily distinguishable from model photographs (inset).

Report: Disney in Florida

The Walt Disney Company has a 35-year history in the business of creating fantasy environments, beginning with Disneyland in Anaheim, California. It is only recently, though, under the aegis of the five-year-old Disney Development Company, that the fantasy has begun to spill out of the Magic Kingdom proper. With the construction of the Dolphin and Swan Hotels and many other projects in Florida, California, and Europe, Disney is blurring the once-clear separation between the inside and outside of their theme parks.

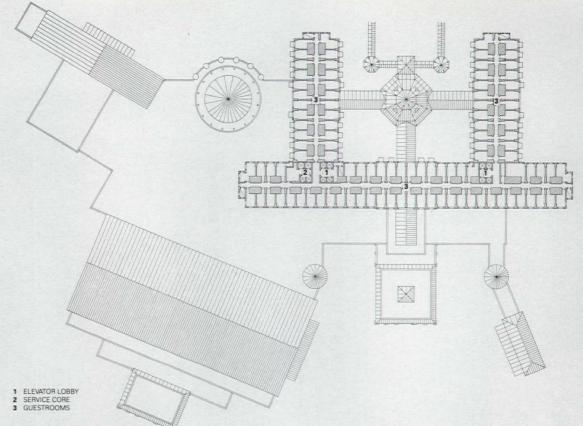
After Walt Disney built Disneyland, he was dissatisfied with both the quality of the development that sprang up around the park and with the fact that his company was not profiting from the tourist business that went to those off-park hotels, restaurants, and attractions. To avoid making the same mistake at Walt Disney World (1971), he secretly assembled 43 square miles of land outside Orlando with which to make his second kingdom an empire. Disney leased land to the major hotel chains that built the Modern high-rises that line "Hotel Plaza Drive" and built Walt Disney World Village, a 1970s-style outdoor shopping area with cedarshingled roofs. As far as design was concerned, the cartoon aesthetic didn't leave the park; a fashionable Sunbelt Modernism was the rule.

In the 1980s, though, Chairman Michael Eisner's Disney became more aggressive in its development strategies; at the same time, the

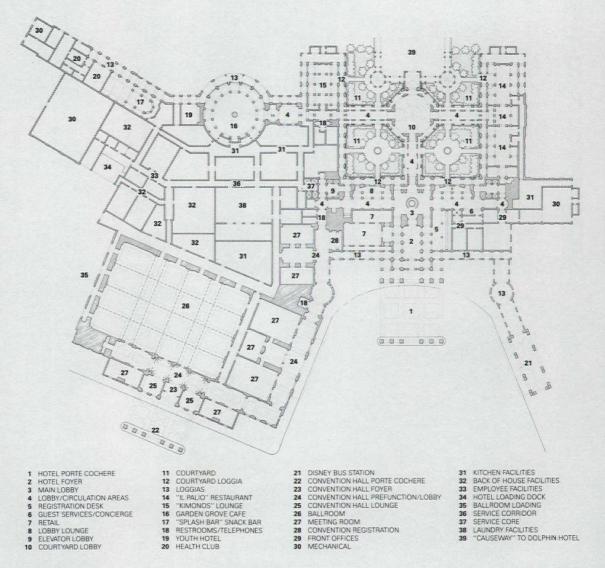
trend in mainstream architecture

P/A Awards Update: Swan Hotel

swung toward what Disney had been doing all along. Disney Development has begun collecting architects who are well-known for employing allusion - and illusion in their works, and has assigned them the task of making buildings with conventional programs, such as hotels and office buildings, as diverse and fantastic as the work of the "Imagineers" that design inside the parks. Robert A.M. Stern, for example, has brought seaside imagery to the Yacht Club and Beach Club Hotels (both just next door to the Dolphin and Swan), and in his "Casting Center" has turned the act of applying for a job at Disney World into an epic adventure. Stern is also among the architects designing five hotels that evoke American architectural themes on the EuroDisney site outside Paris. (Antoine Predock, who is also designing a "Mediterranean" hotel at Disney World, is another, as are Michael Graves and French architect Antoine Grumbach.) (continued on page 80)



TYPICAL FLOOR PLAN



FIRST FLOOR PLAN

N A + 100//30m



Awards Update: Swan Hotel



Disney Development Company president Peter Rummell boils down his philosophy on "entertainment architecture" to this: "In the end, it's all a bunch of stories, and you can pick the one you want." In most of Disney's work, the architecture is a quick read; its theme parks and hotels parody architectural styles and period costumes to create the equivalent of a romance novel. The new Walt Disney World Swan Hotel, though, is more a Busby Berkeley musical, lavish and entertaining but in a genre all its own. Because it does not suggest any particular time or place, it is the most fantastic of the fantasy buildings in the Disney World complex.

The Swan (along with its neighbor, the Dolphin, which will open this summer) *does* strongly suggest the presence of Michael Graves, who with Alan Lapidus was its architect. The use of color, iconography, and a formal, axial plan are familiar enough elements in Graves's work and in the tenets of Post-Modernism. But in the Swan, Post-Modernism's in-jokes and irony are not the rule; the architectural form plays it straight, while the decorative program goes for heartier, more accessible humor.

This idea is made clear from one's first glimpse of the hotel, which is visible from within the nearby theme parks and from the highways that feed into the Disney complex. The two 47-foot swans that top the hotel are, of course, the most startling sights, along with the whimsical coral-and-aqua wave pattern that covers the building. But beneath the swans and the pattern (actually an EIF system), the basic form of the building is a simple curved profile, much like those Graves has employed elsewhere. The entrance front is the plainer one, consisting of the decorated, billboard-like facade to which low appendages - the convention center and porte-cochères - have been added. The side facing the lake and the Dolphin is richer, with two perpendicular wings topped by clamshell fountains. The volumes of the Swan, if not the Dolphin, are simple Classical shapes - but decorated with a liberal hand.

The interior by and large adheres to similar rules; Graves says he tried to "break down the seriousness" of the formal plan and Classically inspired spaces through bold patterns and other extra-architectural devices. In plan, the large convention center is treated

The most appealing spot yet completed is the causeway (above and top) that connects the Dolphin and Swan. The more primary colors of the canopies were chosen to provide contrast with the subtler coral and aqua of the buildings. On second look, the architect and clients have decided to remove the blue-and-yellow rotundas. The giant clamshells that top the perpendicular wings are fountains. Sailboat bridges (above left) designed by Graves connect the hotels to EPCOT Center via a boardwalk that will be lined with entertainment facilities.

While architects like Graves and Predock tend to produce abstracted, suggestive versions of environmental themes, Disney's in-house architectural team has contributed some of the more literal and flamboyant efforts, typically working with a specialty firm on functional considerations. The Disney staff worked with the Orlando firm of Fugleberg Koch Architects on the Caribbean Beach Resort, a moderately-priced Disney World hotel divided into four zones representing - virtually caricaturing - the architecture of four Caribbean islands. The same team is now working on a project employing styles of the Mississippi River.

The list of projects in the works is overwhelming; at the opening of the Swan Hotel, Michael Eisner took advantage of the press presence to announce a decade's worth of new plans for the Florida site. Joining the three theme parks, 14,000 hotel rooms, water park, and other existing attractions will be a fourth park (reportedly involving animals), 5000 hotel rooms, and 29 new attractions at its existing parks. Also down the road, according to Disney Development president Peter Rummell, is the possibility of some real-world development - new towns - on some of the still substantial undeveloped land. The company has already out-Main-Streeted Main Street (the Magic Kingdom) and out-Hollywooded Hollywood (Disney-MGM Studios Theme Park); what might their attempt at a living, breathing community produce?

P/A Awards Update: Swan Hotel

80

A broad hall (top left) connects the hotel to the convention center, which also has its own entrances. Prefunction areas in the center (top right) feature large murals. The chair-rail moldings seen here are a constant throughout the public spaces. The axis of entry to the hotel leads through three spaces of somewhat indistinct hierarchy: the column-lined hotel foyer (facing page, bottom), the barrel-vaulted main lobby (above), and the octagonal courtyard lobby (facing page, top). The foyer and courtyard lobby were to have draping fabric ceilings, but because an appropriate flame-retardant fabric could not be found, they were painted.





as a piece attached to a formal, axial plan. The three major lobby spaces of the hotel itself are lined up on the major axis, which runs between the Swan's frontvard fountain and the entrance to the Dolphin across the lake. The first space, the long and narrow hotel foyer, has a tentlike vaulted ceiling and is lined with papyrus-reed columns. Next is the main lobby, also rectangular but oriented perpendicularly to the axis. Hallways leading to the elevators and the convention center branch off the sides of the lobby, which has a centrally placed fountain and a barrel-vaulted ceiling painted with flowers. The last of the three is the octagonal courtyard lobby, which is essentially a pavilion in the courtyard formed by the two hotel wings. Another set of perpendicular corridors leads from this room to the drumlike, double-height Garden Grove Café and the Il Palio restaurant.

Most of these spaces are surprisingly comfortable and intimate, perhaps too intimate. After the flamboyant gestures of the exterior, one expects a grand, definitive center along the main axis, but the succession of spaces provides little change in scale. Graves says this was a conscious decision; he was "fighting the problem of bigness" in the hotels' programs and opted here for a series of smaller rooms in order to "make things human." Still, a space more like the great entry rotunda in the Dolphin would have brought a clearer hierarchy to the Swan plan and given the plan's "narrative" a climax. Instead, one is drawn to the real climax of the composition, the clamshell fountain at the entrance to the more spectacular Dolphin.

The same decorative strategy employed in the richer public spaces also helps fight the dullness of the conventional guest room floors upstairs: The corridors are papered with a life-size beach scene, the doors are painted to resemble cabanas, and the carpet imitates quarry tile and lily ponds. The guest rooms are typical for a convention hotel, with the welcome exception of their Graves-designed furniture, festooned with pineapples, palm trees, and floral prints.

In a place where a certain chaos and randomness is cultivated, and the "order" of the decorative system is little more than a series of loosely-connected (and sometimes conflicting – what are the lily ponds doing on the beach?) themes, how does an architect go about making decisions? "The order, I guess, is provided by



Project: Walt Disney World Swan Hotel, Lake Buena Vista, Florida. Architects: Michael Graves, Architect, Princeton, New Jersey (Michael Graves, project architect; Patrick Burke, associate in charge; Susan Butcher, Jesse Casteneda, Wilfrid Wong, job captains; Susan Bristol, Amy Cheun, Selim Koder, Michael Kuhling, Tom Rowe, Erica C. Weeder, Ross Woolley, design team; Meryl Blinder, Jennifer Carlisle, Amy Forsyth, Stephanie Magdziak, Saverio Manago, Carole Nicholson, Nancy Thiel, Pam Zimmerman, assistants); Alan Lapidus P.C., Architect, New York (Alan Lapidus, principal in charge; Patricia Aldea, project architect; Victor Soliven, job captain; Susan Turner, Jurek Zaborowski, Kim Lam, Katy Ho, Helene Conway, Alan Ford, architectural team).

Clients: Tishman Realty & Construction Co. (managing partner) and Aoki Corporation in a joint venture with Metropolitan Life Insurance Co.; hotel operator is Westin Hotels & Resorts. Site: (with adjacent Dolphin Hotel): 50 acres of lagoons adjacent to Walt Disney World's EPCOT Center.

Program: 700,000-sq-ft hotel with 758 guest rooms and suites, convention center, health club, game room, swimming pool, retail space, two full-service restaurants, snack bar, grand bar, and lounges.

Structural systems: reinforced concrete (hotel tower); steel superstructure (low-rise buildings).

Major materials: exterior insulation and finish system on metal studs with painted murals, hinged metal-frame windows, standing seam metal roofs and membrane flat roofing, gypsum board interior partitions on metal studs.

82

Rotundas mark the end of corridors leading to the elevators, but an unexpected turn is required to find the elevators themselves (see plan). The beach scene on the guest room corridor walls (above left) is punctuated by doors disguised as cabanas (top right); the quarry-tile-and-lily-pond carpeting seems to have sneaked in from another fantasy. The standard-issue guest rooms (above right), like the corridors, are made much more pleasant through the colorful, playful furnishings.





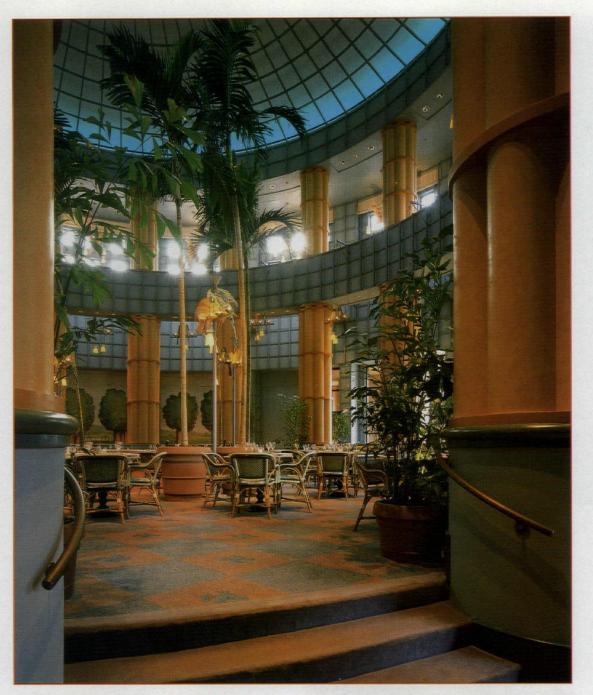
one's eye or taste," says Graves. The use of swans and dolphins came from his Classical studies; he saw the "friendly water-borne creatures" that appeared in Classical architecture and sculpture as appropriate images for lakeside hotels that needed to be taken seriously as convention sites yet not "blow the Disney myth" for children. The other decorative themes were chosen to meet similar criteria, and various uses and combinations were proposed on a sort of trial-anderror basis within Graves's office and with the clients (the owners and Disney, and Westin Hotels, who operate the Swan). "If you were working with Walter Gropius, you'd say 'There must be a best way,' but there isn't one here; you could do it a variety of ways." The process seems to have worked; the decor possesses a lightheartedness that retains a certain dignity - bearing in mind, of course, that this is Disney World; anywhere else that relative dignity might be lost.

The Swan and Dolphin break a long-standing Disney World rule in that they can be seen from within the theme parks, thereby running the risk of spoiling the illusions inside with a real-world intrusion. Graves's decision to break the rule came in the compe-





tition that led to the commission; he found that a tall building best met the functional requirements. To compensate for his transgression, he proposed making his building a "green mountain" - a nonarchitectural form covered with balconies and vegetation. From that idea, the form of the Dolphin evolved. It apparently became clear to Disney officials as the design developed that these fantastic buildings would not dispel illusions but create new ones. Thus the giant swans were allowed to loom atop the treescape behind vignettes of various nations at EPCOT Center and above the imitation Hollywood of the Disney-MGM Studios Theme Park. As other hotels go up between the pair and EPCOT, the entire Disney property begins to take on the aesthetic of the theme parks, where something unexpected and unconnected turns up around every corner. Among the oddly juxtaposed "stories" in such a world, the Dolphin and Swan stand out for their freshness as well as for their physical stature. Though his plot is a little muddled at times (and who ever complained about that in a Busby Berkeley show?), Graves has proven himself one of Disney's best storytellers. Mark Alden Branch





electric drive refrigeration machines; two 350-hp gas-fired steam boilers; air-handling units for public areas; vertical fan coil units with electric heaters in each guest room. Consultants: DeSimone, Chaplin & Associates, structural engineers; Lehr Associates, mechanical engineers; Imero Fiorentino Associates, lighting designer; Michael Graves Architect, Wilson & Associates, interiors; Ivey, Bennett, Harris & Walls, Inc., civil engineers; Anita Rosskam, Maer-Murphy, Inc., Robert Braun, muralists and artists; Robert Pacifico Associates, kitchen consultant; Baring Industries, Inc., laundry consultant; Paul Alan Magil & Associates, audio-visual/security consultant; Cerami & Associates, acoustical consultant; Herbert Halback, Inc., landscape architect; William Hobbs, Limited, fountain consultant; Future Tents Mintec, Limited, tent consultant; Law Engineering Testing Company, geotechnical engineer; Cermak, Peterka, Peterson, Inc., wind tunnel testing consultant; D.T.M. Inc., elevator consultant; Atlantic Hardware & Supply company, hardware consultant; Michael Graves Architect (Ronald Berlin, Meryl Blinder, Susan Butcher, Jesse Castaneda, Michael Kuhling, Alex Lee, Stephanie Magdziak, Saverio Manago, Donald Strum, Erica C. Weeder, Julia Wirick), Joseph Zelvin Models, Inc., Todd Associates Architectural Models, Inc., modelmakers; William Taylor, model photographer.

Mechanical systems: three 420-ton

Development manager: Tishman Construction Corp. General contractor: Aoki Corp. Costs: \$120 million. Photos: Steven Brooke, except as noted.

83

The Garden Grove Café (top) is the hotel's only high-ceilinged space, except for the more utilitarian convention center ballroom. Graves achieves the appearance of a rotunda with a balcony, while in fact there is no mezzanine level in the restaurant. The papyrus-reed columns used here and in the foyer are among the few tricks played with architectural elements. The windows at right overlook the pool and lake. Il Palio, the hotel's Italian restaurant, is decorated with flags from the celebrated Siena horse race. The chairs are Graves's commercially available "Finestra" model. The murals used in the restaurants, as elsewhere, manage to maintain the hotel's light spirit without becoming cartoonlike.

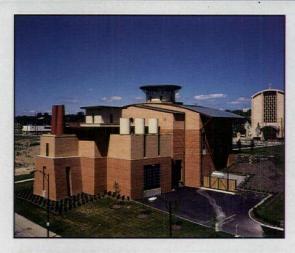
Steel Industry Enshrined

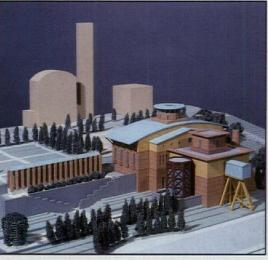
Michael Graves interprets Youngstown's industrial heritage in a Museum dedicated to its vanishing factories.



The Youngstown museum is set on a slope above the center of the city (top, this page). Seen from below, it is a hybrid building (center, this page) with attached pieces that refer to early industrial architecture; the Cathedral of St. Columba is partly visible (right in photo). The P/A citation-winning model (bottom, this page) depicts Graves's design proposal for the museum. A close-up of the entry (opposite page) illustrates the reductive detailing typical of the building.

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The steel mills that once dominated Youngstown are closing down, and their former employees are adjusting to a postindustrial future. During these difficult transitional years, Youngstown might find its new museum, which won a citation in the P/A awards program (P/A, Jan. 1988, pp. 122-123), doubly important. The building, by Michael Graves, Architect, in association with Raymond J. Jaminet and Partners, serves the city in two ways: It documents the development of Ohio's steel industry and commemorates a vanishing way of life.

As he developed the museum, Graves looked beyond the city's recently built mills to 19th-Century factories that incorporated residential elements. Likewise, his building is synthetic, a landmark with references to human habitation and the industrial process. Even though the museum is yet to open, it is already a popular image within the city. The people it serves and represents - those who worked in the mills and the schoolchildren who will come to learn about Youngstown's past - are proud to identify the museum as their own institution, on a par with the art museum, civic buildings, and, specifically, the Cathedral of St. Columba across the street.

Graves aligned the museum with the cathedral, and designed a roof that harmonizes with its arched silhouette. (Graves had already recognized the elegance and monumentality inherent in the arched profile; see the adjacent commentary on p. 86.) At the rear of the museum, where machines and models will be displayed, Graves surrounded a two-story core with three "aedicules" that have industrial references. They are volumetric counterparts to the flat façade in front, and more substantial than the thin overlays once typical of Graves's buildings. Intentionally over-



Stretching the Arc

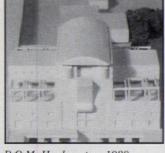
Visually, the bowed roof of the Youngstown Museum is quite impressive – a broad arc that implies a generous volume of space within. It is a profile that serves Graves quite well; more compelling than a flat roof, it remains abstract, yet alludes to monumental precedents. (Ledoux proposed this form for a Paris gatehouse.)



Youngstown Museum

Youngstown Museum

Ten years ago, Graves used a smaller bowed form to crown the projected D.O.M. Headquarters in West Germany. A proposed City Hall for Phoenix (1984) featured a vastly enlarged arc, as does the Swan Hotel (p. 76), with fiberglass birds in place of urns. On the domestic scale, an arc form has been applied in a proposed house for Rhinebeck, New York (p. 74).

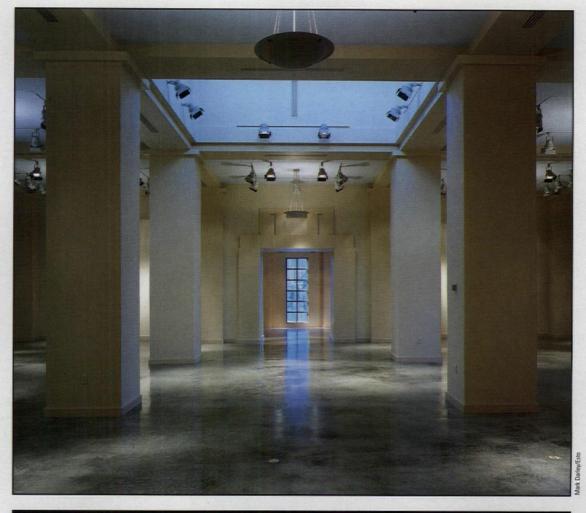


D.O.M. Headquarters, 1980

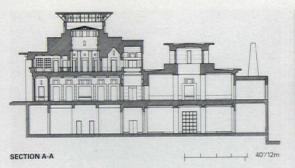


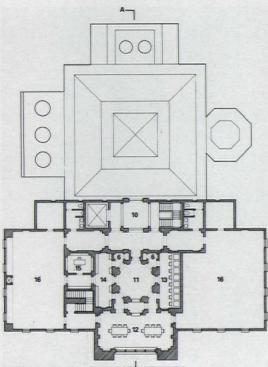
Phoenix City Hall, 1984

At Youngstown, Graves has used exposed beam ends at the extremities of the arc to imply bowed structural members running the long way. In fact, there are no such beams inside the envelope; the roof is actually supported by transverse joists. The façade is foremost a compositional medium that conveys an image; structural expression is of secondary importance.

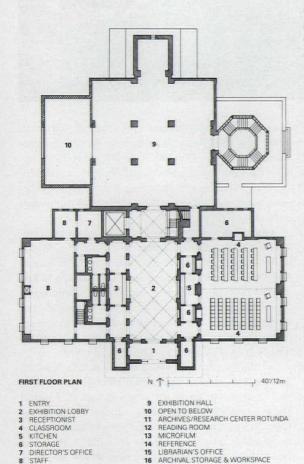


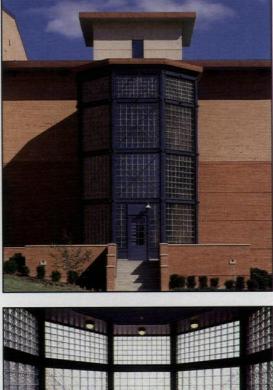












scaled, these are effectively giant three-dimensional signs, easily read by those who drive past the back of the museum.

Here, on the west side of the machine hall, an octagonal stair tower links the lower gallery with the garden, which is to be executed by the city. While the octagon is impressive as an image, its steel and glass construction calls for detailing more explicit than what we see. The crossed tie rods give no sense of a tensile force, and inside, the metal stair is set against a gypsum board wall without careful distinction of the building materials. Most of the interior is finished in gypsum board; outside, synthetic stucco complements the brick veneer. Their neutrality helps Graves keep the Classical figures somewhat abstract, but details are often too schematic, making the building appear less substantial than it really is.

Graves's spatial sequences are much more assured, an elegant adaptation of Beaux-Arts conventions. From the front door, one crosses a long lobby and double-height stairwell to the machine hall, where a central monitor is supported by four great piers. With limited daylight and high ceilings, they make this a formal space - grand, but not overwhelming. Here, and downstairs, as well, the central plan and apse-like appendages impart the atmosphere of a church.

The two levels in front are dedicated to education. Upstairs, the archives, which are open to the public, are centered around a rotunda, just below the cupola. From here, one can look to the cathedral across the street or in the opposite direction, across the monitor and smokestacks above the machine exhibit space, to the center of town. Here, visual coordinates connect the museum to the city and the individual to the factories that once identified Youngstown. Philip Arcidi

Classical details and controlled sunlight make the exhibit hall (top, opposite page) a serene setting for the machines and models that will be installed. The domed rotunda of the archives (bottom, opposite page) is aligned with the cupola and a view to the Cathedral. A glass and steel stair tower (this page) links the exhibit halls with the proposed garden.

Progressive Architecture 3.90

87

Stephanie Magdizak, project team). Associated architect: Raymond J. Jaminet & Partners, Youngstown, Ohio. Client: Ohio Historical Society and Youngstown State University. Site: a 2-acre sloping lot between the university and downtown; the Cathedral

of St. Columba is opposite the front of the museum. Program: a 32,000-sq-ft structure for

Project: Historical Center of Industry

ect architect; Patrick Burke, associate-

ager; Christina Chun, Lisa Fischetti,

and Labor, Youngstown, Ohio.

exhibitions, classrooms, archives, and a research library, dedicated to the region's industrial and labor history.

Structural system: cast concrete, ground and first floors; steel frame, second floor. Major materials: brick, glass block, tinted glass, exterior insulation and finish system, copper, flat three-ply roofing. Mechanical system: steam provided from off-site source; variable air volume HVAC system.

Consultants: Korda Nemeth Engineering, Inc., structural and mechanical; Joseph Jendrasiak, landscape.

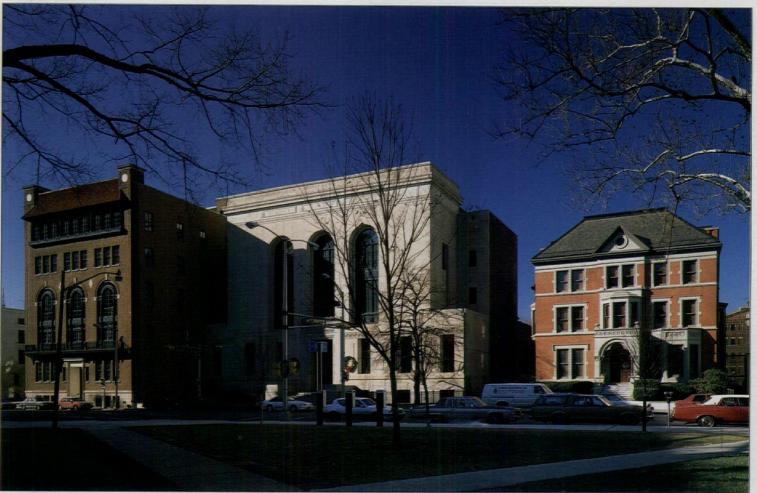
General contractor: Mike Coates Construction Company.

Costs: \$3.9 million; \$120.48/sq ft Photos: William Taylor, except as noted.

Four Not-so-easy Pieces

Inside the Newark Museum, Michael Graves links four buildings with a network of courts and galleries.





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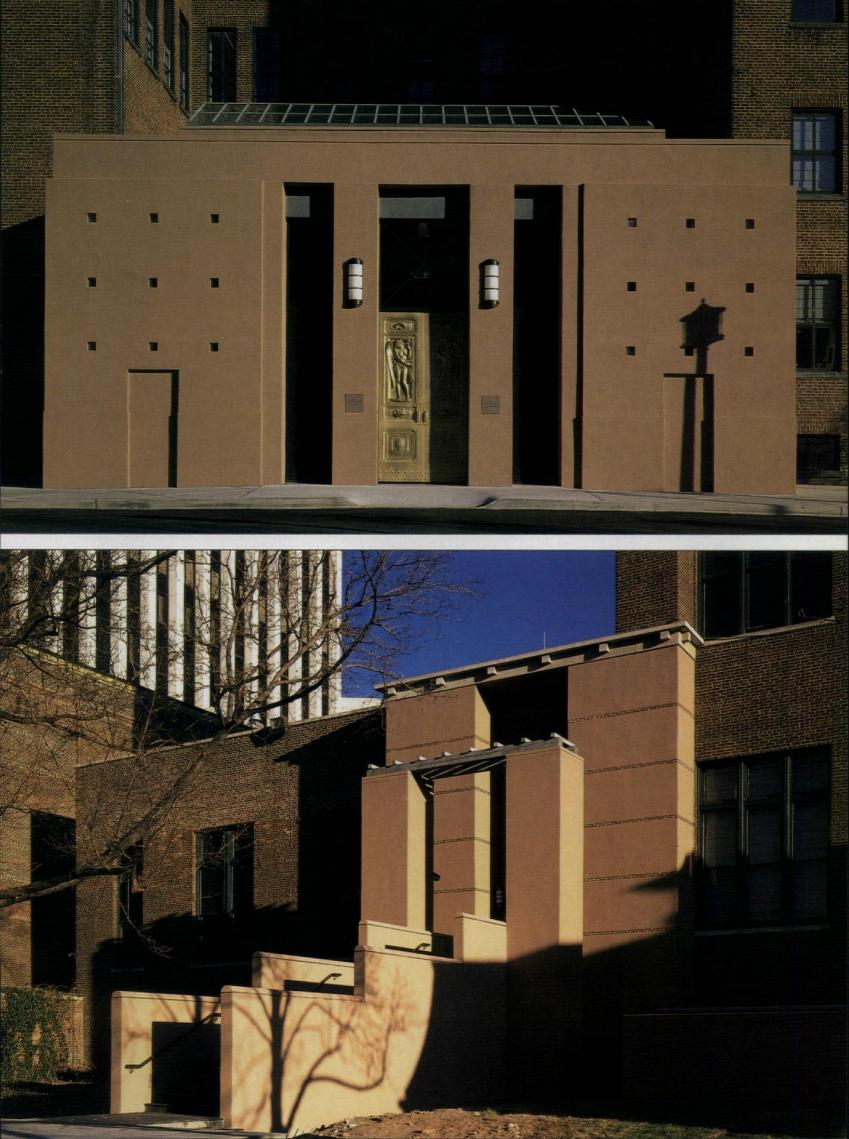
. Facing Washington Park, the Newark Museum's front door is centered in the original Main Building, which is flanked by the former YWCA and the Ballantine Mansion (center, this page). A model (top, this page) shows the Museum with its proposed garden; the long wall of the North Wing extends to the carriage house at the back of the lot. The Education Building's new motor entrance (top, opposite page) is set into the plain side wall of the old YWCA; the garden entrance to the Main Building (bottom, opposite page) aligns with the front door and will lead to an outdoor sculpture display.

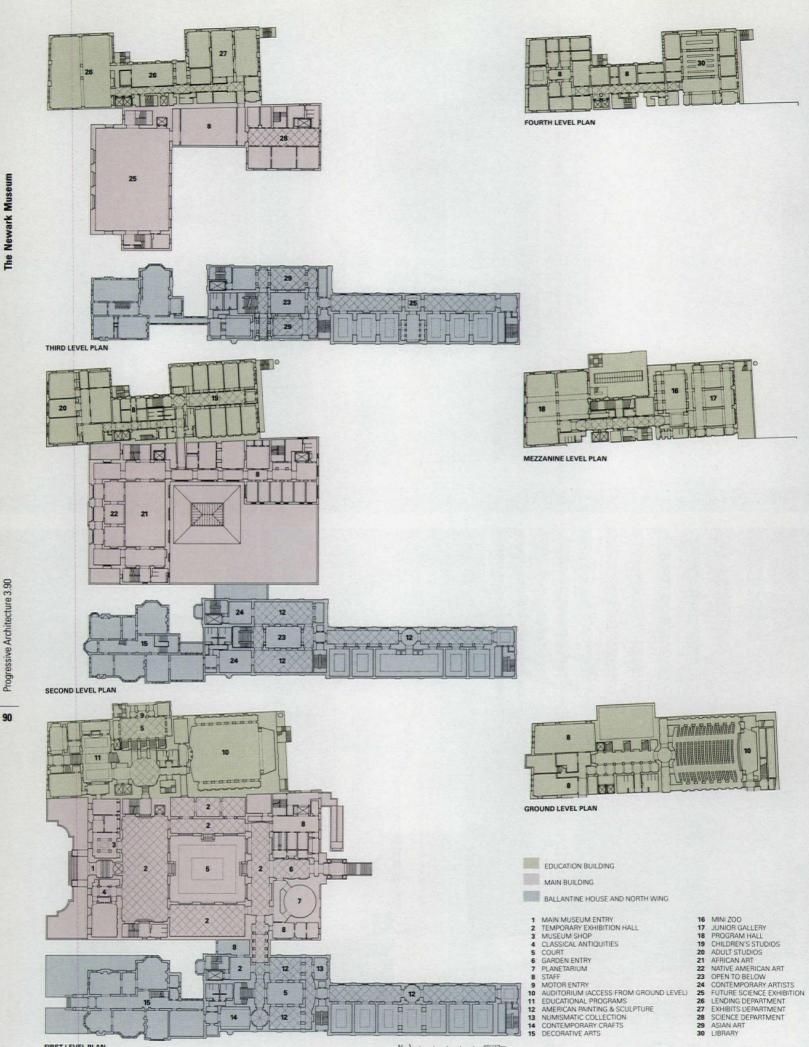
"Newark": the name still carries images of decay and abandonment, the legacy of destructive riots in the late 1960s. It would hardly seem the place where art or architecture would be issues, and perhaps the last place one would expect to find Michael Graves at work. Yet, there is now talk of a "renaissance" in Newark, a movement advanced by his remodeling and expansion of a valued, 87-year-old institution, The Newark Museum. The effort is testament to a commitment to the city that Graves shares with the Museum Director, Sam Miller; their client relationship is the longest in the architect's career.

In 1967, when Graves was a young faculty member at Princeton, he was recommended by Robert Geddes (Architecture dean at the time) to Miller, who had just become Director of the Museum, and was assembling an expansion program. Newark's Museum was recognized for its diversity and its commitment to education. It was a complex Museum, distributed among three buildings: the original 1926 Main Building by Jarvis Hunt, modeled on the Renaissance palazzo; a three-story brick structure (now called the North Wing), formerly offices for the Commercial Casualty Insurance Company; and an adjacent Victorian house, the 1895 Ballantine mansion, slated for demolition, but restored in 1976 (see P/A, May 1978, pp. 86–89). There were several small houses on the Museum grounds, as well, including a carriage house behind the North Wing, the subject of a 1975 renovation project by Graves.

Graves's first master plan, developed from premises that changed several years later (see P/A, March 1972, pp. 72–79), was characterized by the fragmentary "Cubist" compositions of his early work; it linked a series of distinct elements, old and new, ordered by an armature of *passarelle*-galleries. Although the scheme spurred the museum toward new long-term goals, it was stalled by the death of some key trustees and by Newark's social and fiscal hard times.

In 1982 the City of Newark gave the Museum the former YWCA next door, expansion plans revived, and Graves was asked for a new design that would incorporate all the Museum's buildings. Graves recalls, "It was a new project, as if Sam Miller had gone to another museum." Graves integrated the four buildings into a single experience, almost doubling





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FIRST LEVEL PLAN

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Progressive Architecture 3.90

90



The Newark Museum



Progressive Architecture 3.90

the gallery space. His new design is deferential to the established buildings; they retain their separate identities and provide the basis for a new functional *parti*.

The old YWCA, the largest component of the renovation, houses the Educational Department, a mainstay since the Museum's establishment in 1903. Graves accommodated busloads of schoolchildren and traffic for special events with a motor entrance on the building's south side, just off Washington Street; inside, it features a skylighted lobby. The original entry remains on the street front, with stairs leading to four levels of classrooms, offices, and the Junior Gallery; a new 325-seat auditorium is in a basement space that was once a gymnasium.

The original Main building is still the Museum's "front door" to Newark's Washington Park. On entering, visitors pass a suite of galleries and the Museum shop to a large exhibit hall and then step down into a broad skylighted court for changing exhibits. Graves restored this space to its original condition; he cleaned the granite floor, removed a suspended ceiling, and re-installed the original chandeliers.

The North Wing is thoroughly changed and now

features most of the painting and sculpture galleries, anchored by a new, three-story court and stairway. The most dramatic space in the renovation is a sunlighted point of orientation for three adjacent buildings. From here, one follows a gallery hall to the Main Building or walks to an octagonal gallery, and proceeds to the Ballantine House, which holds the decorative arts collection.

In contrast to Graves's design for the Whitney Museum, exterior "signature" features are few. The new south entry on the Education Building is a modest pavilion with bronze doors designed by Andrew O'Connor for Newark's American Insurance Building in 1904. A new garden entry, opposite the front door of the Main Building, will become the principal doorway from the parking lot by way of the proposed sculpture garden. Now the back lawn, it will become an outdoor room of landscape elements, an inversion of the court within Jarvis Hunt's building.

The interior counterparts to these exterior moves are the three light courts noted above; each is a pivot point, an anchor for adjacent galleries. From these interior courts, visitors circulate among hierarchically The Museum's original skylighted court occupies the center of the Main Building (left). This space, a restoration, is one of Graves's most understated accomplishments in the building. It is complemented by the hallway leading to the garden entrance (above), where the architect's style is discernible.



92



distinct rooms and passages, each adjusted to their respective buildings. A circular space, for example, adjoins the Main Building as a transition to the South Wing lobby. In the North Wing, the galleries that extend from the court are arranged as a row of rooms with their own centerpoint – a minor cross axis marked by a circular room along the hall and a window in the center of the south elevation. The building's references are multiple; Graves creates clarity with complexity, consistency without conformity.

Graves carefully aligned the galleries between the courts to lend coherence to the Museum's rich but cumbersome collections and educational programs. He employed variations of a pier-and-wall motif to effect a tectonic order derived from the "givens" of four very different buildings. Furthermore, he balanced the galleries with secondary figural spaces to mark passages and transitions. Subtle variations, such as a barrel-vaulted corridor leading to the auditorium, maintain a comfortable diversity throughout the museum. Graves referred to the modulated progression as an "architectural *marche*," routed with the input of the curatorial staff. He credits them for the creative

93

placement of the works of art, whose arrangement underscores the galleries' symbolic connotations.

Because it had been so cramped, the museum needed to renovate as much as possible within their clearly-defined budget. These demands and the budget ceiling pushed Graves to some difficult choices. For example, the stairwell at the west end of the North Wing doubles as a fire stair and the only passage from one gallery to its sequel on the next floor; a new vertical space and stair would have been more appropriate. Since this wing was originally an office building, its ceilings are lower than in most galleries; Graves compensated by modulating walls into a rhythm of bays. To economize, the lighting selection was limited to four fixture types. Their similarity proved to be a dividend; they help unify the museum (although they seem a bit too low in the North Wing). Graves's office deserves credit for its forthright and creative use of vinyl tile floors; a tough choice, and a bit shiny, but the architect's patterns are skillfully tailored to each gallery and corridor.

The Museum's decision to actually remain in Newark in its original location reflects a dedication to

the city shared by the staff and trustees. Rather than departing for a less challenging site, they preserved a part of downtown Newark and realized the civic connotations implicit in the museum's Classical Main Building. It remains their "front door" to the city.

More important, the Newark Museum reveals Michael Graves's social concerns; he is an architect who uses design as an instrument of change. In comparison with some of his latest work, the museum is stylistically conservative but in the truest sense. He instilled new life into the original buildings and illustrated how they might reinforce and enhance one another. For Newark and the local residents who will use the museum, it is an alternative to the present state of the city, a portent of what it can be. The architect's design and the users' responses promote care for the cultural environment on every level: architectural settings, objects, and individuals. As Michael Graves characterized the design, "This is as real as any reality." **Peter C. Papademetriou** In the new south entry lobby of the Education Building (top, opposite page), a skylight opens views up to the unaltered side walls of the building. Stairs opposite the doors are set between four great piers. Visitors go down to reach the auditorium (bottom, opposite page), where piers extend along the side aisles. A circular room, ringed with columns, overlooks the south entry lobby and provides a transitional space between this building and the Main Building.

Project: The Newark Museum, Newark, New Jersey.

Architects: Michael Graves, Architect, Princeton, N.J. (Michael Graves, project architect; Karen Nichols, associatein-charge; Peter Twombly, design phases associate; Jim Pricco, construction documents phase associate; Tyler Holmes, construction phase associate; Raymond Beeler, Ronald Berlin, Patrick Burke, Pamela Carter, Christina Chun, David Coleman, Michael Crackel, David Dymecki, Lisa Fischetti, Paul Gresham, Alexey Grigorieff, Thomas Hanrahan, Leslie Mason, Peter Hague Neilson, Paul Katz, Gary Lapera, Lee Ledbetter, Debra O'Brien, Eric Regh, David Rockwood, Steven Sivak, Hoke Slaughter, Roger Smith, Suzanne Strum, Nancy Thiel, Lesley Wellman, project team).

Client: The Newark Museum. Site: one half city block facing Washington Park in downtown Newark, with a large walled garden and parking lot. Program: four buildings were remodeled in two phases. The Museum incorporates three skylighted courts, galleries, a mini-zoo, lending collection, art workshops, education department, library, auditorium, offices, and rooms in a restored mansion.

Square footages: 146,100 sq ft (includes 56,813 sq ft of galleries and lobbies, 6950 sq ft auditorium). Structural system: existing structure

maintained.

Major materials: exterior work, cement plaster; interior walls and ceilings, gypsum board; floors, vinyl tile (see Building Materials, p. 144).

Mechanical systems: primary heat, gas boilers; secondary heat, reheat coils; humidification controls throughout; cooling, rooftop chillers; air distribution by 14 air handlers.

Consultants: DeSimone, Chaplin and Associates, structural; Lehr Associates, mechanical/electrical; Architectural Specifications, specifications; Ralph V. Ward, Ltd., security; Acentech Incorporated, acoustical; Douglas Baker, lighting; David W. Scott, museum; Calori & Vanden-Eynden, Ltd., Signage; Michael Graves, Architect, graphics; John A. Van Deusen & Associates, elevator

General contractor: Turner Construction Company.

Costs: approximately \$21 million, exclusive of fees.

Photos: Steven Brooke, except as noted.

The North Wing has three floors of American and Asian art (the Tibetan collection is world renowned), anchored by a three-story court with a faux marbre finish (opposite page). Piers and columns modulate the galleries flanking the court (bottom, this page). On the second floor, the long hallway doubles as a sculpture gallery, with a circular setting for Hiram Power's statue, The Greek Slave, to mark the midpoint of the North Wing.





Progressive Architecture 3.90



Logic and Will

Rem Koolhaas and his Office of Metropolitan Architecture reveal,

in this low- to moderate-income housing in Amsterdam, the underlying logic of their idiosyncratic work.



Progressive Architecture 3.90

96

The Ij-Plein housing consists of two parallel apartment blocks, separated by a narrow pedestrian court. The shorter of the two blocks has glass-enclosed stoops providing entry to large, three- and four-bedroom apartments (above). The apartments are ingeniously stacked, with cascading stairs that run through the middle of the block.

"Logic allows you to be willful," says Rem Koolhaas, capturing, in one seemingly paradoxical line, the essence of his firm's work. Unlike Deconstructivists who, says Koolhaas, "mix up form and function," his Office of Metropolitan Architecture applies an almost ruthless logic to problems, which then "allows the shape to be free," he says.

Consider the firm's urban design for a low- to moderate-income residential neighborhood in a former port area north of the historic center of Amsterdam. In this, his first commission upon returning to the Netherlands from the United States, Koolhaas "bombarded the site with 25 different typologies" to show how the same number of housing units could be accommodated by various planning models. Those ranged from Leon Krier's low urban blocks to Ivan Leonidov's point towers to three of Le Corbusier's Unités. Logical in his systematic analysis of Modern urban types, Koolhaas willfully overlaid each on the site like so much patterned wallpaper, seemingly oblivious to boundaries or other constraints.

The final plan of the neighborhood, known as Ij-

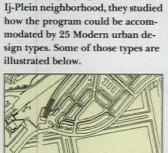
Plein, takes pieces from several of these prototypes. Divided by a central outdoor recreation area, the neighborhood has a western section consisting of multifamily villas alternating with long bars of apartments, all of which are oriented south to the view of central Amsterdam. The eastern section contains parallel rows of apartment blocks, perpendicular to the water, out of which Koolhaas has cut cross streets and a triangular park. On the one side, objectlike buildings float in open space in the manner of Leonidov; on the other, a tight grain of buildings encloses a park, recalling some of the planning schemes of Gropius, Mies, and Hilbersheimer.

Koolhaas studied at Cornell under Colin Rowe and O.M. Ungers, and the influence of both is evident in his plan for Ij-Plein. The reference to historical types and the play between objects in space and space-enclosing objects recall the work of Rowe. But the relentless logic of the analysis and the abstract way in which the types are overlaid on the site reveal the influence of Ungers, albeit done with more wit and a greater openness to paradox and pop culture.



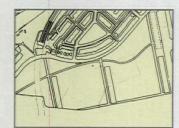


The longer apartment block is raised on pilotis to provide space for shops, a community center, and pedestrian paths. An access road to the rear parking area also runs under the building. Single-loaded one-bedroom apartments are stacked above the road, entered along outdoor galleries. Where the ground level is free, switchback stairs rise through the center of the structure, providing access to flats whose balconies are supported by perforated steel columns (above). Where shops obstruct the ground level, Koolhaas uses cascading stairs. The back of the longer block (left), which overlooks a marina, has a metal-clad elevator shaft for the topfloor gallery. lj-Plein urban design and housing Office of Metropolitan Architecture were developing a plan for the

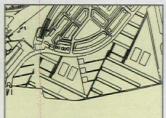


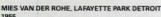
When Rem Koolhaas and the

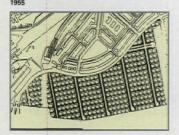
LE CORBUSIER, VILLE CONTEMPORAINE, 1922



LE CORBUSIER, UNITES d'HABITATION 195





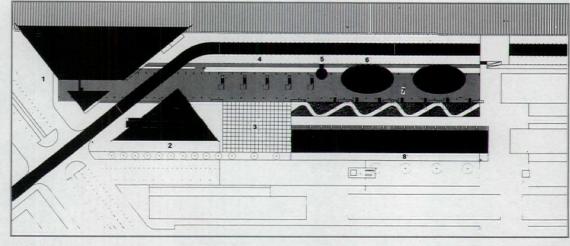


LUDWIG HIBERSHEIMER, SIEDLUNG STUDY



LEON KRIER, QUARTIER DE LA VILLETTE, 1976

SECTION THROUGH SHORT AND LONG BLOCKS SHOWING LATERAL AND TRANSVERSE CASCADING STARS





PLAZA COMMUNITY CENTER

5 ELEVATOR 6 SHOPS

STAIRS TO UPPER FLOORS THREE AND FOUR-BEDROOM UNITS

NKL 100/30m



FIGURE-GROUND DRAWING OF FINAL SITE PLAN (TINTED)

Housing Types

The Office of Metropolitan Architecture established design and massing guidelines for Ij-Plein and reviewed what other architects built on the site. The overall quality of the housing is, as a result, fairly high. This is a neighborhood of discreet, unassuming Modernist structures that refute the idea that such architecture does not lend itself to the making of background buildings. Notable among all of these buildings are the two apartment blocks Koolhaas himself designed at the eastern edge of the site - buildings that embody, at the level of architecture, the same approach taken with the urban design.

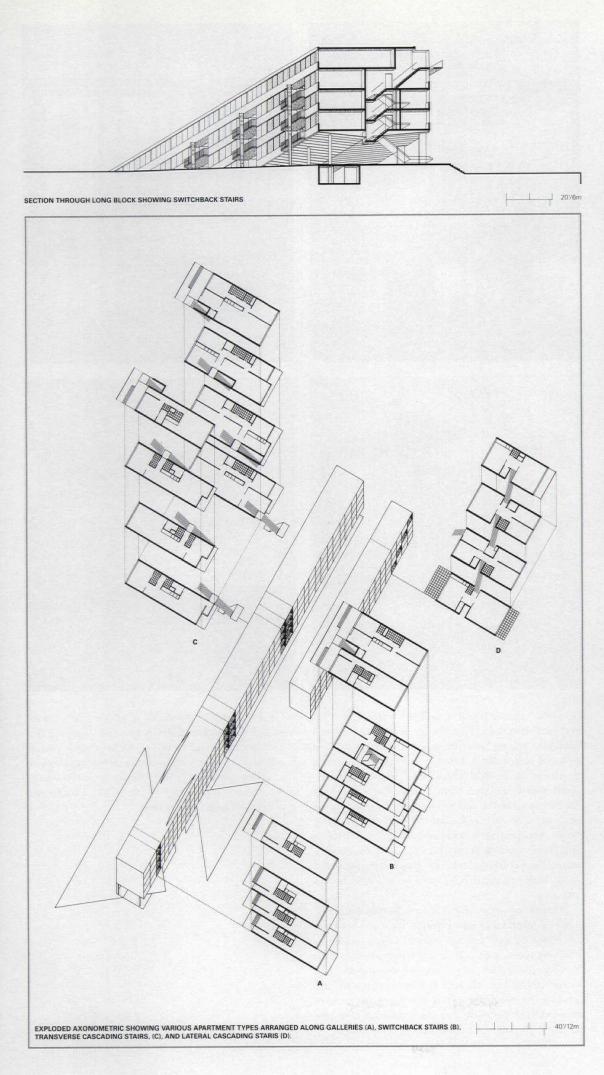
The two low-cost, low-budget buildings stand on a long, narrow piece of land, traversed by a major street. The longer of the two buildings is raised on pilotis to allow the street to pass underneath and to create more open space at ground level. Like the rest of the neighborhood, these blocks employ a common vocabulary of flat roofs, strip windows, and stuccoed exterior walls. But unlike most of the surrounding buildings, these have more inventive public spaces and more varied apartment types.

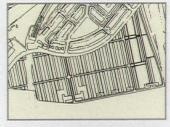
Where the street passes under the longer block, single-bedroom flats face single-loaded outdoor galleries. Koolhaas has pulled the galleries away slightly from the exterior wall to give some more privacy to the adjacent bedrooms and to admit light to the floor below. (The structure here is hung from large trusses, painted orange, that arch above the rooftop to terminate the main cross street visually.)

Where the ground level is uninterrupted, Koolhaas has paired one- and two-bedroom units around switchback stairs. Further down the block, where shops occupy the space under the building, Koolhaas has arranged one- and two-bedroom units along cascading stairs that end in switchbacks along the façade. The most inventive variation on a standard plan type, however, occurs in the shorter of the two buildings. Here, Koolhaas runs cascading stairs laterally along the center of the building, creating multilevel, three- and four-bedroom units. Entered up a stoop at the second level, the larger upper units are particularly pleasant, with light spilling down the stair from the top floor living area.

In contrast to the logical order of apartment types,

98





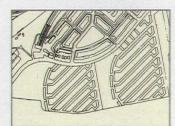
WALTER GROPIUS, DAMMERSTOCK, KARLSRUHE, 1927-28



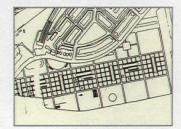
JACOB BAKEMA, CIAM-GROUP, PENDRECHT, 1949



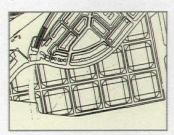
JOHANNES DUIKER, HOOGBOUW, 1930



ERNEST MAY, FRANKFURT 1927-30



IVAN LEONIDOV, MAGNITOGORSK 1930



CERDA, BARCELONA 1859

Progressive Architecture 3.90

Project: Ij-Plein neighborhood plan and Ij-Plein housing, Amsterdam North, Holland.

Architects: Office of Metropolitan Architecture, Rotterdam (Rem Koolhaas, Kees Christiaanse, Xaveer de Geyter, Tony Adam, Paul de Vroom, Leo van Immerzeel, Arjan Karssenberg, Thijs de Haan).

Client: City of Amsterdam.

Site: a former industrial shipyard along the Ij river north of Amsterdam's historic center, bisected by a tunnel connecting the two halves of the city.

Program: an urban plan to include seven housing projects, a community center, supermarket, shops, and school; and two apartment blocks (one 127,664 sq ft, the other 49,085 sq ft) with several dwelling types, 6458 sq ft of shops, and a 10,764sq-ft community center.

Structural system: reinforced concrete floors and walls on pilings.

Major materials: reinforced concrete, brick, insulated stucco, aluminum windows, redwood soffit under long block. Mechanical system: gas heating with experimental heat recovery system. Contractor: Heijmans Bouw bv., Rosmalen, Holland.

Photography: © Peter Aaron/Esto.

Koolhaas has used extensive amounts of glass, which increases visibility and makes cramped interiors seem larger. The metal-clad switchback stairs that project beyond the façade of the longer block (top left) have large windows at their ends. Glass windbreaks and roofs enclose the stoops along the shorter block (bottom left). Inside, glass walls separate the living rooms from the dining and kitchen space, giving a sense of spaciousness to the small units (top right). The area between the pilotis (bottom right) is enlivened by shops and softened by a redwood soffit, making the space surprisingly pleasant. Where the stairs emerge at the upper gallery, translucent glass enclosures separate them from the apartment terraces (facing page).

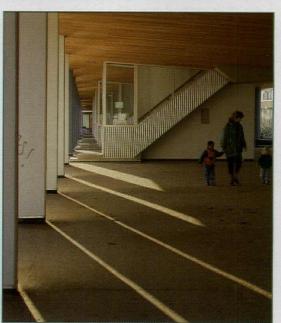




the public spaces reveal a decided willfulness. The food market at the northern edge of the site is a large metal-clad triangular structure that appears to have been slid under the building. The same idiosyncratic placement occurs with the smaller shops – glass-enclosed oval forms that seem to have been squeezed into place amidst the pilotis. The stairs, too, have great presence. The series of glass-enclosed stoops along the shorter apartment block have a fragile quality, like gangplanks up to a grounded ship. And zig-zagging among the pilotis of the longer block, the metal-clad stairs recall the industrial chutes once found in this port area.

It is perhaps inevitable that Rem Koolhaas's buildings be compared to his drawings, for it was with the latter that he first became known. These buildings, however, are least successful when they are most like drawings – as in the pedestrian path that wiggles, like a hand-drawn line, through a forlorn patch of turf between the two buildings or the triangular market whose sketchy detailing looks as if it had been translated directly from the initial drawing for a building.





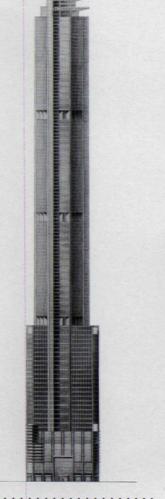
Where Koolhaas succeeds is where many others have failed: creating functional low-cost housing that also achieves a high level of architectural quality. Koolhaas may be best known as an irreverent theorist. But Ij-Plein and the Ij-Plein housing reveal a more sober, more rigorous side to his work – a willfulness grounded in logic. **Thomas Fisher**

100



To Be Continued

New buildings and projects by Helmut Jahn of Murphy/Jahn continue to demonstrate a restless continuum.



Simply to call Helmut Jahn of Chicago prolific is to restate the obvious, given the number of highly publicized projects he has produced over recent years. He is almost incredibly industrious, and has a technical skill for which he gives credit to his education in Munich; there he obtained his grasp of building systems and requirements that remain an important part of his thinking and design process today. At IIT, within the rigor of the Mies-oriented aesthetic where the exploration was primarily concerned with space, structure, and materials, he gained the backing in design that complemented what he knew from Germany. Of his training, he says, "It is my firm belief that the absence of pressure for formal invention quite different from today's education and practice made it easier for me to understand the relationship of functional, technical, and aesthetic forces in ar-

chitecture."

In the nearly 20 years since Jahn joined the firm of C.F. Murphy Associates, now Murphy/Jahn, he has demonstrated his intention to proceed with his own form of Modernism in an evolutionary process that develops out of the Mies-oriented C.F. Murphy work.

33

He has also shown himself to be highly self-directed in defining his own meanings for terms like "contextualism" and "historic precedent."

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MC- CORMICK-PLACE . 67.

MICHUM

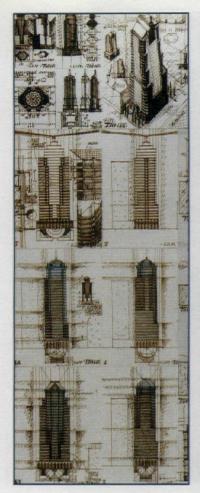
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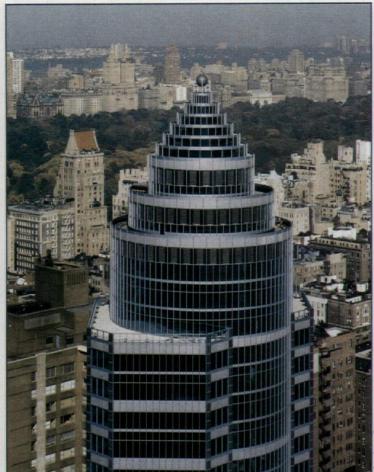
As he continues to produce prodigious amounts of new work, he continues his restless exploration for the ideal way to combine the many aspects of architecture he counts most important. He insists always on the balance between those functional, technical, and visual goals that, to him, make a successful piece of architecture. The projects shown here represent but a very small segment of Jahn's current work and can, therefore, only hint at the multitude of things that concern him.

Jim Murphy

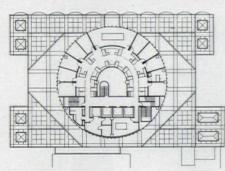
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Jahn feels that the series of sketches (top) tells the story of many of his sources of inspiration; it includes Sullivan, Mendelsohn, and Taut (left column), and the campanile at the Piazza San Marco, the Washington Monument, and the Eiffel Tower. The upper right series includes Wright and Mies. The lower right sketch is of a new German project for Lufthansa. The lower studies are for other new projects; the series is for a competition for Hong Kong. Some of the many sketches Jahn does on his projects accompany projects shown on the following pages.

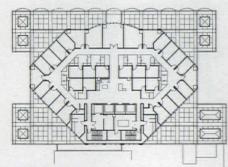




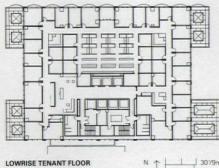
TWO AFRIAL VIEWS TOWARD THE NORTHWEST



28TH FLOOR TENANT PLAN



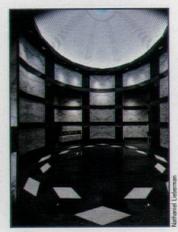
HIGHRISE TENANT FLOOP



____ 30%9m NTH



750 Lexington, New York, is what Jahn describes as a Tuscan tower, starting out as a rectangular base, changing to an octagon containing a cylinder, then to just the cylinder topped by smaller cylinders. Its 30 stories contain 375,000 gross square feet of office space. The "outer" of the interlocked geometric volumes serves to make the transition from the neighboring buildings to the tower element. The cylindrical two-story lobby (top right) reinforces the tower shape. Automobile parking is on the lower level, which because of the building's location will be very accessible to the 59th Street Bridge. The building is also located atop a main subway stop.



Helmut Jahn's Views

Helmut Jahn had already designed two award-winning buildings, Kansas City's Bartle Hall and Kemper Arena, by the time he took over the design reins at C.F. Murphy Associates in 1973. Throughout the 1970s he designed a number of mostly low-rise buildings, which he describes as "one-liners, without attempt at synthesis." He did design several buildings that were not "one-liners" later in the 1970s, including the Xerox (then Monroe) Centre (P/A, Dec. 1980, p. 58), the Board of Trade addition, One South Wacker Drive, and the State of Illinois Center (P/A, Dec. 1985, p. 72), all in Chicago. With these buildings, the designs began to be investigations involving various cues, historical and otherwise, but using current materials in representational roles.

The rise of the ill-defined "Post-Modern" movement was well along by then, but Jahn would have no part of its historicizing. While he does recognize that even this movement had some positive effects, freeing up architectural thought, and he did make some gestures in his buildings that acknowledged past influences, he steadfastly refused to resort to direct uses of historical elements.

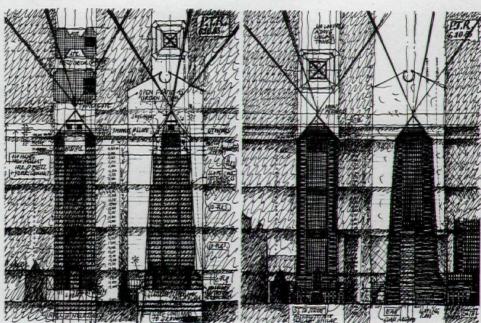
Instead, Jahn says, "The later

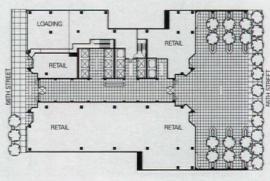
felmut Jahn

Park Avenue Tower, New York, is described as an obelisk, a 36-story, 480,000-square-foot (gross) shaft that tapers on two opposite sides. while the other two walls are vertical. Conforming to codes, the tapered sides set back in three tiers on these facades of the building. These two sloping sides converge to a height where the four sides form a 110-foot square. At the top is an open and lighted foursided pyramid that completes the obelisk form. The taper of the two sides satisfies a programmatic requirement for variable floor sizes. The structure is on a mid-block site between Park and Madison Avenues and connecting through from 55th to 56th streets. A 6400-square-foot plaza is located along the entire 53rd Street frontage. Valet parking is provided below grade.

The second se

AERIAL VIEW TO THE NORTHWEST





GROUND FLOOR PLAN

N ← _____ 20%6m

15TH FLOOR PLAN

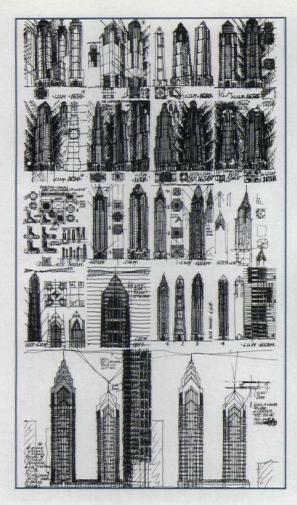
Progressive Architecture 3.90

104

functionalist, technological approach toward a new synthesis of abstract representation. This architecture explores the relationship between function, construction, and architectural form, and the tension between art and technology." Jahn saw this as putting a halt to "mindless application of the Modern movement." He felt that such continued application produced buildings "without connection to site, place, the human being, and history."

buildings represent a continuum and evolution from a strict,

This, of course, is also what the "PM" movement was supposed to combat as well, but Jahn is clear about the difference between his view and Post-Modernism. "All the Post-Modern architects," he says, "those who choose to imitate the past literally and those who allude to it only casually, share a sense of fondness, and even awe, toward what has come before. There is no doubt that in the last ten years, with a well-to-do society, buildings have had a lot to do with creating comfort. The buildings try to please, to offend no one. There have been no new discoveries; few of the rules are broken or new ones established. A sensible recognition of history and acceptance of new influences will generate an architecture of valid, modern, contemporary monumentality and appropriateness."





VIEW EAST ALONG MARKET STREET



12m LOBBY

One Liberty Place, Philadelphia, has had a controversial history since its conception. As it is the first building in the city to rise above the previous unofficial height limit – the 491-foot level of William Penn's statue on the Philadelphia City Hall – it provoked much debate when it was announced. It provides office floors ranging in size from 23,900 to 13,000 square feet. Its companion tower, the shorter Two Liberty Place, is now being completed on the same block.

Jahn describes the building as a representation of efforts to unite the "expression of romantic yearnings of traditional skyscrapers and the display of Modernist technological imagery." This can lead, he says, to a "logical expansion and continuation of Modernism – Romantic Modernism." The tower's multiple gables are clearly and candidly derived from New York's Chrysler Building, high on the list of America's favorite skyscrapers.

The 1,325,000-square-foot building rises 61 stories from a threestory podium, which is to make a contextual urban statement to relate to the surrounding city. From the stone-clad base, the amount of glass increases with the building height until the top is totally glazed, emphasizing the transition from ground to sky.

Jahn feels that in his work in the early 1980s, "A series of buildings less literal and more abstract – but still influenced by historic models of Constructivism or commonly understood and familiar images – are rendered in today's materials and integrated with current technological and functional requirements." For instance, at the Board of Trade, the major façade is a glass version of the earlier Art Deco building.

At One South Wacker, Jahn employed different colors of glass to create visual pilasters and stepped arches. The State of Illinois Center incorporates a number of devices, including glass representations of keystones and piers and stone piers that disintegrate as they march away from the building.

While some of his more recent work "deals with the idea of collaging different geometric shapes which are also often part of the surrounding urban scene - into new and recognizable distinctive assemblies," some of the other work takes a different direction. Also, he has been taking a new look at some of the work of several masters from the early part of this century; he acknowledges that the influences of Bruno Taut and Erich Mendelsohn have played a role, most notably in some recent European work, but also to some extent in projects in Miami (p. 109) and Chicago.

HIGHRISE LEVEL PLAN

MIDRISE LEVEL PLAN

N ↑ 40'/12m

Helmut Jahn



. The Messe Frankfurt Project, Frankfurt am Main, West Germany, comprises three new structures, the existing post-war Kongresshalle, and the historic Festhalle built in 1909. It was desired to keep a maximum amount of outdoor exhibition space in the complex. The new exhibition hall, together with its entrance pavilion, has been positioned to form the outdoor area with the two existing facilities, while the new 915,000square-foot, 70-story office tower (nearing completion) is freestanding, to represent a campanile for the whole complex, raised high off the ground to form a gateway. It will be the tallest building in Europe, at 825 feet. The 750,000-square-foot exhibition hall has clear spans of 263 feet.

Progressive Architecture 3.90

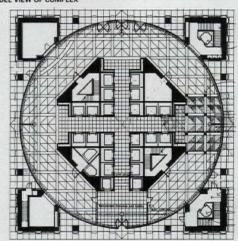
106

In addition, he notes, "Starting with a series of buildings in New York City, we have also pursued a distinct Classical parti in a more literal way. These buildings represent the image of traditional Classical forms, executed with modern materials and techniques. Park Avenue Tower (p. 104) is an obelisk; 425 Lexington is a column with obvious reference to Loos's Tribune Tower; City Center is a Classical setback tower; and 750 Lexington (p. 103) is a Tuscan tower." His Messe tower in Frankfurt (p. 106) would seem to belong to the same category. In Philadelphia, his 1 Liberty Place and the neighboring 2 Liberty are unashamedly influenced by New

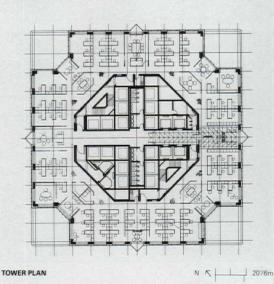
York's Chrysler Building. Another vein entirely contains Jahn's extremely popular and successful United Airlines terminal at O'Hare. It does not draw on a formal model, but on types of buildings like exhibit halls or train stations. His even more recent projects for the Munich Airport Center (p. 110) and a consolidated terminal for New York's JFK (pp. 111–112), while they differ in significant ways, draw on some of the same imagery.

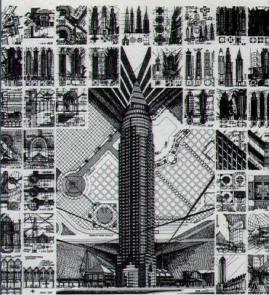
More formal complexity is seen in some of the recent projects, such as the Singapore towers (p. 108) (continued on page 110)





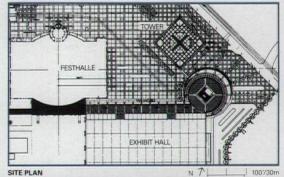
GROUND FLOOR PLAN





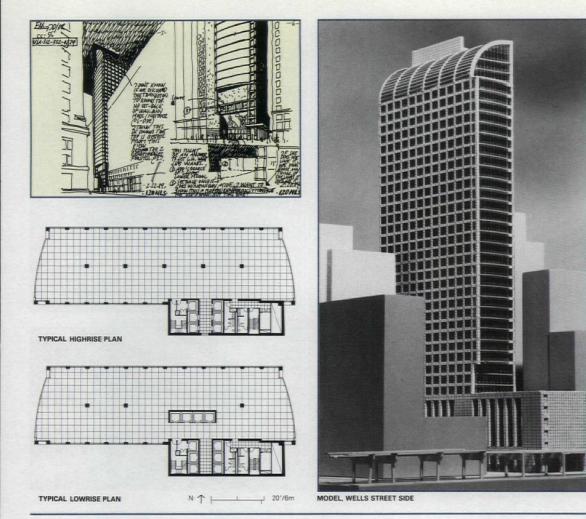


XHIBITION HALL AND ENTRY PAVILION





ENTRY PAVILION DETAILS



Savings of America Tower, 120 North LaSalle, Chicago, is on a mid-block site connecting between LaSalle and Wells streets. The 39story, 550,000-square-foot building is only 80 feet wide, the 60-foot office space plus core. A well-traveled midblock walkway, the alley running next to the building, will be repaved and upgraded, as part of the process of getting city approval. Curved bays on the end walls allow views down LaSalle to the river, and create what Jahn calls "a large-scale version of projecting bay windows that have always been a Chicago tradition.' The building is meant to maintain the wall-like character of the street, but with a contemporary expression in stone and glass. The quarter-round top houses mechanical functions and is not glazed but clad; Jahn notes that "many of the glazed tops, including our own, lack a certain strength.' Instead, the top is meant to create a distinctive image against the sky.

Kurfürstendamm 70, Berlin, West Germany, is located on an extremely narrow 9.5-foot site, with permission from the city to cantilever out 18 feet to the street curb. Kurfürstendamm, West Berlin's most important avenue, is enlivened by advertising, and therefore advertising is integrated with the design of this building. The structural solution on the eight-story structure is a 9.5 foot core from which cantilevered girders project within the mechanical top floors to support hanger rods. These rods support all floors below along the curtain wall. A strong grid of three structural bays expresses the system on the façade.

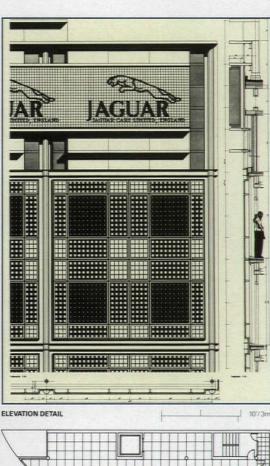
Glazing is clear, with ceramic frit patterns of varying density. At the corner facing Kurfürstendamm, slices of the building come together in a composition of sleek curve, Constructivist spire, and the flat plane of the core wall. A glass canopy projects out of the curve to protect the entrance into the narrow side of the core.

Helmut Jahn





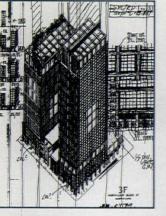
MODEL/SITE PHOTO MONTAGE



OFFICE FLOOR PLAN V 30%9m

107

Helmut Jahn



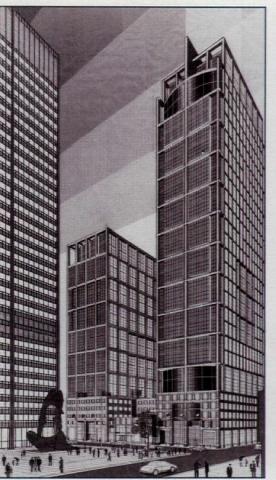
North Loop Redevelopment-Block 37, Chicago, is a full-block complex bounded by State, Dearborn, Washington, and Lake Streets. It comprises 424,000 square feet of retail space and two office towers, 32 and 48 stories, with 1.95 million total square feet, organized along a pedestrian arcade. It will provide a pedestrian connection with both the State and Dearborn street subway stations. Aesthetic and structural emphasis combine in a 15-foot-wide by onefloor-high grid throughout the complex, which is then subdivided or multiplied as required. Jahn emphasizes that the detailing will be meticulous in design and execution. Associated architects: Johnson & Lee.

108

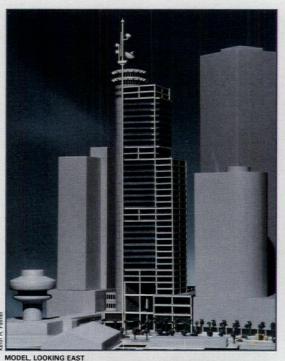
tects 61.

Office Building, Singapore, are 30-story and 29-story towers (380,000 and 400,000 square feet respectively) located at the edge of the city's financial district and at the historic Change Alley Arcade. They form a monumental gateway, making maximum use of an important pedestrian street linking Collier Quay with Raffles Square. Both towers are rendered in similar metal and glass, with an emphasis on the structural frame. The elements of the resulting complex are organized to reinforce the urban conditions around it, joining the water, the Square, and the Financial District. Jahn sees this work as having an attitude more consistent with the Miami project (facing page, top), because of some common elements, than is normally seen in their work. The associated architects are Archi-

Raffles Place and Collier Quay

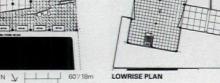


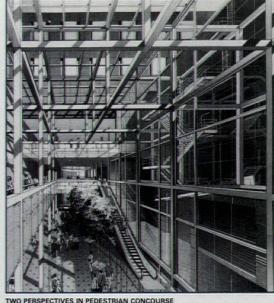
PERSPECTIVE ACROSS DEARBORN STREET



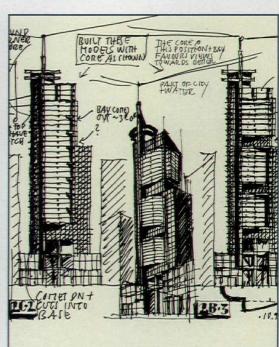


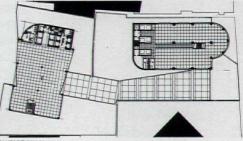


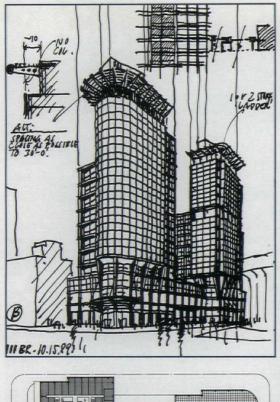


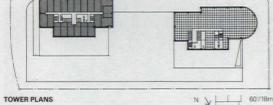


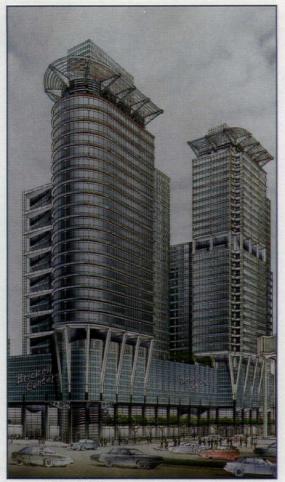










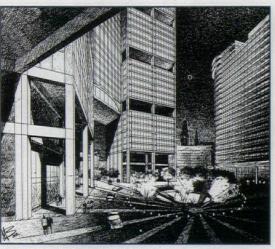


PERSPECTIVE LOOKING EAST

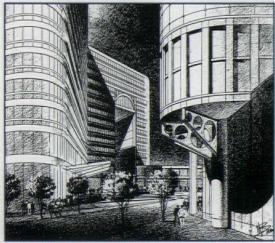
1111 Brickel Avenue, Miami, is to be a mixed-use complex with two high-rise towers on a base. One of the towers will be entirely for offices, while the lower portion of the other will house 256 hotel rooms with associated public areas. The upper portion will also be offices, with the base incorporating lobby spaces and a two-level retail arcade. The formal entry to all functions will be through a large landscaped plaza that opens off of Brickell Avenue.

Each tower takes a different sculptural form, with the corner facing Brickell being given a semi-circular end form. As in the Singapore towers, there is an emphasis on a structural grid form. The same grid of metal, in a shade of a blue-green, articulated by a tighter curtain wall grid of another shade, will tie the two towers together

unobstructed views to the bay and the semi-circular end to give it emphasis.



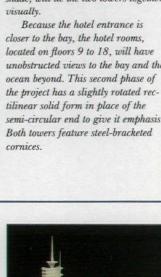
WO PERSPECTIVES IN OPEN CENTER COURT



LOCATION PLAN



NTSTRAS



Progressive Architecture 3.90

109

Helmut Jahn



Victoria City Areal competition, Berlin, called for an office complex on a site described as the best and most important in Berlin, on the border between East and West. Jahn calls the composition "a new urban typology, which combines space and object." A stepped perimeter block surrounds a large open space and is connected to the adjoining streets through large "gates," thus taking traditional European city elements like the public square and the perimeter block into a new relationship. Its expression, in the architect's terms, combines Bauhaus Modernism, especially that of Mies and Mendelsohn, with Russian Constructivism.

Munich II Airport Center, Munich, is a multiuse development to be constructed at the center of the new Munich Airport; it is to include hotels, office buildings, exhibition space, commercial space, and rail facilities for both the intercity and the Munich transit systems. Since 40 percent or more of the passengers coming to this facility are expected to arrive by rail, it is important that they be able to check bags near the rail facilities before proceeding to flight gates. The trains will run in open recessed trackways through the 300-foot-span main hall of the center. Connecting "arms" will project east and west of the main area, linking the building - functionally and visually - with the east and west terminals. This, in turn, will provide those facilities with a connection to the urban rail systems. While the space and some of the technological expression is reminiscent of the United

terminal at O'Hare, it is clearly different in its suspension roof and other elements. The Associated architect is Reto Gansser.

(continued from page 106) and the Victoria City Areal competition for Berlin (p. 109). Of these projects, Jahn says, "These buildings are perhaps more varied; they're not just a single type, a tower or a slab, but combinations of tower and slab. They create more space, because they're on more land, and they have different faces because they don't just face one street or a corner. A number of them pick up on an urban pattern

110

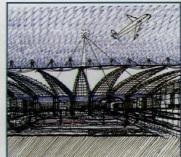
and continue or complete that pattern, the concepts of streets and spaces."

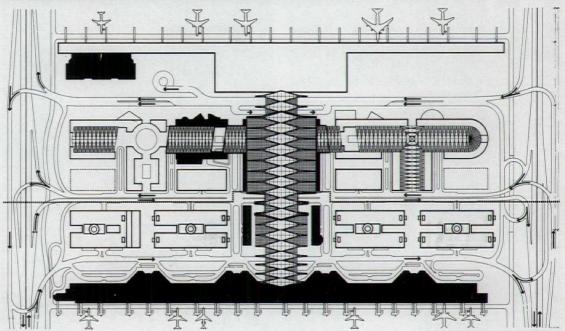
He has noted something about the European clients: "I've found that the Europeans always gravitate toward the more adventurous examples of our work. Because they have a more extensive history, they don't opt for historical solutions. They have wanted a vision, and they have contacted me because what they saw in some of our work was that vision. Where we have been trying to recreate history here, they want to make history again."

In the years since 1973, Jahn has obviously produced a prodigious volume of widely (and sometimes wildly) different architectural statements. Looking back, he remarks, "I'm not pretending that I have an answer for what to do. In our work, that goes back a number (continued on page 112)





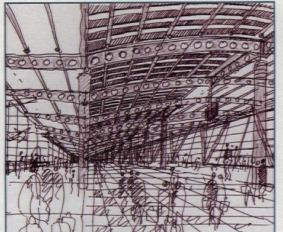




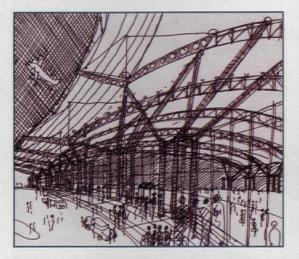
SITE PLAN

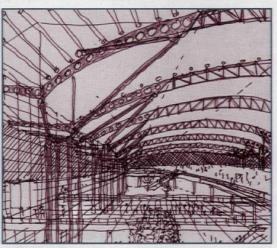
AERIAL EXTERIOR OF MODEL

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AERIAL EXTERIOR OF COMPLEX, AND INTERIOR OF MODEL INTERIOR, MAIN TERMINAL





MODEL INTERIOR

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JFK Consolidated Terminal, American Airlines and Northwest Airlines, New York, is part of a major rebuilding of this international gateway. Sweeping 280-foot spans over the four-level terminal areas will create an impressive spatial experience for arriving and departing passengers. Here again, the imagery might be taken for that of the O'Hare facility, but the trussed structure is actually far removed from the steel bents that support the UAL terminal. There is a satellite concourse located far enough across the taxi apron to allow widebody taxi operations in two directions.

111

Helmut Jahn

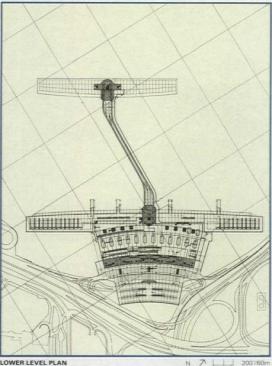
At JFK, the first level of the main terminal is inspection and domestic claims areas, and a large greeting lounge for arriving passengers. The next (grade) level is ramp services and inbound and outbound baggage systems. The upper level is ticketing, gate facilities, VIP lounges, and curbfront departure access. On the penthouse level is the customs-bound international arrivals corridor and mechanical fan rooms. The outboard satellite is arranged on three levels.

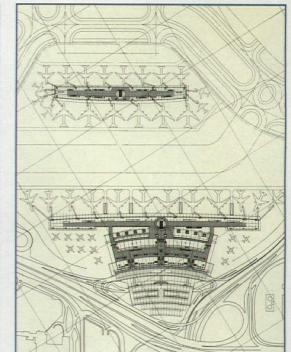
On the foregoing Murphy/Jahn projects, Helmut Jahn was assisted by: Sam Scaccia, Philip Castillo, Brian O'Conner, Scott Pratt, Ranier Schildknecht, Martin Wolf, Nada Andric, Dennis Recek, Ed Wilkas, Gordon Beckman, Steven Cook, John Durbrow, Susan Froelich, Mark Piltingsrud, Sanford Gorshow, Steven Nilles, Mark Frisch, Robert Hendrickson, Steven Kern, Antonio Pelipada, Mikhail Budilovsky, Thomas Chambers, Richard Drinkwater, Raimund Schöck, Lothar Pascher, Dieter Zabel, and Fritz Ludwig. Former assistants are James Goettsch and Daniel Dolan.

(continued from page 110)

of years now; we have often gone against what is 'pleasing,' what is 'acceptable.' I have somehow always stood firm, even though clients have told me more than once 'We like what you're doing, but our tenants don't like it.' '

Speaking at the opening of the O'Hare United facility, Jahn said, "A building like this, with goals as described, cannot be done by an architect alone ... He needs a good client." After which he thanked city and UAL officials who were instrumental on the client side. In concluding, he expressed a version of what he feels generally: "So welcome to the 21st Century; and remember, the next terminal of the future will have to be designed again." Chances are that Jahn will be there equipped to do whatever is necessary with uncommon flair. Jim Murphy





UPPER LEVEL PLAN



TRANSVERSE MODEL INTERIOR

112

Perspectives

Thomas Beeby talks to Ross Miller about Mies, Classicism, and his recent work.

Interview: Thomas Beeby

Thomas Beeby has been Dean of Yale University's School of Architecture since 1985. He formed his own firm Hammond, Beeby & Associates (now Hammond, Beeby & Babka) in 1971, after working for six years for C.F. Murphy Associates in Chicago.

Miller: You began your career from 1965 to 1971 as a designer at C.F. Murphy, a Miesian Modernist firm. How do you connect that experience with your current Classical work?

Beeby: It was a wonderful time to be an apprentice-architect in Chicago. At C.F. Murphy there was an incredible sense of professionalism that had to do with fine building and not cutting corners anywhere. There was a tradition of public building in Chicago then, which was supported by the city. They actually floated bond issues to pay for buildings without public referendums. The architect designed a building the way he wanted it, and after he got through schematic design, a budget was attached to it, so there was no cheapening of the building as the job progressed. The result was a series of public buildings with great power.

The training that I got in Chicago at that time gave me certain attitudes about architecture which have stuck with me - producing buildings that are wellbuilt, that are serious buildings, that represent civic architecture. I had always been interested in the relationship between Mies and Classical architects. When I first began to work at C.F. Murphy, I couldn't evaluate Classical buildings. I had no critical facility for seeing them. But after working for around six months on Miesian projects, I suddenly could see Classical architecture. I could see buildings as planar faces, as problems of shallow relief on façades, as compositional problems dealing with repetition. Mies opened my eyes to Classicism, and I became interested in what Classicism offers in terms of legibility. It has a series of devices that inform people about how buildings work, and I think the general public understands the conventions of Classicism. Modern architecture offered a different idea about arrangement that had to do with pure functionalism on the one hand or pure invention on the other. Neither inform us as to what the essence of the building is, which has to do with the relationship between the form, the structure, and the kind of intention or use of the building. Miller: You speak of Classicism as akin to Modernism and not something that is anti-Modernist.

Beeby: That's right. If you understand the logic of Modern architecture as it was in Chicago, the Miesian version of it, it was not only an ordering device, but an aesthetic system, a reverence for the quality of both materials and construction. That is not in any way in conflict with, say, the Classical buildings done by Daniel Burnham. If you look at the office buildings done by Burnham's office at the turn of the century,



Thomas Beeby

"Architecture obviously has to do with both invention and convention, but the idea of suppressing either side produces architecture that is not complete."



Classical detail in the Daniel F. and Ada L. Rice Building at the Art Institute of Chicago.

you'll find that they're modular and rational in the same way that Mies's buildings are. The same economic system is driving them both; the same kinds of choices are being made.

Miller: What do you think is the public's current understanding of Classical architecture? Beeby: At the public review of the submissions to the Harold Washington Library (P/A, July 1988, pp. 25-26), there was one segment of the population that wanted something that was, in their terms, imaginative, something they had never seen before, which they then translated as being forward-looking. There was another segment of the population that wanted a building that was clearly a civic building, that looked like a library and that looked like it belonged to the city of Chicago. There's a distinct split between those two positions and few moderating positions in between. The interesting thing to me is that those two opinions were found among people at all levels of education and sophistication. It seems to be a split in our culture. Architecture obviously has to do with both invention and convention, but the idea of suppressing either side produces architecture that is not complete.

Miller: Two urban traditions meet in Chicago: Burnham and his idea of an axial planning and Mies, who exploited the native grid. How does your work, especially the library, respond to these two traditions? Beeby: Our work lies at the junction between the two. If you read John Wellborn Root's interpretation of building in America, it's still absolutely true: How do you build in a society that is unformed, changing all the time, always transient? How do you keep architecture from being an endless carnival of styles, one after another? The problem today for an architect is exactly the same, which has to do with making an architecture for today. I've always been interested in Sullivan's discovery with the Wainwright Building. He'd been looking at the same problem, for 20 buildings, and suddenly, he could see it a new way. That's what invention is about. It's not about searching for new forms for the sake of new forms; it has to do with a new understanding of what you have at hand. Miller: It's interesting that you mention Sullivan's Wainwright building, where for the first time, the Romanesque was used as a way of really filtering the Classical language of architecture through the Middle Ages - into an almost Miesian or Modern mode. Beeby: One of the things that always interested me about Sullivan is his notion of materiality. The standard story of Modern architecture is that there's this evolution from solid masonry buildings, such as the Monadnock Building, to glass buildings, such as those by Mies. If you look at Sullivan's Getty Tomb, it's a solid block, with an incredible sense of materiality, yet there's ornamentation that runs over the surface of the building. The Wainwright is the same. It is an incredibly solid building, with ornate spandrels that create a flickering darkness that runs between the

113

vertical shafts. Then at Carson Pirie Scott, suddenly, the building is no longer dark; it's no longer solid. It's a white frame clad in terra cotta. So, here's Sullivan dematerializing the box, just as the story says he did. Except six years later he does the first bank, and then you're back at the tomb. He turned his back on this dematerialization, which he'd worked through in his own mind.

Our library has something to do with this rejection of lightness. It has to do with a return to solidity, to materiality as an essential aspect of architecture. When you think about the architecture of Chicago, you don't come up with visions of glass, you come up with visions of incredibly powerful blocks that sit on those streets. It's not about curtain walls. Instead of having a modern plan with the core in the center and a glazed exterior, our building has the core wrapped around the outside with an open center. This gridded center, with a figural wrapper of core elements around the outside, allows you to develop a plasticity and materiality on the outside but maintain the kind of flexibility of modern space on the inside. The pieces have been seen before, but they're just combined in a way that is quite different.

Miller: Having received the commission for the Paternoster Square master plan, you'll find yourself coming in contact with Prince Charles. What is your view of his criticism of Modern architecture and architectural education?

Beeby: It's interesting because he has picked the Achilles heel of architecture. His targets are very carefully chosen, for post-war building in London has not been of the highest quality. In defense of English architects, though, it must be said that they were building during a period when there wasn't a lot of money in England. There was not money to use appropriate materials or even to build appropriately, so you ended up with a hostile environment of secondrate, shoddy construction.

England has this tradition of truly inventive Classicism, the kinky, eccentric Classicism of John Soane and Edwin Lutyens that is brilliant in its invention and that thumbs its nose at convention, although it uses convention as a starting point. I think that kind of architecture should be the path English architecture should follow.

Miller: In my view, your original drawings for the North Shore Congregation Israel really was a turning point in your meditation on the Classical.

Beeby: I have always been interested in the notion of significance, of how you make a building, through its arrangement, signify ideas. How do you decide to make something one way versus another so that it has specific meaning? During the synagogue project, I looked into the history of the synagogue and the idea of the temple. I realized that there's a collective unconscious that understands notions about architecture and things like materiality. Jungian imagery, religion, fairy tales, folk culture, and such provide

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models for a universal language of the unconscious, but I finally came to the conclusion that Classicism embodies those characteristics more than any other kind of architectural vocabulary. Certainly Modern architecture, in its concern for abstraction, abandons things like materiality, ideas of darkness or the endless lighted space. All those things were suppressed by Mies's version of Modernism. On the one hand, I was looking at what made Mies's work what it was, and on the other at what Mies had given up in Classicism. I ran across an incredibly beautiful book by Rudolph Schwartz on the church incarnate, which has an introduction by Mies. In a way, it explains Miesian architecture. It had to do with Protestant ideas of form, with sensual deprivation, distillation, and perfection.

Miller: It's as if Mies's Classicism is evacuated space. The center remains open and also free of memory; it's Classicism without memory.

Beeby: That's right. Peter Behrens plays a part here, providing a link between Schinkel and Mies. Behrens's

"How do you build in a society that is unformed, changing all the time, always transient? How do you keep architecture from being an endless carnival of styles?"



North Shore Congregational Israel in Glencoe, Illinois.

St. Petersburg Embassy, which Mies worked on, is an incredibly generalized work; its relentless repetition and generality of form is a precondition for universal space, for reducing the program to nothing. When I taught at IIT, I realized that a person's background had a lot to do with how they responded to Mies. People from cultures that set great store by sensual gratification never quite got the idea of Mies, while people who understood sensual deprivation as a kind of elevated state, people from Protestant and certain Oriental cultures, responded to the mystery of the work. There's a kind of cruelty to the abstraction of Mies's work that I didn't want to subscribe to. I appreciate the order of it; I personally find it aesthetically quite moving. But most people do not subscribe to that sensibility.

Miller: But with so few people understanding Classical architecture anymore, how literal does that language have to be?

Beeby: One of the interesting things about Classicism is that not only is it a complete language, but it's a complete galaxy of languages. It offers a way to layer meaning where a person who is uninformed can appreciate it in terms of space and form, and a person who understands more can see its intellectual content, and a person who really knows architecture can understand the irony of its misappropriation or deformation. The argument now is that no one understands Classical architecture anymore, but my sense is that no one ever really understood it.

Upper floor plan of the Harold Washington Library in Chicago.

It looks like the Classicists, with royal muscle and some help from the colonies,

have won this round over London's most sensitive site.

Controversy: Paternoster Square

Like a prism, the debate over Paternoster Square a sizable redevelopment site just north of St. Paul's Cathedral - has multiple facets. Through it, the urban controversies raging in England are concentrated.

The struggle has pitted Prince Charles and a camp of ever more confident Classicists against a group of "progressive" architects, who expect dire consequences from the unbridled royal indictments of the profession, and who ridicule the retrograde style Charles favors.

Paternoster Square has all the prerequisites of a battle worth picking. The 7-acre battleground abuts Wren's Cathedral - a locus of intense emotion for all Britons. And there's big money at stake. The site, occupied by bleak 1960s office blocks based on a 1956 plan by Sir William Holford, will be cleared for new mixed use construction, chiefly of offices for the City, London's globally ambitious financial core.

The spark to the tinder is Prince Charles, who has fired widespread support for his multimedia crusade against Modern architecture. In large part because of his intervention, Arup Associates, the "progressive" firm that won the commission for the master plan, was ousted. Bowing to popular sentiment, new owners of the majority of the site turned the commission over to John Simpson, the author of a rogue Classical scheme approved by the Prince. Recently, these developers, Greycoat of England, in a joint venture with George Klein's Park Tower Realty of New York, recruited self-styled Classicist Terry Farrell and Thomas Beeby, the dean of Yale, to assist Simpson with revising his master plan.

Make no mistake. This argument is about style not substance. No one defends disgraced Modern urbanism. And few dispute the value of human scale and life-affirming public spaces that Charles advocates. To understand how the debate reached its present pitch, it's necessary to go back to round one.

In 1987 a competition was held to solicit ideas for the redevelopment of Paternoster. Its objective was to pinpoint a masterplanner equal to the task, rather than a specific scheme. Seven firms made the short list: Arup Associates, Foster, Macormac, SOM, Stirling, Rogers, and Isozaki.

"There could be no better place to focus present issues, or for the blood to flow, than on the steps of St. Paul's."

In Architectural Review of January 1988, architect Francis Duffy, one of the competition organizers, described the challenge: "It would have been hard to devise a neater experiment . . . On the one hand lay the irreducible fact of the great cathedral of St. Paul's. On the other was the commercial reality of requirements for so much of the big, deep, highly serviced office space designed to accommodate the organiza-



Site plan, Arup scheme

Arup's Scheme: The plan takes into account codes that restrict the depth and height of buildings adjacent to the Cathedral, ensuring that its foundations are protected and important views maintained. The plan is based on the creation of a network of new public spaces, which would be closed to cars. These include four basic elements: a new Cathedral Close, an arcade, a colonnaded square, and a network of pedestrian streets based on the site's historic layout and connected to the surrounding fabric. The master plan creates ten sites for new buildings, ranging between four and eight stories in height, for which detailed guidelines were provided, governing plan area, massing, and materials.

tions and information technology which the globalization of financial services now demands . . . In effect, the conditions forced each competitor to state his position about access, imagery, the accommodation of change, the relation of one building (and one century) to the next, all the stuff that the city is made of." The vision of Sir Philip Dowson of Arup prevailed.

But he anticipated trouble. "It was quite clear from the National Gallery experience in Trafalgar Square that we were going to have a problem on our hands quite separately from the urban and architectural one," Dowson recalled in a letter to P/A. "There could be no better place . . . for the blood to flow, than on the steps of St. Paul's."

Before proceeding to turn the concepts of his winning scheme into a concrete master plan, Dowson sought input from interested parties. A broad-based Paternoster committee was formed with representatives of the Cathedral, the City, English Heritage, and the Royal Fine Arts Commission. To introduce the public to the issues and solicit feedback, an exhibition of the six competition schemes (excluding Arup's) was mounted in June and attended by Prince Charles. Arup intended to exhibit its revised plan at a later date. "There followed Prince Charles's Mansion House 'speech' which with its unbalanced hyperbole made any . . . sensible discussion extremely difficult," Dowson writes. It was on this occasion that the Prince charged post-war English architects with wreaking more damage on London than the Luftwaffe had done. "This speech was followed later in 1988 by a television programme where in front of an audience of six million we were surprised to be charged by him with an 'inhuman' design at a stage when none existed," Dowson recalls. "The enthusiasm of the Prince or his advisers . . . were now outrunning the

Oil rendering, Simpson scheme



115

Progressive Architecture 3.90

"The argument over architecture has broadened considerably in the wake of the Prince's comments; it is now a mile wide and an inch deep."

Perspectives

facts of the position, and so the waters became irretrievably muddied."

When Arup Associates presented their master plan in November 1988, Prince Charles, though invited, did not come. Dowson emphasizes that a Gallup poll run during the exhibition was "massively in favor of our final proposals."

But by now, the approval was virtually moot. For John Simpson was already working on an alternative Classical scheme, which was never part of the competition. Simpson explains why he embarked on his demonstration: "When all the entries [of the competition] came forward, it became fairly apparent that to some extent the wrong approach was being taken." There was a discrepancy between the grain of the proposed redevelopment to the north and that of redevelopment and conservation areas to the south and southwest. "We felt it was vital to show graphically what [an integrated approach] meant in terms of buildings," he says. "We were accused of not doing something viable. We decided to produce something that was ... attractive to a developer."

Meanwhile, Mountleigh, the developer who had hired Arup, sold its 4.3-acre holdings to a Venezuelan company, which flipped the property to Greycoat. The new brooms swept clean. Last November, they brushed aside Arup in favor of Simpson's emphatically Classical proposal. One can only speculate why; spokesmen of both companies avoided comment.

Barring its boost from HRH, why Classicism? To Simpson it is the only legitimate source. "We have a culture, and it's that we draw on." Farrell maintains that only Classicism has evolved the "urban principles" capable of accommodating elements such as the scheme's gateways, loggias, and Roman-inspired market building.

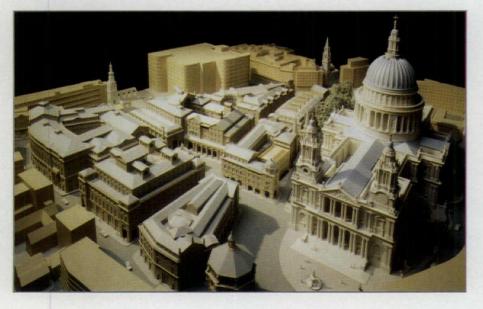
Simpson has no difficulty with the discrepancy between the Modern open-plan interiors and their Classical elevations. Buildings are continually



Site plan, Simpson scheme

Simpson's scheme: Attempting to evoke the pattern of streets that existed on the site before it was obliterated by bombing on the night of December 29, 1940, Simpson introduces an array of public squares and arcaded pedestrian paths, which define discrete buildings and frame the existing 18th-Century carriage house adjacent to the Cathedral. Most of the buildings include retail at sub- and groundlevels, with four to six stories of open plan office space above, wrapped with facades drawn from 18th-Century English Classicism. The plan provided 750,000 square feet of offices, 240,000 square feet of shopping, 25,000 square feet of residential space and a 70,000-square-foot hotel. But since the program was devised without a real client, it is now being revised by Simpson, Farrell, and Beeby to meet the developers' specific needs. Individual buildings, Farrell explains, will be assigned to architects "who have different ways of expressing Classicism.'

Model, Simpson scheme



readapted to new uses, he says. "Interiors have a shorter life, the exteriors survive from one generation to the next." In response to criticism that his buildings fail to reflect the technology of our time, Simpson envisions it being harnessed to the mass manufacture of Classical elements.

It is to be "greatly regretted" that Arup Associates was not retained by the new developers, says Maxwell Hutchinson, currently president of the Royal Institute of British Architects, who emphasizes that his are not official RIBA positions. "John Simpson's scheme exemplifies everything that is wrong," he asserts, and cites Simpson oil renderings depicting "an antique society which no longer exists... open windows with curtains flapping in the breeze – when we know the buildings will all be airconditioned."

Hutchinson lays a good deal of the blame for the scheme's "façadism" at the Prince's feet. He, too, has been burned, losing jobs in Surrey and London because, he claims, he did not toe the Prince's stylistic line. His frustration emerges in a recent book, *The Prince of Wales: Right or Wrong?* (Faber & Faber). "The argument over architecture has broadened considerably in the wake of the Prince's comments; it is now a mile wide and an inch deep," Hutchinson remarks. "[The Prince] is the common man, the man in the saloon bar who likes a good strong tune and believes they don't write them like that anymore."

He blasts the skin-deep architecture that has risen: "Modern facadism is now almost a seasonal thing . . . the bimbo wears haute couture or a wet T- shirt, depending on what is being sold."

The Architect's Journal reiterates the perils: "The whole profession . . . is in danger of being marginalized, of becoming merely an element in the marketing strategy of cynical developers. Is this what the Prince really wants?" asks a November 1989 editorial.

The argument about style has a sinister underpinning. Even assuming that Classicism can, as Simpson posits, render the technology of our time, it remains a political and social anachronism. The societies in which the Classical styles of every era flourished were distinguished by much greater ethnic homogeneity and often enforced unanimity of religious and scientific beliefs. But in the melting pot that is England today, the Prince's feeling that only Classical buildings have commemorative value can be shared by only a portion of his future subjects. Surely mixed societies, as much as advanced technology, will mark the 21st Century. Adhering to the notion of a "perfected" Western civilization, Classicism approaches racism.

No doubt, the Prince has tapped into a deep and troubling seam of public resentment; his laymen followers thoroughly distrust the profession. Even valid arguments of "progressive" architects are considerably weakened without the underpinning of a broader social vision and, couched in hermetic terms, are in danger of being dismissed as merely the cries of wounded professional pride. **Ziva Freiman**

Urban Issues: Atlantic City

It is now almost ten years since the Sands Hotel became the first in a new generation of casino resorts to grace the shoreline in Atlantic City. Since then, this city, famous for the Boardwalk, Miss America, and saltwater taffy, has undergone a dramatic, if disturbing, transformation. Donald Trump's new Taj Mahal Casino Resort on the Boardwalk, slated to open next month, is characteristic of a breed of corporate megastructures that have swept away historic Atlantic City with hurricane force. Begun by Resorts International, the Taj Mahal was designed by an in-house team inherited by Trump when Resorts was acquired.

Topped by a melange of domes, spires, and minarets, the Taj Mahal seeks to connect to a tradition of seaside exotica first articulated by John Nash in his Royal Pavilion at Brighton - a tradition from which Atlantic City has drawn in the past. The Taj Mahal's exoticism, however, is only skin deep. Except for its applied decoration, it shares much in common with the other large casino hotels that have sprung up since 1978, when gambling was legalized in Atlantic City. Like its immediate neighbor, the Showboat Hotel Casino, the Taj Mahal is organized primarily around ease of vehicular access. Some casino executives have decided that profits depend on attracting the hordes of daily excursioners who arrive by automobile or chartered bus. To cater to this clientele, the hotels have competed to construct the largest and most accessible parking garages.

The typical new Atlantic City casino, therefore, consists of a multistory precast concrete parking garage along Pacific Avenue and a largely windowless plinth of public spaces, with the casino at its heart, sandwiched between the garage and the Boardwalk. In the newer hotels, a room-tower slab emerges from the base and, by statute, runs perpendicular to the Boardwalk, offering views up and down the beach. The top of the slab is reserved for high-roller suites. According to Trump Plaza's architect, Alan Lapidus, the rule for their design is straightforward: "The more outrageous the better."

The Taj Mahal follows the formula, but like other gambling palaces fails to resolve a basic architectural and cultural contradiction: How do you reconcile the intense, introverted world of gambling with the leisurely, external world of beachfront and bathing?

In its heyday in the 1890s, Atlantic City attracted middle- and lower-middle-class vacationers from throughout the East to the easy charms (and, some would say, easy morals) of the waterfront. To entertain the tourists, an exuberant, small-scale wooden Victorian architecture of porches, verandas, arcades, and amusement parks lined the Boardwalk, which by 1870 had become the city's clear organizing spine.

With the rebuilding of Atlantic City over the last decade, large-scale, corporate architecture has become the norm. Most of the venerable hotels of



Atlantic City's Boardwalk (above), lined with the "new Behemoths." Below, nighttime rendering of the Taj Mahal.

"How do you reconcile the intense, introverted world of gambling with the leisurely, external world of beachfront and bathing?" Atlantic City have been razed to make way for the new generation of behemoths. Some of these casinos, such as the Taj Mahal, seek to mask their "convention"-ality with exotic decorations and pseudo-elegance, but the logic of casino organization and the programmatic demands of the New Jersey Casino Control Commission tend to dictate the form. Even more disturbing, as operators seek to keep their clientele from wandering to competing facilities, each new facility turns its back more decisively on the Boardwalk.

In the rest of Atlantic City, the architectural consequences of gambling are less apparent. There is little discernible new construction other than the casinos, and the city seems not to have benefited from the financial windfall. Even though there are increased employment opportunities, it is obvious that most of the jobs have been filled by non-residents: The first thing one notices when approaching Atlantic City is a mile-and-a-half-long parking lot lining the causeway that connects the resort with the mainland. The lot is reserved for casino employees, who are shuttled daily to their respective hotels.

And it is to these hotels and the Boardwalk that one is inevitably drawn to assess Atlantic City's architectural renaissance. The strongest reaction is one of loss. For all their tackiness and neglect, the historic establishments along the Boardwalk had a welcome authenticity and pedestrian scale. They worshiped the ocean and paid homage to it, reaching out with amusement piers and attractions of all descriptions.

But now the ferris wheel has been replaced by the roulette wheel. The new, overstuffed resort hotels barely acknowledge the water in their desire to create artificial, internalized worlds in which the gambler can feel secure. In the placelessness of the Nevada desert, such a strategy is architecturally defensible; at the edge of a continent it is regrettable.

For generations, vacationers to Atlantic City brought home boxes of saltwater taffy – a tasteless confection injected with artifical color and artificial flavor. Unfortunately, this generation's casino developers have seen fit to give the local delicacy architectural form. **Donald Prowler**



117

Books

Can architectural history disregard politics? **Richard Ingersoll** discusses the ways three authors approach Italy and its Fascist interlude.





Building Modern Italy: Italian Architecture 1914– 1936 by Dennis Doordan. Princeton Architectural Press, New York, 1989. 176 pp., illus., paper, \$34.95.

Building New Communities: New Deal America and Fascist Italy by Diane Ghirardo. Princeton University Press, 1989. 223 pp., illus., \$35.00.

Approaches to (and from) Italian Fascism

The history of 20th-Century Italian architecture is snagged by a significant political impediment: the 20year Fascist regime (1922–1943). If architects during the regime were critically stifled – forced out of work if they did not join the Fascist syndicate of architects – the period immediately following World War II invited an understandable critical blackout on the quality of the regime's products. To speak of Fascist architecture in anything less than condemnatory terms was to invite suspicion of sympathy. Not until the 1960s, with the rediscovery of Giuseppe Terragni's lyrical works, which seemed to transcend historical circumstances, was the self-imposed interdict lifted and the missing Fascist link reinserted in the historical continuum of Italian architecture.

In Building Modern Italy, Dennis Doordan demonstrates a residual reluctance to take on the subject of Fascist architecture. He cautiously skirts the topic by choosing 1914–1936 as the bracket dates of his inquiry and by adhering to an arbitrary designation of "progressive" architecture as his subject. Yet Doordan's most valuable contribution, one that would have made a more cohesive topic, is the examination of the Fascist regime's attitude to Modernism. Until the 1935 invasion of Ethiopia, the disparate avant garde movements that most interest Doordan – Futurism, Novecentism, and Rationalism – vied with Beaux Arts factions to become the official party line of a regime that prided itself on being revolutionary.

Following the example of Le Corbusier, the Rationalists proposed that "... from the constant use of rationality, from the perfect correspondence between the structure of the building and the purposes it serves, a style [is] to be born through selection." Their major variance from Modernist dogma was to see architecture not in universal terms but in



History of Italian Architecture, 1944–1985 by Manfredo Tafuri. MIT Press, Cambridge, Massachusetts, 1989. 269 pp., illus., \$25.00. "Postwar Italian scholarship attempted to dissociate Modern architecture and Rationalist architects from Fascism. The exercise was ultimately futile.... There is simply no gainsaying the fact that most of the best architects were dedicated Fascists...."

Diane Ghirardo, Building New Communities, p. 62.

nationalist ones. They were the Italian vanguard that came closest to official sanction and produced a significant set of projects, including the Purist works of Figini & Pollini, Terragni's innovative apartment blocks and his masterful Casa del Fascio, the Gruppo Toscano's Florence train station, the campus of the University of Rome, and the urban center of the new town of Sabaudia. In 1934, responding to critics from the academy, the Duce specifically defended the Rationalists' works, claiming, "I want to make it unequivocally clear that I am for Modern architecture, an architecture for our times. . . . It would be absurd not to want a rational and functional architecture. Every epoch has produced its own functional architecture." Mussolini, however, as Doordan and others hold, was ultimately more for modernization than Modernism, and after the aggressions of 1935, he favored the more bombastic, historicist proclivities of Marcello Piacentini and Armando Brasini, for they better served the rhetorical purposes of imperialism.

Doordan's book is quite a good introduction to the Rationalist experience, but it is evasive about the fate of this movement, so that one cannot really judge how Fascistic the Rationalists were. The subject of urbanism, which has continued to be the Italians' strongest contribution to debates on architecture, is not given its due. He fails to present enough examples and enough depth to evaluate the profound effect Rationalism had throughout Italy on everyday public buildings.

One could never accuse Diane Ghirardo of reticence about the problem of Fascist architecture – a single footnote (excerpted here) of *Building New Communities* reveals more about the political situation of the Rationalists than an entire chapter of Doordan's book. Her study of government-sponsored new towns in Fascist Italy and New Deal America not only analyzes the methods and products of Mussolini's re-*(continued on page 146)* OneFiveFour by Lebbeus Woods. Princeton Architectural Press, New York, 1989. 116 pp., illus., paper, \$19.95. In this collection of evocative projects, Woods describes a future of "transcendent materialism," where architecture will enable society to extend the cosmos's creative rhythms. No matter what readers make of Woods's text, they'll be captivated by his drawings.

The Living City by Roberta Brandes Gratz, Touchstone/ Simon and Schuster, New York, 1989. 414 pp., hardcover \$21.95, paper, \$10.95.

Gratz, an advocate of the "professional amateur," writes that urban interventions must be incremental if they are to succeed. Architects won't find much new information here, but they might enjoy Gratz's journalistic reports from the front-lines of community activism.

New Architecture San Francisco by James Shay, Chronicle Books, San Francisco, 1989. 147 pp., illus., \$40.00.

James Shay interviewed 35 architects from the Bay Area about topics ranging from building codes to dilemmas in Marxist thought. The conversations and well-photographed buildings offer a convenient survey of San Francisco work of the 1980s.

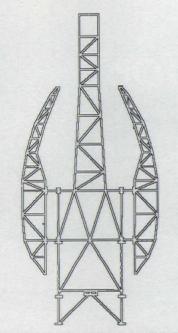
Canadian Centre for Architecture: Buildings and Gardens, edited by Larry Richards, Canadian Centre for Architecture, Montreal, 1990. 164 pp., illus., paper, \$16.95.

Now that its museum is complete, the CCA offers a book describing the building's lineage. It covers precedents for the museum, as well as the intentions of its architect, Peter Rose, and patron, Phyllis Lambert.

See Tech Notes (p. 43) for listings of other publications of interest.

118

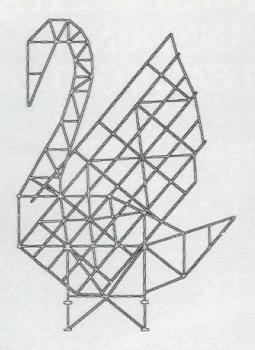
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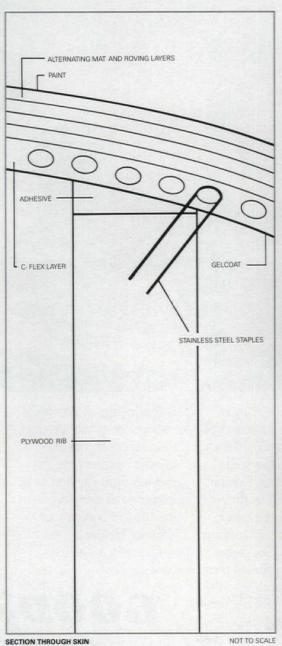


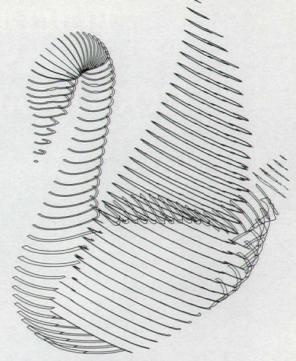
FRONT AND SIDE VIEW OF THE SWAN'S STEEL FRAME

Swan Statues Swan Hotel Walt Disney World Lake Buena Vista, Florida

The (two 46-foot-tall), 56,000pound swan statues that top Michael Graves's Swan Hotel at Walt Disney World (see p. 76) may look like birds, but they are built like boats. Based upon drawings provided by the office of Michael Graves, Disney's central shops made maquettes of the swans, which were then scanned using lasers and photogrammetry to create three-dimensional computer models of the forms. Disney's engineers designed a steel structure for each bird (above). A boat builder then shaped plywood ribs, which are fastened to the steel frame about 16 inches on center, to create the swan forms (above right), working directly from the computer model without dimensioned drawings. To those ribs, Disney crews stapled and adhered a fiberglass skin similar to that used for the hull of a boat. Over a base layer of C-Flex, a resinous product containing parallel glass tubes that give it flexibility in one direction and stiffness in the other, they added layers of fiberglass mat and resin (right). When the skin reached a nominal thickness of 3/8 inches, they covered it on both sides with a gelcoat and then painted the exterior. As a final touch, airplane warning lights were added to the tips of the swans wings.



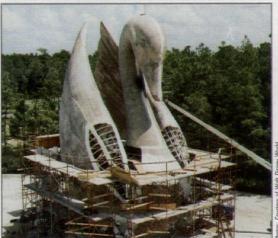




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VIEW OF SWAN UNDER CONSTRUCTION

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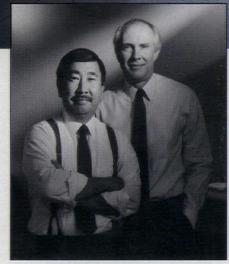
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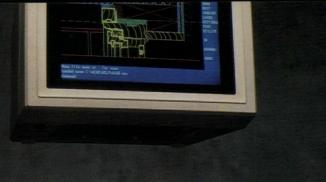
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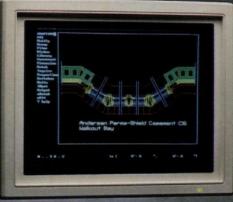














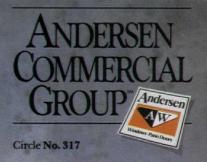
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Progressive Architecture

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The Belden Brick Company Canton, Ohio

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Engineering Copier

The special copying needs of an A/E office are addressed in a video describing the Dietzgen 636S engineering plain paper copier. An automatic feeder holds 24" by 36" sheets; a large feeder is available which holds 36" by 48" sheets. The copier can handle foam core, onionskin sketch paper, blue lines, and poorquality originals, including ones which are torn or pasted-up. Time and money can be saved when these jobs are performed in-house. rather than sent out. The copier can make 5 copies per minute in the single-copy mode and even more with its automatic feeder. **Lending Library Video**

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Sign System

The Graphic Blast System, described in a 7-minute video, carves any typeset or drawn design into any material. Brass, stainless steel, aluminum, marble, and tough thermoset plastics, with a "Life-of-the-Building" or "Life-of-the-Equipment" warranty, are recommended for interior uses such as directional signs and equipment control panels. For exterior signs, a variety of woods-redwood, western red cedar, and treated pine-or 3-ply fiberalass is suggested. Aluminum framing is available for exterior ground- or wall-mounted signs. In addition, the Graphic Blast System can be used on furniture, plaques, memorials, glassware, and changeable directories. Lending Library Video

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The Desktop Icon Panel gives you a "holding area" for the files, directories, and applications used most often.

The window splitter allows you to adjust the amount of space allocated to files and directories.

Each window shows the contents of an open directory by icon, by name, or in wide format (including size, modification date, and permissions).

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126

TCS and the Corporate Ediface

Procter & Gamble General Office Cincinnati, Ohio Architect: Kohn—Pedersen— Fox Associates New York, NY Roofer: Imbus Roofing Company, Cold Spring, KY

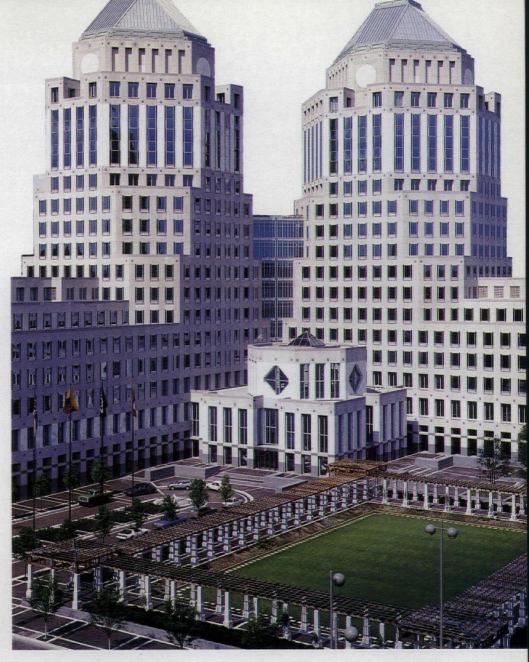
PPG Place, Pittsburgh, PA

Architect: Johnson/Burgee New York, NY

Company

Roofer: Warren, Ehret-Linck

Pittsburgh, PA



There are many striking examples of how TCS (terne-coated stainless) has become an integral part of a total architectural concept...expressed so beautifully as roofs on the Procter & Gamble building and on the many roofs of PPG Place. Weathering to a predictable warm, natural gray, TCS blends quietly with the buildings' architectural expression.

Aesthetics aside, however, TCS has impressive functional credentials. Among them are great tensile strength combined with light weight, exceptional resistance to corrosive environments, complete freedom from maintenance... thereby promising a durability measured in generations rather than years. We'll be happy to send you substantiating evidence. Call us tollfree 800-624-6906.

TCS is available in Europe and in the Pacific Rim. For more information, see our catalog in Sweets



Circle No. 338 on Reader Service Card

The Beckman Institute gets first class security

The Beckman Institute, showpiece of the University of Illinois, went First Class with their security system. According to Bruce Marshall, Beckman's Assistant Director, "the institute chose BEST mortise locks because they meet high standards for aesthetics, quality, versatility, and price. Their innovative interchangeable core and customized masterkey system make it easy to maintain high security."



Join the Beckman Institute and install a First Class system from BEST. For your Best Locking Systems Representative, contact Best Lock Corporation, P.O. Box 50444, Indianapolis, IN 46250. 317-849-2250, FAX 317-845-7650.





At BEST, First Class means top quality locks with a customized keying system.



New Products and Literature

w Products and Literature

sever i roudels and Enerature	
Products and Literature continued	130
Computer Software	139
Fechnics-Related Products	140







New Carpet Designs

Architects Zaha Hadid, Jean Nouvel, Richard Meier, and artists Milton Glaser and Mimmo Paladino have added designs to the German company Vorwerk Teppichwerke's Dialog carpet collection, first presented to the American market last year (P/A, Feb. 1989, pp. 23, 151). Among the more enticing productions in this collection of architect and artist-designed carpeting are Nouvel's sublime shading effects (bottom, left), Hadid's seductive renderings (center), and Glaser's animation of familiar forms (top, left). Carpeting can be ordered tufted or woven in a number of color combinations depending on the design requested. Furniture of the Twentieth Century. Circle 100 on reader service card



Ceramic Tile

"Shop" single-fired ceramic tile, produced by the the Italian company Monoceram, offers a porcelain-hard surface, high abrasion resistance, matte finish, and an impressive range of colors, shapes, and sizes; and is targeted for medium traffic commercial interiors (it is also applicable to residential spaces). The process of injecting crystallized components into each layer of glazing provides a microporosite-free surface; the tile is billed as "stain and acid resistant." Tiles can be specified in twelve colors, 8-, 12-, and 16-inchsquare tiles, 3" x 12" Bullnose, 6" x 8" Cove base, and 10" x 13" Steptread. Dot and octagon shapes are also available. Tile Group Italia. Circle 102 on reader service card



Formed Structural Laminate

Two decorative surfaces and a phenolic substrate are combined in a single panel to produce Formed Structural Laminate, a European laminate product now available in the United States. Designed as a permanent surfacing material component, the laminate is pre-formed to specification; standard sheet sizes of four- and five-foot widths and eight- or tenfoot lengths can be formed to S-, C-, and L-shaped profiles at the factory. The structural integrity of the laminate makes it a candidate for seating, retail and banking counters, and for use in healthcare and other institutional environments. It can be ordered in sheet thicknesses of 1/8", 1/4", 3/8", and 1/2". Ralph Wilson Plastics. Circle 101 on reader service card

New Products and Literature



Conference Seating Brochure

A brochure describes the mechanics, design, measurements, and specifications of the 452 line including executive highback, swivel-tilt, and side chair. Steelcase. Circle 103 on reader service card

Preservative-Treated Wood Guide

"Preservative-Treated Wood for Farm and Home" discusses the pros and cons of chemicallytreated wood and offers information on appropriate applications. The pamphlet is \$1.50. Contact Agricultural Engineering Extension, 200 Davidson Hall, Iowa State University, Ames, Iowa 50011 (515) 294-6361.

Building Panels

Non-textured, slate-textured, stucco or striated fiber cement panels can be specified in standard and optional sheet sizes and thicknesses. FibreCem. Circle 104 on reader service card

Coping System

With Permasnap Coping System, aluminum cap snaps over cleats fastened to parapet with adhesives. No nails, screws, or caulking are required. W.P. Hickman. Circle 105 on reader service card



Bowfront Desk

This cherry wood desk is fitted with three drawers cut from a solid apron piece. Thos. Moser. Circle 106 on reader service card



Wood Windows

Custom wood windows are made from Douglas fir and are suitable for commercial or residential applications, and for retrofit, renovation or new construction. A multitude of styles, hardware options, and glass colors and glazings can be specified.

NorthWest Window Works. Circle 107 on reader service card

Stucco Brochure

A table of physical data and color chart are included in a new brochure on this all-acrylic stucco. Weatherall.

Circle 200 on reader service card

Residential Sprinklers

Pendant and horizontal style UL listed sprinklers provide coverage of 16' x 16' and 16' x 20' spaces, respectively. They come in bronze, chrome, and black and white finishes

Star Sprinkler Corporation. Circle 108 on reader service card

Greenhouse Glazing

Lexan Thermoclear® Dripgard® greenhouse glazing sheets have a proprietary condensate control surface and protect against ultraviolet light. GE Plastics. Circle 109 on reader service card

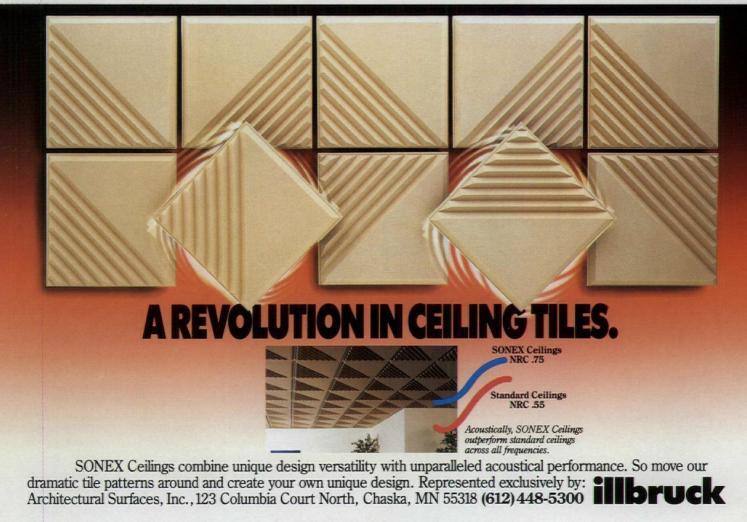
Water Coolers

Design 2000 water coolers are made of lead-free waterways and have Filtex System[®] mesh strainers. Elkay.

Circle 110 on reader service card

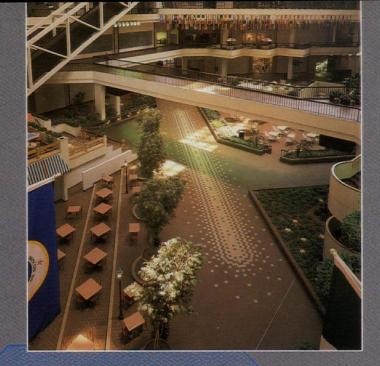
Italian Chair Catalog

A collection of classic chair designs by Joe Colombo, Anna Castelli Ferrieri and others are illustrated in this catalog. Kartell USA. Circle 201 on reader service card (continued on page 132)



Vew Products and Literature

SUMMITVILLE QUARRY. DON'T WASTE YOUR MIND ON ANYTHING LESS.





4"x 8"x 1/2"

FLORENTINE

OCT. WITH DOT

Summitville Quarry.

LAVINCHY

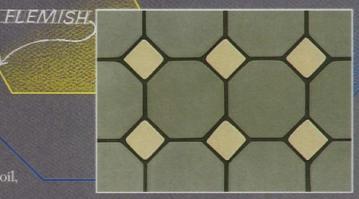
Summitville Quarry. Don't waste your mind on anything less. Our Quarry has earned its reputation for the way it performs, for the way it's made. For the quality that goes into every Quarry Tile. When we talk about Summitville quality, we mean reliability, service, ease of maintenance, consistency, and durabili

of maintenance, consistency, and durability. Summitville Quarry quality gives a sense of freedom, a sureness and trust, so you can experiment and explore different color combinations and patterns with confidence. Knowing each one resists oil,

patterns with confidence. Knowing each one resists oil, acid and detergent stains. You can be free with Summitville Quarry, because it doesn't restrict your design possibilities. It doesn't have the limitations of lesser quality quarry tiles. Our 11 standard colors, 9 shapes and all the trim you need gives your inagination the broadest palette of choices available. Summitville Quarry is really the tool that will let you build a floor of beauty, grace and certainty. Find out the complete Summitville Story from your nearest

Summitville Distributor.

See how Summitville Quarry can improve the outlook of your floor plan. On any level.





Circle No. 374 on Reader Service Card

(continued from page 130) Standing Seam Roof Catalog

Detailed information – including standard gauges, color selection, materials, and finishes – on SRS 1.0, 1.5, and 1.67 Standing Seam Roof Systems is offered in this catalog. Steelite.

Circle 202 on reader service card



Cleanable Acoustical Panels

Clean-Flow Acoustic Ceiling and Wall Panel System's components are laminated with impervious film, which allows the perforated surface to be cleaned. The selfsupporting, 22-gauge galvanized steel modules come in standard widths of 2 feet and lengths of 3 to 12 feet.

Industrial Acoustics Company. Circle 111 on reader service card



New Furniture Collection

The Chancery Collection was originally designed in association with Arthur Erickson Architects for the Canadian Chancery in Washington, D.C. It includes sofas, chairs, and a table. Nienkämper. *Circle 112 on reader service card*

Alabaster Chandelier

The concentric-cone shape of this alabaster chandelier provides uplight and spill light; fittings are of polished brass. Lightolier[®]. *Circle 113 on reader service card*

Mini Truss Lighting System

Low-voltage halogen fixtures are used in the Mini Truss suspended and surface-mount lighting systems. A remote transformer is included. Roxter. *Circle 114 on reader service card*

Electronic Home Contractor®

This hand-held electronic device can be programmed to take room measurements, calculate the area and volume, and determine the amount of materials – from paint to carpeting – needed for the space. Seiko Instruments. *Circle 115 on reader service card*



AeTo Floor and Wall Lamp

Italian architect Fabio Lombardo's eye-shaped lamp houses two lightsoftening glass diffusers. The aluminum head is adjustable and can be specified in 77-inch floor lamp or wall sconce models. Flos. *Circle 116 on reader service card*

Terrazzo Tile

A collection of terrazzo tile called the Designer 90 Series has been introduced and includes 22 standard colors. It is applicable for residential and commercial use. Fritz Chemical. *Circle 117 on reader service card*

New Colors for Ceramic Tile

Corindo porcelain ceramic tiles – for interior and exterior, commercial or residential applications – are available in five new colors. Trans Ceramica. *Circle 118 on reader service card*

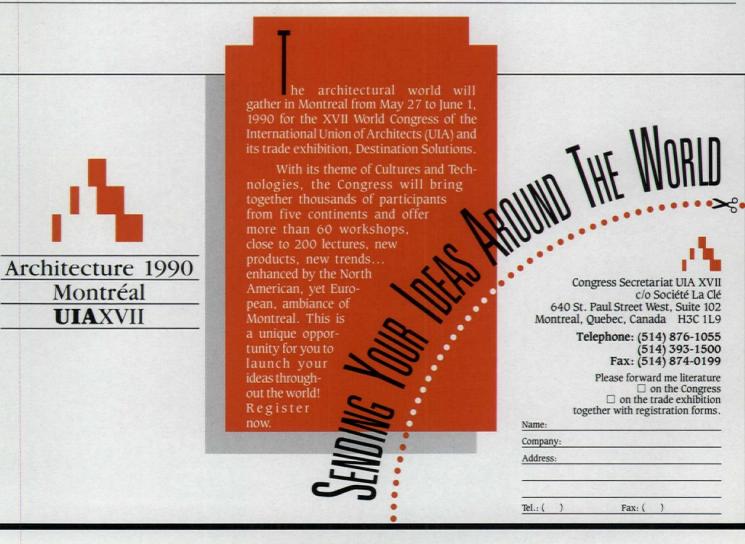
New Colors for Laminate Line

Metalli high pressure laminate can be specified in four new colors – sunny yellow, ocean blue, malibu green, and aquamarine. Abet Laminati. *Circle 119 on reader service card*

Commercial Carpet Handbook

The 1990 handbook is a guide to broadloom and modular systems. Products are coordinated into sections for specific end-use applications. Lees Commercial Carpet. *Circle 203 on reader service card* (continued on page 134)

Vew Products and Literature



Circle No. 348 on Reader Service Card

Italy Interprets Perfection

... AT THE KITCHEN AND BATH INDUSTRY SHOW

Twenty-three prestigious Italian manufacturers will be exhibiting an extensive array of bathware products in the Italian pavilion, islands number 334, 534, 734 and 740 at McCormick Place, Chicago, April 21-23, 1990.

... IN THE EVER-CHANGING ENVIRONMENT OF BATHWARE

Three Italian architects will display, within the pavilion, their concept of the evolution in bathware: Luca Scacchetti will approach the bathroom in the classic tradition. Ugo La Pietra in the Mediterranean style, and Denis Santachiara's design will define the technological future.



For further information please contact: THE ITALIAN TRADE COMMISSION 401 North Michigan Avenue Suite #3030 Chicago, Illinois 60611

Circle No. 342 on Reader Service Card

Don't buy another fixed ladder or ship's ladder until you've talked to Lapeyre Stair!

A recent study concluded: "Results from both the objective and subjective measures suggest that the alternating tread stair is safer and more comfortable than the conventional ship's ladder."*

Unique alternating tread design permits comfortable face-forward descents at steeper angles than conventional designs. Each stair is custom built at 56° or 68° to horizontal. Call for free brochure or dimensional prints.

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LAPEYRE

BACK CONTRACT OF CONTRACT.

Circle No. 359 on Reader Service Card



(continued from page 132)

Film-Faced Sheathing Foamular® is a film-faced insulating sheathing that has polyethylene film laminated on both sides of rigid foamboard. It is suitable for new residential and remodeling projects. UC Industries. *Circle 120 on reader service card*

Laminated Asphalt Shingles

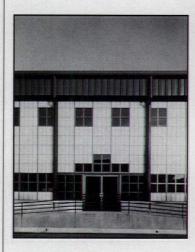
The Timberline Series includes GAF Wood Line[®], Timberline, and the newly introduced Timberline Ultra[®] and can be specified in a range of colors from Charcoal Blend to Burnt Sienna Blend. GAF.

Circle 121 on reader service card



Paris Club Chair

A solid hardwood frame and eightway hand-tied, high-alloy steel springs are covered with calfskin and set on mahogany legs. The chair is available in five colors. Sharpe Nichols. *Circle 122 on reader service card*



Erosion-Preventive Panel System The "sandwich-type" building panel system now has an erosion barrier: A hard, permanent laminate has been made integral to the exterior face sheet preventing exposure of glass fibers by erosion. Kalwall[®].

Circle 123 on reader service card



Wood Furniture Finishes

Settees, chairs, and tables can have whitewash, mahogany, bare teak, or painted finishes. Weatherend Estate Furniture. *Circle 124 on reader service card*

Security Screen Catalog

A security screen products catalog includes information on steel, stainless steel, aluminum Defender II and Van-Guard II screens, and narrow-line aluminum Van-Guard screens.

Kane Manufacturing Corporation. Circle 204 on reader service card



Shelving Components

Oak-slatted shelves called Morspace[®] can be specified in 12" or 16" widths and drywall or wood stud mounted. Visador. *Circle 125 on reader service card*

Exterior Insulation & Finish Catalog

An exterior insulation and finish system called Senerflex[®] is described in a new catalog. A cutaway of the four-component wall system and architectural detailing – moldings and cornices can be created from the expanded poystyrene insulation – are illustrated. Senergy.

(continued on page 139)

See Sweet's catalog 05515/LAP

Tack on another reason to choose to

You've always known Homasote for its great tackability. Now you can choose it for its beauty, too. Because new



DesignWall combines superior tackability with the elegant appearance of textured fabric. With DesignWall, you can create attractive tackable walls for even the most prestigious offices and conference rooms.

The panels also have sound-deadening properties. They're completely finished, ready to apply with fasteners and adhesive. DesignWall comes in four handsome colors:



Magnolia, Grey, Oyster and Burlap. For a free sample and more information, call 800-257-9491, ext. 84 (in NJ, 609-883-3300, ext. 84).



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ike the pyramids, the YES Entrance System provides durability, timeless design and more. Much more. You'll find no other manufacturer provides as many standard features. And you get all the extras without added costs.

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VersajambTM Our unique tubular frame with snap-in filler for added frame strength and rigidity for greater windload capacity, without exposed fasteners.

YES ENTRANCE SYSTEM	STANDARD FEATURES
Door/Frame	
Accented pull handles (all exposed surfaces fully anodized)	Yes
Accented push bar with end caps	Yes
Adjustable levelizer	Yes
Anodized Plus™	Yes
Combination mechanical and welded corners	Yes
Flush bolt trim plate	Yes
Heavy-duty flush bolts	Yes
Lock strike trim plate	Yes
Maximum security hook bolt	Yes
No exposed fasteners	Yes
Non-removable adjustable bottom pivots	Yes
Spring-loaded top pivots	Yes
Thermoplastic elastomer weather stripping	Yes
Unique Versajamb [™] construction	Yes

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SieMatic has been creating unique and innovative kitchen design for more than half-a-century.

Now the standard of excellence for kitchen interior design worldwide, SieMatic combines the tradition of European craftsmanship with the ingenuity of German engineering. The selection of available finishes includes traditional woods, contemporary laminates, high gloss lacquer and mirror-like polyester.

The all-new full color SieMatic Kitchen Book is now available. This 182-page presentation of exquisite kitchen interior design will prove to be a valuable and infomative guide. To receive your personal copy of the SieMatic Kitchen Book along with a Specifier's Manual, send your request on your company's letterhead to:

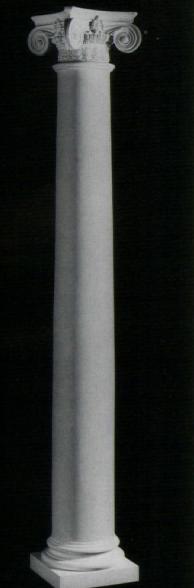
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Column, Tapestry or Table Base Brochure-\$2.00 each All Three Brochures-\$4.00

> For information and brochures: P.O. Box 53268, Dept. 7 Atlanta, Georgia 30355 404-876-5410

(continued from page 134)

Window Products Catalog Two 1990 brochures describe installation and dimension details for "Residential & Light Commercial" and "Heavy Commercial & Monumental" applications of windows, doors, sunrooms, and skylights. Rolscreen. *Circle 206 on reader service card*

Computer Software: Specifications and Details

Detail Libraries

The Vertex Detailer provides over 20,000 building material drawings that can be snapped into AutoCAD to create architectural details. In addition, the Vertex Electronic CADalogs are computerized versions of building product manufacturer's catalogs, with detailed drawings and specifications for any CAD system. Vertex. *Circle 126 on reader service card*

Custom Windows

Create custom windows in Auto-CAD or choose from a library of standard Marvin windows on any PC. Marvin.

Circle 127 on reader service card

Roof Specifications

Generate complex roofing specifications with over 100 common roof details from the Carlisle Syntech Systems package. Use this program to generate drawings in AutoCAD and AutoSketch and documents in WordPerfect. Carlisle.

Circle 128 on reader service card

Molding Maker

Add more than 1000 wood molding profiles to PC-CAD drawings with PC-Mouldings. PC Work. *Circle 129 on reader service card*

Insulation Estimator

Determine the most cost-effective use of insulation in houses with Zip, inexpensive PC software that recommends insulation amounts according to the first three digits of the local zip code. MTS. *Circle 130 on reader service card*

Tile Installation Specifications

Mapei, a manufacturer of tile products, has created a specification program that includes information on installation procedures and specification data for its products. Mapei.

Circle 131 on reader service card (continued on page 140)

DON'T FORGET.

Beauty is only skin deep. So don't forget to specify X-I-M Primer/Sealer/Bonder.

Compatible with the finest topcoats, famous for their ability to stick to surfaces as diverse as glass, metal, wood and plastics, X-I-M products help keep beautiful surfaces beautiful longer.

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Ultra-premium. Guaranteed. And so unforgettable, X-I-M Primer/Sealer/Bonder was singled out as the leader for special applications in a recent survey of painting contractors familiar with X-I-M. Circle No. 381



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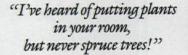
Best Western has a plan to spruce up its hotels from coast to coast.

Because each Best Western has always been independently owned and operated, you could always count on an affordable place to stay that matched the part of the country where your travels took you.

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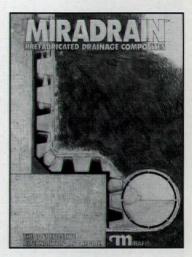
(continued from page 139)

Technics-Related Products



Radon Control

A nylon-filament matting bonded to polyester filter fabric may be installed, along with vent pipe, under concrete slab to release radon. Akzo Industrial Systems. *Circle 207 on reader service card*



Drainage Composites

A drainage product consists of a filter fabric and a polymeric core, which diverts water to a drainage channel. Mirafi.

Circle 208 on reader service card



Membrane Waterproofing

Liquid surface conditioner and self-adhesive membrane comprise a new membrane waterproofing system. W.R. Grace. *Circle 209 on reader service card*

Underdrain Pipe

A drain pipe constructed entirely of porous material is illustrated in manufacturer's literature. Walker Poroswall Pipe. Circle 210 on reader service card (continued on page 142)

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All mounting applicationsstandard, top jamb and parallel arm

UL Listed

What distinguishes the new 350 Series closer isn't its clean, contemporary styling. It's what's inside.

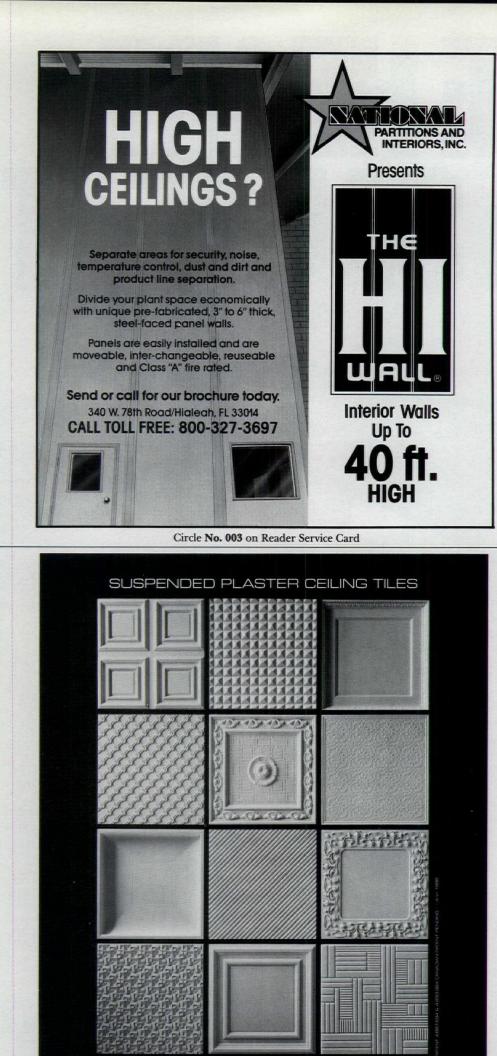
Design that brings new meaning to the concept of durability. Components that are cast, machined and fitted according to a 125-year tradition of craftsmanship. And practical, purposeful features that make the 350 the right choice for every door on any project.

The versatile, reversible, new 350 is part of the complete Sargent line of locks, exit devices and door closers. Each has what no one else can offer-the heart of a Sargent. Adjustable BHMA sizing 1 through 6, with 75% additional power available

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Sargent, New Haven, Connecticut 06511 Sargent of Canada Ltd. Circle No. 372 on Reader Service Card





Waterproofing Assembly

Designed for plazas and roof decks, this waterproofing system consists of a rubberized asphalt membrane, a rubberized asphalt protection sheet, and concrete pavers on pedestals. Insulation and a drainage medium may be added. Hydrotech.

Circle 211 on reader service card

Waterproofing Membrane

Four membranes, including a liquid one, are presented in a brochure with additional waterproofing products and installation guidelines.

Texmastic International. Circle 212 on reader service card



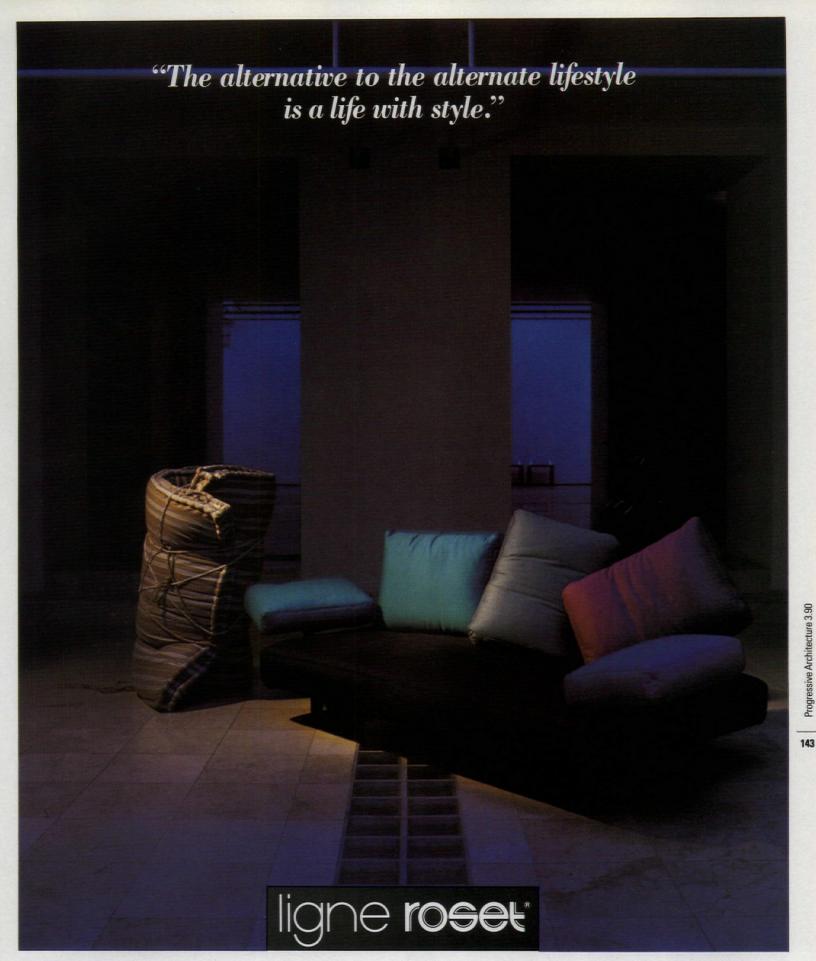
Drainage Pipe

A flat-paneled drainage pipe may be installed directly next to a wall or structure, as well as in landscaping and road situations. Advanced Drainage Systems. *Circle 213 on reader service card*

Drainage Panels

Insulated drainage panels can be used for below-grade construction, either vertically with foundations or horizontally in plaza applications. GeoTech.

Circle 214 on reader service card (continued on page 144)



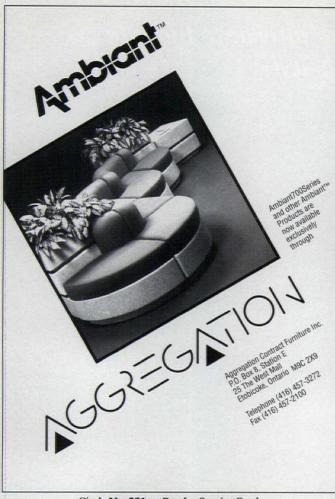
DU PONT DACRON

Innovative and designed for comfort, the Shogun sofa created by Claude Brisson for Ligne Roset, triples as a bed and a chaise. It also features individually and fully adjustable cushions. Select from over 50 leathers and 250 fabrics in a wide array of colors and patterns. Du Pont's registered trademark for the polyester fiber made only by Du Pont

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For further information contact: ROSET USA CORP. NY Design Center 200 Lexington Ave. New York, NY 10016 (212)685-2238 or your interior designer or architect.

Circle No. 355 on Reader Service Card

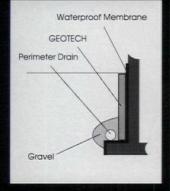


Circle No. 321 on Reader Service Card

Drainage.

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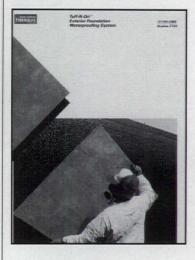
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(continued from page 142) Adaptable Membrane

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(See Technics, Foundations, p. 43)

Building Materials

Durining materiale

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

Walt Disney World Swan Hotel, Lake Buena Vista, Florida (p. 76). Architects: Michael Graves, Architect, Princeton, New Jersey; Alan Lapidus, P.C., Architect, New York. Metal studs: Met Studs, Inc., Orlando, Fla. Concrete masonry units: A-1 Block Corp., Orlando, Fla. Exterior insulating finish system: Senergy.

Gypsum board: U.S. Gypsum. Hinged aluminum-frame windows: ThermAlum. Skylights: Royal Greenhouse, Inc. Storefront doors: ThermAlum. Automatic sliding and swinging doors: Automatic Entrances. Flush steel doors: Firedoor Corp. Flush wood doors: Loughman. Rolling grilles and doors: Atlas. Acoustical tile ceilings: Armstrong. Metal standing seam roofing: Zip Rib/Merchant & Evans. Membrane roofing: Bond Cote, West Point Pepperell. Acoustical panel partitions: Hufcor. Elevators: Montgomery Elevator, Orlando, Fla. Steel stairs, metal handrails: American Stair Corp. Tubs, lavatories, water closets, plumbing fittings: American Standard. Saunas: Helo. Flush valves: Delany. Toilet partitions: Lambaton, Inc., Masaryktown, Fla. Washroom accessories: Bobrick. Water fountains: Oasis. Gasfired boilers: Cleaver Brooks. Air conditioning: Trane.

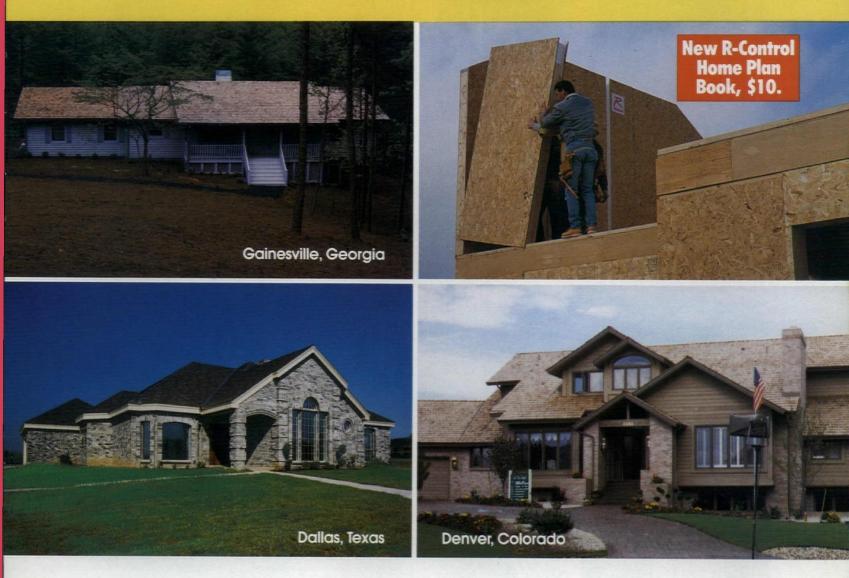
The Newark Museum, Newark, New

Jersey (pp. 88-95). Architects: Michael Graves, Architect. Replacement windows: Hope's Windows. Skylights: Fisher Skylights, Vinyl composition tile: Armstrong "Excelon." Exterior paint (cement plaster surfaces), interior paint: Con-lux. Hinges: Stanley. Locksets: Yale. Door closers: LCN. Panic exit: Von Duprin. Museum quality security/detection/fire: ADT. Interior architectural lighting, designed by Michael Graves, Architect: Baldinger. Lavatories: Kohler. Air conditioning chillers: Trane. Auditorium seating: Irwin Seating Company. Acoustical panels: Acoustone.

Historical Center of Industry and Labor, Youngstown, Ohio (p. 84). Archi-

tects: Michael Graves, Architect, Princeton, N.J.; associated architects: Raymond J. Jaminet & Partners, Youngstown, Ohio. Metal deck roof: Vulcraft. Exterior insulation and finish system: Dryvit. Aluminum sash windows: Kawneer. Steel entrance and hollow metal interior doors: Republic Steel. Rubber EPDM roofing: Carlisle Tech Systems. Copper roofing: Roth Brothers, Inc. Exterior lighting: Urban Archaeology. Interior lighting: Lite Lab. Lavatories and water closets: American Standard. Heating: Youngstown thermal. Air conditioning: Carrier.

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Books (continued from page 118)

gime, but also makes a most uncomfortable parallel to the programs of President Roosevelt.

Both governments had a similar economic strategy: a major public works program to boost the building industry and rural resettlement programs to curtail the potentially revolutionary problem of the urban poor. In both cases the theory behind resettlement was to create a sense of responsibility through land ownership, but in both cases the participants became ensnared in company town dependencies. The Italian experiments were more geared to the town as the means for reproducing daily life; the Americans, following the ideas of Rexford Tugwell. pursued the model of the automobile-based suburb. In Italy, these new urban centers were surrounded by the small farms of the resettlement program, which promised land ownership, but usually created a population of dependent share-croppers. Though the Italian towns have survived the regime as quite sturdy urban structures, their American counterparts, such as Greenbelt, Maryland, have been swallowed up in the speculative sprawl of the suburbs. The cooperatives, garden cities, and migrant workers' camps organized through New Deal bureaucracies generally comprised isolated single-family residences.

Like their Italian counterparts, these American settlements were transformed into opaquely paternalistic operations. This leads Ghirardo to conclude that in both countries, new towns followed conservative intentions. Both governments hoped to avoid disruptions of community values caused by modernization and industrialization; these could be mitigated by "a change in lifestyles rather than a change in political relations." Her book is a highly successful social and political analysis of the contradictions inherent in "building" a community, written with critical vigilance. The book's greatest value, aside from its copious original documentation, is its audacious paragon. It liberates Fascist architecture from a parochial gripe.

If Fascist architecture had been a historical lacuna for obvious reasons, Post-Fascist architecture is almost less well-known because of the ensuing counter-movements. The culture of the war-time Resistance produced a new kind of Italian architect: highly politicized as an anti-Fascist, and consequently highly intellectualized, more of a philosopher than a master builder. Manfredo Tafuri, who is one of the most finely tuned products of this culture, is in fact determinedly not an architect, and his *History of Italian Architecture*, 1944–1985, demonstrates an overbearing concern with ideas.

When Tafuri writes elsewhere about the Renaissance, his prose is complex but lucid; about modern subjects he is nothing more than complex. He pathologically resists both narration and description, so that even when there is a validating photograph one is not certain about the materiality of the building in discussion. While his book has suffered in translation, one also knows how much the translator must have suffered. On almost any page there is likely to be a troublesome passage; Tafuri writes with a brilliance that is blinding and renders the book useless to anyone but a devoted scholar, who probably would prefer to read it in the original. Ordinary readers will learn little about the historical circumstances surrounding the great projects of post-war Italy.

Still there is an attempt to include all the architects who mattered, almost all of whom are better known for their writing and teaching than their designs: Mario Ridolfi, Carlo Aymonino, Giovanni Michelucci, Giancarlo de Carlo, Carlo Scarpa, Aldo Rossi, Paolo Portoghesi, Gae Aulenti, Vittorio Gregotti, and Gino Valle, among others.

There are conspicuous omissions, especially of the works of less intellectual, engineer-based designers such as Renzo Piano, Pier Luigi Nervi, and Riccardo Morandi. These gaps are ironic, since Tafuri reiterates the conclusion of his colleagues, Massimo Cacciari and Massimo Scolari: If architecture lost its center during recent Post-Modern debates, "good craftsmanship" can provide a way out of the dilemma. Tafuri's book is an intellectual history about a highly intellectualized profession. Readers seeking clear, direct analysis won't be rewarded. **Richard Ingersoll**

The author is an Assistant Professor at Rice University's School of Architecture, and the editor for theory and design at Design Book Review.

146

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148

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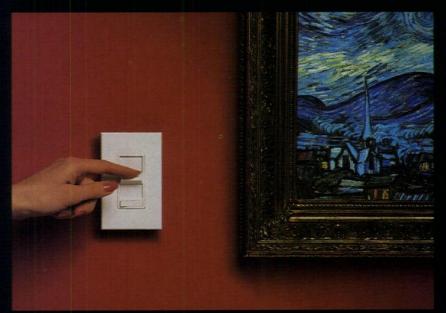
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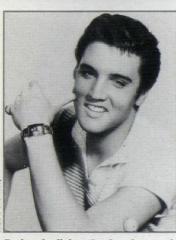
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You've heard time and time again Goethe's definition of architecture as "frozen music" (though we've never heard anyone call music "melted architecture"). We thought of that old saw when we read recently that the funding is in place for the construction of the Rock 'n' Roll Hall of Fame in Cleveland. This is probably not the time to ask, but who came up with the idea of having cool Modernist I.M. Pei design a monument to something as loud and brash as rock music? It's hard to imagine Mr. Pei putting on a Grateful Dead tape when he sits down at the drafting board. Did they consider architectural headbangers like Arquitectonica, Coop Himmelblau, or Frank Gehry? We also began to wonder who would be on the short list for buildings honoring other musical genres. It may be just geography, but we could imagine Mockbee-Coker-Howorth doing the rhythm-and-





Rock and roll then (Presley, above) and now (Pei, top).

blues hall of fame. We can see a bit of "frozen jazz" in the work of the late Bruce Goff (who, as it happens, was a friend of Duke Ellington's). It's a tough race between Emilio Ambasz and Antoine Predock for the New Age Hall of Fame; the administrators would no doubt have to consult their crystals. John Portman would be the first man called to do a Disco Hall of Fame, but he shouldn't hold his breath awaiting fundraising.

But all this speculation is a little idealistic, since the agenda inherent in a Hall of Fame is to confer respectability on its subject, and to downplay rock's countercultural roots is the likely reason Mr. Pei was chosen. Rock 'n' roll is big business, after all, and in that sense is a client no different from a museum or a Texas bank.

. . .

Samuel Johnson once said that, "When a man is tired of London, he is tired of life." Well many are the people who must be tired of driving in London, given the amount of snarled traffic in the city's streets. Several of the small elegant projects of the London firm Troughton McAslan Architects, which will be in our April issue, are located in historic neighborhoods, the preservation of which Londoners have done a better job than most. But cities don't preserve the transportation systems around which those neighborhoods were planned, so that streets designed for pedestrians or carriages become hopelessly clogged with cars. Why, then, don't we match the system to the street? In the heart of London, we would walk; in its 19th Century ring, we would use (publicly available) bicycles or trolleys; and in the 20th Century fringe, we would pick up our cars and drive.

On the roof at Arizona State's College of Architecture and Environmental Design, which will be featured in the April issue.

If you think you've been hot, you should try walking on the roof of the new Arizona State School of Architecture in the middle of a summer day. At the point when you decide that just about everything is too hot to touch, you realize that the soles of your shoes are melting and that your only recourse is to make a hasty, if somewhat squishy retreat. Which is too bad, for up on that roof is a wonderful little village of metal-clad structures that begs exploring. Wayward beach

cabanas? Overflow student housing? They turn out to be enclosures for the building's many light monitors, but they bring to mind point number two of Le Corbusier's Five Points of the New Architecture. "Roof gardens," he wrote, "grow luxuriantly: flowers, bushes and trees, grass...reasons of comfort and reasons of sentiment lead us to adopt the roof garden." Corb was right about the sentiment. There is something about a roof that is liberating, where imagining those huts as, say, artifacts from some lost culture doesn't seem quite so fantastic. But what about comfort? Surely Corb never climbed upon a roof in a climate such as southern Arizona's, or along with the bushes and trees, he would have suggested that we plant umbrellas.



Students entering college over the next few years will find some handsome new buildings waiting for them—that's the word from architects we've consulted for April's inquiry article about campus planning. They've told us that universities are investing in architecture as a tactical move, to attract the best-qualified from a shrinking pool of applicants. No longer satisfied with tob flight academics, studied architect are investi-

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151

applicants. No longer satisfied with top-flight academics, students are sizing up dormitory suites and art studios, and counting nautilus machines in the gym. If they're going to architecture school, they might look for some specific amenities—art supply stores that never close and couches for catching some z's during charrette.

Architecture magazine, like P/A and Architectural Record, has redesigned, and the debut issue in January retains one of the most interesting techniques in their December issue: In what appears to be an ingeniously expeditious new editing technique, two articles in the December issue (pages 49 and 63) and one in January (page 50) simply end in mid-sentence. While the memorability value of an "unfinished article" may be appealing (think of Schubert's symphony, or The Last Tycoon), we suspect that it was unintentional, and pay little heed to the rumor that departing Architecture staff members took the ends of the articles with them. But the most fascinating thing about all this is

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C/S Group
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Eternit, Inc 32A-32D
Follansbee Steel Corp.127Forbo Floor Coverings, Inc.30Forms + Surfaces8
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Lapeyre Stair134Leviton Manufacturing Co.,150Inc.150Lighting World136Ligne Roset143Ludowici-Celadon, Inc.72Lutron Electronics Co., Inc.C4

Methenois co
Marvin Doors 66, 67
Marvin Windows 34, 35
Marvin windows 51, 55
N.C.A.R.B 137
National Concrete Masonry
Association 62, 63
National Partitions & Interiors,
Inc 142
Nevamar Corp 6, 7
PG&E/Pacific Gas &
Electric 64W6, 7
Pioneer Plastics Corp
Pioneer Hasues Corp 00
Protective Treatments, Inc 16
Rolscreen-Pella Windows 60, 61
Sargent/Essex Industries, Inc 141
Schindler Elevator
Corp 64A-64D
Season-All Industries, Inc 56
Senergy, Inc 10
Sharp Electronics Corp 147
Sherwin-Williams Co 28
SieMatic Corp 138
South and Colling in Editors CAWI
Southern California Edison . 64W1
Summitville Tiles, Inc 131
Tischler Und Sohn 4
U.S. Gypsum Co./Durock
Exterior Finish Systems 38
Weatherend Estate Furniture . 125
Weather Shield Mfg., Inc 40 Wells Fargo Bank 64W4, 5
wells Fargo Bank 04w4, 5
Woodstone Co 13
X-I-M Products, Inc 139
Xerox Corp 36, 37
YKK Architectural Products . 137R

McNichols Co

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Fublizeta Via Corticella, 216/6 40128 Bologna Telephone: 051/320309-325452 Fax: 051-320309 Roberto Zucchini

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Continental Europe 12 Avenue Franklin-Roosevelt, 75008 Telephone: 43 59 36 06 Telex: 26 Fax: 43 59 76 70. Yvonne Melcher, Manager Telex: 260717.

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