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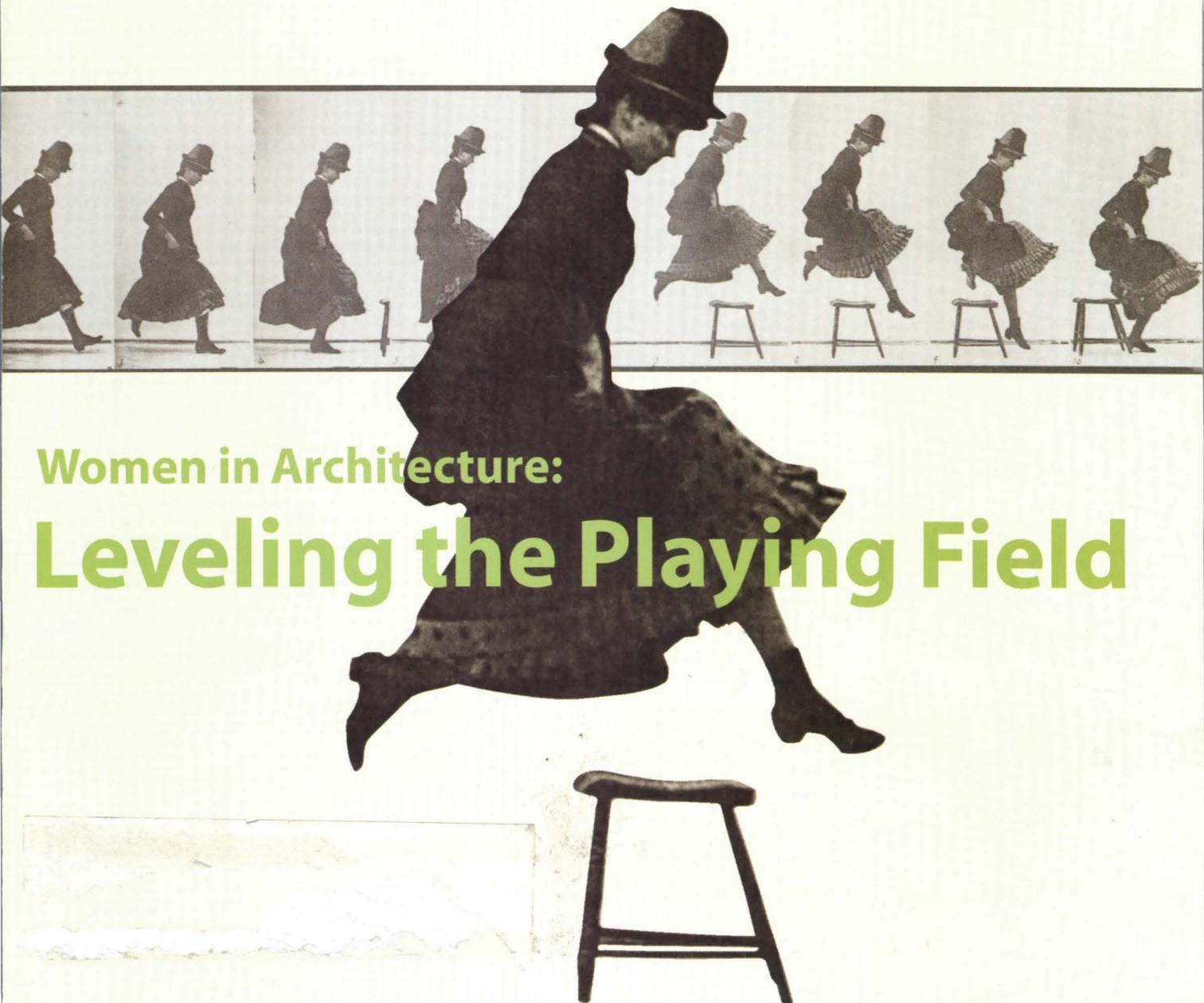
PA

Progressive Architecture

A Penton Publication November 1995

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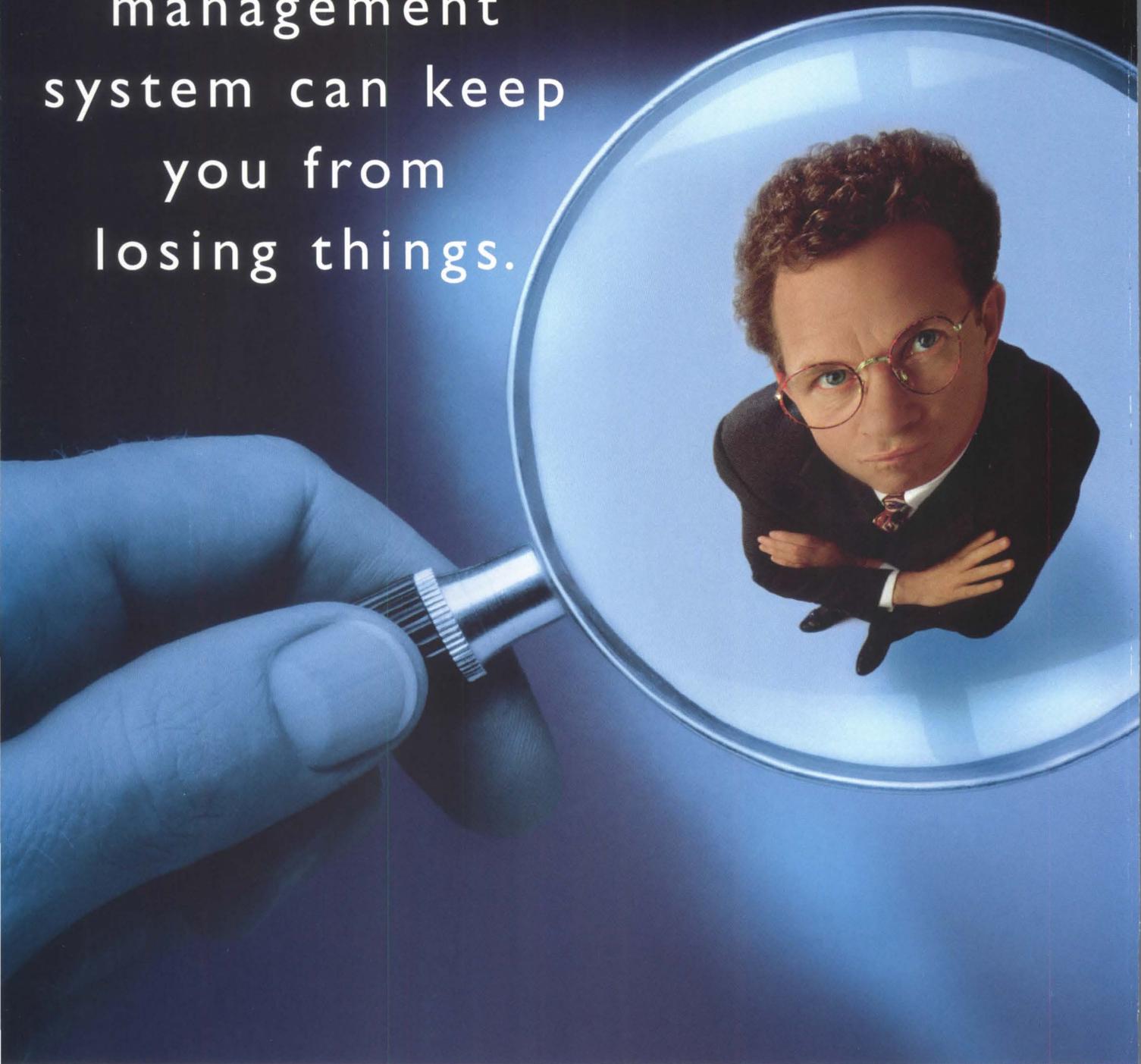
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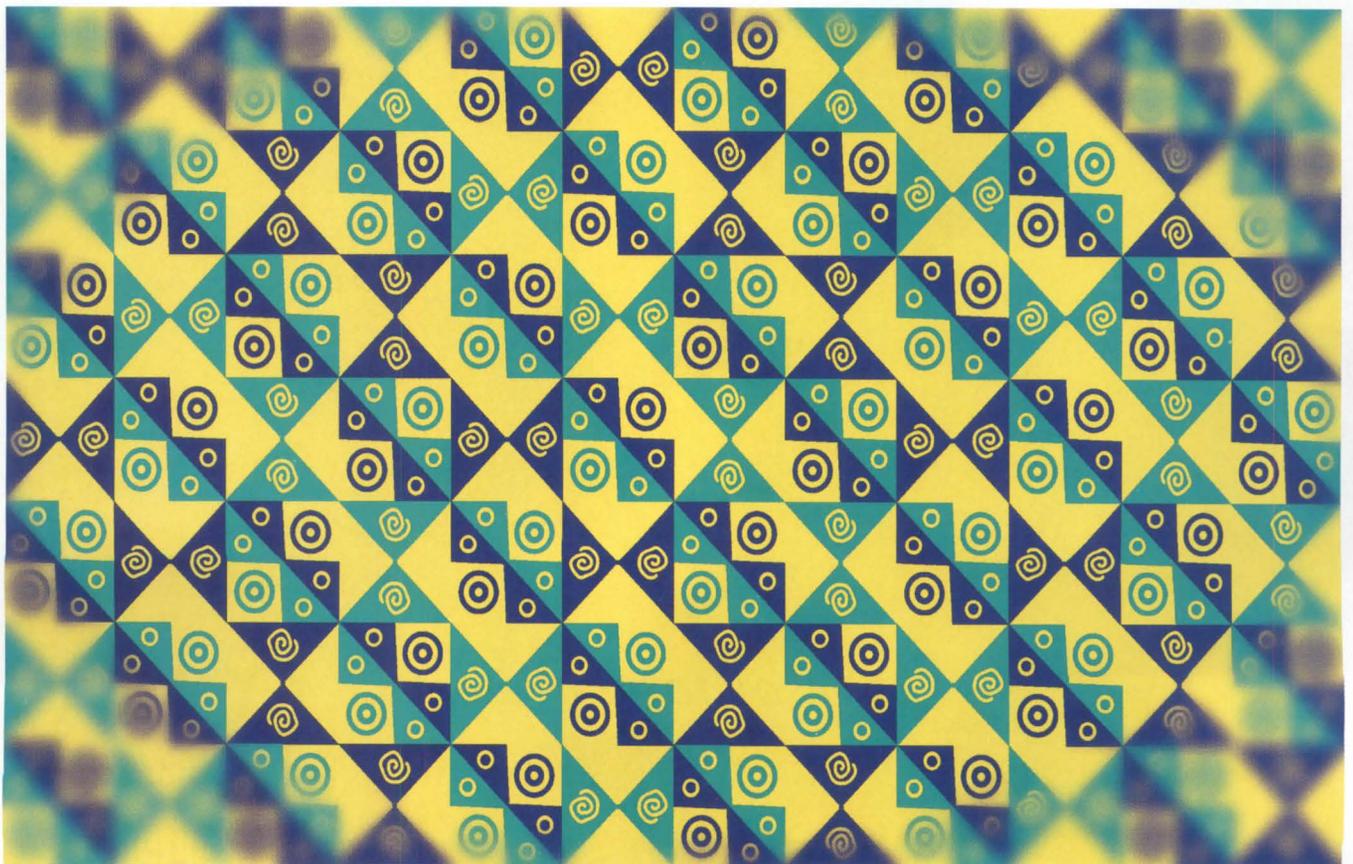
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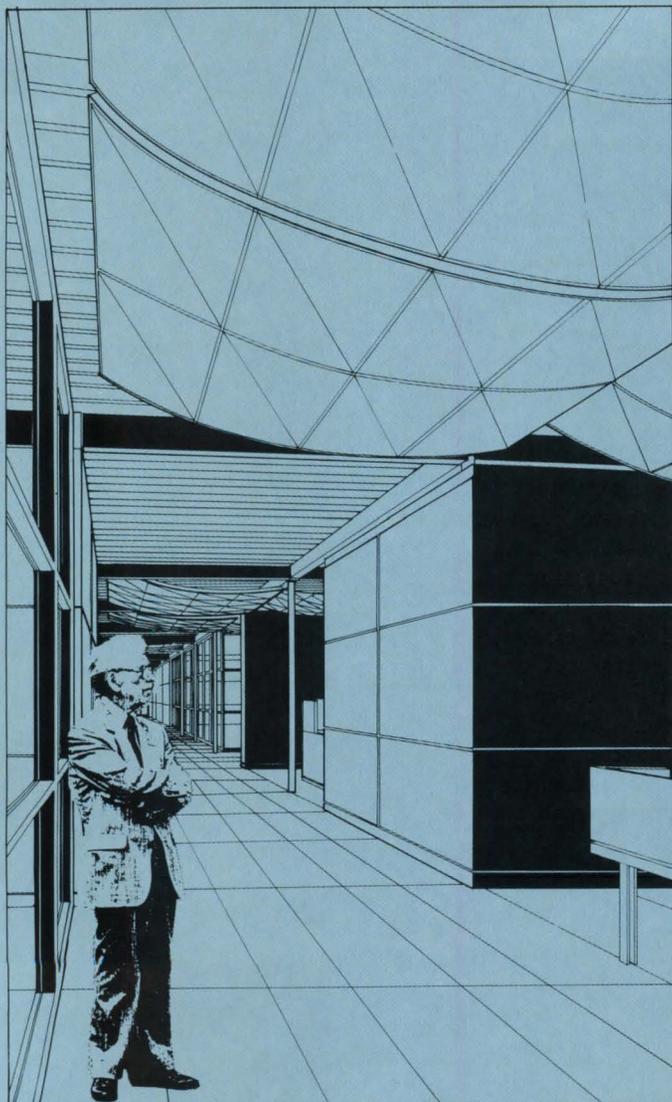
Plate 156 of Volume 7 of Animal Locomotion: An Electro-Photographic Investigation of Consecutive Phases of Animal Movement, 1872-1885, by Eadweard Muybridge. Cover design by Julie Anne Yee.

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Drawing of hallway in Phillips Plastics Company's Origen Center, Menomonie, Wisconsin, by James/Snow Architects (p. 50).

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Why Form Matters

Occasionally, the skirmishes among architectural publications reveal something about the profession. Such is the case with a recent editorial criticizing the trade magazines for being against form, written by Cynthia Davidson, the editor of the theory-oriented tabloid, *ANY*. "The architecture trade magazines in the United States today," she wrote, "are presenting a so-called traditionalism alongside an anti-formal rhetoric as their view of what it means to be a responsible professional architect in 1995."

On the surface, her charge makes little sense. An architectural magazine could no more be anti-form than a music magazine could be anti-sound or a dance magazine, anti-movement. Whatever the faults of the trade magazines in our field, inattention to and "rhetoric" against form are not among them. But behind her comment lies an issue of importance not only to the magazines, but to the profession. What to her may be an anti-formal position has been, instead, a movement within the profession to expand the definition of architectural form and, with it, the range of form-making activities architects pursue.

That movement has responded to the Post-Modern trend toward narrowing architectural form to the visual composition of elements divorced from their tectonic qualities, and limiting the architect's role to that of a building sculptor or decorator. Behind it is a belief that if we are to survive as a profession we must resist such a constraining position.

To some extent our thinking about form has led us here. Historically, form has been defined by its opposite, often to its disadvantage. Defined as the opposite of content, form seems superficial; defined as the opposite of function, it seems extraneous; defined as the opposite of idea, it seems anti-intellectual. Defining form in this way has been no accident. As scientific methods, utilitarian values, and bottom-line judgments have come to dominate Modern thought, form-making as an activity that eludes rational analysis or monetary measurement has been demeaned. And architects, as form-makers, have suffered accordingly.

If we are to change such perceptions, we might begin by redefining form. Current critical theory is particularly useful in this regard. When you get past all the bad writing, such theory is making a lasting contribution by revealing the false

dichotomies in our thinking and by showing how supposedly opposite ideas tend to fold back upon each other. Form, for example, is not opposed to content, function, or idea. Every concept or activity has a form, and every form has cultural content, a particular function, and a generative idea.

Expanding the definition of form is not just empty word play. The more we can demonstrate that form is not an optional add-on, but is essential to the working of the world, the stronger our position will be and the greater our opportunities. Building projects, for example, are often given form long before an architect is ever involved. What the building should be, where it should be, how big it should be, who should be on the project team are all formative decisions typically made by accountants, developers, and brokers – people with mathematical or management skills, but with little knowledge of form.

Architects rightly talk about the need to become more involved in such up-front decisions. To do so, however, we must convince clients – and be able to act on the conviction – that form relates not just to the arrangement of architectural elements, but to the structure of an organization, the function of a project team, the location of a building, and so on. And once we begin to see form in this way, there is no reason why we should stop with the building process. The form of a transportation system, the form of a city's growth, the form of a housing policy: such things are now often determined by engineers, statistically oriented planners, and social scientists, yet all could benefit from the input of form-makers trained to see relevant patterns and to conceive of formal structures.

Some may argue that such an expansion of the architect's realm is impractical, encroaching on others' turf. But that expansion is already under way. Large numbers of architecturally trained people are entering so-called alternative careers, driven by the huge imbalance between the number of students and recent graduates and the availability of traditional jobs. I suspect that many in this group – an avant-garde of sorts who deserve the profession's support – are finding ways to apply their form-making skills in other fields.

This may seem like anti-formal rhetoric to those with a more traditional view of the avant-garde and a narrower view of the architect's role. I see it instead as very pro form. □

A broader view of architectural form-making is critical to expanding opportunities for architects.



Thomas Fisher

The Schools Failing?

The cover story of the September issue of P/A ("The Schools: How They're Failing the Profession," p. 47) attempts to frame a very complex problem in simple, deceptively adversarial terms. As the author admits, the disjuncture between education and practice has existed in one form or another since the first professional architectural curriculum was introduced into academia. In our view, however, that disjuncture is not the result of some petty, avoidable conflict between two easily defined "sides," but a natural circumstance in a profession whose history is longer than that of formal higher education itself, and whose cultural transcendence is without parallel among the professions. The real issue is how to mitigate the detrimental effects of this intrinsic split.

The article legitimately questions the very idea of university-based architectural education, stating that it is "hard to imagine a worse setting for educating students about

new and ongoing efforts to bridge the gap between architectural education and practice. Among the noteworthy points is Ernest Boyer's vision of the architecture school as an exemplar for other academic disciplines. This would seem to be an endorsement of the basic structure of architectural education, and is consistent with the conclusions of Donald Schon, who in his book, *Educating the Reflective Practitioner*, promotes the studio-based architecture curriculum as a model for instruction in other fields. We eagerly await the publication of Dr. Boyer's study, which we trust will engender new and more constructive debate about architectural education. Meanwhile, many cooperative initiatives are already under way, including a joint effort by the current presidents of ACSA and AIA that will result in a written dialogue on educational issues to appear in publications of both organizations.

Although there is understandable concern on the part of most architects about the

practitioners. The words "academic" and "theory" are no more exclusively linked than are the words "practice" and "pragmatics."

The debate should be about a practice world that, when effective, is just as or maybe more dependent on the conceptual and theoretical knowledge base an academic world potentially offers. Unfortunately, as long as we see practice as unneeded of the intellectual rigor of a university, best taught through co-op programs by practitioners who were themselves never taught the theory of practice, the problematic status quo will continue unchecked.

Second, there is the oft-repeated fallacy that studios educate, while courses in practice or construction technology train. This idea doesn't recognize that good technology and practice courses force students to think with a rigor and clarity comparable to any liberal arts education.

Last, and perhaps worst, is the fallacy that studios, uniquely within an architecture school curriculum, teach design, while technology and practice courses do their paltry best to supplement this critical topic with rote memorization of dry data. Perhaps what we all need to accept, if the construction industry at large is to see architects as competent professionals, is the idea that design is a very broad topic, which joins the word "creative" with the words "problem solving" and is as present in the work of outstanding project managers as in the work of outstanding formalists.

**Barry D. Yatt, AIA, Assistant Professor
The Catholic University of America
AIA Documents Committee, Education Task
Group; AIA/ACSA Design + Practice Summer
Institute, Curriculum Committee**

School Prescriptions

Michael Crosbie's article in September's P/A on the failure of schools of architecture to prepare students for professional practice accurately diagnoses the problems of architectural education, but his suggestion of ways to make education more relevant to architects' careers misses an important point. He would encourage more schools to develop work/study programs like those at the University of Cincinnati as a means of better preparing young architects for the real world, because in the schools today, theoretical design is over-emphasized while the acquisition of those skills most needed by young professionals is ignored or even disdained. Mr. Crosbie wants to ensure that recent graduates have the skills employers are looking for. But another (perhaps more compelling) reason for creating a curriculum that encourages (*continued on page 12*)

Perhaps what we all need to accept, if the construction industry at large is to see architects as competent professionals, is the idea that design ... is as present in the work of outstanding project managers as in the work of outstanding formalists. —Barry D. Yatt, AIA

architecture as a profession." Given the exigencies of the current practice environment, however, it is also hard to imagine a better setting for the initial phase of an education in architecture. Virtually every professional field fits somewhat uncomfortably in the university context, and yet a relevant collegiate education is generally considered indispensable for professional credibility. Nonetheless, architectural education is necessarily a hybrid between traditional instruction and "learning by doing," and consequently does not end upon receipt of a degree. The successful architect is as much a product of a carefully planned apprenticeship as of a formal education. Cooperative degree programs are one well-regarded means of helping students gain practical knowledge, but nothing can supplant a comprehensive internship as a vital stage in the future architect's development. Unfortunately, while professional architecture degree programs must undergo a rigorous accrediting process every five years (with accreditation standards set by both the profession and academia together), there are no equivalent controls on the practice side.

Ironically, despite the article's lurid title and ominous graphics, it devotes a great deal of text to an encouraging discussion of

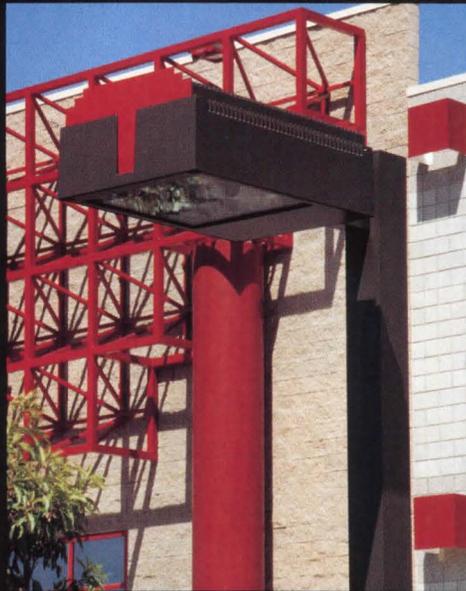
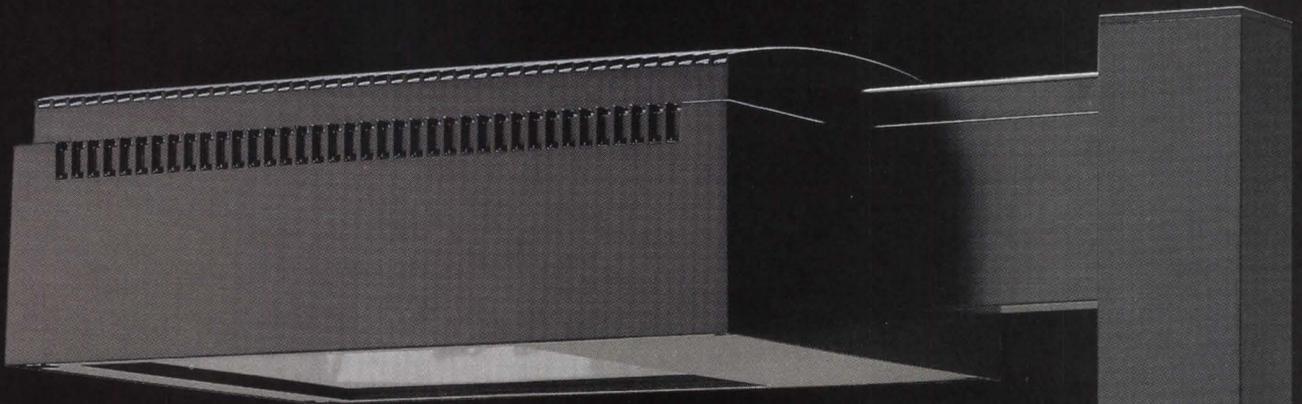
disparity between students' expectations and the realities of practice, the solution is not simply to forfeit those expectations. With the volume of knowledge required to practice architecture growing at an exponential rate, educators and practitioners must actively seek and explore new opportunities for dialogue. In so doing, we must always remember that architecture is both a profession and a discipline, and to sacrifice either would be to diminish its value to clients and its promise to those who choose it as a career.

**Robert C. Greenstreet, President
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The Association of Collegiate Schools of
Architecture, Washington, D.C.**

School Fallacies

Michael Crosbie's very timely piece in your September issue was right to the point. However, it accepted, uncritically, three key fallacies of the education/practice conflict. First is the questionable notion that an academic world based on theory is preserving the lamp of knowledge against a practice world based primarily on pragmatics. The history of practice has repeatedly demonstrated that architects lose control of the design process when they aren't competent

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(continued from page 10) students to immerse themselves in construction arts, material science, and structural and mechanical systems is to enrich design training in the studio, providing the basis for deeply felt and knowingly reasoned design decisions. This is particularly important now, at a time when countless cultural influences suggest to students that a superficial, style-driven approach is acceptable. It is not enough simply to expose young architects to the real world; it must be made clear to them why this knowledge leads to more artistically deep and intellectually rigorous buildings.

Steven Landau

The Stein Partnership

New York

The Wright Alternative

The "scholarship of applied knowledge" has been the norm for over 60 years at the Frank Lloyd Wright School of Architecture. The school's mission is to prepare men and women to enter the profession of architecture. Teaching methods are based on learning by doing.

Each new student is apprenticed to a mentor who is a member of the Taliesin Architectural Firm. The firm's main office is

the school's large drafting studio. There are many project types and plenty of work for every architectural apprentice.

Apprentices work with developers, prepare construction documents, and follow actual field construction under the mentor's guidance. Working together in this way is not considered "intrusive to the educator" and the studio/office arrangement enforces the school/practice connection without a rigid time frame. This is the ultimate "teaching model" suggested by Robert Gutman.

All apprentices do community service projects for nonprofit organizations and local government. They are familiar with contract negotiations and deal regularly with clients. This is also a model coop program which "builds on the student's experience in the world of practice."

After graduation, apprentices often continue as architects with the Taliesin firm. Graduates who leave are well prepared to merge easily into practice and are highly regarded in the profession.

Rochelle Pripstein, AIA

Chalfont, PA

Adjunct Faculty

*The Frank Lloyd Wright School
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Employer Survey on Graduates

A survey of employer satisfaction with recent architecture graduates, mainly in Kansas and Missouri, is available from Eugene Kremer, Professor, Department of Architecture, College of Architecture and Design, 211 Seaton Hall, Manhattan, KS. Tel: 913-532-5953. Fax 913-532-6722.

Model Making

As a professional model maker with 25 years of experience, I was initially very excited about the article on model making (*Model Making: A Model of Practice, P/A, May 1995, p. 78*) since there have been few, if any, such articles in *P/A* and other architectural magazines. However, upon reading it, I was very disappointed. Not only did I learn nothing new, but found that the general ideas as well as specific points were incorrect and a disservice to the profession.

Although I agree with many of the conclusions on the uses and implications of CAD/CAM in model making, such as cutting for other model makers or cutting thousands of parts overnight, no definition of the model maker or of his/her role is presented in the article. Furthermore, the article claims to be covering the "current (continued on page 14)

F E L O N

Using pirated software can add more to a resume than "computer experience."

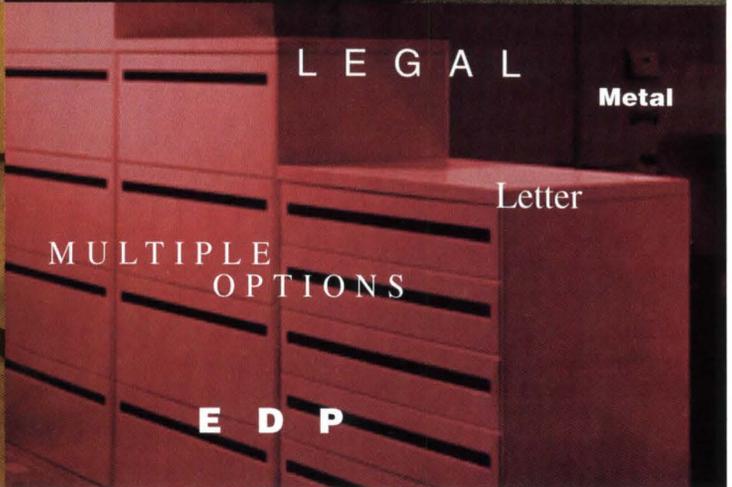
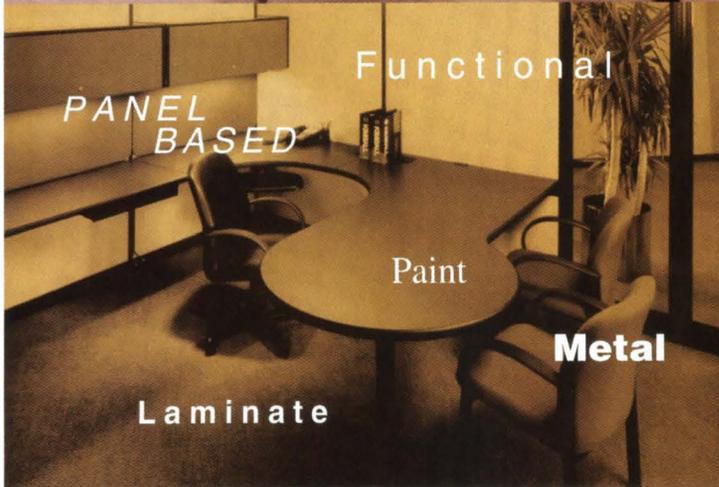
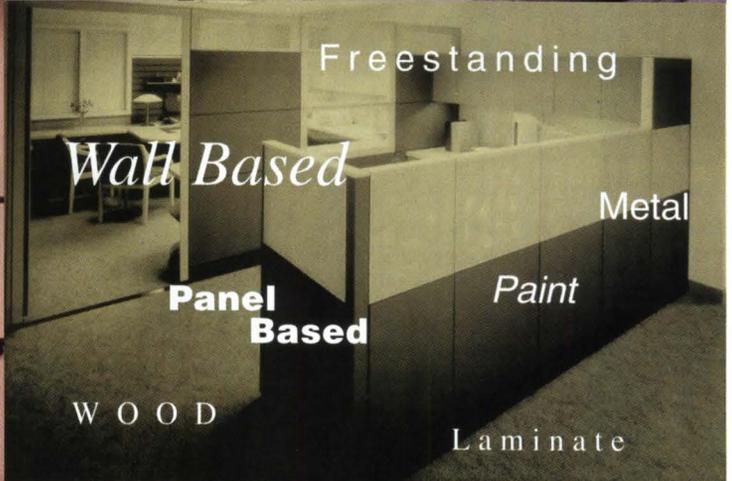
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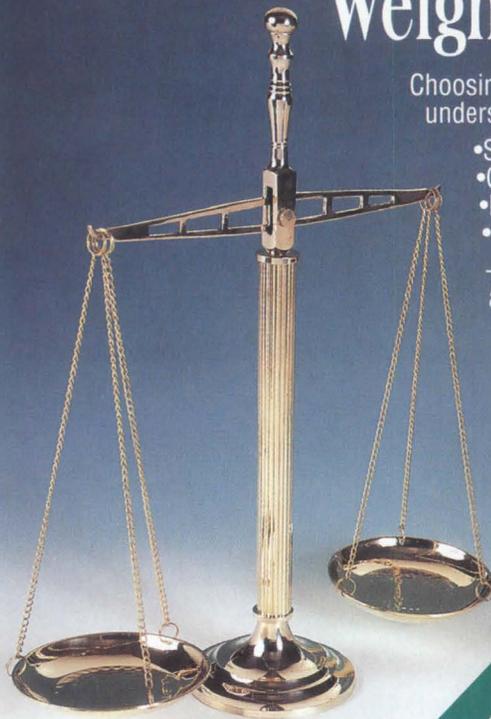
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(continued from page 12) state of model making" which I fail to understand, since a visit to and an interview with only one model maker are mentioned.

The article quotes Mr. Champlin, who states he used to be a "bench-type model maker building models by hand." From this "entry-level" model making, Mr. Champlin moves magically to a professional level through the acquisition of CAD/CAM, laser cutters, and CNC machines. I am hard pressed to understand how buying hi-tech machines, i.e., tools, can confer on someone the skills necessary to make him/her a professional. This is like the popular tune, "Get yourself an outfit, and be a cowboy too."

Tools such as CAD/CAM are at the service of the model maker, not the other way around. When Mr. Champlin receives CAD electronic files from architects and laser-cuts pieces from them and then assembles those pieces, does this make him a model maker? If someone buys Scandinavian furniture pieces and assembles them, does that make the person a cabinet maker? If these new methods are changing the way we think about design, do we infer from this that the model maker is no more than an assembler?

A month ago, HOK, one of the country's largest architectural firms that uses advanced technology, presented me with simple hand-drawn sketches of its Pennsylvania Station Development project, which included several schemes of a dome with complex geometry. The client wanted a fully detailed, museum-quality model over a weekend, and because of constraints of time and budget had no CAD electronic files. Short deadlines and cursory sketches are but two of the parameters model makers must contend with. Another factor is the series of changes architects make throughout the design process, which, when there is a competition deadline, makes it impossible to have CAD electronic files ready for the model maker to use. In these cases, the technology described in the article would not have made a difference either in the quality or in the delivery time of the models.

CAD/CAM in architectural model making did not burst on the scene in the 1990s. It has been with us since the early 1980s around the country and had industrial applications even earlier. California-based Scale Models, Unlimited, was the first to develop laser cutters commensurate with the scale of model making and the relatively soft materials it uses. Credit should go to this firm. The two-to-three-ton lasers and computer numerically controlled two- and three-axial milling machines mentioned in the article (photographs) were (continued on page 42)

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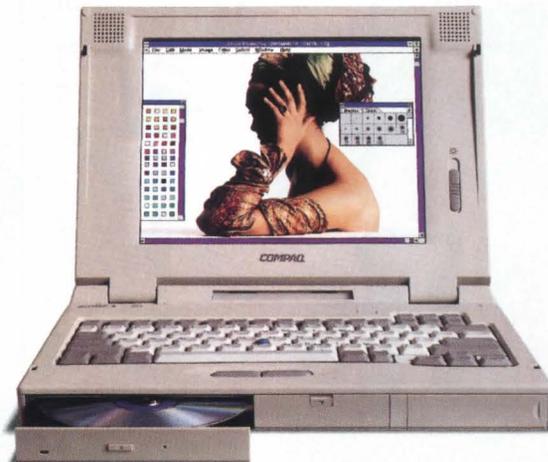
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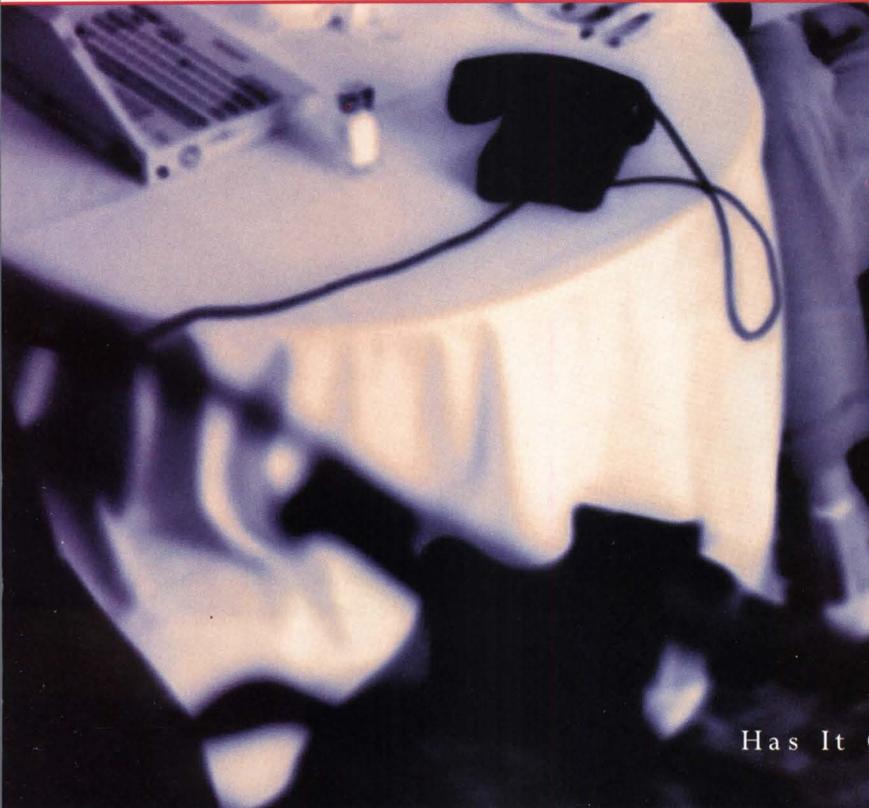
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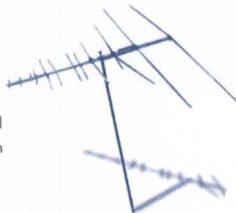
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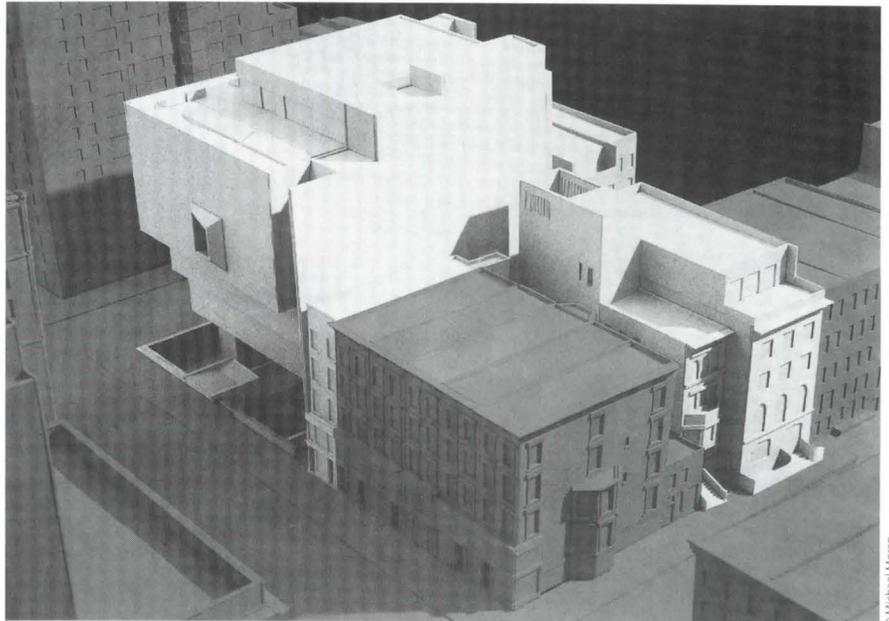
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Once Burned, Twice Shy at the Whitney

Almost seven years after presentation of its last, scaled-down expansion scheme by Michael Graves (P/A, Feb. 1989, p. 21), New York's Whitney Museum has announced a far more modest growth plan that will add hardly any cubic footage to its Upper East Side neighborhood. The proposal, by Richard Gluckman Architects, a New York firm noted for museum and gallery work, will link two townhouses to Marcel Breuer's somber landmark, accommodating offices and a library, and thus freeing part of the original structure for 8,500 square feet of new gallery space. The exterior of the Breuer building will not be altered at all; in fact, the linked space in the townhouses is around the corner, out of view of museum-goers.

The expansion plan reflects a transition the Whitney has undergone in recent years. Tom Armstrong, the museum's imperious director in the 1980s, was deposed in 1991, in part because New York's architects and preservationists rejected his star-architect plans. But clearly there are also economic reasons for the modesty of the new expansion plan. The Whitney is three-quarters of the way toward completing a \$35-million fund-raising drive; of that sum, slightly more than a third involves building: \$3.5 million for the property purchases and \$10.5 million for renovation and furnishing.



© Michael Moran

The rest is going into endowment to reinforce the museum's financial position. Undoubtedly the days of big spending for construction are missed, but in this case everyone concerned (even Graves, one could argue) seems to have benefited from this museum's forced return to the drawing board. □

The expanded Whitney Museum of American Art will include two converted townhouses on East 74th Street (at right in photo), plus a stair/elevator link. Another house on Madison Avenue (center) has long been tied to Marcel Breuer's 1924 landmark (left).

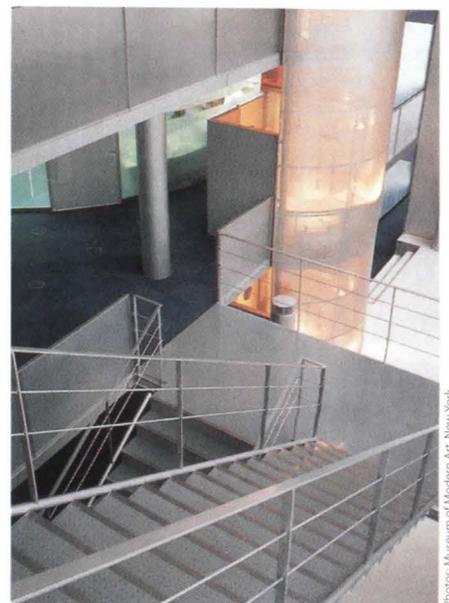
Dancing in the Dark at MoMA

"LightConstruction," an international survey of 30 projects assembled under the rubric of "lightness" at the Museum of Modern Art in New York, is a beautifully choreographed, but poorly conceived exhibition. Formally, the show is exceptional – high-caliber work displayed on exquisitely designed presentation boards, with several models and two large-scale installations. Curator Terence Riley tells us that the work represents an emerging sensibility in architecture: an exploration of light(ness). But he leaves us in the dark as to how this is a new concept – light being a basic element of all architecture. And the variety of projects only adds to the confusion. Some projects use lightweight and translucent materials (The Leisure Studio in Espoo, Finland, by Kaakko, Lane, Liimatainen, & Tirkkonen), some have walls of clear glass (Bernard Tschumi's Glass Video Gallery in Groningen, The Netherlands), others are



The Leisure Studio (above) and the ITM Building (right) are variations on an elastic theme at MoMA.

sheathed in reflective skins (Frank Gehry's Frederick R. Weisman Art Gallery in Minneapolis), and still others employ a soft color palette and extensive glazing (Toyo Ito's ITM Building in Matsuyama, Japan). The show, which is well worth seeing despite its flaws, is on view through January 2, 1996. □



Photos: Museum of Modern Art, New York

Books



© Martin Charles

CFA Voysey by Wendy Hitchmough, *Phaidon/Chronicle, San Francisco, 1995, \$75.*

The English Proto-Modernist is the subject of an elegant, large-format book with the depth that exemplifies modern biography. His architecture and his equally influential design of fabrics and furnishings are examined down to the smallest details, not in isolation but in relation to the social and political movements of his times (1857–1941), the unusual religious convictions of his family, even the evolution of the periodicals that spread his reputation widely. Almost nothing is said, however, about the ambitions or sensitivities of his clients. Graphically, too, the volume has strengths and weaknesses. Fine current photographs by Martin Charles are juxtaposed to intriguing period illustrations, but architectural drawings seem to appear only if available by happenstance – and they are typically too small. For some of the key buildings, there are no plans at all. Handsome illustrations of fabric and wallpaper designs give no clue as to actual scale. (Shown above: entrance view of New Place, 1897, in Haslemere, Surrey, England.)

Nature and the Idea of a Man-Made World: An Investigation into the Evolutionary Roots of Form and Order in the Built Environment by Norman Crowe, *MIT Press, Cambridge, Mass., 1995, \$29.95.*

In this enormously thoughtful book, Norman Crowe, an architect and teacher at Notre Dame, examines what it is about buildings, gardens, cities, and other constructed works that answers innate human needs. He deftly weaves together science, philosophy, and the record of thousands of years of human activity as he searches for keys to a satisfying built environment. One lesson from human experience with nature is that "there must be a balance between the temporal and the timeless," Crowe says. The places we build should accommodate change, but they must also offer a sense of permanence, which is essential to human beings troubled by their own mortality. Crowe finds sources for the ideal, balanced environment in the canons of Classical architecture, and he explores four different traditions: those of Sukiya in Japan, Sufi in Persia, Sung Dynasty building standards in China, and centuries of European development.

Architecture as Metaphor, Language, Number, Money by Kojin Karatani, translated by Sabu Kohso, edited by Michael Speaks, *MIT Press, Cambridge, Mass., 1995, \$17.50 paper.* This and the following book mark the beginning of a series, called Writing Architecture, sponsored by the ANYone Corporation and "dedicated to examining the condition of architecture at the end of the millennium." This book, written by a professor of literature at Hosei University in Tokyo, is a fascinating and remarkably clear account of how architecture has served as a metaphor in the history of ideas. While a few familiar figures such as Christopher Alexander and Jane Jacobs are discussed, most of the book deals with the work of philosophers.

Earth Moves, The Furnishing of Territories by Bernard Cache, translated by Anne Boyman, edited by Michael Speaks, *MIT Press, Cambridge, Mass., 1995, \$17.50 paper.*

This occasionally lucid book, written by a French architect and furniture designer, reveals the varied intellectual tradition out of which grows the avant-garde's current interest in fluid, folded, inflected architecture. Gottfried Leibniz's fascination with parabolic forms (via his calculus), Henri Bergson's belief in duration and the flow of life (the *élan vital*), and Paul Klee's use of the snaking line (the freedom of the stroke) are all cited as influences. The eclecticism of these sources, however, suggests that this is an after-the-fact (if brilliant) rationalization of a set of forms that Cache happens to like. Cache also comes across, like Voltaire's portrayal of Leibniz as a Dr. Pangloss, too content to represent the world symbolically rather than improve it.

Briefly Noted

Architecture Animals by Michael J. Crosbie and Steve Rosenthal, *Wiley & Sons, New York, 1995, \$6.95.*

Fourth in a series of small board books for architectural enthusiasts, "ages 2 to 102."

New Directions in Hospital and Healthcare Design by Richard L. Miller and Earl S. Swenson, *McGraw-Hill, New York, 1995, \$75.*

Addresses its timely subject through new technologies and design trends.

The Synagogues by H.A. Meek, *Phaidon/Chronicle, San Francisco, 1995, \$59.95.*

A history of the building type (short on modern examples), emphasizing the intricacy of detail and the importance of placemaking.

Wright Sites: A Guide to Frank Lloyd Wright Public Places, Second Edition edited by Arlene Sanderson, *Princeton Architectural Press, New York, 1995, \$12.95.*

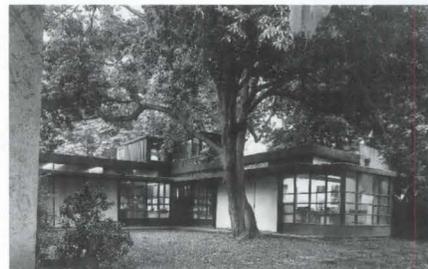
Revised edition includes project descriptions, access information, and directions to all extant, visitable buildings in the United States.

Land Art by Gilles A. Tiberghien, *Princeton Architectural Press, New York, 1995, \$65.*

"Earthwork" projects from the 1960s onward; evocative, inspirational works.

Wolf Von Eckardt, 1918-1995

Wolf Von Eckardt, architecture critic of *The Washington Post* from 1963 to 1981, succumbed to complications from a stroke Aug. 27 at his home in Jaffrey, New Hampshire. Von Eckardt, who fled Nazi Germany in 1936 after being expelled from school because his mother was Jewish, never graduated from college, but he had a remarkably varied career as a printer's apprentice, a designer of book covers for Alfred A. Knopf, a consultant to the West German government, and an information officer for the AIA, among other jobs, before joining the *Post* as an art and architecture critic. Later design critic for *Time* magazine, Von Eckardt, 77, also taught and wrote books, including *The Challenge of Megalopolis*, Bertolt Brecht's *Berlin*, and *Back to the Drawing Board! Planning Livable Cities*. □



© Julius Schulman

Schindler's Dissed

A controversy has erupted over planned renovations to the historic Schindler House in West Hollywood, California. The vintage 1921 structure, Schindler's first work on his own in California, was his residence for a number of years. Local building officials ordered a stop to renovation work by the Friends of the Schindler House when it was discovered that a building permit had not been issued. The whistle was blown by the local AIA chapter, which claimed that historic materials had been removed from the house and replaced with new materials that were unsympathetic to the building. After a hearing by the city's Cultural Heritage Advisory Board, a permit was issued retroactively.

Gordon Olschlager, chair of the L.A./AIA chapter's historic resources committee said that the house is "an extremely important resource for Los Angeles," and he characterized the work undertaken by the Friends as "disturbing." A bookstore to be constructed behind the house that may compromise the historic landscape is also worrisome to the chapter. Friends President Robert Sweeney maintains that the renovation work is historically correct, but says the Friends did not consult anyone outside the historic property. The chapter has recommended that the city carefully review all work to be done there. □



A Curtain Wall Worth Saving?

Minneapolis architects and preservationists have been trying to prevent Opus Corporation from razing the former Lutheran Brotherhood headquarters, the first curtain wall office building erected in the city's downtown after World War II. The eight-story blue-green building, designed by Perkins & Will and constructed in 1956, is widely appreciated for bringing a comfortable scale and a welcome splash of color into a business district that tends toward bland tones and bigness.

Attempts to designate the building as worthy of government protection were rejected by the city after Opus commissioned local architectural historian Tom Martinson to write a report arguing that because of its rounded corners, its ground-floor walls of stone, and its hugging of the public sidewalk, it is not a pure representative of International Style Modernism and thus is not worthy of designation. Opus has talked of combining the building's land with the rest of the block to erect an office tower perhaps seven to ten times as large.

The building is now empty, and Opus says attempts to attract a new tenant have been frustrated by the narrow 12,000-square-foot floorplate and the need for asbestos removal. City Council has asked Opus not to demolish the building without first presenting plans for the site's redevelopment. □

New Director at ACSA

The Association of Collegiate Schools of Architecture has named G. Martin Moeller its new executive director. A graduate in architecture from Tulane University, Moeller served in the late 1980s as ACSA's assistant director before leaving to run the AIA chapter in Washington, D.C. His arrival, after what the ACSA board called "a very difficult time," was greeted by the organization's president as ideal for ACSA's "cost-conscious era of change and reevaluation." □

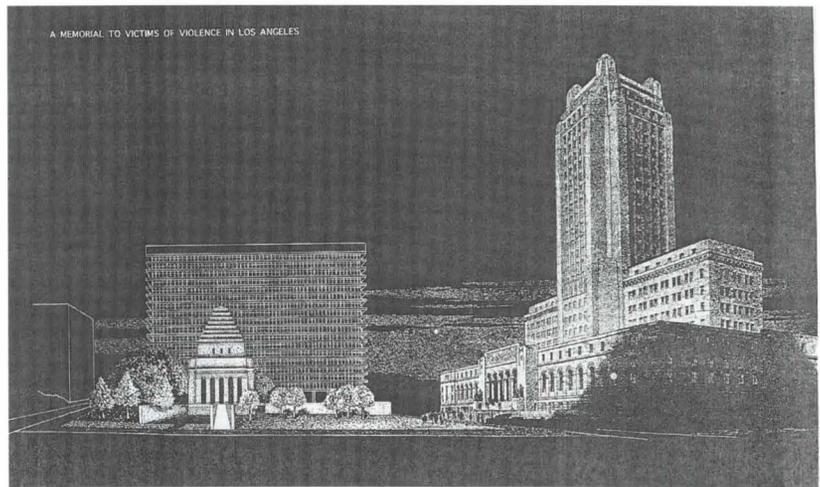
Seattle Voters Reject the Commons

Seattle Commons, one of the decade's most ambitious proposals for creating a mixed-use neighborhood and a large new park in a major American city, lost at the polls in September. Seattle voters turned down a \$111-million tax levy for the 61-acre park, which supporters said would have stimulated construction of a new neighborhood with up to 19,000 residents and an additional 5,000 jobs in what is now a scruffy commercial-industrial area between downtown and Lake Union.

In part, the proposal, which won a P/A Citation (January 1995, p. 102), seemed a victim of its own gestation. The idea originated not in City Hall but in a newspaper column, and was quickly picked up by the city's power elite, with local newspapers acting as cheerleaders. The Committee for Seattle Commons, led by a young entrepreneur and a lawyer ambitious to be part of the city's "new generation of leadership,"

planned the park and development and conducted a publicity and fund-raising effort that resembled a well-oiled political campaign. Some voters felt the Commons was being stuffed down their throats. A \$25-million gift to the Commons by Microsoft cofounder Paul Allen just before the election added to the aura of elitism.

The levy would have used up the entire balance of the city's taxing capacity under state law. Critics saw in the Commons the shadow of the 1960s' federal bulldozer and pointed out Seattle's many other capital needs, including a new main library and improvements to neglected infrastructure. Political analysts felt the tax for the Commons and a King County sales tax increase to finance a new ballpark for the Seattle Mariners – both on the same ballot – dragged each other down. Proponents have talked about trying again at some unspecified time. **Donald Canty**



Visions of Violence in Los Angeles

These are grim times, at least in the imagination of people planning memorials. Wesley van Kirk Robbins's latest design competition, "The Juice," asked entrants from around the world to design a Garden of Justice with a memorial to victims of violent crime, for a site in the heart of downtown Los Angeles. Sure enough, the results were dark and brooding. Several participants – Yuji Fukui of Tokyo, Richard Williams and Jim Tharp of Fort Worth, and Anurag Nema of Dallas, Texas, and Shahdol, India – garnered high honors, but none surpassed architect Philip R. Overbaugh of Oakland, California, whose winning design proposed chopping the top off L.A.'s City Hall – a 1927 interpretation of the Mausoleum of Halicarnassos – and setting it down in a nearby park. The

original inscription in the City Hall rotunda, "The city came into being to preserve life, it exists for the good life," would receive a postscript as *noir* as anything in a Raymond Chandler novel: "Here lie the broken dreams of a city."

The competition took to a new extreme a recent reversal in the purpose of memorials. Through most of history, public memorials venerated those who had accomplished great things or who had sacrificed their lives for a noble cause. This latest competition, by contrast, set out to commemorate those whose only shared characteristic was a *ghastly and purposeless* death. Perhaps such gestures will incite communities to reduce violence, but they run the risk of exacerbating an already widespread sense of futility. □

Calendar

COMPETITIONS

A House for Tomorrow

Deadline, submission: December 8
Designs for a 2,250-square-foot, single-family house using APA-trademarked engineered wood products may be entered in this competition. Contact Design for Tomorrow, PO Box 11700, Tacoma, WA 98411-0700. Tel. (206) 565-6600, ext. 172. FAX (206) 565-7265.

Traveling Fellowship

Deadline, application: December 11
The Steedman Traveling Fellowship is a \$20,000 award for foreign travel and study by an architect who received his or her professional degree up to eight years ago. Contact Steedman Governing Committee, Washington U., School of Architecture, Campus Box 1079, 1 Brookings Dr., St. Louis, MO 63130-4899. Tel. (314) 935-6293. FAX (314) 935-8520.

Greek Marble Interiors

Deadline, submission: December 31
Interiors and furniture designed with marble from Greece may be entered in this national competition. Contact Marble from Greece, c/o Renee Sacks Associates, 545 Madison Ave., New York, NY 10022, or call Consulate General of Greece at (212) 751-2404.

Gypsum Competition

Deadline, submission: December 31
Entries may now be submitted to the Gypsum Association's Excellence in Gypsum Board Design and Construction awards program. Contact Gypsum Association, 810 First Street, NE, Suite 510, Washington, DC 20002. Tel. (202) 289-5440.

Rotch Travelling Scholarship

Deadline, application request: January 1, 1996
The Rotch Travelling Scholarship is a \$30,000 international travel award open to architects who are under 35 years of age. For details contact Rotch Travelling Scholarship, Boston Society of Architects, 52 Broad St., Boston, MA 02109.

EXHIBITIONS

The Image of Boston

Through December 29
MIT Museum, Cambridge, Massachusetts.
Photographs taken by Nishan Bichajian in the 1950s and Peter Vanderwarker in the 1990s document changes in Boston's cityscape.



Photography and Construction

Through January 14, 1996
Canadian Centre for Architecture, Montreal.
"Architects of the Image: Photography in the Heroic Age of Construction" includes photos taken between the mid-19th Century and the 1930s. (Shown above: Eiffel Tower, Paris: Raising of Columns Above the First Platform, 1888, by Louis-Emile Durandelle.)

Two on the Prairie School

Milwaukee, through Feb. 4, 1996;
Chicago, through Jan. 7, 1996.
Two exhibitions on the Prairie School are: "Prairie School Collaborators: Frank Lloyd Wright and George Mann Nieddeck" at the Milwaukee Art Museum and "The Prairie School: Design Vision for the Midwest" at the Art Institute of Chicago.

Buckminster Fuller

November 9–January 3, 1996
Cathedral of St. John the Divine, New York.
Coinciding with the 100th anniversary of the birth of Buckminster Fuller is "Contemporary Developments in Design Science," an exhibition of his work and of others in the field.

The Rebuilding of Oklahoma City

November 17–March 17, 1996
National Building Museum, Washington, D.C.
"We Will Be Back: Oklahoma City Rebuilds" examines the impact of the bombing of the Alfred P. Murrah Federal Building and the city's downtown redevelopment plans.

Rudolph Schindler

November 20–December 31
Boston Architectural Center, Boston.
"Schindler and the Small House" includes built and unbuilt residential projects by the Modernist.

CONFERENCES

Thermal Performance of Building Envelopes

December 4–8
Clearwater Beach, Florida.
"Thermal Performance of the Exterior Envelopes of Buildings" will cover principles and practices for the development of guidelines for energy efficiency in buildings. Contact Thermal VI, Denise Overton, tel. (615) 574-1003. FAX (615) 574-9338. E-mail: g73@ornl.gov.

P/A Awards Lunch and Design Conference

January 20, 1996
Los Angeles, California.
The presentation of awards and citations to the winning architects in the 43rd Annual P/A Awards will be held in conjunction with a conference, "Design: Client Support for Design Excellence." See p. 115 for details or FAX (203) 348-4023.

Broadening Architectural Education

January 26–28, 1996
Springfield, Missouri.
Practitioners and educators are invited to participate in this symposium to discuss liberal arts education and the preparation of the architect in our changing society. Contact Hammons School of Architecture, Drury College, 900 N. Benton Ave., Springfield, MO 65802. Tel. (417) 873-7288. FAX (417) 873-7446.

Alzheimer's Design Assistance Workshop

January 28–29, 1996
San Diego, California.
The planning and design of special care facilities for people with dementia will be addressed. Contact Institute on Aging and Environment, U. of Wisconsin-Milwaukee, PO Box 413, Milwaukee, WI 53201. Tel. (414) 229-2991. FAX (414) 229-6976. E-mail: aging@csd.uwm.edu.

Practice Notes

Overhead Rates Down, Profits Up

Design firms have the lowest overhead rate in 14 years, according to a survey by the software company Harper and Shuman. In three years, median overhead rates have fallen 10 percent as firms have renegotiated leases, downgraded their space, or passed medical insurance increases on to employees. Profits have increased greatly. Contact Harper and Shuman, 68 Moulton Street, Cambridge, MA 02138-1119; phone (617) 492-4410, fax (617) 876-2973.

What Sets a Firm Apart?

Only about 20 percent of design firms stand out in the view of clients, says Fred Stitt in *The Guidelines Letter*. Those that do, according to Stitt, regularly conduct pre- and post-occupancy evaluations of projects. "Only 3 or 4 percent of designers interview the potential users of a building prior to, or during, design stages," writes Stitt. *The Guidelines Letter* is located at P.O. Box 456, Orinda, CA 94563, phone (800) 634-7779, fax (510) 299-0181.

Technics Notes

Solar '96 Conference

Next year's national solar energy conference, intended to be the largest and most comprehensive yet, is scheduled for April 13-18 in Asheville, North Carolina. It will present technical papers, forums on renewable energy and conservation topics, symposia, and workshops. For information, contact: American Solar Energy Society, 2400 Central Ave., G-1, Boulder, CO 80301; phone (303) 443-3101; fax (303) 443-3212; e-mail: beckych@csn.net.

Wood Technical Publications

APA – The Engineered Wood Association has released new technical publications for architects on the proper use and application of structural wood panels. They are: *Floor Squeaks: Causes, Solution and Prevention* (C468); *Buckling of Wood-Based Panel Siding* (F410); *Staining of Finishes from Water Soluble Wood Extractives* (L810); and *Design Capacities of APA Performance Rated Structural-Use Panels* (N375). For ordering information, contact: Publications Department, APA, P.O. Box 11700, Tacoma, WA 98411-0700; phone: (206) 565-6600, ext. 186.

Cost Data in Metric

Building Construction Cost Data 1996: Metric is now available for \$99.95 from R.S. Means Company. The catalog contains more than 550 pages of industry standard metric costs, covering some 20,000 components. Call R.S. Means; phone (800) 334-3509, or fax (800) 632-6732.



Bing and Harrington

A Legacy Jeopardized

"Traditional Architecture of the South Slavs," a fine show of photographs and drawings recently at the AIA headquarters, reviewed the built vernacular that emerged from the cultural confluence of the Ottoman and Hapsburg empires among the varied peoples and climates of the Balkan peninsula. Mounted by Philadelphia architecture professors Judith Bing and J. Brooke Harrington, the show displayed wood buildings – houses, farm structures, mosques, chapels, and monasteries – from all regions of the former Yugoslavia. (Shown above is a chapel in Dub.) Although reluctant to see their documentary work (done just prior to dissolution of the Yugoslav federation) cast as an inventory of what may now be lost forever, Bing acknowledged that many of the areas she and Harrington charted have been hard hit by shelling. "And wood buildings are the most vulnerable," she added. The show may travel to other venues in the eastern U.S. and a book may follow. Sad to say, their reverent efforts may be the only lasting evidence of remarkable building traditions swept away in bloody strife.

Thomas Vonier

Champs in the Charrette League

U.S. News & World Report's annual fall survey of graduate schools' reputations ranked Harvard's GSD, tops in architecture, with 4.6 points out of a possible 5.0. Less predictable was Princeton's second-place rating (at 4.4), ahead of Yale and Columbia, which tied for third (with 4.3). Filling out the top ten were M.I.T. (4.2), Rice (4.0), Berkeley and Penn (both 3.9), and U.T.-Austin and U.Va. (both 3.8). The scoring was determined by canvassing "top administrators and senior faculty" of all accredited master's-degree programs – typically three individuals per school – and asking them to rate "reputation." A 5 meant "distinguished," a 4 "strong," and a 3 "good." □

What Was That Question Again?

The Miami AIA chapter is taking its message – that architecture matters – to the agora of modern American society: cable television. Twelve half-hour segments entitled "You and Your Architect" ran on cable in Dade County this summer, and organizers are arranging to rerun the series soon. "The intent is to inform the public about the importance of architecture and good design," said the series' host, chapter president Neil Hall.

Some segments consist of brief, polished videos by the national AIA on architectural successes around the country. The more interesting shows – made locally without benefit of glossy production – feature local architects in talk-show format discussing their own projects, the constraints and client demands that shaped them, and practice in general. The series begins to tackle provocative questions.

During a session on school architecture, Hall said, "The public has a tendency to think that when we do design schools, we go overboard and just put our own fantasies together. Why is that an erroneous assumption, especially when we have a shortage of schools and not enough money to build new ones?" In response, the three architect-guests shifted in their chairs. Then one parried the question, blaming it on perceptions and noting lamely that designing a school is "a very involved process." The conversation moved on. Too bad. The public would like to hear tough, specific questions asked *and* answered. The shows, a good first step, sometimes fail in the follow-through.

Peter Whoriskey

Peter Whoriskey writes on architecture for The Miami Herald.



New York Office of Parks, Recreation and Historic Preservation. Long view of Freepark.

Moses's Promised Land

"Robert Moses and the Shaping of New York," at the PaineWebber Art Gallery in New York, may cause some viewers to wonder: Did metropolitan New York's longtime czar of public works just get coarser and more imperious with age, or did some of the harshness of his later projects stem from the inhumanity that took hold of architecture and planning worldwide after World War II? The show – bringing together a fascinating collection of photos, sketches, blueprints, writings, videos, ornament, and memorabilia, even including Moses's fedora – amply demonstrates both the good and the evil in Moses's long career: the creation of beautiful parks and parkways, graceful bridges, and needed public housing, along with the cruel destruction of neighborhoods and a brutal

devotion to expressway construction long after its antiurban character had become obvious.

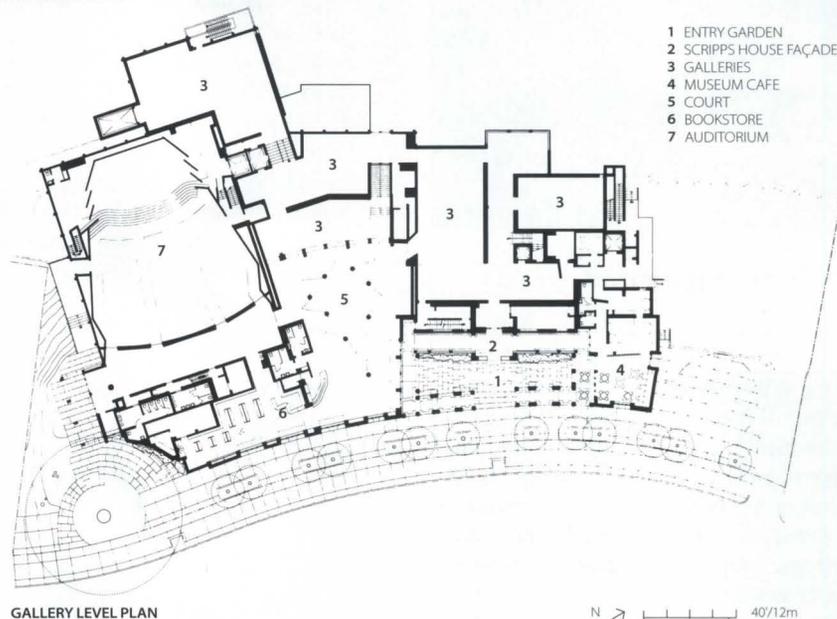
The exhibition, curated by William S. Ayres, includes lovingly detailed early work such as Jones Beach State Park in 1936 (west bath house shown above). After the war, as planning adopted a ruthless, gigantic scale, Moses's works – with notable exceptions such as the elegant Verrazano Narrows Bridge of 1964 – lost much of their former delight. Still, no one can fail to be impressed by how much Moses was able to orchestrate. This balanced presentation will continue in Manhattan through December 8 and will be on view at The Museums at Stony Brook, Long Island, from January 20 through May 12, 1996. □

Old and New Complexity

Robert Venturi's and Denise Scott Brown's idea of complexity and contradiction revolutionized the way we think about the design of new buildings, but it also prepared us for an era in which renovating and adding to existing buildings have become dominant. Few such facilities are as complex and contradictory as the Museum of Contemporary Art in San Diego, where Venturi, Scott Brown & Associates and associate architect David Raphael Singer have stitched together a patchwork of existing buildings, including Irving Gill's greatly altered Scripps House and a large 1950s auditorium. By enclosing a courtyard, the architects created a new entry lobby that gives access to the galleries and the auditorium as well as to an enlarged bookstore and an educational center on a lower level. A new curved façade of arched windows is interrupted by a trellised entry garden, featuring the restored Scripps House façade and a new café. The design nicely resolves the complicated problem without denying the complexity of the site, although there is one moment – the placing of heavy new trellises in front of the Scripps House façade – where one might wish for a little less contradiction.



ENTRANCE ELEVATION



GALLERY LEVEL PLAN

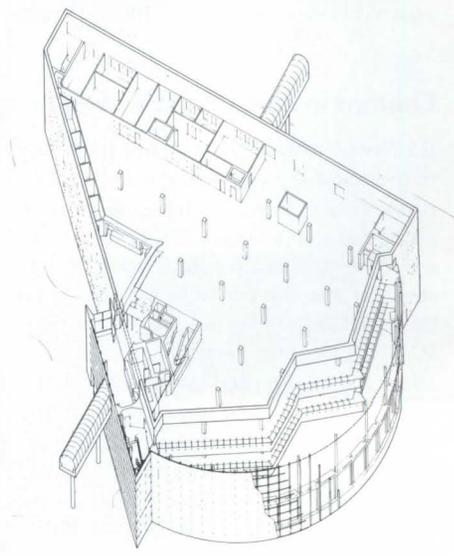
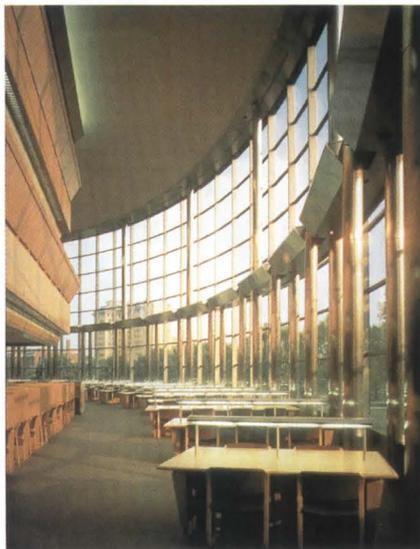
- 1 ENTRY GARDEN
- 2 SCRIPPS HOUSE FAÇADE
- 3 GALLERIES
- 4 MUSEUM CAFÉ
- 5 COURT
- 6 BOOKSTORE
- 7 AUDITORIUM

An Eye to the View

The footprint and organization of the new library by Gunnar Birkerts & Associates on the satellite campus of the University of Michigan-Flint was largely determined by its urban context. The 110,000-square-foot building, housing a full-service academic library, a learning resources center, and the county archive, is located downtown, set in a green belt along the south bank of the river Flint. Capitalizing on the surrounding landscape, the architects placed the multistory main reading room within a generous curved atrium overlooking the water, and located 700 readers' carrels in angular, intricately detailed wood tiers facing the view. The west façade of the building forms a straight edge along one street, while the angled east wall works with neighboring structures to frame a gateway to the river park. Glazed elevated walkways connect the library to adjacent buildings and to a parking structure. The existing master plan prescribed the use of brick as a major cladding material, along with tinted glass and dark anodized metal.



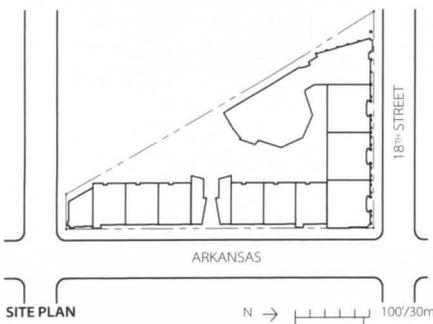
Photos: Balthazar Korab, Korab Hedrich Blessing



AXONOMETRIC

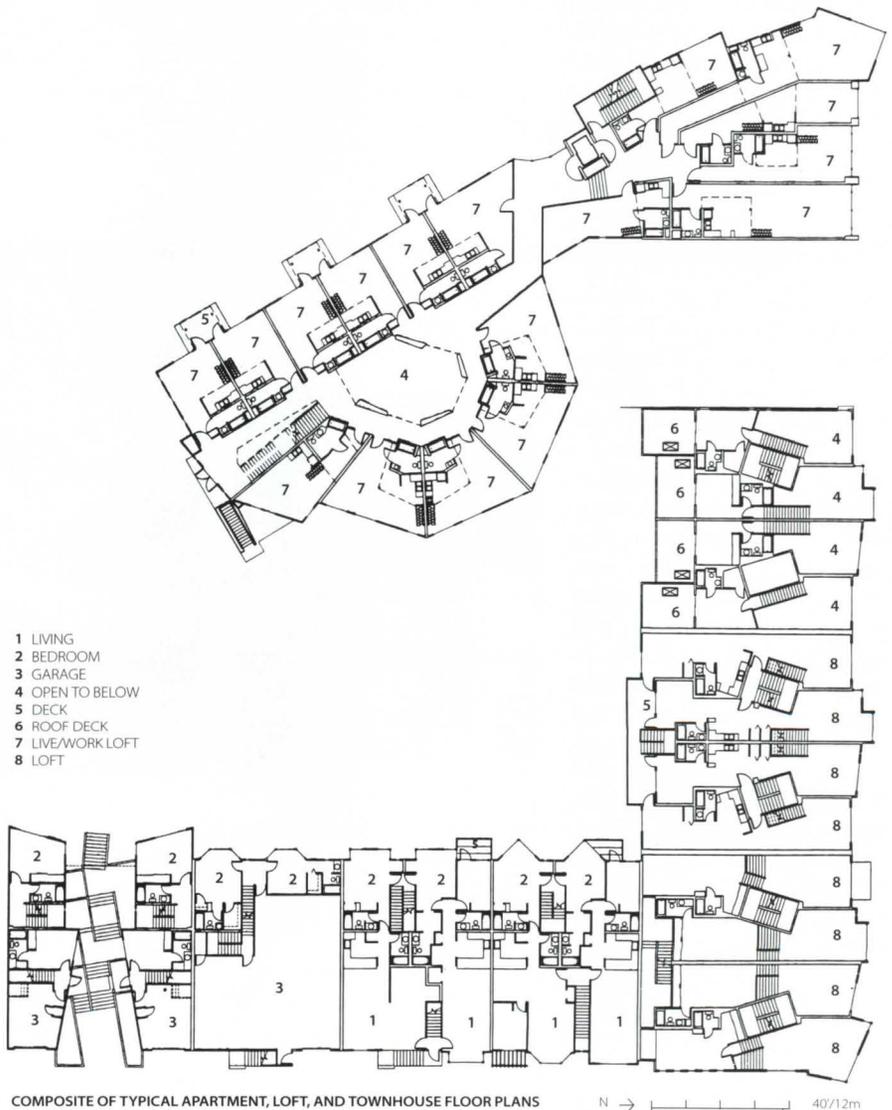


Photos © Tom Rider



An Affordable Place for Artists

David Baker Associates' live/work development at 18th and Arkansas in San Francisco, winner of a P/A Citation last January (p. 86), is nearing completion. Artists have begun to move into the 59 lofts, about half of which are subsidized. The lofts, with heights up to 16 feet, have varied floor plans and have both northern and southern exposures. The complex's subsidized portion, designed with Artspace Development Corporation and known as Goodman 2, centers on an atrium where artists can gather to coordinate activities. A storefront gallery with 20-foot ceilings provides a multipurpose performance space. There are other kinds of units as well: 11 townhouses, 24 flats, and one detached dwelling. The complex occupies the sloping triangular site of an abandoned railroad tunnel on Potrero Hill, and is broken into a dozen buildings of varying design, both to accommodate grade changes and to accentuate individuality. A landscaped courtyard is a shared amenity designed to reinforce the sense of community.

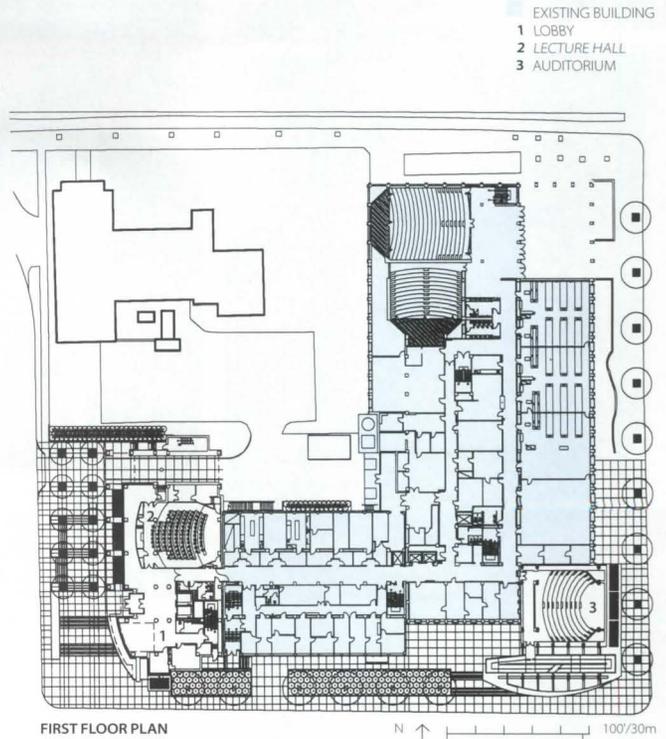


Anderson Illustration Associates



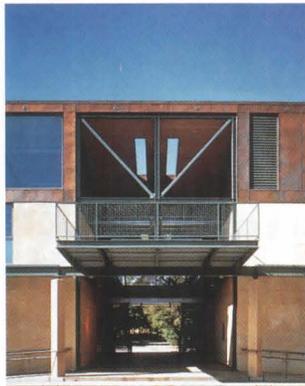
The Right Chemistry

As universities try to meet their science departments' needs for state-of-the-art laboratories, many of them face the question of how to organize the new facilities and adjoining older buildings into a coherent whole. At the University of Wisconsin, a new 90,000-square-foot research tower expansion of the Chemistry Department by Flad & Associates of Madison (in center left portion of illustration) relates to its neighboring 1960s buildings by using a curtain wall and precast cladding derived from them. A new 300-seat auditorium at the other end of the complex emphasizes the main entrance with a two-story atrium in the shape of an inverted cone. The strongly articulated tower, its bold scale based on 16-foot floor-to-floor heights, and the civic scale and placement of the auditorium introduce an expressiveness the earlier buildings lack. Flexible laboratories and state-of-the-art equipment will enhance the Department's standing in the field.

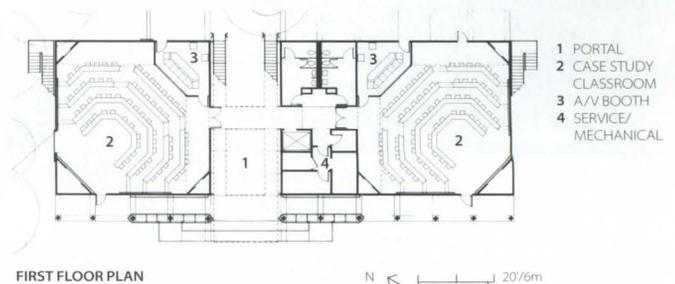


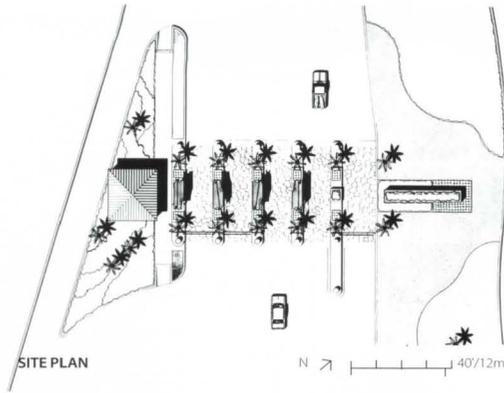
Product Development Center Cuts its Own Edge

The Charles B. Thornton Center for Engineering Management at Stanford University in Stanford, California, defines a strong edge for a new courtyard. Designed by Tanner Leddy Maytum Stacy Architects (TLMS) of San Francisco, the Thornton Center is a free-standing addition to a 20-year-old structure by Harry Weese. The new 12,000-square-foot building, which houses an interdisciplinary product development program, is designed in the spirit of Weese's earlier opus, with exposed steel trusses, sheet metal roof, exposed mechanical systems, and large expanses of glass. The building's north façade, which faces the new courtyard (by Peter Walker William Johnson & Partners), recalls other Stanford buildings, with a large central portal framing views of the courtyard. Inside, the Center's first floor contains lecture rooms, mechanical, and support spaces. The second floor, with its large, north-facing windows and deep roof trusses, holds loft-like labs, shops, and offices.



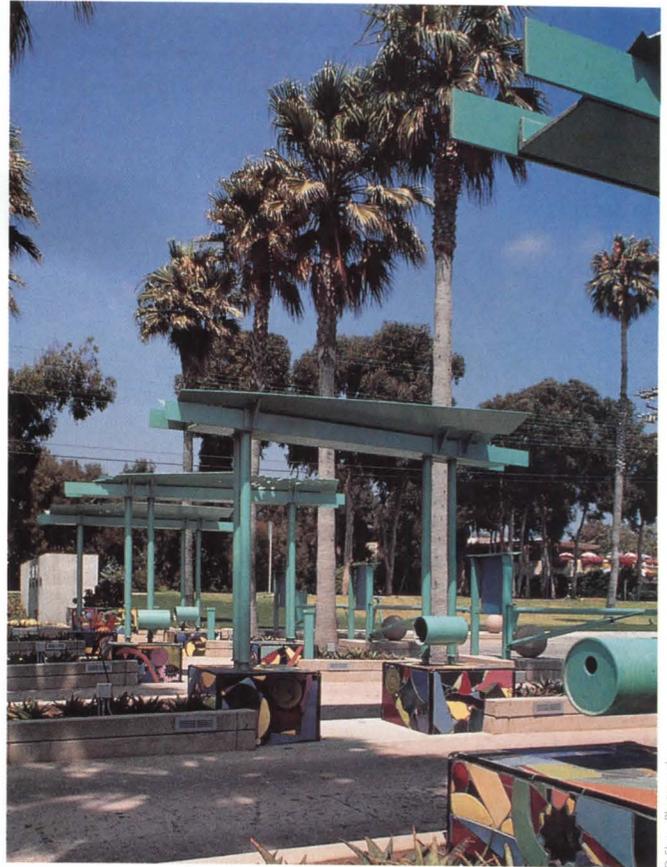
Photos: Richard Barnes



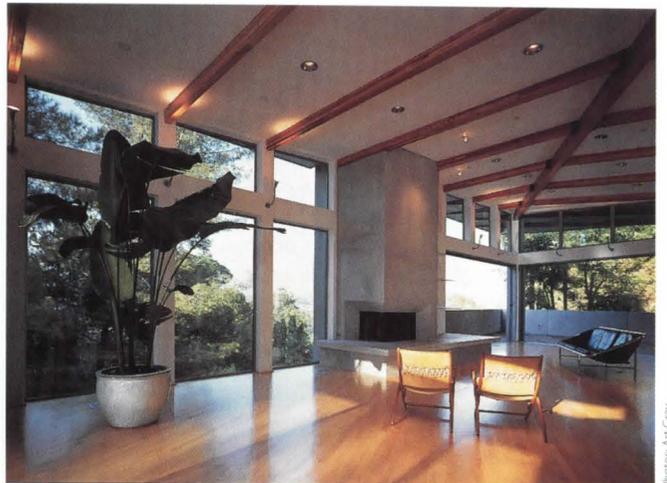


Keeper Gate

The newly refurbished entrance to Zuma County Beach in Malibu is part of a plan by the Los Angeles County Department of Beaches and Harbors to upgrade the services and infrastructure of the 19 beach properties owned by the county. As conceived by Gruen Associates of Los Angeles, the refurbishment was meant to reinterpret or evoke aspects of the beach familiar to locals since the 1950s. In arraying the car-entry gates, the architects, in collaboration with artist Marlow Bartels, sought to portray a dislocated architecture that would appear as though it had survived the onslaught of a tidal wave. The surfaces of the open-air cashiers' stations are clad with variegated ceramic tile mosaic. Individualized steel shade structures feature perforated, canted wings, meant to obstruct the ocean view minimally. The stations are set within a grid of palm trees, surrounded by a variety of indigenous plants such as aloes, sea lavender, and fescue grass.



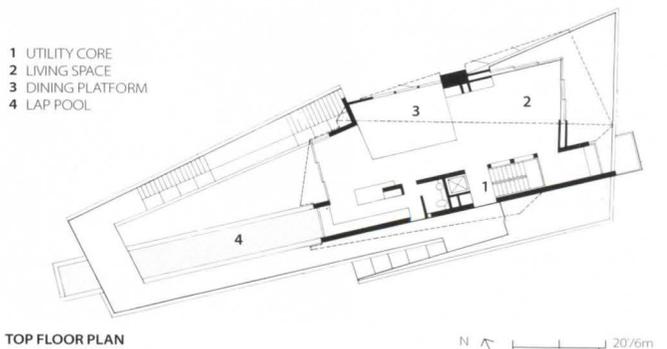
D. Stone Photography



Photos: Art Gray

A House with Backbone

Wishing to minimize the environmental impact of a 4,000-square-foot house in the Linda Vista area of Pasadena, designer Hagy Belzberg of BDS in Beverly Hills applied a strategy informed by Louis Kahn: situated on an unalterable slope between an upper and a lower street, the house's services are concentrated into a narrow, linear armature wedged into the hillside to function as a retaining wall; the served living areas adjoining the core are configured as a continuum of uninterrupted space. The residence's main living floor was sited below the upper street to diminish the house's profile on the site. The exterior wall treatments – unpainted, steel-troweled gray cement and white silica – are expected to discolor naturally, with no maintenance required.



TOP FLOOR PLAN

Betsy Consiglio



A Green Vineyard

Architect Kate Warner has formed a company, ReCraft East, on Martha's Vineyard, to demonstrate the use of resource-efficient products for the home. The first demonstration house uses recycled materials, such as fly ash from burned trash in the concrete, the staves of old beer barrels for cabinets, industrial glass for the tile, PET plastic for the carpet, and salvaged flooring and insulation. Just as important is the design of the house, which shows that a marketable and eminently livable three-bedroom home is possible within a 1,500-square-foot shell. It suggests that going green involves building less and living more compactly as much as it does choosing the right materials.



FIRST AND SECOND (TOP) FLOOR PLANS N ← 10/3m

A Little Broadway in L.A.

Ellerbe Becket's rehabilitation of the 2,000-seat Ahmanson Theater, one of three performing arts facilities at the Los Angeles County Music Center designed by Welton Becket in 1965, is a Modern interpretation of the splendor found in old Broadway houses. A rich color palette – deep hues of gold and purple – sets the tone for the project, which included the lobby, the house, and support facilities. A new curtain wall transformed the lobby from an opaque box into a transparent "vitrine," 70 feet high, that opens up views across the existing plaza to the drum-shaped Taper Forum. Although the redesign of the plaza by landscape architect Martha Schwartz is on hold a new entrance canopy enlivens the exterior space. The house, formerly a scaleless black box, has been completely reworked to create the "intimacy" of older Broadway theaters.

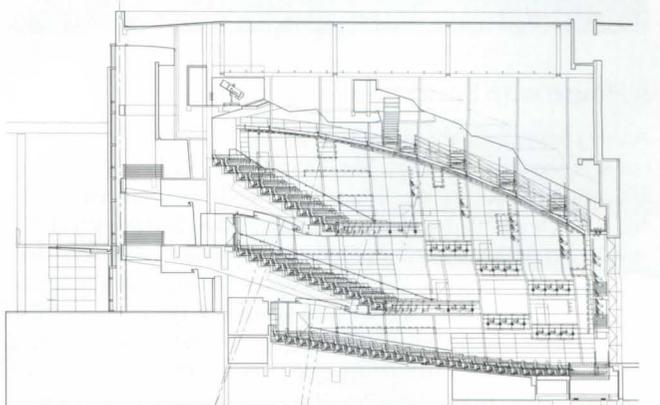
To this end, the architects pulled the rear and side walls in several feet; added seats to the balcony and mezzanine; installed a new ceiling (a "great chandelier" with dimmable colored lights and perforated metal panels) below the existing one; and added a movable partition, which allows the house to run at a capacity of 1,400.



Adrian Velicescu



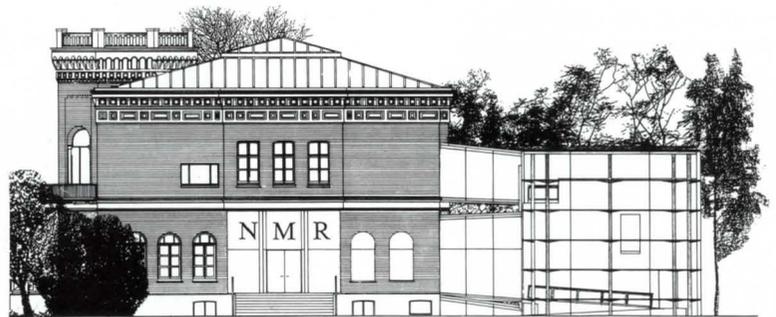
Richard Kuhn



SECTION 20/6m



Photos: © Christian Richters

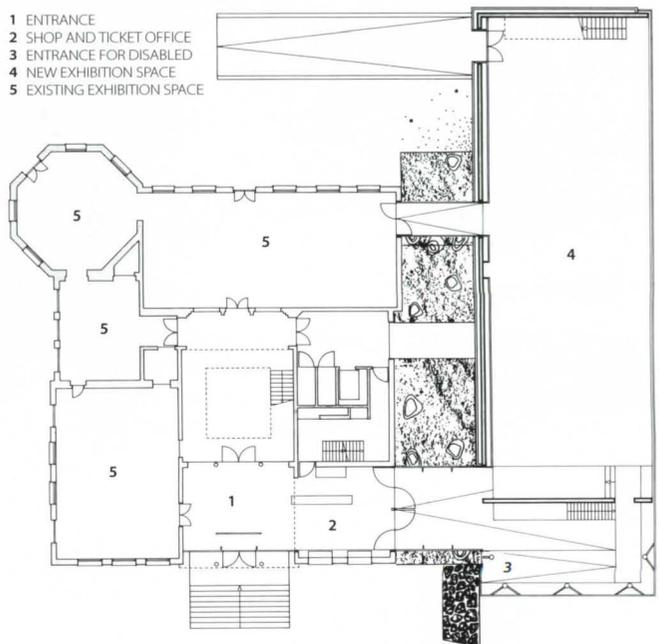


EAST ELEVATION

Museum in a Glass Case

This addition to Rotterdam's Natural History Museum makes a subtle play on the idea of display. Designed by Dutch architect Erick van Egeraat and his firm EEA, the addition is a minimally detailed glass box attached via glazed corridors to the existing brick-clad building, the two of them placed side-by-side like museum specimens from different eras. The addition itself carries the idea of display even further. The exhibition space, for example, occupies a concrete box that sits within the glazed pavilion like an object in a glass case. The building's glass cladding, laid over an exposed steel skeleton, may be likened to the "missing" skin on the prehistoric bones of the museum's collection.

Natural history museums, however, also represent a respectful attitude toward the past and toward nature. The addition's minimal detailing, its screenlike curtain-wall, its openness to the surrounding trees all make it recede next to its historic neighbor and disappear into its parklike setting. Modern architecture has long been castigated for being unresponsive to context, but this addition reveals another side of Modernism, one that follows the good curatorial practice of restraint.



GROUND FLOOR PLAN

N → 1/20/6m



Seating by Citterio

Introduced by B&B Italia is the Harry and Florence seating collection designed by Italian architect Antonio Citterio. The Harry sofa (shown above), incorporating a movable chaise longue at one end, is available in

two lengths. The Florence armchair, which has sloping arms to contrast with Harry's square profile, is available in two versions and with an optional footrest. Circle **100** on reader service card



Fiber Optic Landscape Lighting

Fiberstars introduces its FiberScape™ series of landscape fixtures. The fiber optic system uses a U.L.-certified remote illuminator that houses a 150-watt high-intensity discharge lamp or a 250-watt quartz halogen lamp. The fixtures can be linked to a single illuminator with Fiberstars FSPT fiber optic opaque tubing. Model FS-410 cast-aluminum step fixture (shown above) is one of six models in the series. Circle **101** on reader service card



Copper Laminates

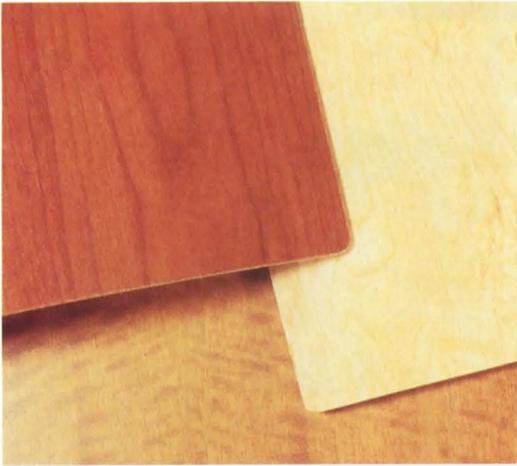
Advanced Technology uses acid etching, hand painting, embossing, and lacquering techniques to create its Art

Copper metallic laminates. The laminate product comes in 4' x 8' phenolic-backed copper sheets. Circle **102** on reader service card



Wall-Mounted Lighting

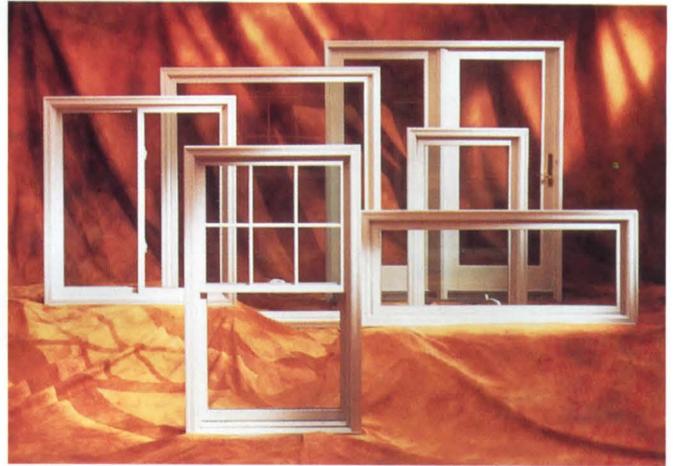
Wall Forms™ wall-mounted luminaires are available from Kim Lighting. The fixtures, made of heavy die-cast aluminum, are available in full-face, half-face, cutoff-face, and shallow cutoff-face configurations. They take metal halide, high-pressure sodium, incandescent, halogen, or fluorescent light sources, and can be surface-mounted or recessed. Circle **103** on reader service card



Three New Laminates

Three laminates have been added to Laminart's Premium Veneer Prints collection. They are: Figured Satinwood, a reddish-brown finish; Karelian Burl, a "teardrop" design; and Regency Cherry, an American Cherry finish with a subtle grain. The laminates have long, vertical repeats and are available with gloss and textured finishes.

Circle **104** on reader service card



Replacement Windows

Andersen announces its Renewal family of custom replacement windows and patio doors for residential applications. The products are constructed of Fibrex™, a structural composite

material made from wood and vinyl reclaimed from the Andersen manufacturing process.

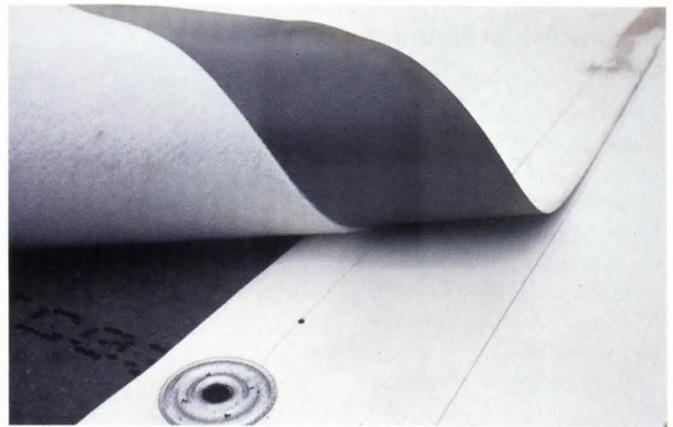
Circle **105** on reader service card



Motorized Awnings

The Somfy-Matic™ II retractable awning system is available from Somfy Systems. The system works manually or automatically (sun and wind sensors activate the motor to roll out or retract the awnings). The motor is concealed within the roller tube of the awning. The Somfy-Matic™ II system can be used in both residential and commercial renovations and in new construction. Control units for outdoor mounting and a hand-held remote control are available.

Circle **106** on reader service card



Roof Repair System

HPG PLUS, a fleece-backed roofing membrane, is available from HPG International. The product covers minor imperfections, ridges, or splits in existing roof systems. HPG PLUS can be used in mechanically fastened applications over smooth-surfaced or cap-sheet

roofs or in adhered applications over lightweight and structural concrete. When hot-air welded, the HPG PLUS membrane "provides a permanent, continuous moisture barrier," according to the manufacturer.

Circle **107** on reader service card

Masonry Report

The Concrete Reinforcing Steel Institute announces the availability of its "Engineering Data Report on Reinforced Masonry." Frequently asked questions regarding concrete masonry construction are addressed in a question-and-answer format. Included in the report are: different types of concrete masonry units used in reinforced masonry; pilaster units; and sample placing drawings of reinforcement for high-lift and low-lift grouted walls. Circle **108** on reader service card

Roofing Specs, Details

The 1995 Specifications and Details Binder is now available from TAMKO. It includes TAMKO commercial roofing specifications; product information on TAMKO's SBS-modified and BUR roofing products; and detail drawings. Circle **109** on reader service card

Antimicrobial Flooring

Antimicrobial resin flooring for the protection of concrete floors is available from Silikal® for applications requiring strict standards of hygiene and sanitation. The system uses Microban®, a chemical formulation that provides control of bacteria, mold, yeast, fungi, and associated staining and odors. Circle **110** on reader service card

CSI Directory

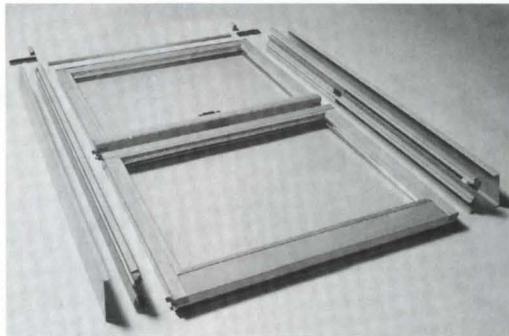
The 1995-96 Construction Specifications Institute's (CSI) Services and Publications Directory is available. The directory lists technical documents, educational materials, and programs developed by CSI. A new Construction Contract Administration module provides information on interpreting, administering, and enforcing the terms of a construction contract. Circle **111** on reader service card



Door Hardware

HEWI introduces a line of lever handle designs for residential and light-commercial applications. The lever handles are made of nylon and are packaged with HEWI's passage and privacy

latches. The latches are sold in two backsets and adjust for door thicknesses from 1³/₈" to 1³/₄". Levers are available in red, gray, olive-brown, white, and black. Circle **112** on reader service card



Double-Hung Window Renovation Kits

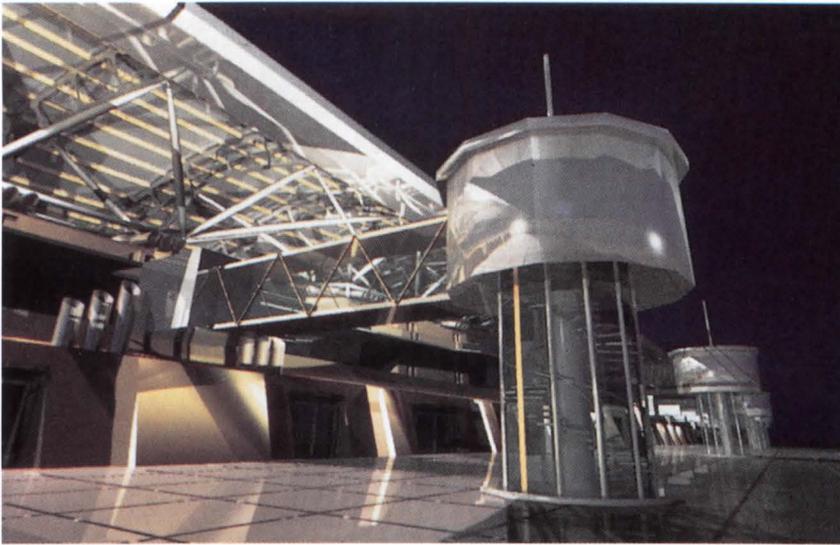
The Reno-Pak Window Sash Replacement Kit is available from Loewen. The kit is designed to replace double-hung window sashes without having to replace the entire window. Reno-Pak sashes have a full-length vinyl retainer system designed to improve the efficiency of the window's air seal. Circle **113** on reader service card



Acrylic-Coated Duct Board

EnDuraCoat™ duct board is available from Owens-Corning and can be used with commercial and residential HVAC duct systems. EnDuraCoat™ is a resin-bonded glass fiberboard with a flame-retardant, reinforced aluminum foil facing. It complies with applicable ASHRAE and National Fire Production Association standards and is available in 1"- and 1¹/₂"-thick forms. Circle **114** on reader service card

Computer Products

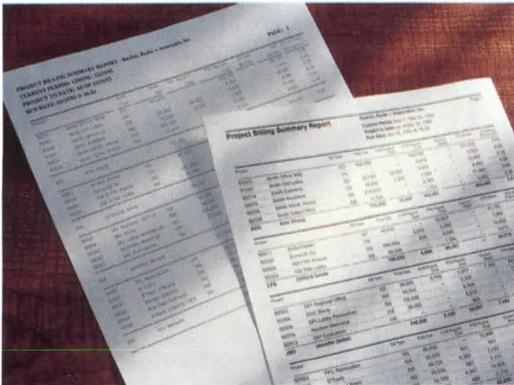


Full-Service CAD

ALLPLAN, from the German-based company Nemetshek, is popular in Europe and is now available in North America. Fully integrated 2D and 3D capabilities allow drawings to be constructed rapidly and changes to be made globally. Real-time animation,

parametric detailing, solids modeling, and automatic roof generation are other features of this software, which its developers describe as "not a CAD package, but a building-design system."

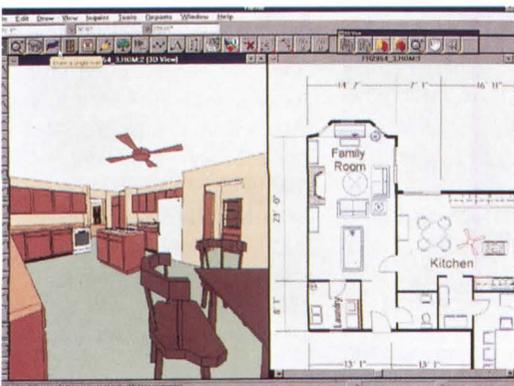
Circle 115 on reader service card



Project Management Software

Complete financial and project management reports can be generated by Sema4 for Windows. Project summaries, time analysis, consultant tracking, project budget, and annual income statements are some of the software's capabilities in creating customizable and pre-formatted reports.

Circle 116 on reader service card



Residential Design Software

Softdesk has announced a new version of its Planix 3D Home Architect, a residential design software package. Enabling users to look simultaneously at 2D and 3D views of a house, the new version of the Windows-based software contains a symbol palette and a bonus CD-ROM of 500 home designs by Home Planners, Inc.

Circle 117 on reader service card

Graphic Tablets

CalComp has introduced DrawingSlate II, a family of thin, low-cost, lightweight graphics tablets for Sun workstations. With a 6"x9" active surface, the tablet is only 1/4" thick, weighs 1.5 pounds, and costs \$280. The small size of the tablet allows it to be easily transported, stored, and used on laptops.

Circle 118 on reader service card

High-Design PCs

Lunar Design has designed the HP Pavilion PC family of home computers for Hewlett-Packard. The computers have minimal details, "soft sculptural forms," and ergonomically designed controls that limit the accidental triggering of functions.

Circle 119 on reader service card

Plotter/Scanner/Copier

Océ-Bruning has enhanced its Océ 9500-S Series of "E"-size plain-paper plotters/scanners/copiers. PostScript level II, Versatec connectivity, and on-line documentation are three new features of the fast, versatile machines. The enhancements provide designers with large-format graphics capabilities.

Circle 120 on reader service card

CAD Details Library

More than 500 architectural details, copied from the accurate and reliable drawings of experienced professionals are now available for \$450 on hardcopy or in CAD files from Architectural Design & Technology. The details have been extensively reviewed for code compliance.

Circle 121 on reader service card

Printing Software

Insight Development has announced a Windows version of RenderPrint software, which simplifies and enhances the printing of large raster images. A preview feature allows users to see how the final output will look on the screen before it is printed. Circle 122 on reader service card

Engineered Lumber Software

Georgia-Pacific offers FASTBeam, a program that lets users select or analyze GP's engineered wood products according to design criteria, and FASTPlan, a computer-assisted drafting program that eases the drawing of accurate, detailed framing layouts and the generation of materials lists.

Circle 123 on reader service card

Real-Time Visualization

IBM has introduced a new version of its 3D Interaction Accelerator™, a virtual reality visualization system. 3DIX Release 2.0 has a "virtual camera" that lets users manipulate complex CAD models in real-time. A multi-user review system also lets design-team members review CAD models remotely.

Circle 124 on reader service card

Translating Raster to Vector Images

IDEAL Scanners and Systems has released I/Vector 3.2, a 32-bit translator that converts scanned raster images to vector DXF files without the use of a CAD operator. All functions of this parameter-driven software are user defined. One can, for example, view vector results as an overlay on the raster original to verify accuracy.

Circle 125 on reader service card



Desktop Video Conferencing

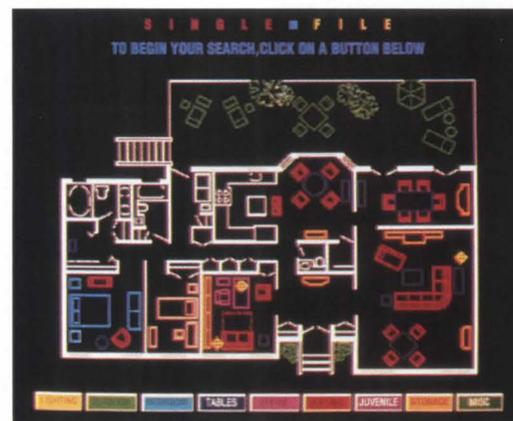
AT & T's Vistium™ Personal Video System uses video technology and computers to link people working on distant projects. Users can share almost any Windows-based software and, by

adding a computer board, a camera, and an ISDN phone for a cost of between \$2,800 to \$7,000, can save the cost of traveling to job sites or consultants' offices. Circle 126 on reader service card



Software for Students and Faculty

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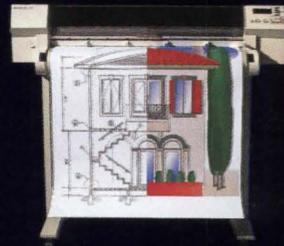


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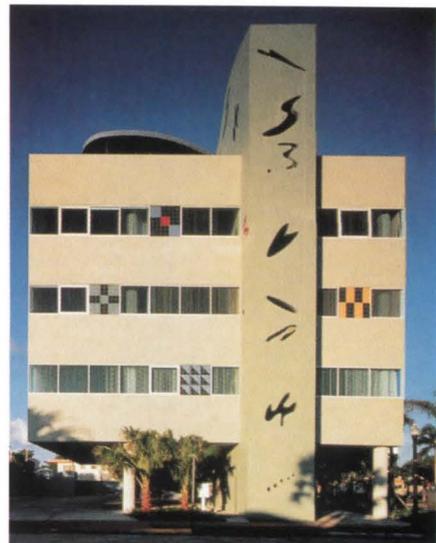
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Miami Beach Booms Again

In the old resort's South Beach, buildings are fashion statements and an architect can be promoted like a movie star. *by Peter Whoriskey*



Michael Graves Architect



Dan Forer

Graves's model (left) shows the four-story Bancroft Hotel, a two-story retail addition, and a condo tower. Arquitectonica's new headquarters (above).

The success of the South Beach district of Miami Beach over the past decade has grown out of the dreams and toil of countless small-scale entrepreneurs. Café owners, fashion impresarios, and club kids have transformed block after block of dilapidated Art Deco hotels into the epicenter of South Florida chic.

The next phase will be different. Big money – hundreds of millions of dollars – and big names – Michael Graves, Arata Isozaki, Arquitectonica, Philippe Starck – have entered the scene. Isozaki is designing an addition that will triple the size of the Bass Museum, now a 14,000-square-foot Mayan Deco building from 1930. Arquitectonica has completed a new headquarters for itself, and has under construction a 200,000-square-foot parking and retail building. Parisian provocateur Starck has finished a refurbishment of the Delano Hotel from 1947.

The city's economic vitality is stimulating plans for construction on a scale vastly greater than that of the historic hotels, many of which are just two and three stories tall. Among the projects on the boards are a 15-story condo and retail project designed by Graves, an 830-

room convention center hotel by John Nichols, and a cluster of six waterfront condo highrises to be master-planned by Sasaki Associates. Politicians, architects, and residents, all of whom realize that tourists prefer charming, human-scale settings, are looking at the mammoth new scale and asking: Can bigness be charming, too? Can it complement a historic district that is listed on the National Register?

Designer Hype

The most prominent project is Graves's, not just because it will sit at the top of Ocean Drive, the fabled beachfront strip of cafés and clubs, but because the project's publicists are aiming, as they put it, to "make Michael Graves a movie star." A smiling image of the architect, sweater draped suavely over his shoulders, stares at Miamians from billboards, bus posters, and newspaper ads. Radio spots put the Princeton designer in the same league as Frank Lloyd Wright. Pamphlets exhort readers to "own a Michael Graves original."

Certainly Graves got an important site: a narrow 2.5-acre rectangle that stretches from Collins Avenue to the beach and terminates the view up Ocean Drive. His job was complicated by the city's request that he preserve

the four-story Bancroft Hotel, a 1939 relic occupying part of the property. Graves divided the project into three pieces. First, the rooms of the Bancroft Hotel will be converted to retailing. Second, a new two-story retail building will wrap around a rectangular public plaza punctuating the view up Ocean Drive. Finally, on the beach side, Graves has sketched 12 stories of condos rising above a three-story pedestal of parking and communal space.

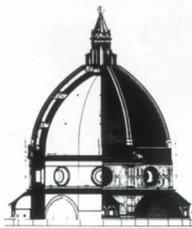
The condo tower, colorful in blue, yellow, and salmon, is a blend of Classicism and whimsy, with a beach façade that looks like the prow of a ship and with a circular arrangement of columns at the building's top. Graves's original drawings called for arched windows on the rooms nearest the beach, but views sell condos, so the architect was forced to scrap that plan and provide floor-to-ceiling glass – though not without complaining. "How," Graves asked, "can you articulate something if it's all glass?"

Let's Mess With Success

Just a block from the condo site lies Lincoln Road, a street of eclectic shops and cafés that has been transformed in recent years from a low-rent, low-occupancy disaster into a place so pop- *(continued on next page)*

Peter Whoriskey writes on architecture for The Miami Herald.

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Essays, images, discussions, and extracts have been published by: Peter Rowe, Thomas Fisher, Jorge Silvetti, Rem Koolhaas, K. Michael Hays, George Baird, Peter Eisenman, Mohsen Mostafavi, Michael Graves, I. M. Pei, Philip Johnson, Peter Davey, Leo Marx, Richard Sennett, Alex Krieger, Eduard Sekler, Martha Schwartz, David Harvey, John Stilgoe, Henry Cobb, Nathan Glazer, Laurie Olin, Denise Scott Brown, Robert Campbell, Moshe Safdie, and many more.

This large tabloid-format magazine is published in September, February and June of each year. Issues average sixty-four pages in length (with little or no advertising) and three images per page.

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Reports

Miami Beach (continued from previous page)



Thomas Delbeck, Courtesy Carlos Zapata Design Studio

A jutting information kiosk by Carlos Zapata will anchor the east end of the Lincoln Road pedestrian mall.

ular that when city leaders announced a \$16.2-million-design makeover of Lincoln Road, some residents wanted to know: Why mess with success? A team led by Ben Wood of Thompson and Wood was chosen for the job, and skeptics at first feared that the area's cherished eccentricity would be smothered. But Wood says he has been "trying to step away from the aesthetics of consumption" and has aimed in South Beach for "a design that allows for more spontaneity."

Plans now under construction lean toward the playful and peculiar, a consequence in part of the team's hiring two other architects - Carlos Zapata of Miami Beach and Hiroshi Hara of Tokyo, plus landscape architect Martha Schwartz - to design pieces of the project. One block will be planted with 20 towering date palms equipped with misters to create a surrounding fog; passersby will be spritzed like fruits in a produce department. Elsewhere, five linear pools, each 80 feet long, will be divided by jungle plantings, forming a barrier that can be crossed only by using stepping stones. An information kiosk by Zapata will have a freestanding wall of glass jutting from its back; it will be bathed in a curtain of running water and will serve as a screen for projected images, possibly of tropical fish.

The most imposing project is slated for the very tip of South Beach, just outside the historic district, in South Pointe. An arbitrage daredevil from Germany, Thomas Kramer, has bought a huge swath of waterfront property wrapping from the bay to the ocean. Kramer's organization, the Portofino Group, is planning about 4.5 million square feet of condos, shops, and restaurants, including at least six highrises. For residents, planners and city leaders, the question has become: Can we prevent another Condo Canyon?

A complex and massive land deal between Kramer and the city, which at this writing is on the verge of winning the City Commission's approval, would impose architectural guidelines on the development. Negotiated by Sasaki Associates on behalf of Kramer, and by Elizabeth Plater-Zyberk for the city, the guidelines are supposed to prevent the kind of exclusive, automobile-based, beach-blocking design that many Floridians have come to loathe. The guidelines call for sidewalks lined with shops, condo front entrances at sidewalk level, view corridors between buildings, and a 50-foot baywalk for public access. The guidelines are nearly silent on the size and orientation of the condo towers, but Plater-Zyberk says the results will be "a lot better than if we had no design guidelines at all."

Sure. But with a development as big as this, and with the proposed deal leaving open the possibility that the new buildings could hang like curtains across the bayfront, the effort to reform Condo Canyon seems no more than half complete. South Beach has yet to come to terms with all the problems bigness will bring. □

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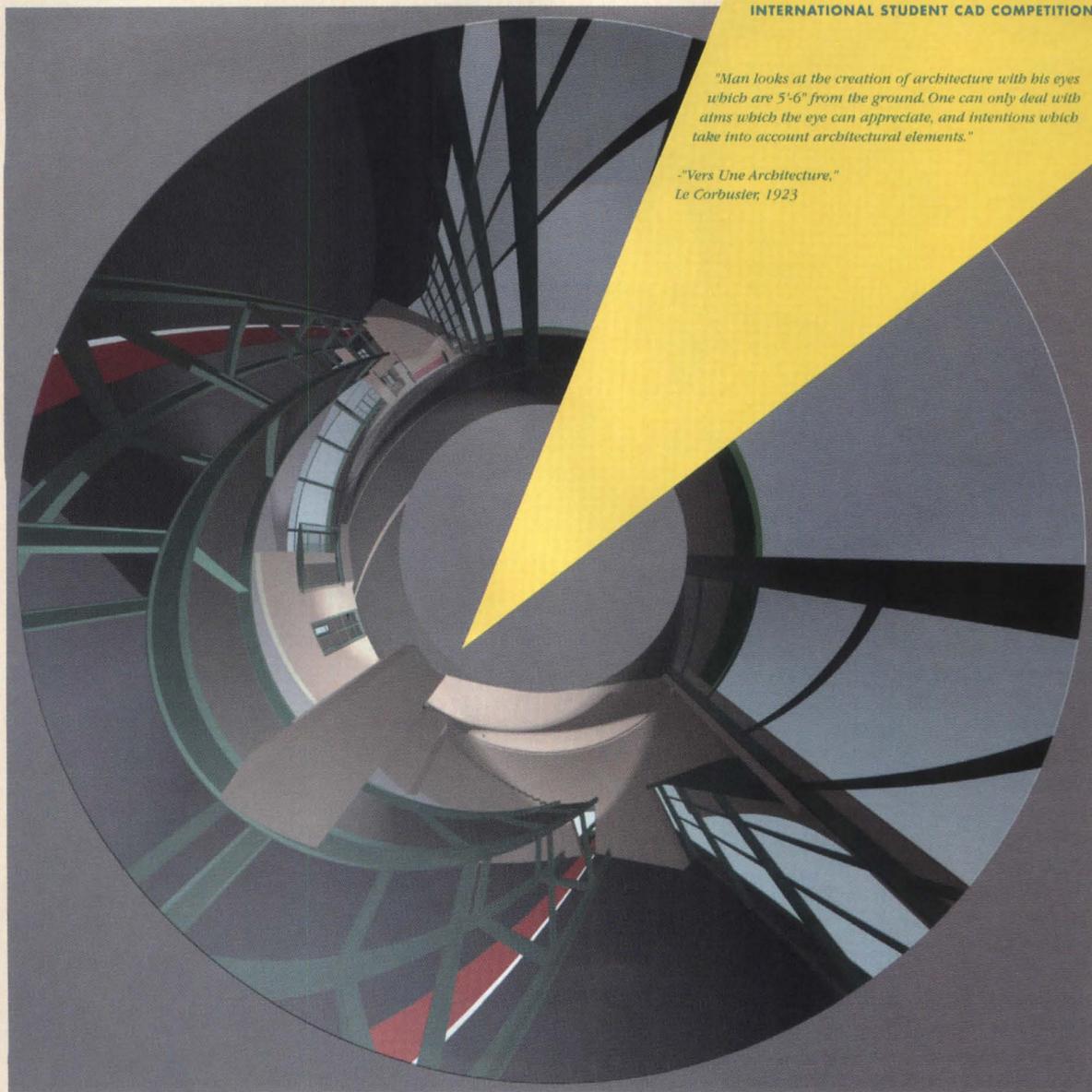
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- NEWTON FROM THE PROJECT BY E.L. BOULLEE • THE HANGING GARDENS OF BABYLON • THE STODDARD TEMPLE FROM AYN RAND'S THE FOUNTAINHEAD • THE DEPARTMENT STORE (GRAND MAGASIN) FROM EMILE ZOLA'S LADIES PARADISE (AU BONHEUR DES DAMES) • HOTEL CALIFORNIA FROM "HOTEL CALIFORNIA" BY THE EAGLES.

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Britain Builds a Dinosaur

The new British Library, three decades in the making, is a classic example of how not to carry out a public project.

by Daralice D. Boles

Now nearing completion at St. Pancras, London, the new British Library claims the dubious distinction of costing more in time and money than any other building in the history of British public expenditure. In the 30 years since its inception, the project has passed beyond the bounds of mere infamy into a kind of twilight zone of public and political disregard. No one can say just how much the new national library has cost – though estimates exceed 450 million pounds (\$756 million) – or just when it will open. In fact, phase one of the library was finished in October, inspected, and sealed off; the library administration refuses to move in until the entire building is completed sometime late next year.

The librarians' hesitation is in some ways understandable: they are inheriting a building that time has passed by. Since 1964, when architect Colin St. John Wilson presented his first design for a single national library building, the nature of library science has changed. The growth of on-line information access means that in many subjects, the computer has replaced the central library, whose function is now more akin to that of a museum. The very idea of consolidating 150 million items on one site seems somehow quaint today, while new cuts in funds at the local level, along with the pending closure of 42 branch libraries in Britain, have led some critics to suggest that the money might have been better spent serving a broader public.

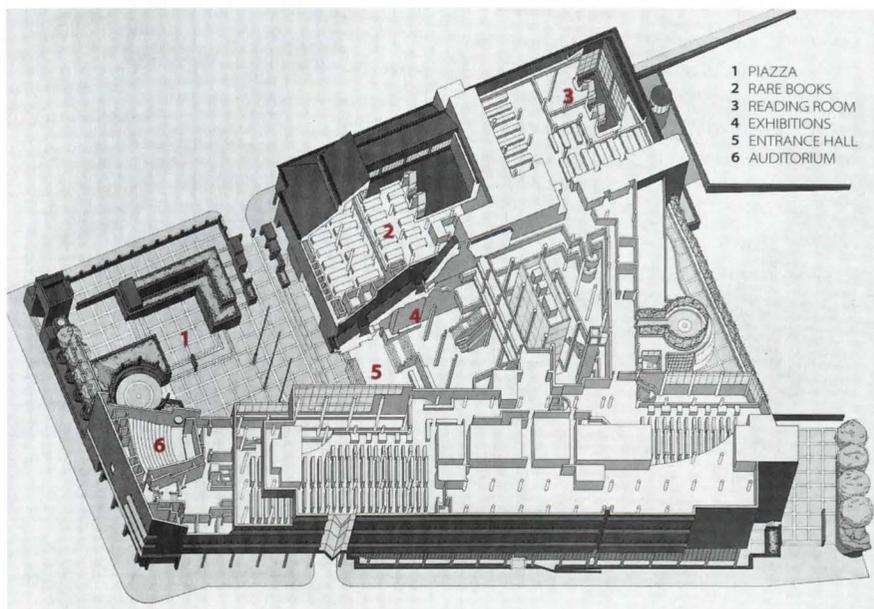
A Pared-Down Program

It is apparent, moreover, that the building, which was intended to provide for all of the library's present and future needs, does neither. The original program called for 3,500 reader seats and shelf space for an existing collection of 18 million volumes now scattered on 18 sites throughout London, with on-site expansion space for up to 25 million books. The new building supplies only 1,176 seats (just 76 more than in existing library facilities) and storage for only 11 million books – this for a collection that grows at the rate of five miles of shelf space a year. Phases two and three of the project have been *(continued on the next page)*

Daralice D. Boles, a former P/A senior editor, is a P/A correspondent in England.



Richard Davies



The new British Library by Colin St. John Wilson has a piazza on top of four levels of underground stacks. The axonometric shows its organization.

(continued from page 14) developed for cutting and shaping hard industrial steel parts, such as aircraft parts. Using these machines to cut and shape light and thin architectural model parts is like commuting between office and home in a tractor-trailer.

The most relevant aspect of lasers for model makers is precision cutting. And there are many companies which specialize in this trade and to which makers outsource their pieces. I venture to say that model making will never *have* a cutting edge but will surely always seek the most precisely cut edges.

Mr. Champlin declares "the way we design and construct buildings may begin to look like the methods by which we make models" due to the new technology. Quite frankly, this is hogwash. New York-based SOM was the first architectural firm to acquire in-house laser-cutting machines. This firm has used these machines on a daily basis for design and model-making applications for over a decade. These architects, therefore, are qualified to comment on the "impact on design" of the new technology. Furthermore, the impact of model making, regardless of the technology, has always been a factor in relationship to the commissioning architect's design concept. On the one hand, potential and/or real problems in certain design concepts can be revealed to the architect through the model making process and thus can be resolved prior to construction of the real building. On the other hand, some problems which the model maker must solve in creating a model have little or no bearing on the real building.

In all fairness, Mr. Fisher should have cast his net a little wider, to other model makers and their architect clients for feedback on their common concerns. It is time for the architectural press to produce some in-depth and serious coverage of model makers and to spare us superficial and wobbly pieces. It is also time for model makers who contribute in a significant and often "invisible" way to the architectural community to be given some consideration – in both meanings of the word – and by those who intend to report on its issues and concerns.

Richard Tenguerian, President
Tenguerian Models
New York

Author responds: Mr. Tenguerian does a good job misreading my article. I never said that computers make one a professional or just "an assembler." Nor did I ever claim that CAD/CAM is new or that Champlin was the only model maker using it, although I stand behind my claim (not Champlin's) that CAD/CAM will begin to affect building construction. A broad survey of model makers would make a good article that we should consider, but that doesn't negate the value of looking at one person's practice.

CORRECTIONS

Oakland Plaza by Lee/Pyatok

In *Projects* (P/A, Sep. 1995, p. 26) our text on Oakland's new government center should have included credits for the central plaza design, which was the winning entry by Y.H. Lee Associates, and Michael Pyatok, both of Oakland, in a 1985 competition.

Wrapped Reichstag Photo

The photograph of the Reichstag in *News* (P/A, August 1995, p. 27) should have been credited to Marius A. Ronnett.

Perspective Credit

The bird's-eye perspective of a domed sports and entertainment center in Saitama Prefecture, Japan, (P/A, Sep. 1995, p. 26) should have been credited to illustrator Gilbert Gorski. □

British Library (continued from previous page)

officially abandoned, and with them, certain library functions, like the all-important bindery, which must make do with existing off-site facilities. Thus neither the goal of consolidation nor that of planning for future expansion has been met. A building that was intended to open in 1990 at a cost of 116 million pounds is now limping to the finish six years late at four times the price.

How did so significant a public project drift so far off course? The library blames the government, which has passed the project from agency to agency and has financed it (or not) in a stop-go system of yearly allocations. The government blames the library for constant and costly changes during construction. As late as 1990 the National Audit Office found that "uncertainties about the final design of the building" had contributed to massive cost overruns. An awkward system of separate contracts with the various trades meant the first construction manager had no incentive to finish on time or on budget; indeed, from 1978 to 1988 there was no budget at all. Finally, phased construction, touted as a means to save money, has cost more, not less. For example, a central plant constructed for a severely pared-down design during the Thatcher years had to be demolished and moved to accommodate the larger design now being built.

And then there are the many mechanical problems, from faulty shelving that allowed books to "creep," to rusty sprinkler heads, to low-voltage cables damaged, claimed the library, during installation. (The contractor blamed change orders.) The legal disputes relating to these issues will keep the project alive long after the last construction worker leaves. Satisfaction is unlikely, given the age of the project. "We are not turning over a new building," admits architect John Honer of Colin St. John Wilson & Partners.

A Dated Design

The passage of time has significance in architectural terms as well. The library, even unfinished, still has the feel of a 1970s design. This is a classic Late Modern building designed from the inside out, with the minimal strengths and significant weaknesses of that approach. Outside, it is superficially contextual, the bulk of the complex set back from the street behind and beneath a Lawrence Halprin-style plaza so as not to compete with the Neo-Gothic St. Pancras railway station next door, whose brick cladding the Library attempts to match. Its size makes a mockery of this modesty, which is itself inappropriate for a public building of this importance.

But, as is typical of so much of its era, the library is far more successful inside than out. Even unfinished, the interiors demonstrate a deft use of natural light, secure handling of admittedly costly building materials and finishes, and introduction of a sophisticated environmental system that should extend book life fourfold.

These accomplishments are lost on the many readers who would rather remain in the library's 1857 Round Reading Room at the British Museum, one of London's great interiors. Nor are such subtle achievements respected by the Prince of Wales, who has likened the Library to "an academy for secret policemen."

Neither the library nor the government appears to have learned from the ordeal. The library has yet to devise a plan for moving its 11 million books, and it has not decided what uses will be found for some rooms in the completed building. The government is now pursuing a short-sighted plan to recoup some of its losses by selling off five acres at the north end of the library site, leaving no room for expansion. It is unlikely that any government report will ever get to the bottom of a mess in which government incompetence plays so large a part. That task will be left to independent researchers mining materials from the shelves of the very building they critique. □



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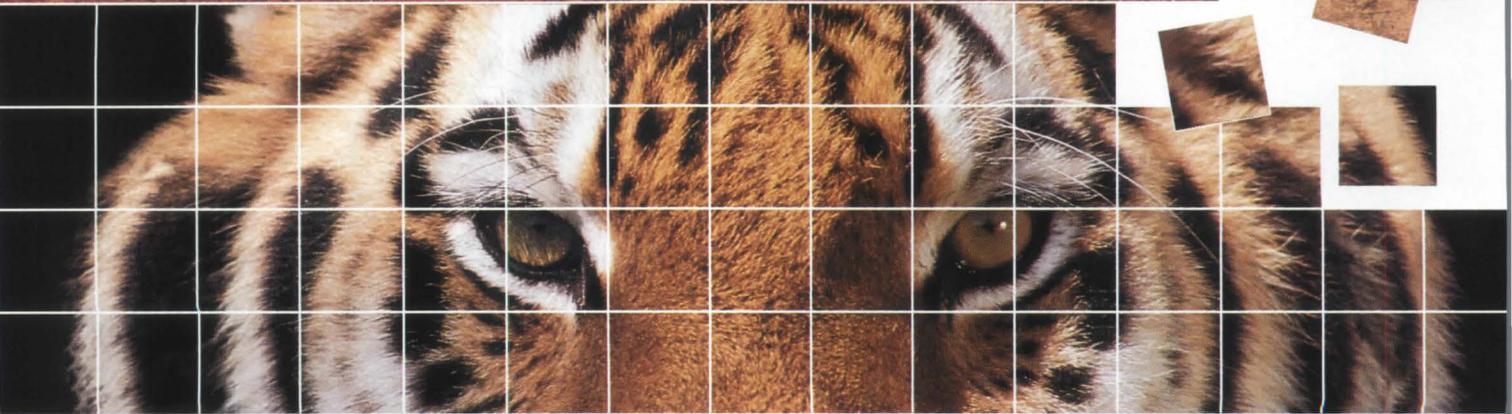
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Women in Architecture: Leveling the Playing Field

The profession opened its doors to women years ago, but failed to toss out its exclusionary practices.
A new inclusionary game plan is the key to the profession's survival in a changed world.

by Abby Bussel

When the April 1994 issue of *Blueprint* arrived, I saw the status of women architects illustrated in four-color: The cover story was about emerging talent in London, but the cover line, "All the Young Dudes," was laid over a photograph of 23 men – not a woman in sight. I was appalled by the message the magazine sent, a message its editors noted – subsequently and apologetically – was inadvertent. The women they had found, explained the editors in a published response to a slew of irate letters (including my own), did not meet the criteria set for the article.

If *Blueprint's* search for young talent didn't turn up any suitable women, was it a lack of effort or a dismal account of the status quo? Either way, the subject of gender must still be addressed by the press (*Blueprint* is not the only laggard; P/A and the others could be more proactive on this count) and by the profession. This despite what some believe is a satisfactory *fait accompli*: women are already here.

But having a presence is not enough. It's like making the team, but spending the whole season on the bench. Bridging the gender gap in architecture is not only the right thing to do, but the only thing to do if the profession is to survive in our increasingly diverse society. "If we don't," contends Linda Groat, an associate professor of architecture at the University of Michigan, "we will remain isolated and esoteric." Giving everyone equal time on a level playing field is a way for this profession to avoid marginalization.

The Status Quo

This is not to say that women aren't making headway in the profession. Their numbers are rising steadily in the architecture schools (currently one-third the total number of undergraduates and graduates). And women-owned firms are more common than they were 20 years ago. But women make up only

9.1 percent of the AIA's regular membership and the day-to-day experience in education and in practice is still strewn with the same old obstacles.

"We're seen as women first, architects second," says a sole practitioner in California. A common misconception in the profession is that women want special treatment. But "what we want is equal treatment" says a firm partner in San Francisco, offering this example of the problem: when she is approached by a potential client, it's often for an interiors job, but when her male partner is approached, the client wants a building.

The scarcity of women practitioners feeds the public's assumption that all architects are men, and makes life tougher for those women who are in the field. The dearth of women colleagues and mentors, for example, is expressed by a project architect reflecting on her experience in a now-defunct branch of a well-known firm: "At age 30, I should not [have been] the woman in the office with the most architecture experience." Unfair promotion practices as well as pay inequity are common frustrations. Says one 38-year-old sole practitioner, "I was the most senior woman in an office of 120 people, with only ten years of experience. Two months after I began, they hired a guy with about eight years of experience, told me he was my equal in terms of position, and paid him \$12,000 a year more than me."

Opportunities to gain experience also come less frequently to women. A 37-year-old architect, now an owner/principal, wrote to us about "... being given only drafting duties well after professional registration, while project architect duties and responsibilities were given to unregistered male employees with far less experience." The same respondent also decried illegal hiring practices, such as being asked "questions during interviews regarding whether I had children, was going to have children, etc."



The scarcity of women practitioners feeds the public's assumption that all architects are men, and makes life tougher for those women who are in the field.

Discriminatory and sexist behavior also plagues women outside the office, where they confront societal preconceptions of ability and position. On arrival at a client's office for a design development meeting, a 27-year-old licensed architect was asked: "Are you the interior decorator?" While running a construction meeting, the same person received this comment: "Well, maybe you can just have the architect give me a call, honey?"

But the greatest evil is sexual harassment: "I was sexually harassed by a prominent architect and the situation was allowed to happen by his staff," says a junior designer. A similar situation was relayed to us by a firm principal in reference to a previous job: "During a conference, I was propositioned by another manager to meet him in a hotel room to have sex. Our boss was there listening to this come-on and said nothing. Luckily, I felt confident enough to tell him off. He was not disciplined."

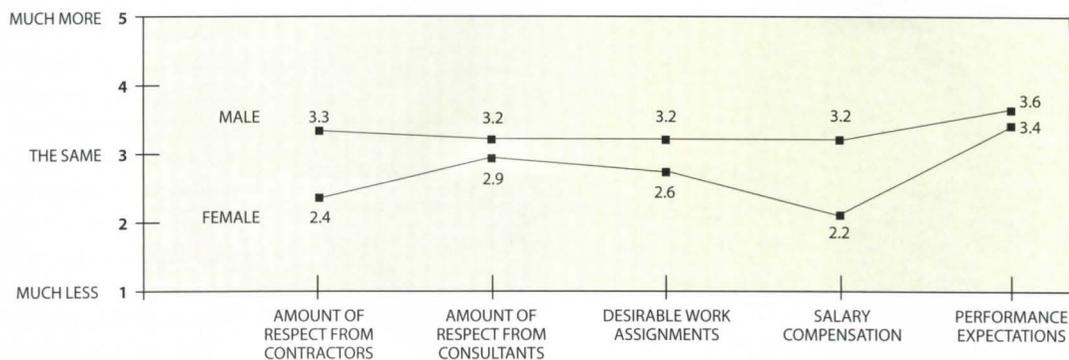
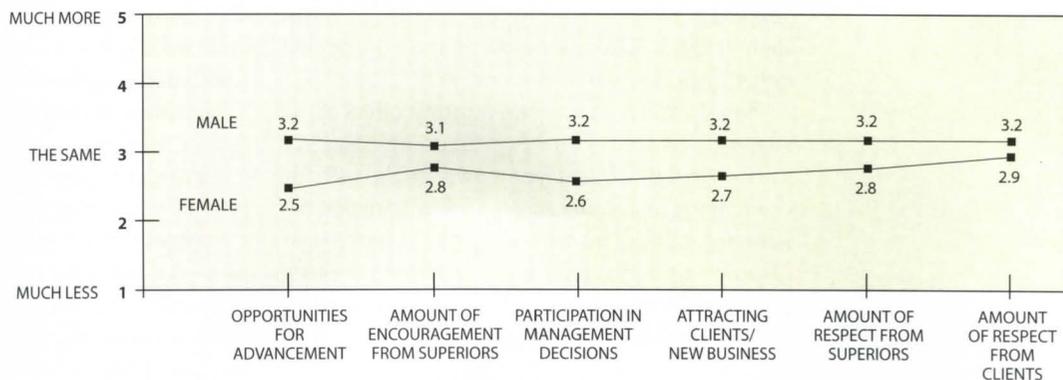
And a P/A correspondent filed this report after a recent visit to one of Chicago's most prominent firms: the marketing director "stared at my chest" throughout our meeting and, during an office tour, members of the nearly all-male staff "stared at me and one actually whistled."

Collecting Data

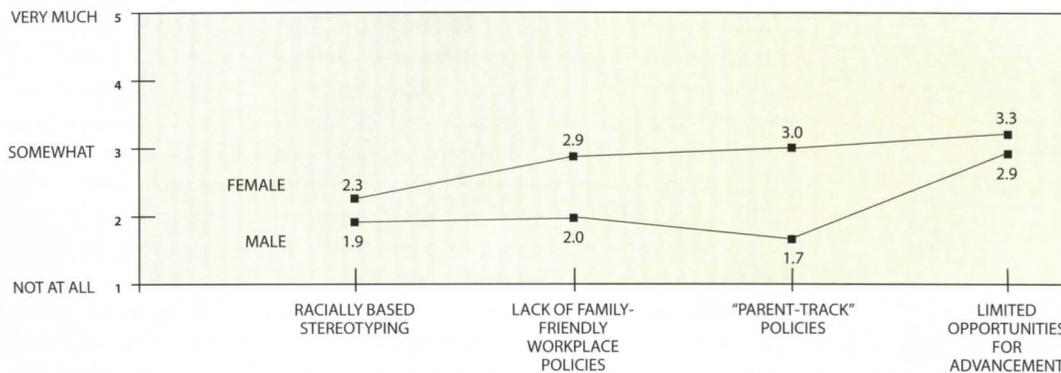
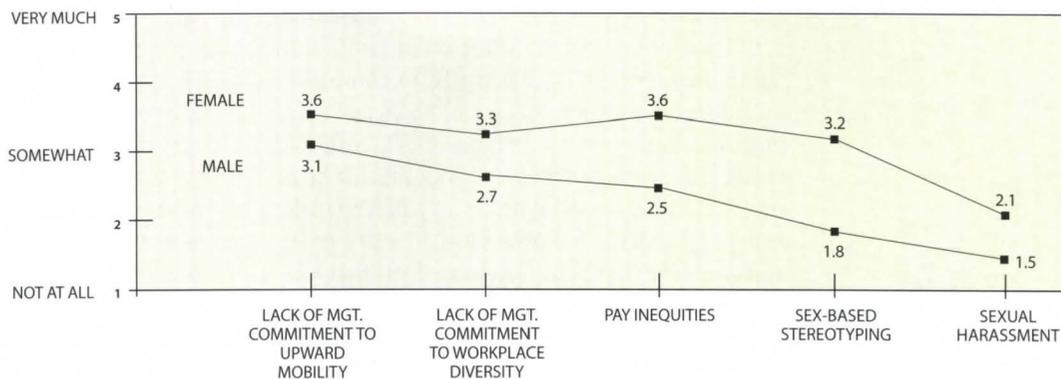
Evidence of inequities in the profession has been collected in a major research project conducted by Dr. Kathryn H. Anthony, chair of the Building Research Council at the School of Architecture, University of Illinois at Urbana-Champaign, with several assistants, and funded by the Graham Foundation and the UIUC Campus Research Board. An outgrowth of earlier research for Anthony's seminal book, *Design Juries On Trial*, this study used both surveys and interviews to collect data from three sample groups that included white and minority women and men. Although the researchers are currently in the process of combining all three data sets into a total sample of more than 400, the results of one group (drawn from a random list of AIA members) show that "more than one-half of the participants had seen or heard about gender discrimination and about one-third had personally experienced it." And on a 5-point scale, opportunities for advancement received a 3.2 from men and a 2.5 from women. (See graphs opposite.)

Said one participant in this study, addressing the double standard of performance requirements in the profession: "Women have got to be better than men to succeed." Participants also addressed the pros and cons of being assertive. One woman architect, who was at first assigned only

How do you rate your current position compared to members of the opposite sex?



To what extent are the following glass ceiling barriers for you?



All graphs courtesy of Kathryn H. Anthony and Melissa Worden.

menial tasks, later asked for more challenging work and got it. But the experience of another woman architect was quite different: "Every day you've got to go out and prove [yourself] – win their respect. They [employers and colleagues] either respect you or call you a bitch."

Based on her findings, Anthony offers these suggestions to anyone experiencing injustice in the workplace: set your own goals, ask for challenging assignments, get a broad range of experience, document your activities, update your résumé regularly, and seek help from diversity networks. And her advice for firms seeking to improve working conditions and their own com-



"I was sexually harassed by a prominent architect and the situation was allowed to happen by his staff," says a junior designer.

petitiveness: institute diversity standards, educate management, encourage extra professional activities, allow flex-time for community and family involvement, and learn from companies outside the profession that promote inclusionary practices. Anthony also believes the AIA should create and promote diversity programs for firms (tailored to firm size), develop a system to make firms accountable for achieving diversity goals, and establish awards to recognize firms that have exemplary programs.

Going to the Authorities

Although an award would put a positive spin on the issue of diversity, it obviously wouldn't eliminate discriminatory practices or sexual harassment. But the AIA's Code of Ethics and Professional Conduct can be used as a vehicle for assuaging gender-related problems, an avenue of which seemingly few are aware. Rule of Conduct 2.501 states: "Members shall not discriminate in their professional activities on the basis of race, religion, gender, national origin, age, disability, or sexual orientation." The code is administered by a National Judicial Council appointed by the Institute's board of directors; charges can be filed

by members, components, or anyone directly aggrieved by the conduct of members. Offenders in the most extreme cases may have their membership terminated; and public acknowledgment of code infringements depends on the type of reprimand made by the council.

Another strategy, taken by a brave few, is to report incidences of discrimination and sexual harassment to superiors or to take documentation to the Equal Employment Opportunities Commission. Most of the respondents to our questionnaire who came up against illegal practices said they did nothing because they feared retribution or blackballing; many had seen colleagues "laid off" for speaking out. Taking the risk of not getting a job or losing one is just not an option for most people. But both the EEOC and the Labor Department have penalties for retribution, and a few lawsuits would encourage offenders, both men and women, to think twice before making sexual advances or practicing in a discriminatory manner. However, many of the suits that are brought result in settlements with a gag order attached. So much for public scrutiny.

Towards A Level Playing Field

That such problems persist is abominable, but women are finding ways to overcome them. To ensure equal treatment in the workplace, many have started their own firms. Others are reasserting the presence of women in the profession at conferences on gender. At the recent "Inherited Ideologies" conference (P/A, June 1995, p. 69), for example, presenters dissected and revised architecture's patriarchal history. Beatriz Colomina, an assistant professor of architecture at Princeton University, spoke about Le Corbusier's subjugation of Eileen Gray. And Alice Friedman, professor of art and co-director of the architecture program at Wellesley, spoke of significant contributions women clients have made to the designs of ground-breaking work such as the Schroeder House and the Barnsdall House.

Another way to insert the accomplishments of women into the architectural annals is being undertaken by Sheila M. Klos, head of the Architecture & Allied Arts Library at the University of Oregon. In response to unfulfillable requests from students to locate information on women, Klos is compiling the *Index to American Women Architects, 1945-1995* (if you want to be included, contact Klos at 5249 University of Oregon, Eugene, OR 97403-5249. FAX (503) 346-2205. E-mail: klos@oregon.uoregon.edu).

At the grass roots, local women-in-architecture groups, some open to men and women, have been in existence around the country for many

years and range from highly organized associations – such as Women in Architecture of the North Virginia AIA Chapter and the Association for Women in Architecture in Los Angeles – to more loosely knit groups. (Some, like the one I am involved with, include professionals from a variety of design disciplines.)

There have also been activist groups such as the now defunct CARY (Chicks in Architecture Refuse to Yield) founded in Chicago by architects Carol Crandall, Kay Janis, and Sally Levine in 1992, one year before the AIA National Convention was held in their city. Taking the opportunity to reach the institute's rank-and-file, CARY launched the exhibition, "More Than the Sum of Our Body Parts," a series of in-your-face vignettes, during the convention.

One vignette, "There Were Three Professionals in a Boat..." compared architecture to two other historically male-dominated professions: medicine, which is 18.1 percent female (1992), and law, which is 24.4 percent female (1990). It also compared the efforts of each to confront gender bias and create policies to improve working conditions for women. The American Bar Association, for example, has recognized the importance of self-assessment. Its Commission on Women in the Profession, in a 1988 report (now being updated) to the ABA House of Representatives, argued that the barriers to women in law were affecting the viability of the profession: "We must examine the structures of our professional institutions to ensure that they do not become anachronisms – and that we do not lose the talents of our best and brightest."

The AIA, on the other hand, has not investigated the high attrition rate of women. Its Women in Architecture Committee, which has been incorporated into its National Diversity Committee, did not undertake a thorough assessment of the status of its constituency. However, a two-part study on the subject for the AIA by Roberta Feldman, Co-Director of the City Design Center at the University of Illinois-Chicago, has been partially funded. If and when it is completed, we may gain a better grasp on the reasons we are losing many of our own best and brightest.

In contrast to CARY's guerrilla-like tactics, which were reactivated by Levine in a new show, ("Architecture Lets in Chicks, Except ... through the Glass Ceiling"), that coincided with the AIA's second annual National Diversity Conference in San Francisco this August (P/A, Oct. 1995, p. 23), those who attended the women's caucus at the conference tried to work from inside the establishment. At the end of two heady sessions, the

A few lawsuits would encourage offenders, both men and women, to think twice before making sexual advances or practicing in a discriminatory manner.



caucus submitted a proposal for an AIA Draft Policy Statement on Women's Issues in the Architectural Profession that outlined actions it hoped the institute would take, including: recognition of different models of leadership; promotion of fair employment practices in firms (family leave policies and flex-time schedules, open statements of promotion standards, pay equity, mentorship and role models); and promotion of gender equity in the schools.

Caucus participants also suggested that diversity sessions be held at the annual convention and urged the institute to publish and promote a "Model Employment Manual." (The ABA published its own manual, "Lawyers and Balanced Lives: A guide to drafting and implementing workplace policies for lawyers," in 1990.)

One caucus attendee, Sylvia Kwan, a former chair of the AIA's Minority Resources Committee who is currently running for election to the national board of directors, disagrees with the need for a manual, believing that firms should make necessary structural changes based on ideas exchanged in an open dialogue with employees. Acting in response to a morale problem, which had resulted in the loss of several talented junior architects, she and her partner Denis Henmi at Kwan/Henmi established their own level playing field several months ago. In their case, the problem to be addressed was not specifically gender-related, but a junior-senior problem. She was approached by junior staffers who "were relegated to tasks rather than to projects" or pigeonholed in certain project types. The partners held a forum, asking their employees what they could do to improve working conditions. The firm's 30-person staff, which is divided equally between men and women, requested that they be allowed to work on project types of their choice and to stay on projects through completion. They also asked for improvements (*continued on page 86*)

Factories for the Future

Three manufacturing facilities designed by Minneapolis architect Julie Snow point the way toward a more uplifting and egalitarian workplace.

by Philip Langdon



Manufacturers are notorious for treating workers like cogs in a machine, and usually their architecture shows it. Barebones construction, harsh artificial lighting, obliviousness to any beauty in the surrounding landscape – these are a few of the traits that make the typical factory dismal.

So it's tremendously refreshing to travel through rural western Wisconsin and find manufacturing facilities based on a wholly different approach. In the past several years Julie Vandenberg Snow, while working as a partner in James/Snow Architects in Minneapolis (she is now principal in Julie Snow Architects), has designed two factories and one multipurpose manufacturing facility on the outskirts of small Wisconsin towns. All three projects, for makers of injection-molded plastic parts, a high-tech sector of the economy, are models of contemporary industrial architecture: They foster efficient and flexible production, they treat factory workers like valued employees, they bathe the interior in natural light, and they supply generous views of the surrounding scenery, all while adhering to a crisp, clean Modern aesthetic.

Respecting the Worker

Wisconsin is as logical a place as any for advanced factory design. This is the stamping ground of the old Progressive movement, a part of the country where decent treatment for all seems more deeply embedded in the common culture than in employment centers like Detroit, New York, and Los Angeles. Wisconsin business owners are well aware of the achievements of the 3M Company in nearby St. Paul, Minnesota – a business that has grown to giant size by treating its employees well and recognizing the profit-making potential in their ideas (such as the idea of a glue with minimal holding power, the key ingredient in 3M's famously successful Post-It Notes).

True to the 3M model, the client for two of Snow's facilities, Phillips Plastics Corporation of Phillips, Wisconsin, has sought during its 31 years to create environments in which the employees tending machines on the factory floor feel they're on the same plane as managers and office personnel. "Since the early 1970s we've tried to have transparency in our interi-



Phillips Plastics Short Run Plant New Richmond, Wisconsin

A high roof supported by bowstring trusses, with glazing at the top of the end walls, magnifies the sense of spaciousness in the Short Run plant and floods the interior with natural light. A key element of the design is the wall of laminated glass squares that lets employees see both the production area and the offices, yet prevents the offices from being invaded by factory noise. As Short Run's business grew, offices that were initially all on the ground floor expanded onto a mezzanine. Since the photo on the facing page, the production and storage area

has been extended by two more bays, clad in metal insulated panels and brick.

Architect: James/Snow Architects; Julie Snow, principal designer.

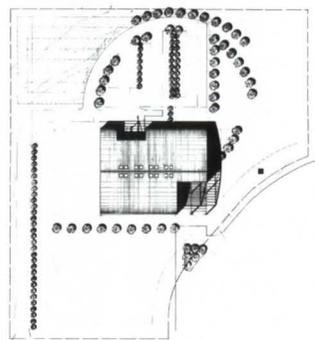
Associate architect: P.S.I. Design Architects – Mike Piene, project architect; Ali Hesmati, Chris Schmidt, Joe Sturtz, design team.

Engineers: Harwood Engineers (structural, electrical); Erv Smith (mechanical).

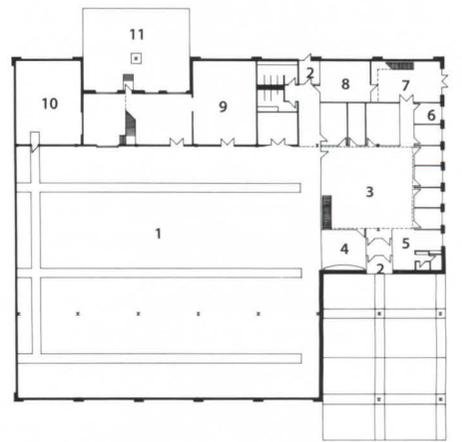
Acoustical consultant: Steve Kvernstoen.

General contractor: Peter Swabe, Inc.

Photos: Don F. Wong.



SITE PLAN
N ↑ 300'/100m



FIRST FLOOR PLAN

- | | |
|---------------|---------------|
| 1 PRODUCTION | 6 OFFICE |
| 2 ENTRY | 7 LUNCH |
| 3 ENGINEERING | 8 LOCKER |
| 4 CONFERENCE | 9 TOOLING |
| 5 WAITING | 10 MECHANICAL |
| | 11 STORAGE |



ors,” says Bob Cervenka, Phillips’s CEO. Whatever acoustic separation is needed between manufacturing and office work is achieved through glass partitions, enabling all the employees to see one another and not fall into an “us-them” mode of thinking.

In 1989, on a field outside New Richmond, Wisconsin, Phillips built its first factory by Snow/James – the Short Run facility, so named because it specializes in small orders of custom-designed plastic parts. The building is supported by 160-foot-long, white-painted bow trusses, and it features, on its interior, a wall made up of four-foot squares of laminated glass, providing unobstructed views between the manufacturing area and the offices. “The glass wall creates a closer bond between people,” says Steve Adamietz, Short Run’s engineering manager. “The relationship between manufacturing and engineering – that’s critical.”

From nearly every point in the building there are dynamic views of the factory’s orange-colored beam crane moving back

and forth, 22 feet above the concrete floor. The crane permits quick movement of machinery (such as molds that weigh 2,000 pounds), so little time is spent setting up for each customer’s order. The trusses provide an 80-foot clear span, making an efficient, unobstructed interior; Snow placed utilities such as water, compressed air, and electrical power in trenches with removable metal covers in the factory floor, further cutting down on clutter and dirt.

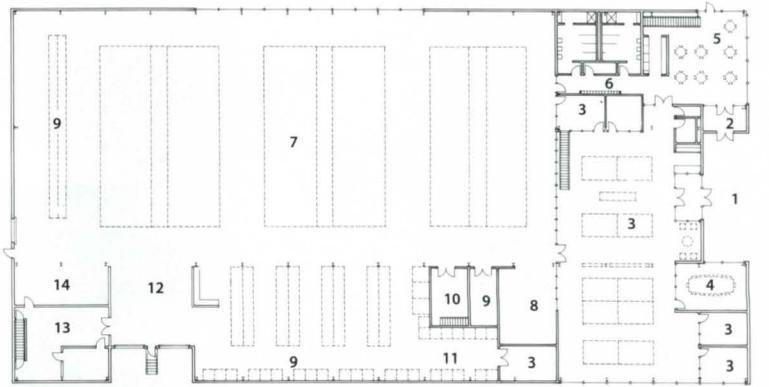
“You can walk in and see the cleanliness,” observes Adamietz. Engineers from Phillips’s corporate customers – including medical equipment manufacturers, who are meticulous about cleanliness – frequently visit the plant, consulting with Phillips’s engineers. The spick-and-span production area helps convince them that Short Run is the right place for them; the factory’s impeccable quality has become a marketing tool. Because of the growth in orders, Snow was called back two years after the plant opened to double the size of its production floor. *(continued on page 56)*



SITE PLAN

N ↓ 300/100m

- | | |
|------------------|--------------------------|
| 1 PUBLIC ENTRY | 8 TECHINCAL |
| 2 EMPLOYEE ENTRY | 9 STORAGE |
| 3 OFFICE | 10 MAINTENANCE |
| 4 CONFERENCE | 11 MATERIALS PREPARATION |
| 5 LUNCH | 12 SHIPPING |
| 6 LOCKERS | 13 MECHANICAL |
| 7 PRESS AREA | 14 MOLD PREPARATION |



FIRST FLOOR PLAN

40/12m

QMR Plastics Division River Falls, Wisconsin

James/Snow's second factory (facing page), clad in colored insulated precast concrete, has floor-to-ceiling glass on much of the back wall. "You can work at a press and look right up at the wildflowers," says Julie Snow. The employee lunch room (top left) sits in a corner that incorporates the building's employee entrance. Utilities are in a tunnel eight feet wide and six feet deep, allowing quick hookups to machinery. Air handling, sprinkler systems, lighting, and structural support (preengineered truss-

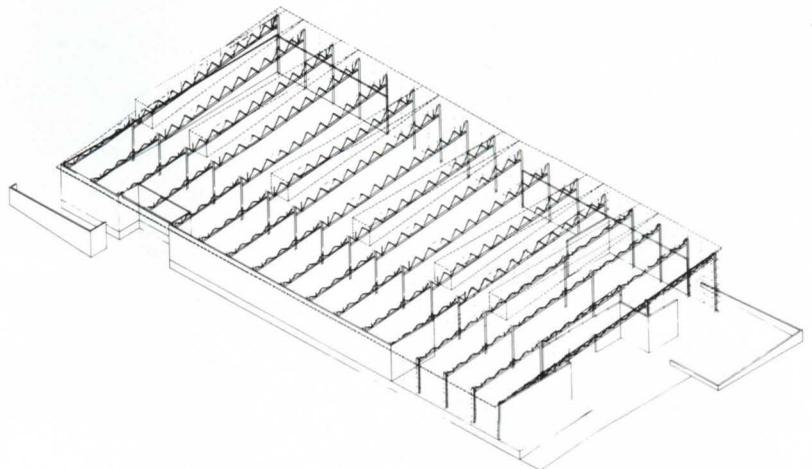
es) are concentrated in the 12 feet between the beam crane and the ceiling.

Architect: James/Snow Architects, Julie Snow, design principal; Grant Reiling, project architect; James R. Larson, Krista Scheib, Nancy Blankfard, Craig Roberts, Vince James, project team.

Engineers: Meyer, Borgman and Johnson (structural); Kaeding and Associates (electrical); Jack Snow Engineering (mechanical); Cedar Corporation (civil).

General contractor: PCL Construction.

Photos: Don F. Wong.



STRUCTURAL SYSTEM AXONOMETRIC



Origen Center, Phillips Plastics Menomonie, Wisconsin

Meticulously detailed, with 4x12-foot curtain wall panels clad in cedar, 4x6-foot panels of glass, and 2x6-foot operable windows, the Origen Center has a thin recessed fascia, to make the roof deck appear to hover above the walls. The building's structural framework extends over the granite-paved entrance and plinth (on facing page) and across a terrace at the rear (distant right). Julie Snow sees the building complex as a series of overlapping masses that echo Wisconsin's low, flat-topped hills.

Architect: James/Snow Architects, Julie Snow, design principal; Doug Coffler, project architect; Paul Gates, James R. Larson, Paul Yaggie, Nancy Blankfard, Michael Sheridan, Nathan Knutson, Vince James, project team. **Engineers:** Meyer, Borgman and Johnson (structural); Seymour, Davis, Seymour/B&B Electric (electrical); Erv Smith Service America (mechanical); Cedar Corporation (civil). **Acoustical consultant:** Kvernstoen Kehl. **General contractor:** Schwabe Construction. **Photos:** Don F. Wong.



QMR Plastics

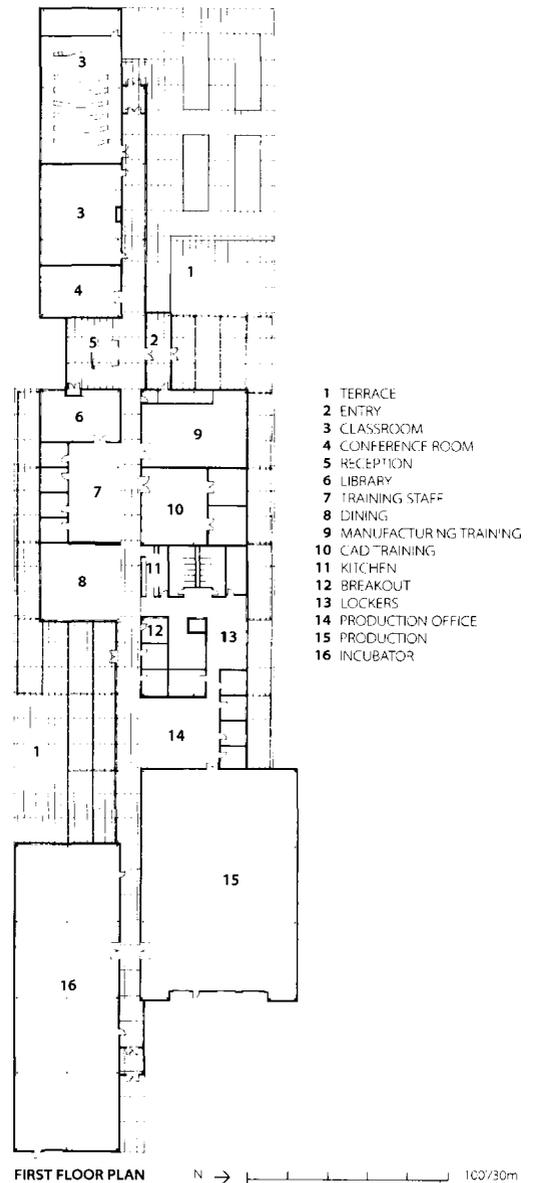
Impressed by what Snow accomplished for Phillips Plastics, another manufacturer, Quadion Corporation, had her design a factory for its QMR Plastics Division next to a tree-covered bluff outside the town of River Falls. When I visited in August, just after QMR had opened, the bugs had yet to be worked out. Vibrations from the bright yellow beam crane were penetrating the office area, in marked contrast to Short Run, where factory noise was barely perceptible in the office zone. The noise may be the result of Quadion's decision to buy less expensive unlaminate glazing for the see-through wall between manufacturing and office areas. During my visit, a conference room was also being infiltrated, from above, by conversation in an adjoining area; Snow had ruled out installing a dropped acoustical ceiling, but the addition of some kind of sound insulation now seems likely.

Otherwise the building is a triumph. The interior, like Short Run's, exudes the vitality of a great railroad station – airy and expansive, with long-span exposed trusses supporting the roof. Simple shed dormers, 88 feet long, let light wash down on the white-painted metal structure. James/Snow's original model of the plant contained six dormers, which came in for tough scrutiny during Quadion's "value-engineering" phase. From a strictly practical point of view, the factory, which is equipped with high-quality metal halide lamps for good color rendition of its plastics, might have done without the dormers and the natural light they supply. But the dormers give a sharp articulation to the long roof, and Snow argued that the building needed at least five of them if it was to have any. So five dormers the building has.

To a visitor who has worked in drab, viewless factories, as I have, the most impressive thing about QMR is that employees working at the plastic injection molding machines can look straight out through generous expanses of glass to a slope planted with wildflowers, with a stand of trees at its crest. The juxtaposition of the factory interior and a sweep of nature is breathtaking. A prominent sunny corner of the building has been reserved for the company lunch room; this corner adjoins QMR's employee entrance, where, in an additional sign of the plant's democratic spirit, the office staff and the factory personnel share a single, undifferentiated parking area.

Origen Center

Snow's most recent building for the plastics industry, occupied in September, is Phillips Plastics' Origen Center, located in an industrial park outside the town of Menomonie. It brings together three functions: training for managers and workers from the company's several facilities; production of overflow orders from its factories, and incubation of Phillips's new businesses. Until now, Phillips has had to construct an entire new factory when it developed a promising new product line. At Origen Center, the company will be able to get a new line better-established first. Functions at Origen Center are organized as a series of rectangular volumes along a 468-foot corridor; each can achieve seclusion from visitors in the reception area, yet the entire complex, with its straightforward circula-

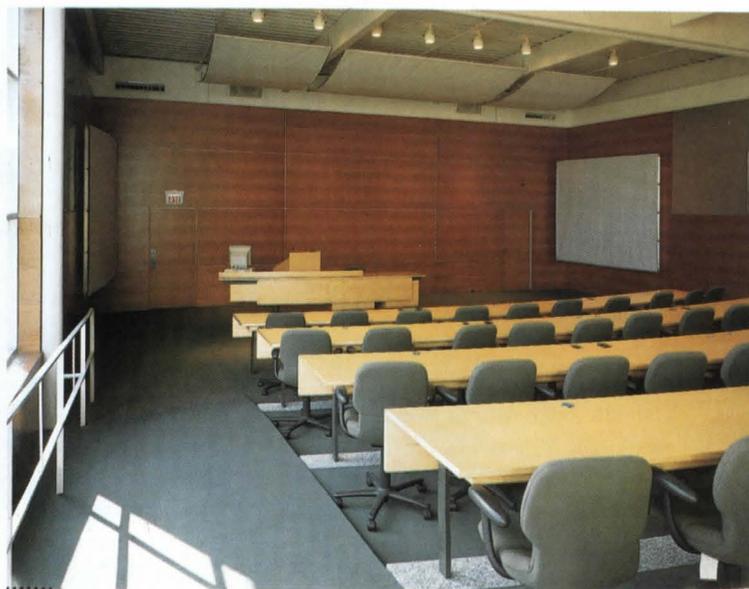


**Origen Center, Phillips Plastics
Continued**

The spine of the Origen Center is a corridor paved in grayish granite, with floor-to-ceiling glass along parts of its 468-foot length (such as the segment at top left on facing page, which looks out on a 108-foot-long rear terrace – silent and elegant in the best Miesian tradition). Curved panels of Dacron fabric soften some of the steel acoustical decking ceilings, as in the reception area (facing page, bottom left), where a screen designed by the architects separates the receptionist

from the waiting area. Cherry paneling from a single tree embellishes many of the public areas. Natural light is introduced throughout – often generously, but sometimes sparingly, as in a training room at top right. The complex, used by employees from Phillips's several manufacturing facilities in Wisconsin, has a tiered classroom (bottom right) at its west end.

Photos: Don F. Wong



tion and its extensive use of glass, encourages easy interchange of ideas – a key, it is thought, to the company’s future progress.

The Origen Center is serenely composed, clad on the outside in stained cedar and surfaced on the public portions of the interior with cherry paneling detailed in aluminum bar stock. The high-tech atmosphere is softened just enough by natural materials. The building’s structural framework extends across some of the exterior areas, a technique Snow also employed at Short Run. Overall, the building treads a fine line between making an industrial structure elegant and scaring off some of Phillips’s budget-conscious customers with hints of costliness.

“I would guess we could chop 30 percent off the cost if we went to Butler-type buildings,” Cervenka says. “Our original buildings were the Butler type, and then we started to discover the benefits of satisfying some of the people-type needs – benefits in terms of people working together; attitudes; a

clean, open building; and sending a signal of quality.” Good buildings help to attract better employees and reduce absenteeism and turnover. At the same time, an industrial building cannot afford to waste money, or even give the impression of doing so. Says Snow: “It has to be rigorously functional, which is why exploring the Modern Movement makes sense.”

Snow’s manufacturing facilities hold lessons for today’s businesses, tempted as they are to cut their initial building costs to the bone. Cheap buildings hobble companies that want to get the best out of their tools and their employees. In the November-December 1994 *Harvard Business Review*, Christopher A. Bartlett and Sumantra Ghoshal argue that in a supercompetitive economy, companies must cultivate the resources of their entire work force, especially “the knowledge and expertise of the people on the front lines.”

These three buildings from Wisconsin show how manufacturers can begin to do just that. □

Probing Architecture's Anatomy

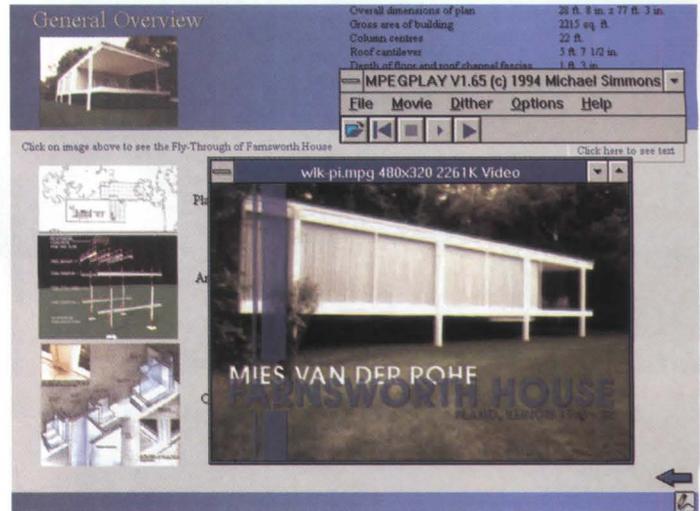
A new computer tool that documents and analyzes a modern landmark – the first in a series – is a boon to students, scholars, and architects alike.

The Farnsworth House Volume, created by the Building Technologies Group at Columbia University, provides multimedia documentation and analysis of Mies van der Rohe's 1951 building in a computerized, networked environment. The Farnsworth House package combines primary source materials and a variety of interactive models presenting a broad spectrum of information previously unavailable in a single, unified format. The use of a simple graphic menu to access an array of data makes the package both an ideal tool for teaching architecture and engineering students, and a scholarly resource for practicing architects and historians. The package is available for direct use on work stations in university labs and classrooms, and for limited access via the World Wide Web.

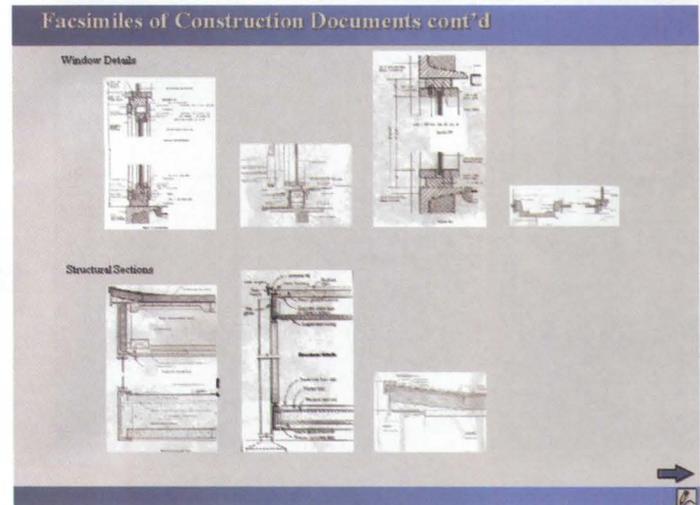
Data and Analysis

The Farnsworth Volume includes a number of features. A general overview of the building (1) has an animated fly-through, presenting its spatial organization, and a textual/audio summary of the building's key features and technological importance. There are selected details (2) consisting of three-dimensional computer models, photographs, and drawings of construction details. Emphasis is placed upon integration and overlap of technical systems and their impact on the building's formal and spatial expression. Three-dimensional computer models of the enclosure and structural systems can be manipulated, allowing different views and the selective removal of components to enhance one's understanding of the house's material assembly.

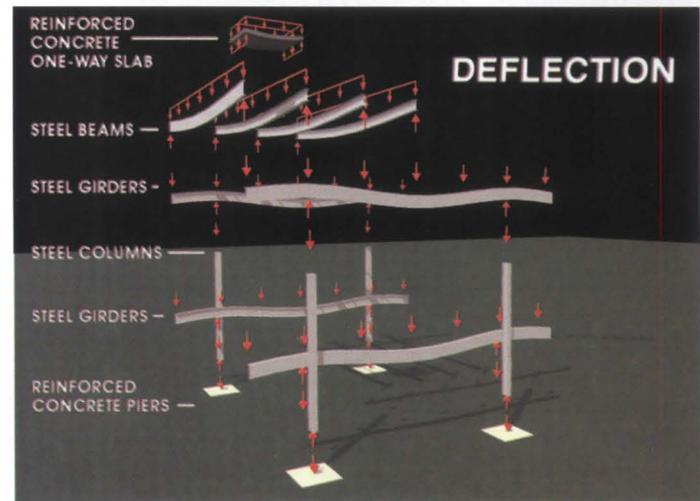
There is a variety of technical analyses, including interactive studies of Farnsworth's structure, cladding, and atmospheric control systems. Structural analyses include a finite element analysis program and three-dimensional models and animations (3). Thermal performance of the building's envelope and radiant heating systems is shown through spreadsheets and plans. The interactive capabilities of these analyses allow users to explore how, for example, changing the relationships of its skeleton



1



2



3

Drawings by Chris Fox and Peter Oberdorfer

components might alter the Farnsworth's structural behavior.

Also included are original construction drawings scanned at high resolution and organized into point-and-click maps – allowing magnification around areas of a user's interest. Specifications and other text-based data exist as searchable documents. An animated construction sequence focuses on the building's unique details, while an image gallery of historical photographs traces its development from construction to its present-day condition. Searchable versions of published essays provide critical information on the architectural, technical, and social impact of Farnsworth, along with a selected bibliography.

Significance of the Results

The synthesis of this wide range of data allows students, scholars, and practitioners to achieve an understanding of the relationship of technology to architecture that would be very hard to achieve through conventional means. Construction documents, usually found only in architectural or engineering firm archives, are difficult to access. Actual constructed details, showing material connections, are rarely available. Software packages might be employed individually by consultants during the design process to study structural behavior, thermal performance, and three-dimensional organization, but rarely are these programs used in an interdisciplinary way to show relationships between technology and architecture's spatial and formal development.

The Farnsworth House prototype is being used as a teaching tool for both engineering and architectural students. It allows engineering students to conceptualize engineering as a design science rather than as a purely abstract discipline. It also increases the rate at which architecture students understand relationships between envelope, thermal transfer, spatial considerations, and history. For example, in senior level engineering and architectural building design courses, students are asked to use construction document data to perform detailed structural and thermal analyses of the building; to compare Farnsworth to related structures; and to work with three-dimensional models to update systematically the building's technical systems. Students are also asked to develop a plausible construction sequence of their modifications.

Computer Interfaces

Interfaces for the Farnsworth House package exist on Microsoft Powerpoint for the PC, Irix Showcase for Silicon Graphics computers, and

Netscape for PC, MAC, and Unix-based World Wide Web browsers. The Powerpoint, Showcase, and Netscape interfaces are used as "meta front ends," serving as primary navigation and display tools, and also for launching stand-alone applications seamlessly. For example, when a user viewing a technical report wants detailed information on the thermal performance of Farnsworth House's enclosure system, she can click on the appropriate symbol to launch Excel's display of a heat-loss spreadsheet. At this point, she can modify the spreadsheet to see the effect of changes to the building envelope on thermal performance. This type of launching exists for animations (using Mpegplay), structural analyses (using Staad, Ideas, or Stardyne), thermal analyses (via Excel), and three-dimensional models (using Autocad, Softimage, or Form-Z). The Showcase, Powerpoint, and Netscape interfaces all have the same look and feel, allowing students to work from a variety of computer systems without need to learn a variety of interfaces.

The Farnsworth House Volume was created using Softimage, Eddie, Showcase, Form-Z, Premiere, Photomorph, Photoshop, Illustrator, Fusion Recorder, Powerpoint, and the application software mentioned above. Project hardware includes an SGI Indy, a Powermac 7100 AV, one Pentium and one 486/dx-4 PC, two scanners, and a VCR. Farnsworth is presented to students in electronic classrooms. Classwork is done in computer laboratories using PCs or Silicon Graphics computers. Out-of-class assignments are completed via the World Wide Web using Netscape on PCs, Macs, and Unix-based computers. The World Wide Web version of the Farnsworth Volume is available to a select group of outside schools of NSF's Gateway Coalition, which was a major sponsor of the work.

The Farnsworth Volume is the first in a series being developed as part of Columbia's ongoing Architectural Anatomy Research Project, directed by Anthony Webster. Additional volumes currently under development include the PATechnology Center, Richard Rogers Architects, Ove Arup and Partners and Robert Silman Associates, structural engineers; (P/A, Aug. 1985, pp. 67–74) and the U.S. Pavilion at the World Exposition 1970, Davis Brody Architects, David Geiger, engineer.

For more information contact: Anthony Webster, Director of Building Technologies, Graduate School of Architecture, Planning, and Preservation, Columbia University, New York, NY, 10027; phone: (212) 854-3596; fax: (212) 864-0410; e-mail: acw18@columbia.edu; World Wide Web: <http://www.cc.columbia.edu/~archpub/BT/BT.html>. □

Three sample screen views (facing page) from the Farnsworth House Volume include a general overview of Mies van der Rohe's 1951 building (1), drawings and photographic details (2), and an analysis of the building's structure (3).

Credits

Project director: Anthony Webster; producer: Morton B. Friedman; design: Peter Rosenbaum; animation: Chris Fox, Peter Oberdorfer; photographs: Michelle Kriebel, Ted Arleo; 3-D modeling: Liane Hancock, Laura Reuwee; heat-loss analysis: Quill Hyde, Anthony Webster; narration: John Matouk; research: Elizabeth Leber.

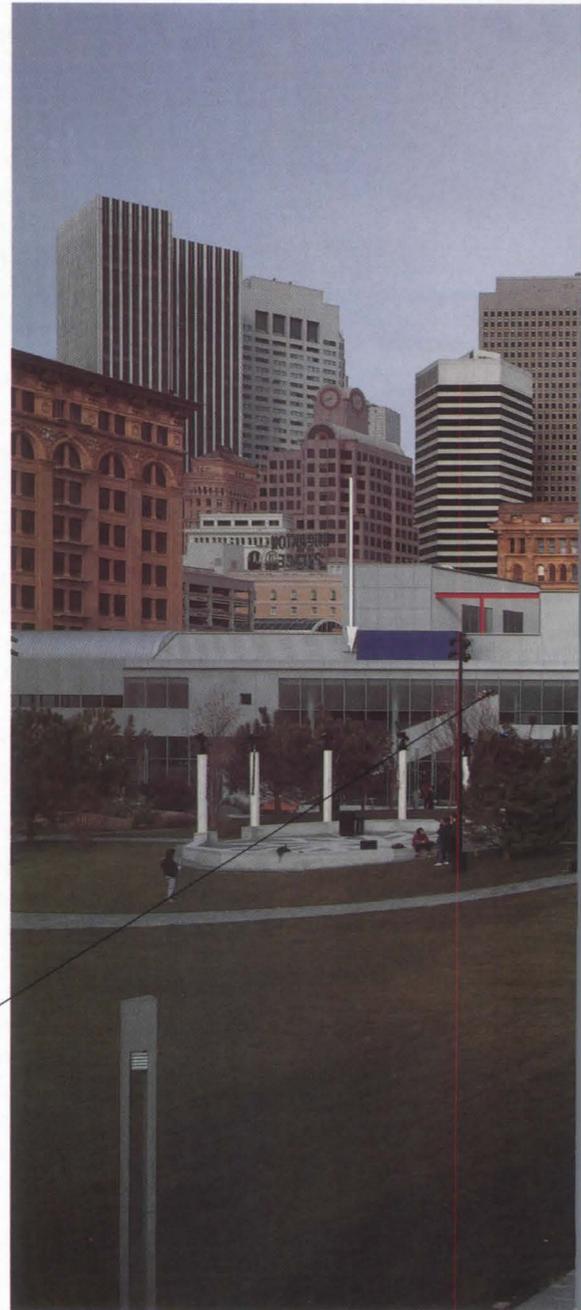
When Good Urban Plans Go Awry

San Francisco is celebrating the near completion of Yerba Buena Gardens (YBG), a new downtown cultural district that, despite the efforts of many noted architects and landscape architects, looks cobbled together. That lack of coherence stems in part from the nearly 30 years of false starts for the development, with plans much publicized and then shelved. But the three-block, 22-acre district also reveals the city's lack of foresight or concern for what might follow. The small failings at YBG thus illuminate a larger failure in the way we make cities, where individual buildings, which might be distinguished in their own right, do too little to accommodate their neighbors or to anticipate future development.

The results are all the more disappointing here because YBG proceeded with the best of intentions. As part of one of the country's longest-running urban redevelopment areas – it was first proposed in 1953 and designated in 1966 – YBG has had the full range of public process, which began its increasingly contentious course in San Francisco with protests in the 1960s against the city's redevelopment. Demolition in the 1960s of the single-room-occupancy hotels south of Market Street sparked organized opposition to the redevelopment agency's plans. Following approval in 1969 of a plan drawn up by the team of Kenzo Tange, Gerald M. McCue & Associates, and John Bolles, a series of lawsuits were filed to redress the relocation of the area's low-income residents and other issues. Settlement of the suits delayed the project until 1979. The development of YBG's peripheral blocks with housing for low-income elderly people and market-rate housing began in the late 1970s and continued through the 1980s, along with commercial development.

Early plans for the central blocks featured megastructures. The 1969 plan called for nine million square feet of development, including a 350,000-square-foot convention center, a 14,000-seat sports arena, a 4,000-car garage, a 2,200-seat theater, hotels, office buildings, pedestrian malls, and plazas. Fortunately, when the single developer required for the site never signed up, this plan

The Esplanade and surrounding cultural buildings at Yerba Buena Gardens stand on the roof of the latest addition to the Moscone Convention Center. **This arrangement has resulted in a raised, inwardly focused development** that seems cut off from the rest of the city.



The author, who lives in Berkeley, is P/A's San Francisco correspondent.

Yerba Buena Gardens in San Francisco shows that it takes more than a series of distinguished buildings and gardens to make a coherent urban district.

by Sally B. Woodbridge



Richard Barnes

A concrete mountain with a noisy cascade forms the backdrop for the Esplanade. Two switchback ramps scale the heights and lead to a terrace that feels like a promenade deck.

A walkway terminates in the monumental, symmetrical façade of Mario Botta's Museum of Modern Art. Its simple massing and dynamic central skylight hold their own against the taller buildings around it. At

street level, however, **the building seems more like a department store – with its glazed bookstore and restaurant along the sidewalk – than an art museum.**

and its subsequent modification, which included an apparel mart, remained on paper.

In 1976 Mayor George Moscone appointed a committee made up of 17 proponents and opponents of YBG to develop a consensus plan for the central blocks. Many recommendations followed, but only the convention center designed by HOK for central block 3 moved to construction, opening in 1981. Named for Moscone after his assassination in 1978, the fortresslike structure presided over desolate blocks of parking lots with rubble fringes, an image associated with redevelopment areas across the country. The lack of response of this building to its surroundings set the stage for what was to follow.

The Final Plan

In 1984 Olympia & York signed a development agreement with the redevelopment agency. A team made up of architects Zeidler Roberts Partnership/Willis Associates and landscape architects Lawrence Halprin/Omi Lang Associates created a plan that included the current components of the three blocks, but in more grandiose form. The public gardens on block 2, for example, were designed as an elaborate theme park à la Copenhagen's Tivoli Gardens.

Development of central blocks 1 and 2 did not proceed in the timely way projected in the plan. Central block 1, important because of its frontage on Market Street, saw the completion in 1983 of the 667-room ANA Hotel, followed by the 1500-room Marriott Hotel in 1989. But plans for a 750,000-square-foot office building on Market Street and a pedestrian mall leading from Market Street to the center of YBG were stymied by the recession.

In 1986 the city moved to construct the third addition to the Moscone Center beneath block 2, the most public-oriented of the three blocks. Although the designers of the above-ground structures worked with the addition's architects, Gensler and Associates, to mitigate the effects of raising the block's surface to compensate for the structure required to house the exhibit hall, lobby, meeting rooms, and service road, the addition dealt a deadly blow to the block's urban design quality. The lobby structure, which rises 20 feet above ground on Howard Street, blocks the view through the block from Mission Street,

Botta's art museum is on a **mid-block site that allows little outside queuing space and that requires people to dodge several lanes**

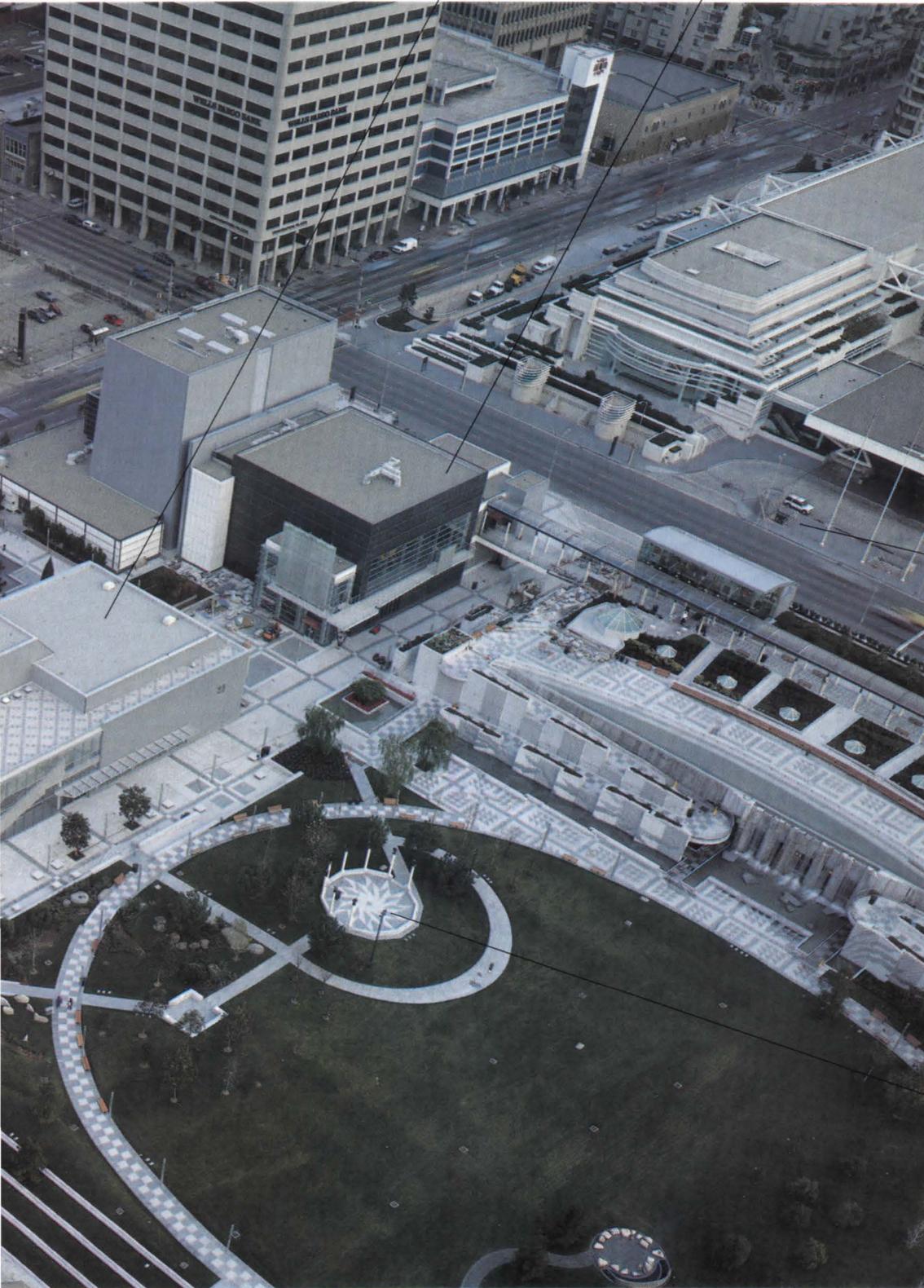
of traffic to reach the other cultural buildings at Yerba Buena. The cleared sites on both sides of Botta's building are targeted for commercial use.



Richard Barnes

Individual buildings, such as the Galleries and Forum building designed by Fumihiko Maki Associates and the Theater designed by James Stuart Polshek, are quite distinguished, relating

well to each other and yet having their own strong identity. But their **main entrances face the interior of the block and turn their backs to the street.**



The lobbies of the Moscone Convention Center and its latest addition both have long automobile drop-offs. Convention-goers may be well served by this arrangement, but **pedestrians must make a long, circuitous climb to a skybridge to cross the street.**

One corner of the Esplanade has a garden and butterfly refuge, designed by the public artist Reiko Goto. Consisting of boulders, trees, and a dry streambed, the garden is a good idea in a bad location because it **restricts visual access to the open space.**

and the long automobile drop-off in front of the entrance discourages pedestrian traffic.

In the Doghouse

Fortunately, the addition's underground service road, which follows the block's perimeter, allowed a graduated rise from the Mission Street sidewalk level to the six-acre, mid-block Esplanade park, designed by Romaldo Giurgola/MGA Partners. Aldo Giurgola is credited with keeping the maximum height of the park to about four feet above the street level. Although the gentle rise is not physically demanding, it has the psychological effect of distancing the central greensward. Adding insult to injury, the Mission Street frontage is interrupted by squat gray blocks, which have been called "doghouses," that

No Third Street crosswalk as yet exists to allow museum-goers to get to YBG in mid-block. Redevelopment Agency staff say that the museum is planning a crosswalk. When you see people venturing into the street waving their arms to slow the four lanes of advancing cars, you hope it will come soon.

rise above ground at intervals and house mechanical equipment and stairways to the underground spaces. Although these structures have been crowned with trellises, it has not been possible to shrub them out.

The elevation of the block's surface also raised the entrances to the two Center for the Arts facilities: a Galleries and Forum building designed by Fumihiko Maki Associates with Robinson Mills & Williams, and the 750-seat theater designed by James Stuart Polshek & Partners. Maki had thought it important to have the building's main entrance on the corner of Third and Mission Streets at the sidewalk level. But a "doghouse," set at the corner to fit the addition's ten-foot waffle-slab module, prevented that welcoming move. As a result the corner appears to be barricaded by a low wall topped by an outdoor exhibition area, with seating that has no public entrance. The building itself has no public entrance at all on Third Street because the staff entrance and loading dock occupy this side. Since the same is true for the theater building, the Third Street side is dull indeed, doubly unfortunate because a big attraction, the new San Francisco Museum of Modern Art, is across the street.

This aggressively monumental building, designed by Mario Botta, breathes down the necks of its more modest neighbors, whose structural weight was limited by the underground exhibition hall. The SFMOMA building has a private, corporate appearance; the museum store and restaurant flag the passersby, while the deeply recessed entrance is nearly invisible. Only partly making up for this is its spectacular striped skylight, a prominent fixture of the city skyline. A long-awaited and much-heralded civic achievement, the SFMOMA, with its ponderous massing, literally and figuratively overshadows the Center for the Arts, which has no effective way to signal the existence of its related offerings to museum-goers just across the street.

There is a passage into YBG from the sidewalk opposite the SFMOMA entrance, but no Third Street crosswalk as yet exists to allow museum-goers to get to YBG in mid-block. Redevelopment Agency staff say that the museum is planning a crosswalk. When you see people venturing into the street waving their arms to slow the four lanes of advancing cars, you hope it will come soon.

Secret Gardens

The half-acre East Garden, designed by landscape architect Omi Lang, is for people who prefer a quiet setting to the activity of the Esplanade. But this garden, which stands between the two Center for the Arts buildings, is almost too secluded to appear truly public. A bank of fountains shields it from view on Third Street and along most of the passageway; you have to reach the edge of the Galleries and Forum building before an entrance to the garden is evident. Also, much of the garden is paved, and the minimal seating is not comfortable. Although over time those who wish to find this shaded retreat will do so, it is not now well used.

When you stand at the entrance to the East Garden, the Esplanade's landscaped open space is visible, but is still somewhat removed from full view because its fringes are braided with incidental gardens and a paved area with benches and tables. Directly opposite the Galleries and Forum building is a garden designed by public artist, Reiko Goto, as a butterfly refuge. That is a laudable concept, but the absence of any explanatory labeling – three ceramic tiles portraying butterflies set onto a low concrete wall are the only indication of a purpose for the dry streambed, mounded with boulders, trees, and blooming plants – renders it a needless interruption to the view of open space. To the left, facing the theater, the back of the convention center's lobby is partly screened by stepped planting beds, a large water-

The Marriott hotel built on Block 1 in the late 1980s has been dubbed "The Wurlitzer"; **its glitzy decoration and busy stepped-down form is pure**

kitsch. Polshek's theater, in contrast, is an effective composition of solid and glassy forms that does its best on site in which all four sides are public and highly visible.



SITE PLAN, YERBA BUENA CENTER

N 300/100m

- 1 MUSEUM OF MODERN ART
- 2 CENTER FOR THE ARTS GALLERIES AND FORUM
- 3 CENTER FOR THE ARTS THEATER
- 4 MOSCONE NORTH LOBBY
- 5 ESPLANADE
- 6 FUTURE RETAIL/THEATER COMPLEX

Yerba Buena Center encompasses several city blocks south of Market Street. While it has been **nearly 30 years in the making, it remains a work in progress.** On block 1, Ricardo Legorreta has designed a Mexican museum, while a 15-theater entertainment and retail complex by Simon Martin-Vegue Winkelstein & Moris and Gary Handel will complete the south side of the esplanade on Block 2. Adèle Santos/LDA have designed a children's center and M. Paul Friedberg & Partners have designed gardens for Block 3.

The East Garden, designed by landscape architect Omi Lang, stands in a back corner of the site containing the Galleries and Forum building. It offers a pleasant, shady retreat even though its minimal seating is uncomfortable, **but it too seems badly located, visually cut off from the street** and from most of the pedestrian passage into the block.

Photos: Richard Barnes

fall, and a pair of ramps that lead to an upper terrace. But they cannot minimize the massive concrete bunker that constricts the space in front of the theater and the view into the block from Howard Street. Once you pass this impediment, the walk to Mission Street is pleasant enough; the transparent garden side of Maki's building permits a successful interchange of open and enclosed spaces, as a public building should. But the building's signage is so discreet that strangers to the area do not readily comprehend its use.

As for the Esplanade's central greensward, dishd and mounded around the edges, it is more than welcome. The importance of this green breathing space in the park-starved South-of-Market area cannot be overemphasized. More of it would have been even better, and you cannot

bench echoes the shape of a reflecting pool at the terrace edge. This is literally and figuratively the high moment of block 2. From here the composition of the block appears to become part of the cityscape. Occupants of the bench can gaze contentedly across the reflecting pool at the panorama of the downtown skyline. Never mind that the view is composed of undistinguished buildings; the vantage point turns the downtown into a pop-up city scene that never fails to delight.

The Saga Continues

The development of YBG and the area immediately around it continues. The last addition to central block 2 will be a retail and entertainment center sponsored by Millennium Partners Inc. of New York/WDG Ventures, Inc., that will have two levels of retail shopping, one theater level with 15 film screens and an IMAX screen. Simon Martin-Vegue Winkelstein & Moris/Gary Handel have designed an elegant Modernist structure for the site, which extends the length of the block on Fourth Street; construction is slated to begin later this year.

For central block 1, Ricardo Legorreta has designed a new building for the Mexican Museum that will stand across Mission Street from Maki's building and next to Jessie Square, named for the landmarked Jessie Street Substation designed by Willis Polk from 1905 to 1909. The substation will be rehabilitated for the Jewish Museum. On central block 3, the roof of Moscone Center will support a children's center designed by Adèle Santos/LDA and gardens by landscape architects M. Paul Friedberg & Partners. An existing sky-bridge across Howard Street will connect the center to the terrace level of central block 2. A historic carousel will be installed at the corner of Fourth and Howard Streets. Since no date has been set for the completion of the above projects, it is not time for the last hurrah.

But even with these promising additions, it is hard to see how YBG will ever be successful in terms of urban design. Crosswalks can be installed, signage improved, and circulation clarified, but since real visual and physical accessibility for the block as a whole is not in the cards, you come away from YBG with the feeling that a great opportunity was lost. This is not because the designers lacked talent or commitment, not even because the goals were wrong, but because too many decisions were made without forethought about their consequences for later development. Humans are not blessed with 20-20 foresight, but the city should have had better vision than is evident at Yerba Buena Gardens. □

Crosswalks can be installed, signage improved, and circulation clarified, but since real visual and physical accessibility for the block as a whole is not in the cards, you come away from Yerba Buena Gardens with the feeling that a great opportunity was lost.

help resenting the bits and pieces of themed gardens. In fairness to Aldo Giurgola, it should be noted that he bore the brunt of public participation in the design process. His first serenely formal and uncluttered design for the garden was treated more like a tabula rasa than like the elegant solution it really was.

Landscape architect Linda Jewell wrote a critique of the Esplanade (*Landscape Architecture*, August 1994, pp. 36-37), arguing that the open space had become a generic background rather than a positive green void within the city fabric. Describing the 20-foot-high and 60-foot-wide waterfall that veils the exhibition hall lobby on the garden side, Jewell complained that the "water crashing ferociously upon angular granite shards" distracted visitors from the simple respite of the green open space. "The landscape element," she asserted, "should push back with an equal force to shape pathways ... or paved sitting areas that intrude into its perimeter. It doesn't."

The terrace level atop the concrete mountain of the Moscone Center lobby has eateries along its back side, reached via a long glass-roofed pergola. An array of cone-shaped skylights set in planted beds signals the presence of the lobby below. Toward the front of the terrace a curved

Yerba Buena Gardens, like so many cultural districts before it, tends to lack the mix of functions that would attract people even when the institutions are closed. As a result, the spaces and pedestrian walks through the complex have an underpopulated feel much of the

time. **Adding to that empty quality are the so-called "doghouses"** that protrude from the Moscone Center: blank, utilitarian boxes halfheartedly hidden by planters, as is the case of this one opposite the theater lobby.

Perhaps the most futile effort to disguise the "doghouses" occurs along Mission Street, where a curved trellis bridges the space between two such structures. The attempt here was to form some sort of gate into Block 2, but the fact that a walkway also runs along one side **makes the gateway a gratuitous structure that is seldom used.**



Third Street is treated as a back street for both the Theater and the Galleries and Forum buildings, with loading docks and staff entries. However, they now appear to turn their back to the new Museum of Modern

Art, as this view taken from in front of the museum shows. **The lack of easy pedestrian access across Third Street** also serves to separate the museum from the rest of the cultural district.

A "doghouse" becomes an outright obstacle at the corner of Mission and Third Streets, a major approach point from the downtown. Maki had wanted the entrance to the Galleries and Forum building to be at that corner, but a "doghouse" there **resulted in a walled outdoor exhibition space with a locked gate along the sidewalk.** Visitors have to walk up onto the *esplanade* to enter the building, and stand-up signs have to be placed along the street announcing that the building is open.

Family Feud

Two of the profession's most powerful bodies have come to virtual blows over the minutiae of architectural practice. What are AIA and NCARB fighting about?

by Michael J. Crosbie

In Washington, D.C., far away from where most architects hunch over drawing boards, huddle in front of CAD stations, or yell into phones at contractors, two architectural bureaucracies are battling in a turf war. On one side, the powers that be at the American Institute of Architects claim that the National Council of Architectural Registration Boards has too much power over the fate of the profession, power that AIA seems to want for itself. On the other side, NCARB, which controls the process of architectural licensing and certifies reciprocity for interstate practice, counters that AIA is in no position to regulate the regulators.

In the middle, you, the architect, are eking out a practice, faithfully paying your licensing fees and maybe your AIA dues, which are used in part to support this skirmish.

Family Tradition

The feud between AIA and NCARB is part of a long tradition of family squabbles about who's in charge. As NCARB has become more powerful in controlling such things as education requirements for architectural registration, the content of the registration exam (*P/A*, April 1995, p. 49), and the ground rules for granting an NCARB



Courtesy: Museum of Modern Art/Film Still Archive

certificate for licensing reciprocity, AIA has seen its leadership of the profession slip. Today, NCARB's actions affect every architect in the country, like it or not. AIA claims about half of the profession as members, and if you're fed up with what the Institute is (or isn't) doing, you can just quit.

The battle between these behemoths is being fought over the minutiae of bureaucracy, not about larger issues that concern the profession. For example, AIA is huffing and puffing over the fact that NCARB certificate holders can now put "NCARB" after their names. For the Institute, this is a direct assault on the worth of "AIA" after your name. The Institute complains that "NCARB" implies a higher level of licensure. Well, it does. Certificate holders can practice virtually anywhere in the country. The Institute is on shaky ground here, because it has never worked very hard to clear the confusion over what its own initials mean. Many potential clients believe they signify registration. In any case, is this the kind of debate your licensing fees and dues dollars should support?

Nowhere in this feud is there much discussion about how the profession should best protect itself and flourish: is it through tighter regulation that architects can gain greater control over the construction industry? Or should we concentrate on selling ourselves as creative, intelligent professionals without whom any client would be foolhardy to build?

Report From the Frontline

Putting those questions aside for the moment, here's a frontline report on the current battle. The issues now discussed at AIA Board meetings and elaborated in long task force reports are these: AIA wants its voice heard as NCARB formulates national standards for licensing and reciprocity, and the Institute believes that getting an NCARB certificate is unreasonably difficult.

At NCARB's annual meeting in New Orleans last June, AIA President Chet Widom lobbed a verbal grenade at the attending state board representatives and national NCARB officials. "We see a problem with the current process of standard setting," declared Widom. "We believe it's essentially closed. Of all the interested parties who have a stake in this matter – state regulators, architects, and the public – only one player sits at the table during the critical policy formulation process," observed Widom. "This we believe is wrong. The architectural community and the public must have an opportunity to offer expert testimony and formally comment at public hearings on proposed national guidelines."

Widom next trained his sights on the issue of "removing barriers that unnecessarily restrict access to licensure and reciprocity," and the need to "maintain alternative pathways into the profession." He told tales of architects who can't gain reciprocity because they either don't hold an accredited architecture degree, or can't qualify for an NCARB certificate.

AIA's formal position on NCARB's role and on the issues of licensing and reciprocity was articulated in a task force report approved by the AIA board of directors last fall. The report might remind you of those medieval treatises about how many angels can dance on the head of a pin. In it, the Institute takes issue with what it calls NCARB's "arm's-length" relationship with AIA, how the Council formulates policy and guidelines to be adopted by its 55 member licensing boards, the requirements for licensing and reciprocity, architect training, and continuing education. An NCARB official at the heart of this feud admitted to nearly dozing off while reading it.

Returning the volley, NCARB issued a response to the report. It is worth comparing AIA's position and NCARB's response on a number of points, if only to demonstrate how architectural bureaucrats can spin their wheels. So, grab a cup of coffee and try to stay awake.

Snuggle Up a Little Closer, Honey

In the report AIA observes that "NCARB's policy of maintaining an arm's-length relationship with AIA and the profession has severely limited the opportunity for the profession to have a voice in the NCARB policy-setting process. The profession does not have an opportunity to participate in public hearings or formally comment on proposed national guidelines and standards."

NCARB dismisses this claim as nonsense. "The Council often holds hearings prior to considering changes in certification policies or the development of white papers. In every instance, the Institute has been invited to observe or participate in these hearings."

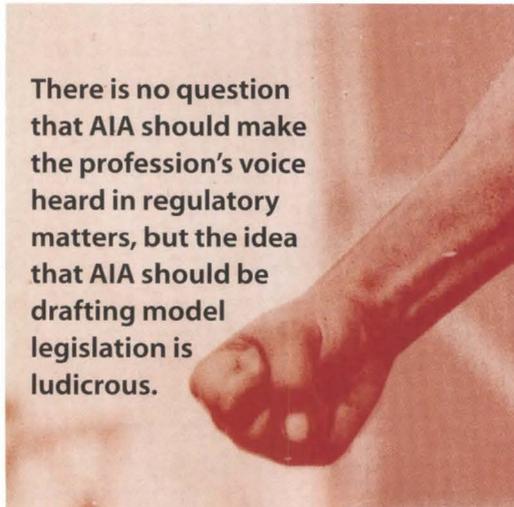
For example, NCARB notes, when the licensing boards voted on whether to require an NAAB-accredited architecture degree for certification, "the Institute, opposing that policy, made its views heard time and time again; indeed, AIA's position on the question was in every member board's mail box at the annual meeting that considered the question." During his remarks at the most recent annual meeting, Widom outlined the AIA's position on a number of issues *being considered*, and told the delegates how they should vote. In fact, the member boards voted unanimously in favor of a resolution that the AIA sup-

ported, which recognizes experience in a design/build firm as valid for IDP credit and certification. The Institute should be applauded for backing this long overdue change – and NCARB for adopting it.

NCARB points out that hearing AIA's position doesn't mean that the Council will agree with it. "The Council member boards who make these policy decisions understand that their ultimate responsibility is to the public which empowers their boards; the Institute's responsibility is to its members."

Who's Watching the Hen House?

The "arm's length" relationship between AIA and NCARB goes to the very heart of the disagreement between the two bodies. NCARB's position is that it must maintain distance from



There is no question that AIA should make the profession's voice heard in regulatory matters, but the idea that AIA should be drafting model legislation is ludicrous.

the profession and organizations such as AIA. As NCARB points out, governmental regulators have "most often attained the public's confidence when they have avoided any appearance of being beholden to the industries they regulate."

That AIA doesn't appear to understand this distinction, or doesn't believe it's important, is revealed throughout the report. Take, for example, this passage: "The work of the regulators is infinitely easier with the full support of those they regulate. It is increasingly important in this time of diminishing financial resources available to support the administration and enforcement of licensing laws that AIA and NCARB work in harmony." The report goes on to recommend that AIA should draft model regulatory legislation (an activity that NCARB now does) that state boards can adopt.

Why is the AIA Board spending its precious time (and your dues money) debating issues like this? How comfortable would architects, or anyone for that matter, be about contractors drafting model legislation to regulate the construction industry, or building product manufacturers writing the laws that govern product performance and safety? It is difficult to understand AIA's naiveté about the regulatory process. Regulation is not supposed to be easy. It's supposed to be effective in protecting the public interest.

There is no question that AIA should make the profession's voice heard in regulatory matters, with effective lobbying at local, state, and national levels. But the idea that AIA should be drafting model legislation is ludicrous. And it ignores the fact that most of NCARB's honchos and the various committee members who draft the policies and model legislation are architects, most of them AIA members.

Who Do You (Anti)Trust?

There's more to the separation between NCARB and the profession it regulates than just avoiding conflict of interest. Antitrust law demands such division. "Increasingly, governors, state legislators, and antitrust enforcers are reviewing suspiciously close relationships between the regulated profession and its regulators," observes NCARB. There is a wealth of case law that supports NCARB's position, for "concerted action between NCARB member boards and AIA chapters might well invite antitrust litigation against one or both organizations or their members." At the national level, the state boards' immunity from antitrust extends to NCARB as long as it maintains an advisory position to the boards, which have authority on all regulation.

One would think that AIA should by now have a pretty good handle on antitrust law. As the Council response to AIA's report points out, NCARB "has never lost a legal challenge to its activities, while the Institute, regrettably, has on three occasions lost antitrust challenges to its activities." But AIA's zeal to get into the legislation-writing business seems to indicate that it still doesn't get it.

Opening the Flood Gates

At NCARB's annual meeting, Widom vowed that "AIA is committed to removing barriers that unnecessarily restrict access to licensure and reciprocity." He criticized the requirements for NCARB's certificate, specifically the emphasis on an accredited degree, and the hurdles non-degree-holders must clear to obtain a certificate. In

the same breath, Widom hammered home the point that the Institute doesn't "advocate a position that would have the effect of lowering standards."

Architects without an accredited degree can qualify for a certificate if they complete certain college courses. Or they can apply for certification as a "broadly experienced architect" who has practiced for at least 12 years after licensure, including eight years as a "principal." At NCARB's annual meeting, delegates approved a resolution (which went into effect July 1) reducing the period to 10 years in charge of a firm's practice. It would seem that this would allow greater opportunity for reciprocity, but AIA opposed the resolution. "This change does not truly respond to the problem," said Widom, who encouraged NCARB to "submit the issue of educational equivalency standards to further study."

It should be pointed out that the NCARB certificate is the sole means for reciprocity for only 23 of NCARB's 55 boards. In fact the Council's position is that it should not be the sole means. The boards requiring the certificate are generally in the least populous states, such as Wyoming, North Dakota, and Alaska. States where the majority of architects practice – such as New York, California, New Jersey, Illinois, and Pennsylvania – do not require a certificate for reciprocity. One could argue that it is in the best interest of the less populated states to have tougher reciprocity laws to keep carpetbagging architects out (although no board would ever admit this). Without reciprocity, architects from out of state can joint-venture with local firms. NCARB's standard for certification has to satisfy the licensing requirements of the toughest boards, or it's useless. Making a certificate easier to get could backfire; state boards could just add reciprocity requirements beyond the NCARB certificate.

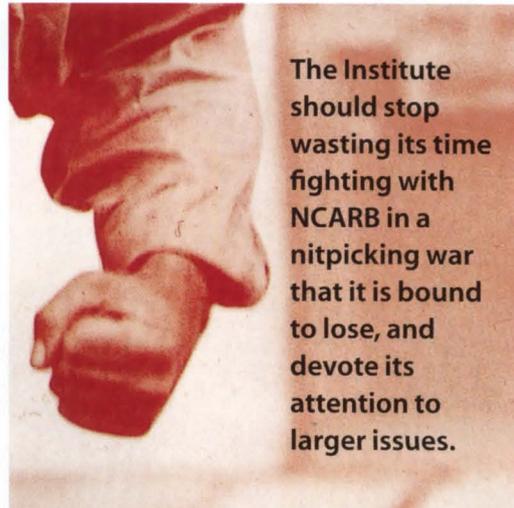
It seems that AIA's strongest rationale for easier reciprocity is that some architects should be able to practice anywhere they wish. From the standpoint of the licensing boards, however, which are not primarily concerned with making architects' lives easier, that's no rationale at all. And at a time when the profession appears to be suffering from too little work for too many practitioners, it's difficult to see the logic in making it easier for more architects to enter into interstate practice. Reciprocity cuts both ways. It can help out-of-state architects gain commissions that might otherwise go to those in-state.

A Higher Calling

Which brings us back to the larger issues that the profession and its leadership should be deal-

ing with. The major thrust of the AIA's direction in the past year or so has been to emphasize the worth of the architect in the construction industry. The Institute should devote itself to that worthy cause, and stop wasting its time fighting with NCARB in a nitpicking war that it is bound to lose. After all, NCARB isn't answerable to AIA, but to the state boards. The more time the AIA leadership spends delving into the minutiae of the regulatory world, the less time they have to consider the big picture of the profession.

Is making it easier for architects to get licensed and to practice anywhere they wish really in the profession's self-interest? David Thruston, an AIA member who holds an NCARB certificate, is perplexed by the Institute's mission. "While the AIA leadership is trying to open the door wider for people to enter the profession," Thruston



wrote in a letter to Widom, "the profession is washing out to sea." For him, and for many other architects, we should advocate raising the qualifications for practice, and should communicate to the public the architect's worth. Thruston questions why, at a time when the profession is struggling for its very survival, "the AIA leadership believes that greater access to licensing and reciprocity is the best use of its time and funds." Good question.

The point that this petty feud completely misses is that this is not an either/or dilemma. Supporting tougher regulation of the profession plays right into AIA's agenda of strengthening the status of the architect as a invaluable asset to potential building clients, as well as to society at large. That's worth fighting for. □

Back to Neutra



For the design/build firm of Marmol & Radziner, the restoration of the iconic Kaufmann House is proving a test of rigor the late master would have relished.

by Ziva Freiman

If you love Modern architecture, you'll know this image: the evocative twilight view of Richard Neutra's Kaufmann House in Palm Springs. Photographed by Julius Shulman after its completion in 1947, Neutra's luminous "artifact for inhabiting the desert" became hugely famous (a version of the plan provided the backdrop to Neutra's portrait on the August 15, 1949 cover of *Time*). Like Frank Lloyd Wright's Fallingwater, commissioned by the Kaufmanns a decade earlier, the winter residence came to be canonized as an "apogee" of the architect's career.

In real life the house didn't fare so well; successive owners adulterated it with thoughtless changes – enclosing integral open spaces, choking the site's desert vistas with awkward ancillary structures, removing or obscuring its original materials. To make a bad situation worse, the structure leaked from the first, and the water damage only worsened with time.

To the rescue, in 1993, came current owners Brent and Beth Harris, both longtime aficionados of Modern architecture. After extensive interviewing, they retained Santa Monica architects Leo Marmol and Ron Radziner to return the house religiously to what it was in 1946 – using Shulman's photographs as the ideal. Marmol & Radziner (featured in *P/A's Young Architects* issue of July 1993) had impressed the Harris with their prior experience in the partial restoration of Neutra's 1950 Kun House #2

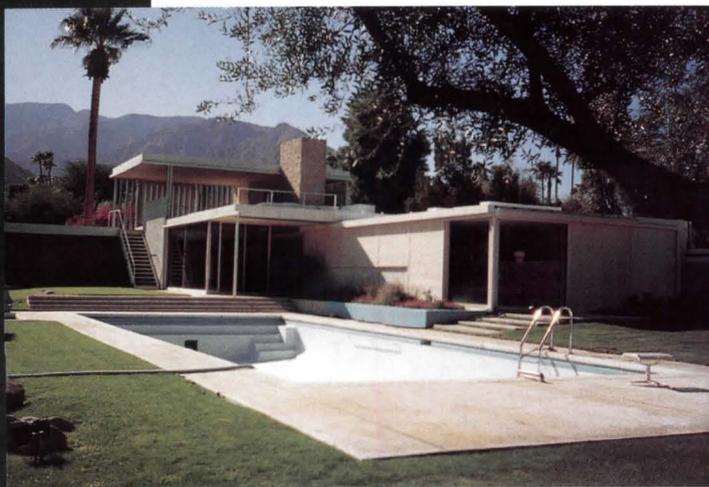
in Los Angeles. As a design/build firm, they promised the hands-on involvement critical to the task. But as important was the Harris's perception that Marmol and Radziner were "believers," and would bring to the restoration a commitment as pivotal as knowhow. The project's scope has proved the Harris's prescient in their emphasis on idealism: bringing back Neutra's masterwork has required nothing less from the architects than the full measure of devotion.

Marmol & Radziner spent ten months on research alone. The only records of the house, besides Shulman's resplendent photos, were small drawings and assorted correspondence kept in UCLA's Special Collections. Prevented by Neutra's heirs from duplicating or tracing any building documents, members of the project team spent four months hunched over laptop drafting boards in the library, laboriously re-drawing hundreds of details. What could not be established through research the architects learned in the painstaking removal of the house's latterday accretions, a process of discovery Radziner likens to "an archaeological dig."

With demolition finished, work has begun to "move forward" and is slated for completion next fall. The reconstruction presents its own challenges: many building components that were standard in the 1940s now have to be custom fabricated; Marmol & Radziner engaged conservation consultants to conduct microscopic examinations of materials that need replacing and have invested formidable efforts in locating new sources. As the project's general contractors, the design/build firm has had to canvass widely for artisans equal to the high standards of craft, devising an intricate system of RFPs and "building tests" to essentially audition the subcontractors.

To round out their learning curve, the young restorers undertook oral history as well, contacting people who had worked with Neutra or were connected to the original project in some way. These encounters made for some of the restoration's most rewarding moments. For instance, Fordyce "Red" Marsh, one of Neutra's favorite contractors, though he did not work on the Kaufmann house, contributed valuable insights to the late master's exacting, forward-looking sensibility. Recalls Marmol. "He taught us how you put together a Neutra house."

© Julius Shulman (left); Courtesy: Marmol & Radziner (below)



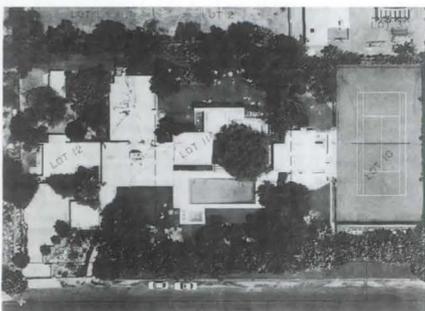
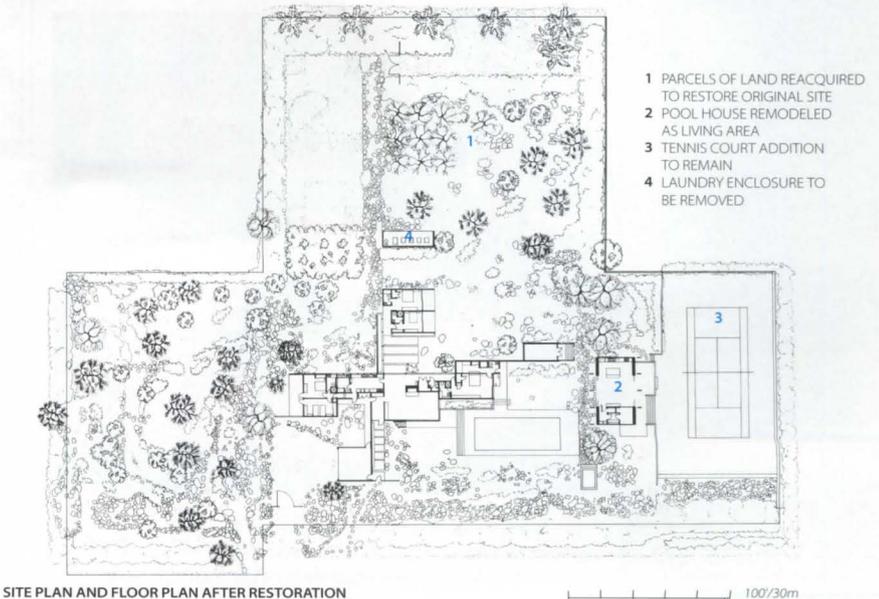
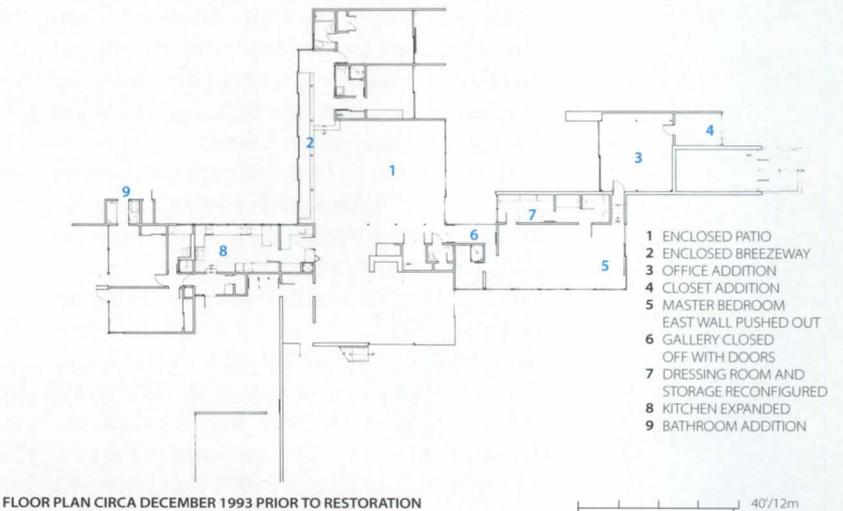
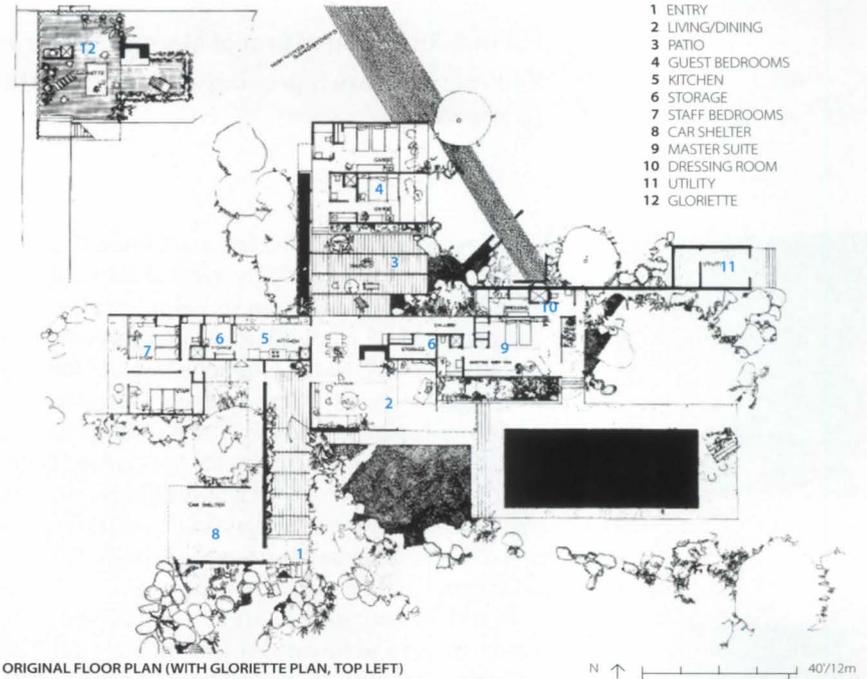
The diaphanous, radiant qualities of the original architecture, captured in Shulman's iconic image, were obliterated by 1993, when the inset photo was taken.

As documented by Marmol & Radziner in December 1993, prior to beginning the restoration, the house had been enlarged to 4,805 square feet from its original 3,175. Exterior patios had been annexed as interior space – most egregiously, the patio between the main wing and the guest bedrooms (1). The aluminum-louvered breezeway connecting these two portions of the house had been glazed (2), and the reflecting pool along its length filled in.

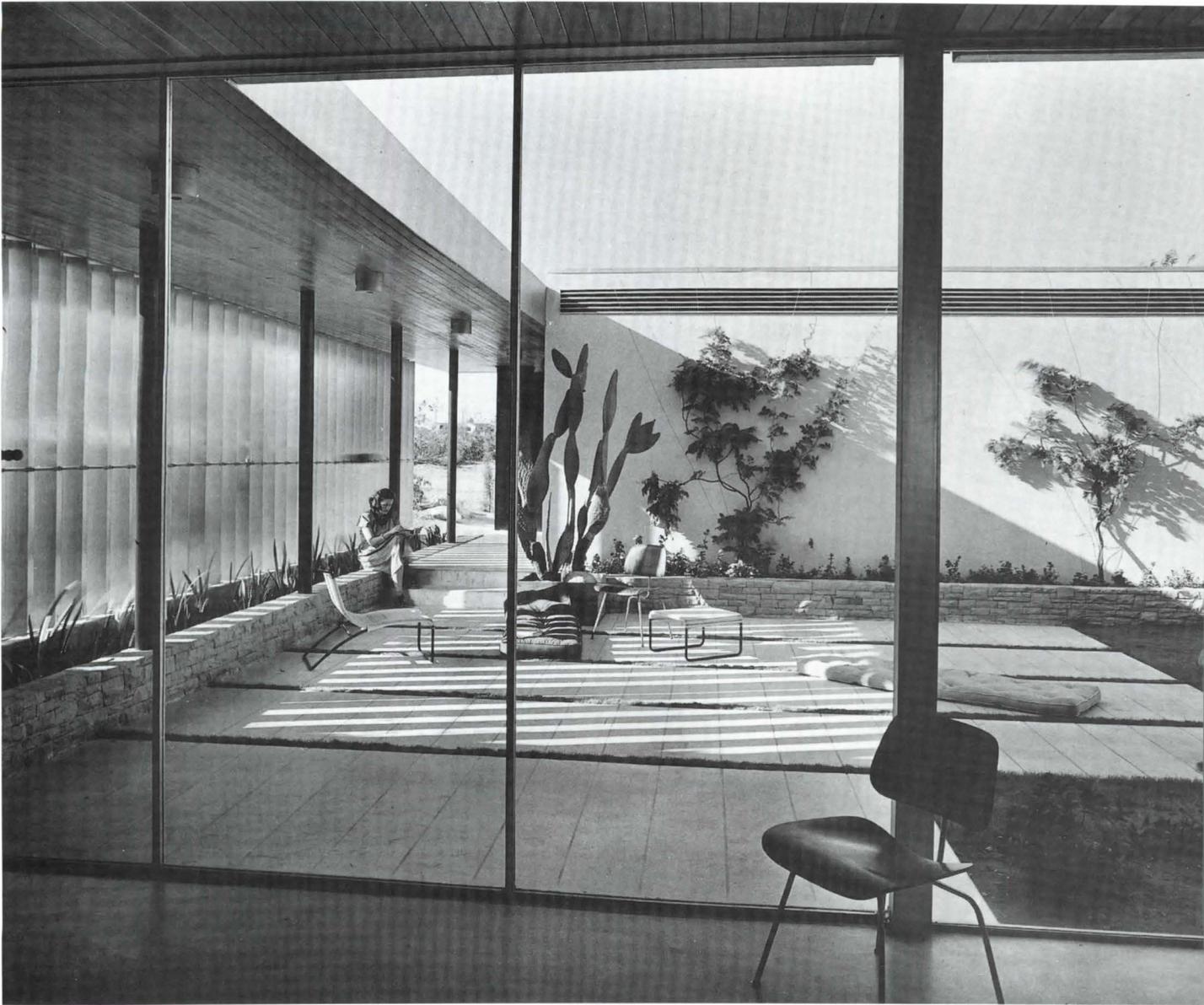
All the interior finishes had been either altered or removed: the original polished white concrete floor had been covered in carpet or linoleum tile; wall finishes had been painted, sandblasted, or concealed beneath wall coverings. Virtually all of the original casework, including Neutra's built-in birch veneer closets, beds, headboards, and side tables, had been removed, as had the bulk of the original plumbing and lighting fixtures.

On the exterior, the hand-applied mica glaze that Neutra had used on the plastered walls to increase their reflectivity in the harsh desert heat, had been buried under several coats of paint. Similarly bedaubed or entirely removed were the crimped metal fascias, whose gleaming, aluminum-painted horizontal lines had, in Neutra's day, enhanced the "levitating" appearance of the roof planes.

Parcels of the site had been sold and a tennis court, spa, and pool house were erected on the east end of the site (see aerial photo, below), decreasing the depth of the original views. The Harrises have reacquired the missing parcels of land; all additions and ancillary structures have been demolished (3), except for the pool house and the tennis court. Citing the greater good and personal enrichment as the primary motivations for their investment, the Harrises intend to reproduce not only the exterior but also the interiors of the house as they existed in the 1940s. Brent explains that keeping the pool house as a modified living area (housing the TV, for example) will "allow us to more easily use the main house" as it was 50 years ago.



Courtesy: Marmol & Radziner



© Julius Shulman

1



2



3

Courtesy: Marmol & Radziner

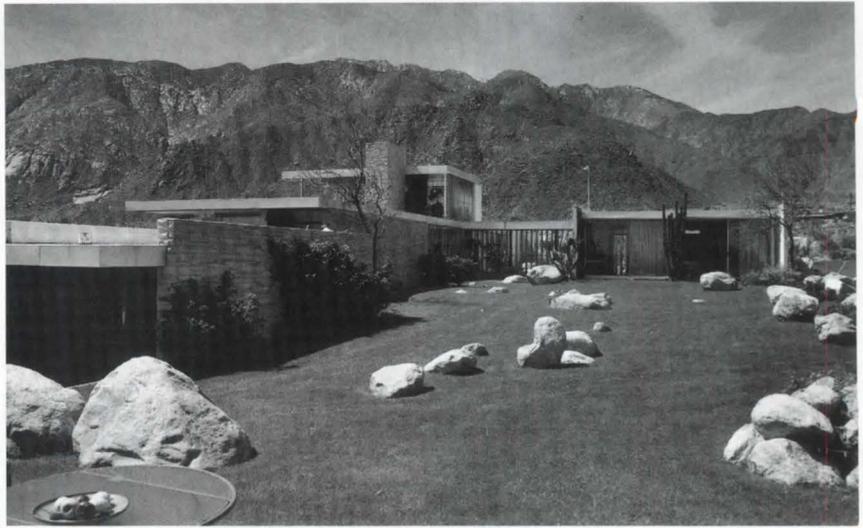
In another insensitive alteration, previous owners had added a boxy office to the staggered masonry walls on the north side of the house adjacent to the master suite, clogging the vistas originally available to the guest bedrooms (4). Upon demolishing the addition, Marmol and Radziner discovered that the original foundation was missing under the gap in the stone wall (5), necessitating its replacement.

Working in collaboration with cactus specialists from the Moorten Botanical Garden, the architects will supplant the suburban lawn on this and other portions of the site with the indigenous vegetation and rocks deemed appropriate by Neutra.

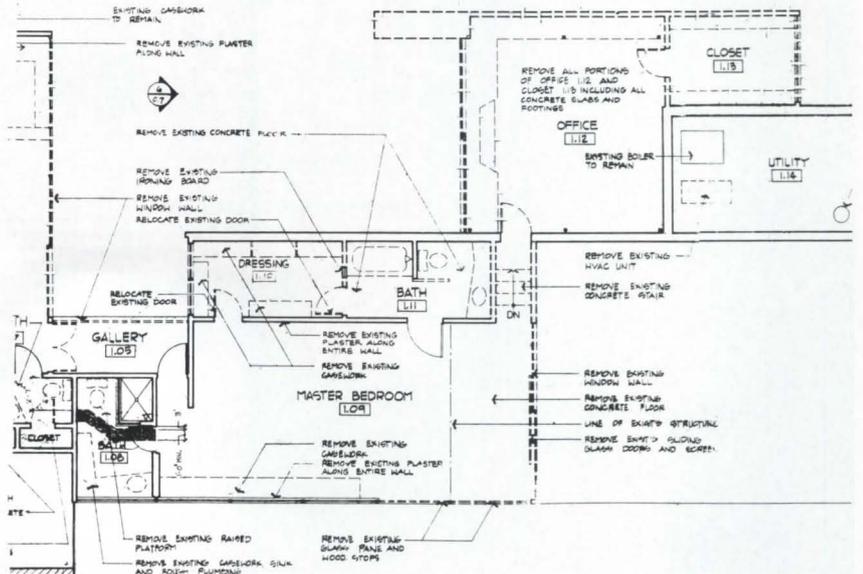
As depicted in Shulman's shimmering photo of 1947 (6), the "gloriette" – Neutra's term for the sheltered outdoor room above the living room – epitomizes what Kenneth Frampton calls the "ambient hedonism" of the desert house. Although its outdoor fireplace had survived unchanged, the problematic penetration of the masonry shaft through the living room roof had leaked from the start. Faced with a choice between dismantling the exquisite stonework or attempting to remedy the detail at the existing intersection, Marmol & Radziner devised an "experimental" strategy for injecting a membrane system behind the original stone without disturbing it.

At some point, the gloriette's wood decking had been replaced with an extended and much heavier concrete terrazzo floor, leading to significant deformation of the living room roof; water ponding beneath the terrazzo had seeped through the ceiling. The terrazzo has been removed, and the roof structure knocked back to the original wood and steel skeleton. Throughout the project, the existing structure (7) will be reinforced with additional steel members for better earthquake resistance (even though Neutra's provisions in this respect have held up well). All the roofs will be resloped; new, recessed gutters will be added in some areas (see Selected Detail, p. 114); and the gloriette's wood planking floor will be relaid.

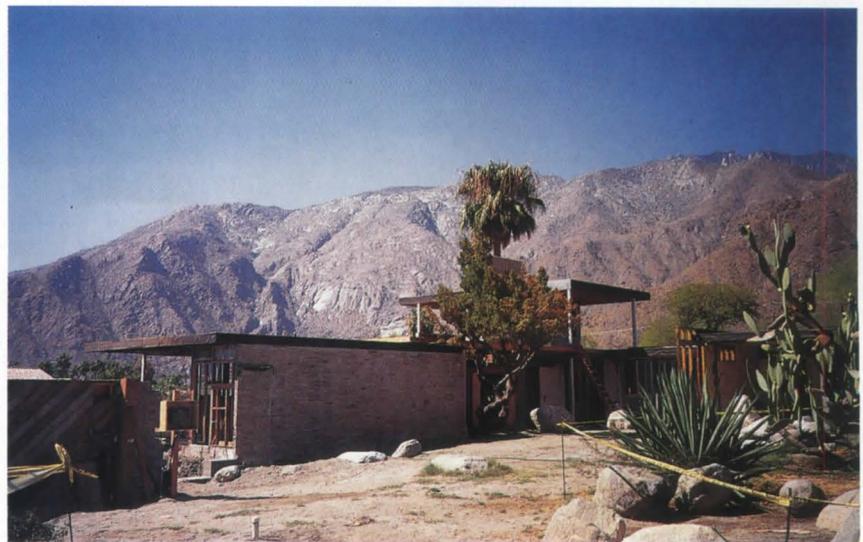
Accumulated HVAC and electrical equipment had added ungainly bulk to the slender profiles of the roofs as seen from the ground, but in particular it spoiled the views from the gloriette. In making the house habitable year-round, air conditioning units will be installed up to 25 feet away from the residence and connected with underground ducts. Distribution of air will occur through toe spaces in the cabinets, linear diffusers, or small holes in the tongue and groove joints of the wood ceilings.



4



DEMOLITION PLAN, MASTER BEDROOM WING



5

© Julius Shulman

Courtesy: Marmol & Radziner



6



Photo courtesy: Marmol & Radziner (left) © Julius Shulman (above)

7



PALETTE OF ORIGINAL AND REPLACEMENT MATERIALS

- 1 NEW GALVANIZED CRIMPED SHEET METAL
- 2 UTAH BUFF STONE
- 3 NEW CORK FLOORING (WITH LIGHT WAX FINISH)
- 4 ORIGINAL BIRCH VENEER PLYWOOD (REFINISHED WITH LACQUER SEAL)
- 5 ORIGINAL PAINT PALETTE
- 6 ORIGINAL EXTERIOR PLASTER WITH MICA GLAZE FINISH
- 7 ORIGINAL OPAL FLASH GLASS
- 8 NEW SANDBLASTED RIBBED GLASS
- 9 NEW CONCRETE FLOORING (WHITE CEMENT WITH SILICA SAND)
- 10 NEW DOUGLAS FIR TONGUE AND GROOVE PLANKING

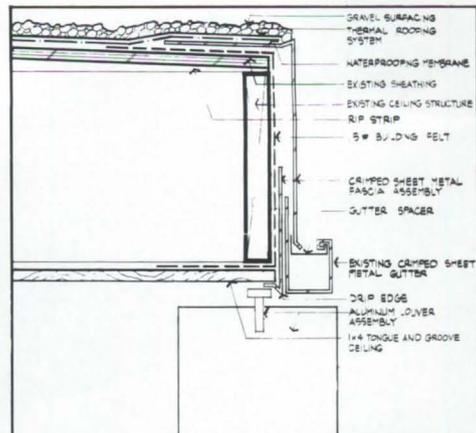
During the six-month demolition process, the restorers diagnosed dozens of different conditions to address for each material, ranging from minor repair to complete replacement. Finding exact matches took some sleuthing. For example: to uncover the paint-slathered crimped metal fascias (9), Marmol & Radziner considered chemical stripping, sandblasting, or walnut-shell blasting. The latter method, though the most costly, was selected for its low environmental impact, reliability, and relatively short duration. For the portions that need replacing, the architects hunted down a machine in Kansas City (unused for two decades) capable of reproducing virtually identical fascias.

Few of the elegantly minimal original metal frame windows and doors survived, and none were available off the shelf. But the grandson of the original manufacturer, remembering his grandfather's pride in the house, was able to locate the old shop drawings and turn them over to the restorers for custom fabrication. A similar process of investigation took place to locate an operative quarry to match the Utah buff stone used on the exterior walls and on the fireplace.

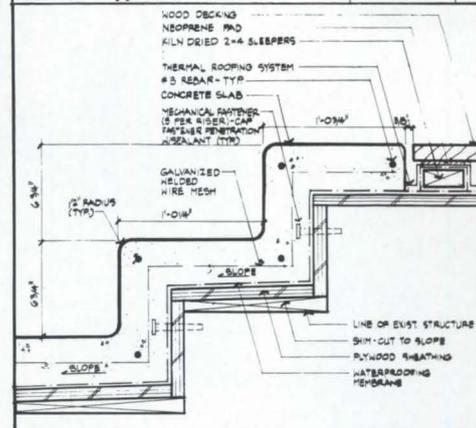
Acting as the general contractors provides a distinct advantage for the

architects, enabling them to carry the integrity of the restoration through lovingly reconstructed details (shown here is a fraction of the drawings produced). Marmol & Radziner created a complex system for subcontracting, issuing minutely detailed requests for proposals encompassing close to 50 trades; once their proposals have been thoroughly evaluated with the client, subcontractors are invited to execute a small portion of work – in an audition of sorts. The architects have not been averse to tearing down sample work when it has not been satisfactory and starting over. In one such case, a prospective stone mason was tested on a stretch of the car shelter wall. Falling short of the superlative standard of the existing masonry, evident in Shulman's closeup of the fireplace (10), the wall was torn down. Fortunately, the next mason to apply proved equal to the task.

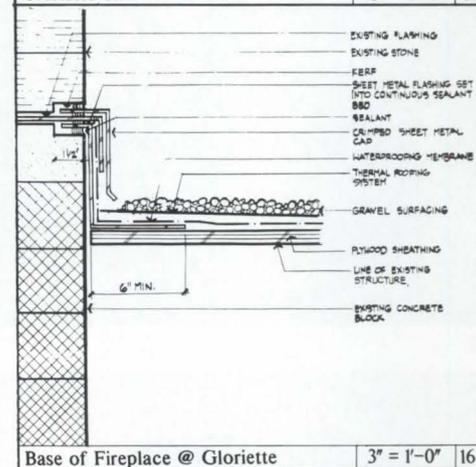
Mere proficiency is not the issue, says Marmol. "There are a lot of people who can do the job – but would see it as a pain." Radziner concurs. "The bidding process allows us to see who is truly excited, who is emotionally invested in the job," he says. Undoubtedly that very ardor is the architects' greatest strength.



Louver – Typical Head Detail 3" = 1'-0" 7



Gloriette Stair 3" = 1'-0" 9



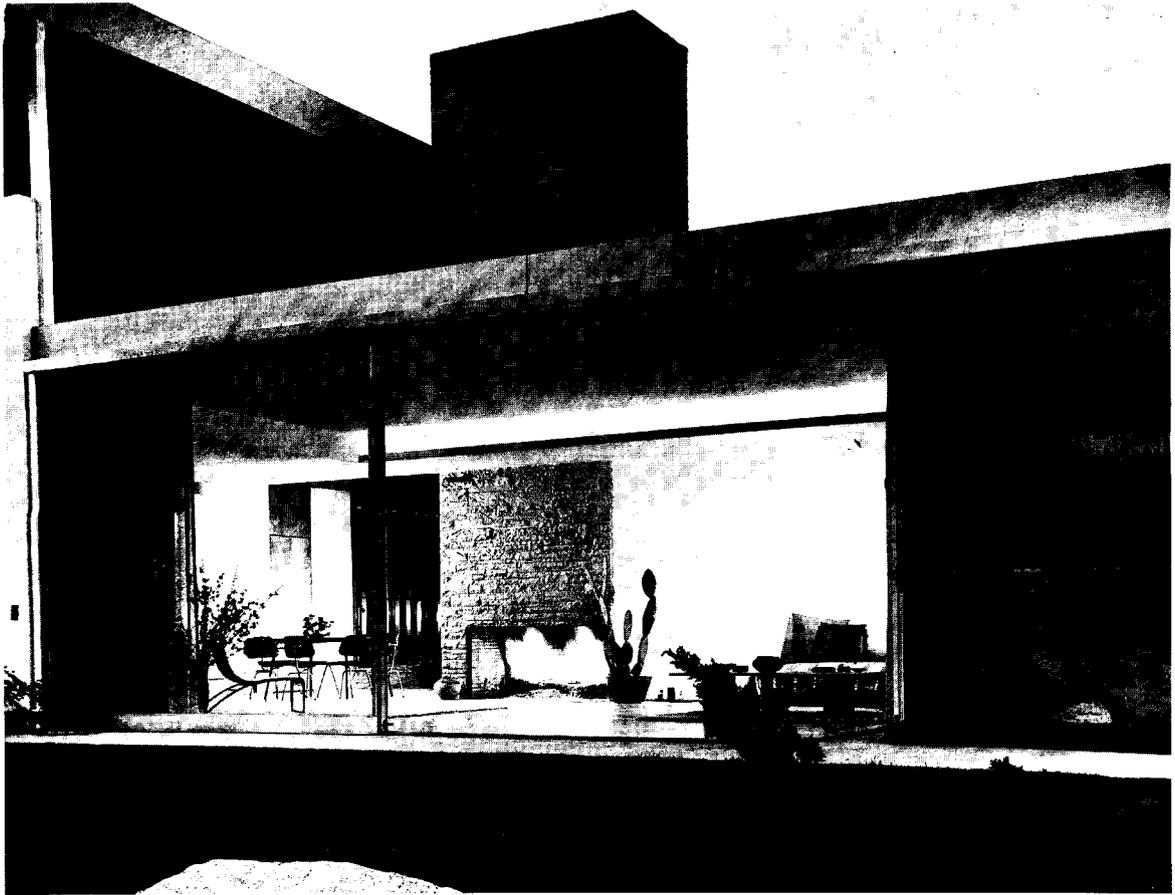
Base of Fireplace @ Gloriette 3" = 1'-0" 16

SELECTED DETAILS REDRAWN FROM NEUTRA DOCUMENTS

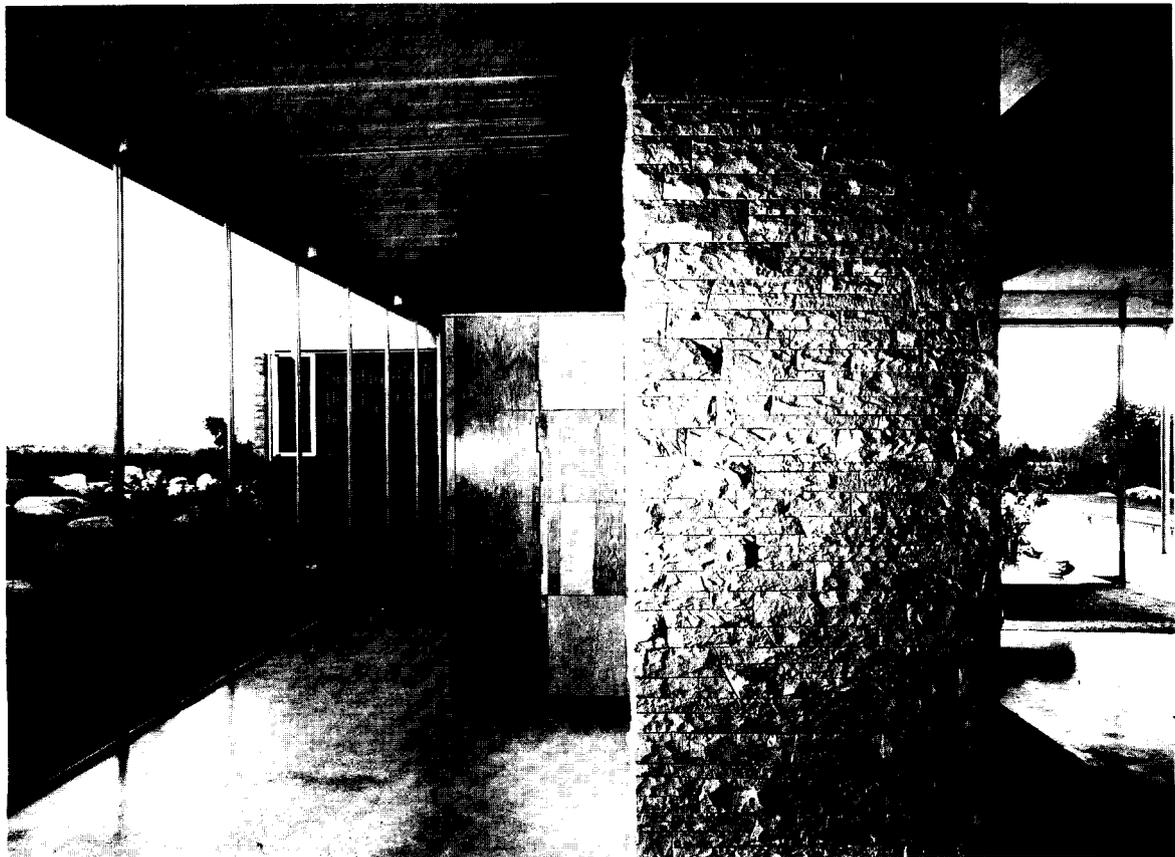
Restoration Architects: Marmol & Radziner Architects, Santa Monica (Leo Marmol, Ron Radziner, principals; Christopher Shanley, project manager; Tim Day, Andrew Kraetzer, Spike Wolff, project team; Paul Benigno, Elana Casey, Peter Cohn, Megan Dayton, Charlene Dekker, Anna Hill, Jin Kim, Christina Long, Shauna McClure, Steve Neutzel, Alvin Pastrana, Sarita Singh, assistants).

Contractor: Marmol & Radziner Construction (Eric Lamers, Bill Matthews, site managers; Thom Faulders, framing superintendent; Christian Bandi, Brian Eberline, Doug Hill, site assistants).

Consultants: Pamela Burton & Co., landscape architect; Cass Rogers, structural; Mel Bilow & Associates, mechanical; John Snyder & Associates, electrical; Seeborn Ltd., architectural conservators.



9



10

Photos: The Oakley Co., Jai us Sharma

Lights Out

Exterior lighting design demands close attention to security, appearance, and economy. Here's a guide to juggling these issues. *by Russell P. Leslie*

Abstract

Design of outdoor lighting must take into account issues of security, appearance, and cost. Discussed are ways to light effectively for security, to light aesthetically to fit the overall design concept of the architecture and adjacent areas, and to light economically using energy-saving lighting equipment.

Designing lighting for outdoor applications can be complicated by seemingly conflicting objectives. Should we light uniformly for safety, or light selectively to create an atmosphere of interest? Should we select lighting products on the basis of performance, or specify on the basis of operating costs? Should we improve security with perimeter lighting, or limit "light trespass" into surrounding windows? Should we increase light levels for security, or employ lower light levels to minimize energy use? Should our already financially burdened cities and neighborhoods invest in lighting for improved economic and social viability, or should municipal and neighborhood funds be spent for other equipment or services? Such issues as security, appearance, and economics have to be considered in unison during the lighting design process.

Security

Lighting cannot guarantee security; crimes happen even in broad daylight. But the architect should first ask whether the lighting plan should encourage or discourage people to be in an area at night.

Retail areas, parks, and gathering places should beckon people after dark. When people feel a sense of security in a space, they will occupy it, and their presence encourages others to do the same. The more people present in a space, the less likely a crime will be committed there. In order to feel secure, people must be able to see far enough so that they can take action to avoid a potential problem. For example, if a group of youths is loitering ahead, the outdoor lighting should illuminate the area sufficiently to give you a choice of crossing the street or taking another path. At the same time, the pedestrian's

view of potential trouble should not be blinded by glare or obstructed by shadows. What needs to be lighted are hiding spaces, upcoming pathways (so trouble may be detected early), and alternate escape routes that do not lead to dead ends. Generally, large areas should be lighted uniformly so that people's faces can be seen.

Industrial areas, storage yards, and areas without nocturnal activity are typically lighted to discourage people's presence. One approach is to use light to conceal; that is, to make it harder to see into the area than to see out, leaving an intruder unsure whether a guard or witness is behind the glare.

An example would be to light a fenced storage yard with perimeter luminaires aimed away from the fence. Potential intruders confronted by glare would find it hard to see into the dark storage yard within. They would know they were visible, and would be uncertain whether a guard or a vicious dog was waiting behind the fence.

Another way to discourage people from being where they are not supposed to be is to create an impression of brightness greater than the surrounding area. High light levels and glare help create this impression. Intruders avoid this area for fear of being discovered and apprehended.

Criteria for Security Lighting

There are several elements of an outdoor security lighting scheme that the architect should take into account:

Illuminance. The Illuminating Engineering Society of North America (IESNA) recommends light levels for different outdoor activities and tasks. These illuminance values serve as a guide for being able to see in a space, but do not predict how secure someone will feel in it. It has long been assumed that people experience an increased sense of security as illuminance increases. To test this theory, Rensselaer's Lighting Research Center in Troy, New York, brought a group of researchers and observers to 27 com-

The author, a practicing architect and associate professor of architecture at Rensselaer Polytechnic Institute, is also the associate director of RPI's Lighting Research Center.

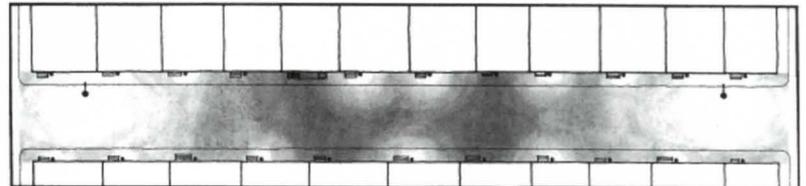
The Outdoor Lighting Pattern Book

This design example is one of thirty being developed by a team of lighting specialists, including architects, engineers, and human factor scientists at the Lighting Research Center, Rensselaer Polytechnic Institute. They will be published next spring in *The Outdoor Lighting Pattern Book*.

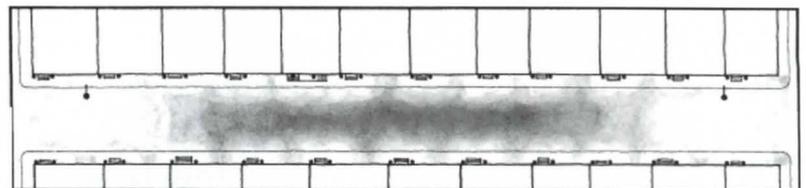
The "patterns" are model lighting designs for areas typically found in cities and towns. The patterns are intended as conceptual design options that can be modified by architects to meet the style and contextual requirements of their sites. To help in the decision-making process, each design set will illustrate typical lighting and will offer several upgrade and redesign options. Each option will be evaluated by experts on the basis of the criteria discussed in this article and will help architects in planning effective ways to light commercial and residential areas. Application guidance on outdoor lamps, luminaires, controls, and lighting principles will also be included.

The Outdoor Lighting Pattern Book will include residential, commercial, institutional, industrial, and open space designs in virtually all outdoor conditions, among them alleys, quick-stop shopping, office parks, storage yards, loading docks, river walks, and playgrounds.

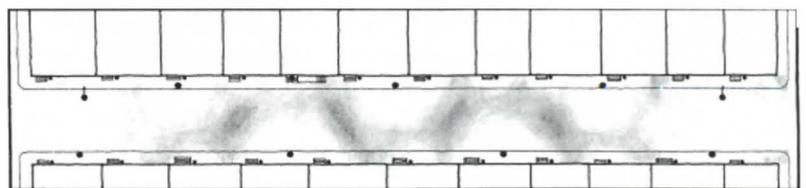
In addition to being a design guide for architects, *The Outdoor Lighting Pattern Book* will assist utilities in designing their outdoor lighting programs and will help community groups develop lighting plans consistent with their objectives. The research is sponsored by the Consolidated Edison Company of New York, Empire State Electric Energy Research Corporation, New York State Energy Research and Development authority, Niagara Mohawk Power Corporation, Northeast Utilities, and Northern States Power.



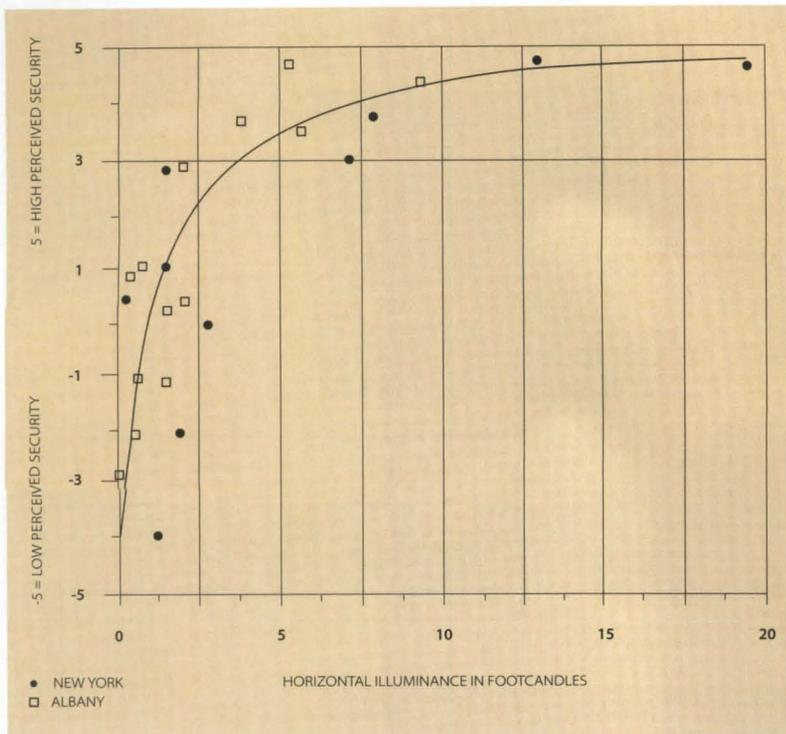
1 TYPICAL ROWHOUSE LIGHTING



2 UPGRADED ROWHOUSE LIGHTING



3 REDESIGNED ROWHOUSE LIGHTING



4 GRAPH OF RESPONSES TO QUESTIONS AS TO WHETHER A GIVEN LIGHT LEVEL PROVIDES GOOD SECURITY ILLUMINATION

mercial and residential sites in Albany and New York, where the observers subjectively rated the lighting for security. The researchers then measured vertical and horizontal illuminance and uniformity. They found a close correlation between horizontal illuminance and security ratings (4). Above three footcandles, the effect of increased illuminance begins to decrease rapidly.

Uniformity. We define uniformity as the ratio of the average horizontal illuminance to the minimum horizontal illuminance. As the uniformity ratio increases, a person's ability to detect and recognize objects and other people decreases. Relative dark spots make it difficult to see obstacles and intruders, especially if one's eyes are adapted to higher luminances.

Coverage. Good coverage on a site allows a person to see into potential hiding spots and reduces shadows that can conceal hazards. Coverage is defined as the percentage of the secure area whose horizontal illuminance is at least one-tenth of the average illuminance. For example, a parking lot should have 100 percent coverage so that no areas are illuminated to less than 10 percent of the average illuminance.

Color. Witnesses to crimes use color to describe clothing, vehicles, and other objects. High-pressure sodium lamps under very low light levels, and low-pressure sodium lamps under any light level, make accurate descriptions of color difficult. Metal halide, fluorescent, and

incandescent sources show color more effectively. There is growing evidence that a cooler light source such as metal halide provides greater peripheral vision per unit of energy than a warmer source such as high-pressure sodium. Using this principle, special lamps are being developed to light areas such as parking lots and roadway edges effectively with less energy.

Appearance

Outdoor lighting should support the design concept for the area, provide orientation, and be comfortable. We want to illuminate to reveal the surroundings, saving the highest luminance for objects we wish to highlight (such as paths, signs, building façades, foliage, or selected architectural features).

In a park, for example, we may want to light only the paths and surrounding foliage and leave the ball fields and lawns dark. This approach will decrease security, but will be much more economical, will limit light pollution, and will provide a clear orientation by emphasizing the paths.

Luminaires with shielded lamps limit glare, a source of discomfort. Light should be aimed toward the objects and people you wish to see. Light that is directed toward the sky is wasted.

Criteria for Lighting Appearance

Color. The color-rendering ability of a lamp affects the appearance of people and objects seen under its light. Color matters most in retail and residential areas. Where color is important, use sources with high color-rendering indexes (CRI), such as metal halide and fluorescent lamps.

Luminaires. Luminaires are an architectural element seen day and night. They should be selected to fit the design concept in both appearance and style. Choose luminaires with all or most of the light directed downward to limit light pollution.

Site Match. The patterns of light from luminaires become strong architectural elements at night. Good lighting should define the circulation pattern, emphasize aesthetic features, and contribute to the attractiveness of the space and the surroundings. Poor lighting illuminates inappropriate places such as the sky, an unsightly wall, or bedroom windows. "Light trespass" can be limited by selecting luminaires with distributions that do not light adjacent properties.

Glare. This reduces comfort, distracts one from viewing more interesting objects, and makes it difficult to see. For example, glare can obscure a driver's perception of pedestrians, obstructions, and other vehicles.

Economy

Lighting schemes that improve security and enhance appearance often require more lighting equipment, longer hours of operation, and higher operating costs. But good lighting can also increase sales, decrease vandalism, reduce accidents, and lower security costs. These benefits generally outweigh the costs of the lighting. In some areas, where the existing lighting operates for long hours with inefficient sources such as incandescent or mercury lamps, a new lighting design will not only improve security and appearance, but may also decrease operating costs.

Whether the benefits of increased security and a heightened sense of aesthetics are worth the cost must be determined by the client. Architects can guide this deliberation by considering design options that include both cost and benefit information and help match the design solution to the design objectives.

Criteria for Lighting Economy

First Cost. The first cost includes the expense of the luminaires, lamps, ballasts, controls, poles, wiring, and installation.

Annual Maintenance Cost. Maintenance costs are the prorated annual labor and material costs of replacing lamps, ballasts, and controls. Long-life lamps such as fluorescent, metal halide, and high-pressure sodium offer savings on lamp replacement, including significant labor costs.

Annual Energy Cost. Savings in energy costs can easily pay for the larger investment in efficient lighting equipment. The designer should select efficacious sources such as high-pressure sodium, metal halide, and fluorescent for outdoor lighting. Hours of operation can be reduced with motion sensors, time clocks, and switches if all the lighting is not needed all the time. At a minimum, photocells should be used to switch off all exterior lights during the daytime. Many exterior luminaires today come with integrated photocells.

Using the Criteria for Selection

The criteria explained above can be used to upgrade and redesign the lighting for any outdoor application. Let's take a rowhouse, for example. The families in this neighborhood look through their windows and watch their children at play on the tree-lined sidewalk. To them, passing cars are always a concern. Masonry steps lead up to the apartment entrances, and sometimes down to basements. The city provides the street lights: 250-Watt high-pressure sodium lamps installed in two cobra heads on 35-foot poles.

Each house (1) features a decorative surface luminaire with a 60-Watt A-lamp near its entry.

The residents turn these on and off according to their individual schedules and habits; often as many as 13 of the 23 lamps are on at a time. Cars and trees create shadows, especially in the center of the block where the cobra heads provide little light. The basement-level entry stairs can be ominously dark.

This typical lighting scenario provides an average horizontal illuminance of less than one footcandle, a uniformity of 14:1, and a coverage of 84 percent. The connected load, not including the streetlights, is 1380 Watts.

To upgrade this scheme (2), the neighborhood or civic association installs two decorative surface luminaires with 28-Watt dedicated compact fluorescent lamps per building; a total of 46. One luminaire replaces the existing entrance light, the other is appropriately located, often over the dark basement apartment entrance. The neighbors have agreed that the luminaires will be switched on and off by integral photocells and will stay on all night.

The upgrade improves the average illuminance to 1.5 footcandles, the uniformity to 5:1, and the coverage to 100 percent. The connected load increases to 1470 Watts.

To redesign the typical lighting scenario (3), the neighborhood association installs seven performance post tops with 150-Watt metal halide lamps. These luminaires, mounted on 12-foot poles, light the sidewalk and the street without causing glare when viewed from the windows. Twenty-three decorative surface luminaires with integral photocells and dedicated 28-Watt compact fluorescent lamps replace the existing decorative surface luminaires.

This redesign improves the average illuminance to two footcandles and the uniformity to 2.5:1, while maintaining 100 percent coverage. The connected load is 2066 Watts. The high CRI value of the metal halide lamps improves the color rendering on the street. The optics of the performance post-tops restrict glare and limit light pollution.

Conclusion

Outdoor lighting can be a significant investment in a project. Applied improperly, it can waste energy, create light pollution, annoy the neighbors, and create harsh, uncomfortable outdoor spaces. Applied appropriately, outdoor lighting results in improved safety, an enhanced sense of security, and extended hours of enjoyment of our towns and cities. An understanding of lighting principles and technologies outlined here will help guide the architect in determining the best strategies for illumination. □



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Women in Architecture: Leveling the Playing Field

(continued from page 49)

in communication within the project team. And the requests were granted. The benefits to the firm, believes Kwan, are higher morale, lower turnover, greater depth in the staff, and the ability to present a comprehensive marketing plan to potential clients.

Sam White of Buttrick White & Burtis, New York, also sees value in mutually agreed-upon working conditions. His firm has a conventional maternity leave policy, but when women come back to work, arrangements can be made for flexible schedules. "We have one woman architect who works 15 hours a week. But those hours are a gift [for the firm]" he says. Another architect who came back from maternity leave now works 40 hours in four days.

Taking It From the Top

While there are instances of inclusionary practices in the profession, many people believe that a generation or two must die out before a real paradigm shift can occur. But a more proactive approach is urgently needed: diversity studies should be a continuing education requirement for practitioners; and architecture schools should diversify their curricula

"The failure of architectural academia to accelerate the inclusion of women and minorities in its tenured ranks has been a barrier to building new leadership in the profession by denying role models to female and minority students."

and try harder to hire women and minorities. It is in the schools, where age-old exclusionary practices are instilled and perpetuated, that evolutionary changes can have the most long-lasting effect.

The need for changes in the schools is addressed in a forthcoming article in the *Journal of Architectural Education* (February 1996) by Linda Groat and Sherry Ahrentzen, a professor at the School of Architecture and Urban Planning at the University of Milwaukee-Wisconsin. In it, they argue that demographic diversity and intellectual diversity "are two sides of the same coin Increasing the number of women and minorities in the field should mean increasing the substantive domain of the profession, and vice-versa." The article is based on the authors' survey of 642 students in six schools conducted to analyze how architectural education might impede or support women and minorities.

Like women practitioners, women students often feel isolated, assume they have to exceed a higher threshold than men, and believe men can "look the part," regardless of ability. A related problem is the jury system, where a more explicit grading system would decrease inequitable practices. The authors also found that the design studio may be uncomfortable for women

because its structure "privileges persuasion over dialogue."

"The visions and ideals of many women and minorities," Groat told me, "don't seem to jibe with the mainstream model." Social issues, for example, were not addressed to the degree these students had envisioned. The narrow focus on formal issues in conventional curricula can be related to the generally monolithic nature of school faculty.

Another educator pursuing equal rights for women, Michael Kaplan of the University of Tennessee School of Architecture, argued at the AIA's first diversity conference that "the failure of architectural academia to accelerate the inclusion of women and minorities in its tenured ranks has been a barrier to building new leadership in the profession by denying role models to female and minority students." According to Kaplan, women make up 8.7 percent of the total number of tenured faculty in accredited architecture programs.

The low number of women educators, particularly among tenured faculty, was addressed in a second study by Groat and Ahrentzen. Women are among the leaders in rethinking architectural education (both Sharon Sutton of the University of Michigan and Leslie Kanes Weisman of NJIT, for example, have reactivated community service studios, a concept that was promoted in the 1970s and marginalized in the 1980s). But the efforts of more junior faculty are stymied, the researchers speculate, by their predominantly nonadministrative positions, by their lack of visibility in advanced studio, and by schools' failure to make explicit the requirements for tenure, much the way firms fail to specify criteria for promotion.

Statistically, architectural education is "at the bottom of the barrel, just above engineering and dentistry" in gender diversity, says Ahrentzen, who notes that the NAAB is rewriting its accreditation guidelines next year – an opportunity to make a few changes in criteria.

NAAB requirements for gender diversity and racial equity would be a major boon. But not the only hope. Says Ahrentzen, "the belief in the schools is that redirection may be coming from the students." With or without NAAB requirements, the schools should establish more inclusionary practices. They would then be more competitive, and their graduates would be more attuned to the world around them.

What's Sex Got to Do With It?

The barriers women in architecture face are not their problem only, but ours. Adapting to current economic realities requires an interdisciplinary, team-oriented workplace, with employees who are skilled in many areas. Leveling the playing field for women and minorities would bring a wide range of perspectives and experiences to the profession. It simply cannot thrive without them. The impending threat to dismantle affirmative action legislation would further tear our already delicate social fabric and hamper the profession's efforts towards diversity. What's needed now is a new definition of architect and in this women can lead the way. □

Please FAX us your thoughts and help P/A address a critical subject:

The Redesign of Practice

For a forthcoming article, P/A welcomes your responses. Use this form or a separate sheet, referring to the question numbers.

The business world talks about re-engineering companies, but they are really redesigning them – developing overall strategies, finding appropriate structures, implementing plans, and evaluating results. Architectural firms have begun to use that process in their own operations, applying a range of creative solutions to the problems of practice in a rapidly changing world. In preparation for a cover story on this subject in the February 1996 issue, we would like you to share with us any experience you or your firm may have had redesigning your practice.

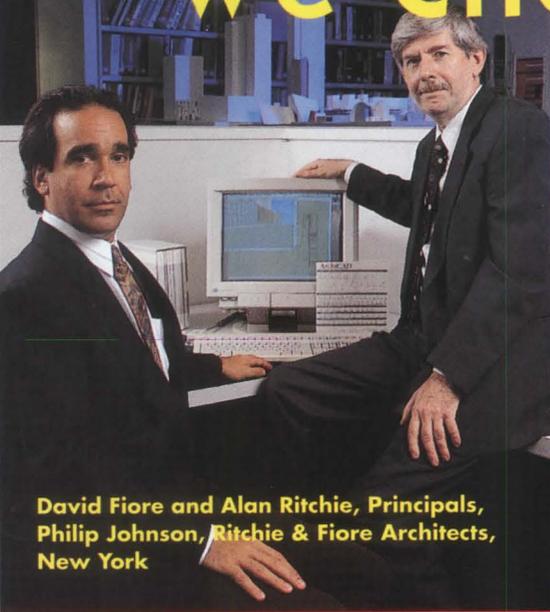
1. How has your firm changed your internal organization and mode of operation?
2. What changes have been made in the services your firm handles? Any difference in what's in-house and what's outsourced?
3. Why were the changes made?
4. What obstacles had to be overcome?
5. How have the changes been received by staff members and/or clients?
6. How have the changes affected the firm's work, financial health, and future prospects?
7. What general lessons, if any, can be drawn from your experience?

Optional: Your name

Your telephone

Feel free to address the issue as you wish, without being bound by the questions or by this form. *All responses will be considered confidential.* Nothing will be quoted by name unless we obtain your express permission. Send responses to: Redesign of Practice, FAX: (203) 348-4023, e-mail: PAeditor@aol.com - subject: RedesignPrac.

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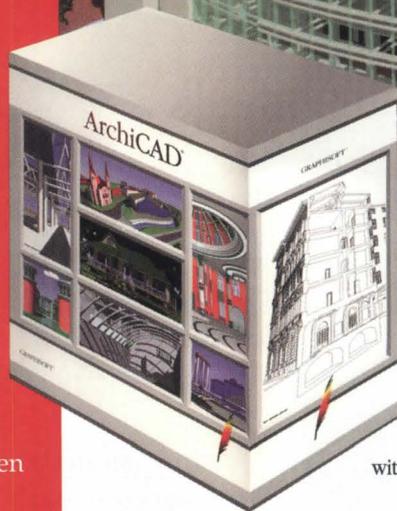
David Fiore and Alan Ritchie, Principals,
Philip Johnson, Ritchie & Fiore Architects,
New York

So much of our work is done on computer these days that the choice of CAD software becomes critical to the overall efficiency of the office. We chose ArchiCAD so that the entire office can standardize under one system. Since our approach is to have the senior staff do as much of the 'hands on' work as possible, an integrated software allows them to spend more time on project management and less time on system management.

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The Shanghai Complex Competition was definitely a situation where a small project team was able to produce a large quantity of high quality presentation drawings in a matter of days. Any other method of approaching the project would certainly have taken several more people, and we would have had to scale back our presentation.

*David Fiore, Principal
Philip Johnson, Ritchie & Fiore Architects,
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Rendered in ArchiCAD by Nick Buccalo/The Drawing Studio, New York

Division 01-

General Data



01850

Design Office Materials

The Dataprint catalog offers a complete in-stock discounted selection of brand-name CAD/Plotter supplies, drafting equipment, office furniture, books, and filing and storage systems, with same-day shipping.

Dataprint 200



01850

Liability Insurance

This folder reviews the programs provided by this insurer, including its premium discounts, interactive seminars, peer review, and early warning service. TeamCover, a project-specific insurance is also described.

DPIC 201

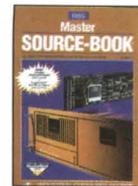


01920

Reference Publications

The CAD Rating Guide is a reference work that compares CAD systems. Includes descriptions, table of contents, list of systems, excerpts from reviews, and order forms.

CAD Rating Guide 202



01920

Reference Publications

The Master Source Book features a comprehensive listing of computer systems, I/O boards, and networking and software products. Tutorial sections, ordering information, and prices are included.

Industrial Comp. Source 203



01920

Reference Publications

Archiflash, a flashcard study system for the A.R.E., contains over 1,100 cards covering information on all written divisions of the exam. Includes time-saving charts, definitions, diagrams, and question/answer sections.

Nalsa 204



01920

Reference Publications

Easy-to-use database of article summaries from popular architecture, building, interior design, and housing magazines. Available for Windows and Macintosh. P/A subscribers get 50% off introductory offer.

Search Publishing 205



01920

Reference Publications

Urban Land Institute Information Services offers infopackets, metropackets, research services, project directories, and working papers on urban issues, land use, and development.

Urban Land Institute 206



01920

Reference Publications

The Walker Product Catalog #35 features all its publications and forms for construction cost estimating and management, including business forms, computer software, and reference books.

Walker 207



01960

Computer Systems

AutoEDMS for Windows manages documents, drawings, spreadsheets, faxes, and images. The system includes file checks, revision control, workflow routing, and viewing and printing of 150 file formats.

ACS Telecom 208



01960

Computer Systems

Microgrid Ultra, called "the ultimate digitizer," is a table-sized tablet with an accuracy of .002" and a resolution of 10,000 lines per inch. A four-button or 16-button cursor is available. Performance specifications are provided.

Summagraphics 209

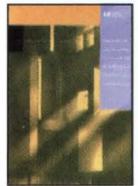


01960

Computer Systems

The Techjet line of wide-format inkjet plotters provides both color and monochrome output, cut-sheet and roll feeding, and extensive connectivity. The Techjet Color and Techjet Designer 720 are amply described.

CalComp 210



01960

Computer Systems

This nicely designed brochure offers an overview of the company's HP 9000 family of workstations, servers, and peripherals. Their systems can do drafting, facilities management, and 3D design/project review.

Hewlett Packard 211



01970

Computer Software

Chief Architect, an object-oriented 3D residential design program, features easily edited interior and exterior perspectives, elevations, and overview 3D displays, as well as complex roof generations.

Adv. Relational Tech. 212



01970

Computer Software

QuickDraw 3D is a high-quality rendering program. It offers interactive and wire-frame rendering, easy object manipulation, and realistic lighting and shading effects. The software is clearly described in this booklet.

Apple 213



01970

Computer Software

New Archित्रion integrates advanced modeling capabilities with complete architectural drafting tools and quality lighting and rendering tools. Other innovations include visual parametrics and intelligent objects.

BAGH 214

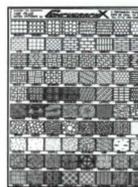


01970

Computer Software

Slick! for Windows v3.0, a drawing management system for AutoCAD, integrates viewing, direct printing, redlining, raster file conversion, and database capabilities.

CAD Systems Unlimited 215

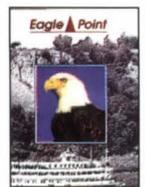


01970

Computer Software

Compugraphx's hatch pattern library for AutoCAD R13 contains 240 hatch patterns plus 29 AutoLISP-generated line-types and utilities. Program includes slide library and menus for both DOS and Windows.

Compugraphx 216



01970

Computer Software

AutoCAD software with landscape, quantity take-off/cost estimating, symbol library, structural analysis, and virtual simulation modules. Catalog includes summaries and applications.

Eagle Point Software 217



01970

Computer Software

FenSpec, fenestration selection software, highlights quick retrieval and review of window, door, skylight, and glazing products. Includes general data, thermal, optical, and other performance characteristics.

EnerAction 218



01970

Computer Software
Flovent®, a computational fluid dynamics (CFD) software tool, predicts the air flow and heat transfer in buildings, optimizing contamination control, temperature distribution, air quality, and energy costs.
Flometrics 219



01970

Computer Software
GeoCAD software for AutoCAD applications features architectural symbols, design and drafting routines, text fonts, and schedules for working drawings. Includes GeoVUE for 2-point perspectives.
GeoCAD 220



01970

Computer Software
ArchiCAD provides a "living document" of a project, integrating drawings so that changes to one are reflected in all. Animations, renderings, bill of materials, and associative dimensioning are just some of its features.
Graphisoft 221



01970

Computer Software
MiniCAD 5, an integrated 2D/3D CAD system, with database/spreadsheet capabilities, features DXF translators; 3D walk-throughs/fly-overs; balloon help; roof, wall, and floor tools; and autodimensioning.
Graphsoft 222



01970

Computer Software
AutoMetric automatically converts angular and linear dimensions in AutoCAD drawings between U.S. customary and metric units. Conversion calculations are derived from the ASTM and ANSI/IEEE.
Hillcrest 223



01970

Computer Software
This booklet shows the range of architectural and facilities management applications for Intergraph's computer software. Projects for a variety of client types are shown with descriptions of what software was used for each.
Intergraph 224



01970

Computer Software
ARCHT®, an object-oriented software for AutoCAD, features an extensive library of 2D and 3D symbols along with utilities and routines for design layout and documentation, with layer management flexibility.
KETIV 225



01970

Computer Software
Lumen-Micro 6 is a complete indoor lighting analysis software able to calculate all indoor lighting metrics. Key features include animated walk-throughs and calculations using artificial and natural lighting.
Lighting Technologies 226



01970

Computer Software
Tree Professional, tree modeling software based on knowledge of tree anatomy and growth, creates broadleaf and conifer trees, palms, and bushes, with high detail and biological accuracy in DXF format.
Onyx 227



01970

Computer Software
Point Line CADD, a full-spectrum PC software tool, integrates support through all phases of the design process including 3D conceptual design, photorealistic presentations, and design development and working drawings.
Point Line 228



01970

Computer Software
3DScheme for Windows, a scheme language interpreter, encompasses the ACIS solid object-oriented modeler. Brochure includes listing of features, advantages, requirements, and order form.
Schemers 229



01970

Computer Software
Sema4 features financial management software for A/E firms for DOS or Windows. Includes time billing, job costing, invoicing, project management, payroll, accounts payable and receivable, and 254/ 255 modules.
Sema4 230



01970

Computer Software
Planix Home Architect is a Windows software program for designing a home, room addition, deck, or landscaping, with over 800 home and landscape symbols. Create a new plan or select from 500 plans on CD ROM.
Softdesk 231



01970

Computer Software
High-performance display list driver for AutoCAD DOS or Windows features dynamic birdseye and detail windows, PanBars, ZoomBars, a Tool Strip, a Tool Box, and a programmable icon panel.
Vibrant Graphics 232



01970

Computer Software
XCAD, integrated 2D/3D CAD software for Windows, features NURBS surfaces, versatile free-form surface creations, editing, shading, and DXF compatibility.
Xitron Software 233

Division 02- Sitework



02520

Concrete Paving
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Eurocobble 234



02524

Porous Paving
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Presto 235



02870

Site Furnishings
Sitecraft features tables, planters, benches, planter-benches, and site accents in redwood, cedar, oak, mahogany, ipe, and purple heart. Brochure details specifications, drawings, and dimensions.
Sitecraft 236



02980

Landscape Accessories
Catalog presents an array of cast iron tree grates for urban and mall landscaping. The decorative grates are available in square, round, rectangular, octagonal, and custom shapes. Includes specifications and site photos.
Neenah Foundry 237



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Division 03- Concrete



03010

Concrete Materials
Brochure illustrates Patene Arctectura's system of specialized coloring, patterning, texturing, and finishing techniques used in exterior and interior concrete flooring and pavements.

Bomanite 238



03010

Concrete Materials
Conproco manufactures a broad line of products for the repair, preservation, and protection of concrete and masonry surfaces. Brochure features before and after illustrations and general information.

Conproco 239



03010

Concrete Materials
Davis Colors™, color admixtures for paving, landscaping, and buildings, are made with pigments recycled from iron or refined from the earth. Available in 25 standard colors and custom hues.

Davis Colors 240



03010

Concrete Materials
Hanover® offers concrete pavers in custom and standard colors and textures for roofs and decks, interlocking concrete brick, reconstructed stone, exterior wall panels, and asphalt block.

Hanover 241



03010

Concrete Materials
Brochure provides information on Scofield's entire line of concrete coloring products including the Chromix® earth-tone colors and the Lithotex® Colorstone marble- and granite-tone product lines.

Scofield 242



03100

Concrete Formwork
Conform is a polystyrene formwork into which concrete and steel are placed to create lightweight reinforced concrete structures. Contains high-insulation values for thermal and acoustical properties.

American Conform 243



03404

Precast Concrete
Hebel precast autoclaved aerated concrete offers lightweight and simple construction; fire, weather, and pest resistance; and acoustic and energy efficiency. Product is durable and environmentally sound.

Hebel 244



03404

Precast Concrete
Slenderwall™, a lightweight, precast concrete architectural exterior wall system, is used in multi-story, spandrel, and load bearing panels. Available in an array of finishes from brick to polished granite.

Smith-Midland 245



03650

Cementitious Underlayment
Maxxon offers a complete line of underlayments for new construction, renovation, and repair. Brochure includes product descriptions, section drawings, technical and test data, and specifications.

Maxxon 246

Division 04- Masonry



04200

Unit Masonry
Spectra-Glaze® booklet features factory-glazed concrete masonry units for interior and exterior walls. Brochure includes color chart, construction details, and information on design advantages of texture and scale.

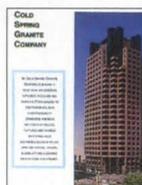
Burns & Russell 247



04200

Unit Masonry
Ceramic-glazed structural brick and tile are non-toxic, have a zero flame spread, and are fire, impact, weather, stain, and fading resistant. Ceramic coatings are available in a variety of finishes, textures, and colors.

Elgin-Butler 248



04200

Stone Cladding
This well-illustrated color brochure shows granite use in buildings, landscapes, and interiors. It also provides a granite color chart, standard details, specifications, and a list of sales offices around the world.

Cold Spring Granite 249



04200

Unit Masonry
Pacific Clay manufactures custom brick products, including face and bullnose bricks, pavers, and mini-bricks. Brochure illustrates five completed projects and a sampling of custom shapes and colors.

Pacific Clay 250

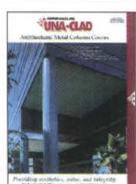
Division 05- Metals



05600

Architectural Metalwork
This book on the use of copper in architecture (available for \$85 or on four disks for \$40) contains the design, details, and specifications of many installations. Physical properties, historical uses, and installer lists are given.

Copper Dev. Assoc. 251



05600

Architectural Metalwork
Una-clad brand custom architectural metal column covers are manufactured in square, round, oblong, and rectangular shapes in aluminum, AGSC copper, stainless steel, muntz metal, and composite materials.

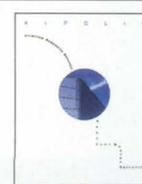
Copper Sales 252



05600

Architectural Metalwork
Doubarn customizes stainless steel, brass, copper, aluminum, or steel, to design specifications in residential and commercial applications. Products range from kitchen counter tops to storefront handrails.

Doubarn Sheet Metal 253



05600

Architectural Metalwork
ALPOLIC™, an aluminum-composite material for exteriors and interiors, features design flexibility, ease of construction, durability, and economy. Available in solid colors, metallic and reflective finishes, and stone textures.

Mitsubishi Chemicals 254



05600

Architectural Metalwork

Bennington copper shingles are described and illustrated in this nicely designed brochure. A discussion of life-cycle costs, durability, and weathering is accompanied by color photos.

Revere 255



05600

Architectural Metalwork

Aluminum and galvanized steel siding and roofing panels are detailed in this 8-page brochure. Color swatches, test results, panel profiles, and product descriptions are all provided.

Reynolds 256

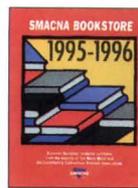


05600

Architectural Metalwork

Ornamental cast iron products include fountains, grilles, gates, capitals, columns, and garden accessories in a variety of finishes. Robinson specializes in historical accuracy and design ingenuity.

Robinson Iron 257



05600

Architectural Metalwork

Sheet Metal and Air Conditioning Contractors National Association's catalog lists technical manuals, construction standards, and design guides. Includes SMACNA chapters and ordering information.

SMACNA 258



05800

Expansion Control

Flush Thinline Expansion Joint Covers accommodates building movement with minimal impact. Available in 1" and 2" joint covers for smooth top surfaces, hygienic characteristics, and low visibility.

ConSpec 259

Division 06-

Woods & Plastics



06000

Recycled Wood Products

Environ™ biocomposite, a new raw material from recycled wood products, may be sawed, milled, routed, and drilled like wood. Available in a variety of granite-like colors.

Phenix Biocomposites 260



06010

Lumber

Guide to Wood Design Information brochure facilitates the search and selection of wood design literature. Includes technical wood design information available from the Associations of Wood Product Councils.

Southern Forest Prod. 261



06010

Lumber

Western Lumber Product Use Manual includes general information; grades and uses on framing, appearance, and industrial lumber; and properties of western species. Includes drawings and tables for each species.

Western Wood Products 262



06124

Fiberboard Sheets & Decking

Firestall Roof Decking is a nailable, Class-A fire-rated structural roof decking, applicable to both wood or steel framing. Literature includes physical properties, a load table, a standard specification, and details.

Homasote 263

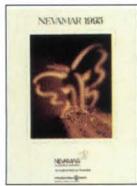


06400

Architectural Woodwork

Full line of architectural millwork and casework, including custom mantels, doors and entry frames, windows, mouldings, stairs, handrails, and cabinets, in species from ash to zebrawood, both prefinished and unfinished.

Kentucky Millwork 264



06600

Decorative Surfaces

This 54-page catalog details the company's complete line of laminates. Laminate panels (LamMates™), metal-surfaces (Pure Metals™), solid surfaces (Fountainhead by Nevamar™), and decorative acrylics are illustrated.

Nevamar 265



06600

Plastic Fabrications

Orac Decor catalog contains decorative mouldings, ceiling medallions, niches, corbels, columns, and door and window surrounds. Manufactured from high-density polyurethane and accommodates all types of paints.

Outwater 266



06600

Laminates

This brochure presents the company's Gibraltar® line of solid surfacing materials. Various applications are shown, colors are provided, test results are given, and design and maintenance information is offered.

Wilsonart 267



06610

Glass Fiber Fabrications

Brochure describes fiber-glass-reinforced plastic in architectural applications, including columns, cornices, canopies, domes, planters, exotic ornamentation, and custom signage. Includes examples and properties.

Molded Fiber Glass 268

Division 07-

Thermal & Moisture

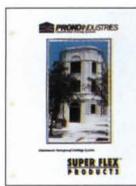


07100

Waterproofing

Laticrete® 9235 is a liquid, cold-applied, load-bearing, non-toxic, fabric-reinforced water-proof membrane providing protection directly under ceramic tile, pavers, brick, and stone. Test data included.

Laticrete 269



07100

Waterproofing

SuperFlex™ elastomeric waterproof coatings system protects against wind-driven rain and provides a high-build finish in a variety of textures and colors. Brochure includes product descriptions and applications.

Proko Industries 270



07100

Waterproofing

Seal-Guard elastomeric roof coatings provide metal roofs with leak-free protection while inhibiting rust and corrosion and resisting temperature extremes. Brochure details applications and versatility of products.

Seal-Guard 271

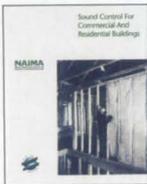


07200

Insulation

Brochure describes the K-13 spray-on systems of thermal and acoustic insulation, acoustical ceiling finishes, and sound transmission control. Includes performance charts and technical information.

Int'l Cellulose 272



07200

Insulation
NAIMA's new guide details ways to construct walls, floors, and ceilings, using fiber glass insulation to effectively control sound. Construction methods illustrated with STC and fire-rating information.
NAIMA 273



07220

Roof & Deck Insulation
Polyisocyanurate foam insulation, with a black glass-reinforced mat facer, is detailed in this folder. Available in both tapered and untapered form, the insulation's physical properties, installation, and compliance are all provided.
Firestone 274



07240

EIFS
Infinity® PE (pressure-equalized) and MD (moisture drainage) systems are explained here. System includes an inner air barrier, an EPS layer with drainage or pressure-equalization channels, and a rain-screen.
Dryvit 275



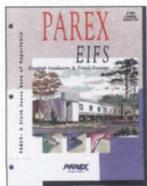
07240

EIFS
EIFS Industry Members Association brochure provides a complete set of generic guidelines specifications, technical notes, test methods, and common construction details on exterior insulation and finish systems.
EIMA 276



07240

EIFS
Thorowall® exterior insulation and finish systems includes a flexible acrylic polymer base system and high-impact polymer-modified system. Available in a wide selection of colors and finishes.
Harris Specialty Chem. 277



07240

EIFS
The Parex Exterior Insulation and Finish Systems provide resilient weather protection in multiple textured colors and finishes. Brochure includes chart on system comparisons, performance, strength, and durability.
Parex 278



07240

EIFS
U.S. Brick Systems offers a lightweight EIFS utilizing kiln-fired 1/2" clay brick and a polystyrene panel face. Complete system features insulation and easy installation with fasteners, adhesives, bricks, and mortars.
Real Brick Products 279



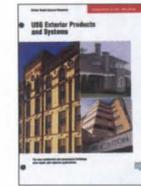
07240

EIFS
Senergy introduces QA21, an exterior insulation and finish system designed for situations exceeding EIFS standards. Brochure outlines materials upgrades, design reviews, field support, and applications.
Senergy 280



07240

EIFS
Ful-O-Mite® EIFS features five 100% acrylic dirt- and mildew-resistant textured finishes, field color tinting, and directly-applied or mechanically-attached methods of exterior retrofit.
TEC 281



07240

EIFS
USG offers a variety of exterior synthetic stucco systems. Brochure features technical data and specifications on USG, DUROCK, and WEATHEROCK EIFS in a wide choice of styles, colors, and textures.
USG 282



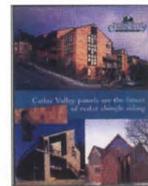
07250

Fireproofing
Garland Energizer FR, a multi-purpose rubberized liquid waterproofing membrane, restores and upgrades fire ratings on existing SBS, APP, and built-up roof surfaces. Made from a blend of SBS asphalt.
Garland 283



07250

Fireproofing
Isolatak's brochure presents the CAFCO line of sprayed fire protection, insulation, and acoustical products, all non-combustible and certified asbestos-free. Includes information on performance and properties.
Isolatak 284



07310

Shingles
Cedar Valley brochure details panelized cedar shingle siding system with fiberglass interply and staggered and interlocking end joints. Includes specifications, illustrations, and finishing information.
Cedar Valley 285



07310

Shingles
Shakertown brochure features cedar shingle siding in eight-foot panels with six siding options. Available in 1, 2, or 3 courses, they qualify for one-hour fire wall. Fancy cuts are available in nine patterns.
Shakertown 286



07310

Shingles
ColorBlends™, fiber cement shingles, provide the appearance and durability of a slate roof pre-packaged for ease of installation. Brochure includes specification details and presents five new ColorBlends.
Supradur 287



07320

Roofing Tile
Gladding, McBean manufactures clay roofing tiles in seven standard or custom shapes and a variety of sizes, textures, and colors. Brochure includes specifications and suggested installation details.
Gladding, McBean 288



07410

Roof & Wall Panels
Architectural Specialty Products offers exterior and interior pre-insulated metal siding and custom metal wall panel systems. Available with a Kynar finish, an anodized aluminum finish, and a stainless steel skin.
Arch'l Specialty Products 289



07410

Roof & Wall Panels
Metl-Span features a complete line of concealed fastened polyurethane insulated metal wall and roof panels. Panels available in three profiles and seven standard or custom colors. Guide specification included.
Metl-Span 290



07410

Roof & Wall Panels
Smith Steelite's Building Enclosure systems includes composite walls, profiled and curved panels, structural standing seam roofing, windows, and vents and louvers for non-residential insulated and uninsulated walls.
Smith Steelite 291



07500

Membrane Roofing
BondCote offers a catalog on polyester-reinforced thermoplastic single-ply roofing membranes. Includes cut-away drawing with captions and detailed lists of physical properties, colors, and sizes.
BondCote 292



07500

Membrane Roofing

The Hypalon® system mechanically fastens and provides an economical, leakproof, energy-efficient, and wind, fire, tear, pollutant, and chemical-resistant roofing system. Ideal for new and reroof installations.

Burkeline 293



07500

Membrane Roofing

Sure-Weld, a white-on-black .045"-thick reinforced membrane is both resilient and reflective, while being faster to heat-weld and more stable than other roofing. The sheet also has ultraviolet and ozone resistance.

Carlisle 294



07500

Membrane Roofing

Brochure features full line of heat-weldable rubber Hi-Tuff Roofing Systems from JPS. Includes installation, technical, and energy savings information for both the Hi-Tuff EP and Hypalon Systems.

JPS Elastomerics 295

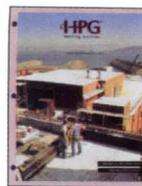


07500

Membrane Roofing

Sarnafil introduces a new 300-page design and specification manual for new or retrofit roofing systems. Includes illustrations and cutaway drawings of mechanically-attached and fully adhered systems.

Sarnafil 296

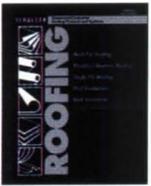


07500

Membrane Roofing

The HPG SR and V-2 Series of reinforced, mechanically fastened roofing systems go over existing roofs, eliminating disposal costs. The welded single-ply membrane is laid over a slip sheet and rigid insulation

HPG 297

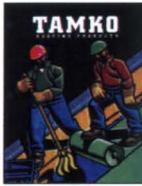


07500

Membrane Roofing

Schuller features single-ply, built-up, and modified bitumen roofing systems with insulation and accessories. Catalog includes materials and methods, product descriptions, technical data, and specifications.

Schuller 298

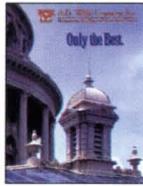


07500

Membrane Roofing

Tamko® Roofing Products comprehensive Specifications and Detail Binder presents its full line of organic, fiberglass, and modified bitumen roofing products for residential and commercial applications.

Tamko 299



07610

Metal Roofing

A.D. Willis specializes in sheet metal roofing for historical restorations. Other roofing systems include built-up, metal, tile and slate, and modified bitumen.

A.D. Willis 300

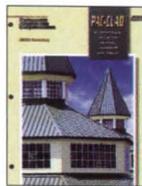


07610

Metal Roofing

Terne-coated stainless steel and carbon steel roofing systems are described in this literature. Institutional, commercial, governmental, and residential applications are all illustrated. Warranties are also detailed.

Follansbee 301



07610

Metal Roofing

Petersen manufactures a complete line of metal roofing panels, featuring the SNAP-CLAD Panel system. Also includes flush panels, soffit and fascia panels, and matching trims in steel and aluminum.

Petersen 302



07620

Sheet Metal Flashing

The Terminator™, O'Keeffe's watertight termination system constructed of a thermoplastic resin, offers weather and chemical resistant properties. Flashing options complement any roof. Available in custom colors.

O'Keeffe's 303



07650

Flexible Flashing

The Mortar Net™ prevents mortar droppings from blocking the flashing weep hole vent while allowing moisture access to the weep hole. Brochure includes technical data and installation information.

Mortar Net 304

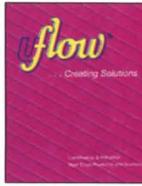


07715

Fascias and Soffit Panels

Southern Aluminum Finishing's Design and Specification Guide features tabbed indexes on its complete line of architectural copings, gravel stops, industrial gutters, and aluminum finishes.

SAF 305

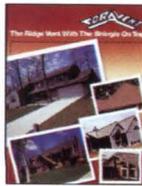


07720

Roof Accessories

The company's wide range of roof-ballast guard screens is illustrated in this technical binder. Product descriptions and components are provided for each screen type, along with data on drainage capacities.

U-Flow 306



07720

Roof Accessories

Cor-A-Vent brochure details information, specification, installation, and applications of ridge vents with shingle, wood shake, slate, flat tile, and metal roofing. Also explains balanced ventilation system.

Cor-A-Vent 307



07720

Roof Accessories

RPS manufactures a complete line of roof-mounting curbs for conventional and metal roofing systems. System includes roof curbs, pipe flashings, pipe and duct mounting pedestals, and curb adapters.

Roof Products & Systems 308



07810

Unit Skylights

Bristolite® offers custom commercial, residential, and industrial skylights, in four standard structural systems. Aluminum and fiberglass frames available with a variety of size and glazing options.

Bristolite 309



07810

Unit Skylights

Circle Redmont SolarWhite glass block and aluminum panels, available as skylights, floor and deck lights, barrel vaulted skylights, walls, and windows, are structurally engineered, pre-glazed, and waterproof.

Circle Redmont 310

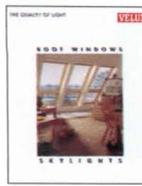


07820

Skylight Structures

Skywall manufactures custom translucent skylights and curtainwall systems. Brochure includes physical properties, test data, and project examples. Complete technical, design and construction assistance available.

Skywall 311



07820

Skylight Structures

Velux's complete guide to roof windows and skylights includes information on specifications, sunscreening accessories and controls, glazings and flashings, and installation tips.

Velux 312

Division 08-

Doors & Windows



08000

Doors & Windows
Case manufactures custom-made wood windows, doors, window walls, and rolling glass walls for luxury residential and commercial projects. Metal-clad options are also available.

Case 313



08000

Doors & Windows
Brochure features EFCO's complete line of windows, doors, storefronts, and curtain wall systems. Includes product descriptions, details, photos of finished projects, specifications, and color chart.

EFCO 314



08100

Metal Doors
Architectural Metal Doors are available in stainless steel, Muntz, and galvanized steel sheets, with plain, embossed, or abraded surfaces. Brochure includes drawings, hardware, and specification data.

Forms + Surfaces 315



08100

Metal Doors
Kaylien offers its Royal American collection of entry doors in bronze, pewter, and copper. Also featured is the Lustr Metl® collection of commercial, fire-rated, water-proof, and bonded doors.

Kaylien 316



08100

Metal Doors
Pease offers steel, fiberglass, and hardwood doors for residential and light-commercial applications. Systems with hardware, wood or steel frames, adjustable or fixed sills, and fire-rated doors are available.

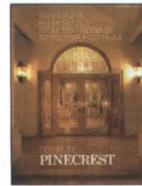
Pease 317



08200

Wood Doors
Nicolai Catalog highlights advanced wood door construction in a broad range of entry doors with a selection of matching sidelights and transoms, exterior panels, and sash doors.

Nicolai 318



08200

Wood Doors
Pinecrest catalog features wood and metal doors with designs from beveled, stained, or sandblasted glass to wood-paneled and hand-carved doors. Matching transoms, sidelights, and laterals are available.

Pinecrest 319



08200

Wood Doors
Simpson's Mastermark® line of handcrafted doors offers 42 exterior, 11 galley, and 11 French door styles; interior doors; and fire-rated doors. Brochure includes section on finishes and maintenance.

Simpson 320



08200

Wood Doors
A new line of doors, with a range of woods and finishes, are described in this literature. Plain-sliced cherry, walnut, white and red oak; rotary-cut birch; and flat-cut Honduras mahogany are all illustrated.

Weyerhaeuser Door 321



08250

Fire Door Systems
Total Door Systems is an architectural-grade fire door system including pre-finished door panels, hardware, field installation, and frames. Brochure includes applications, options, and specifications.

Openings 322



08275

Door Louvers
Catalog features a full line of square and beveled profile VisionLite frames for doors. A U.L.-rated beveled style kit is designed for easy installation. Fixed and adjustable blade door louvers are also presented.

Air Louvers 323



08305

Access Doors
Bilco's 1995 catalog features roof scuttles, fire vents, floor-vault and sidewalk doors, domed fire vents, and the LadderUp safety post. Includes detailed cross sections and specifications.

Bilco 324



08330

Rolling Doors & Grilles
Brochure features rolling metal doors, rolling and side-folding grilles, and service, fire, counter, and insulated doors. The slow-closing M100 fire door and the collection of powder coating finishes are highlighted.

Cornell Iron Works 325



08330

Rolling Doors & Grilles
Kelley's guide features a full line of high-speed low-maintenance doors for industrial and food-processing applications. Brochure includes RT-Series Roll-Up doors, bi-fold doors, and horizontal-folding doors.

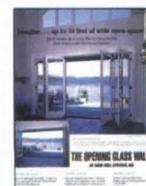
Kelley 326



08330

Rolling Doors & Grilles
Wayne Dalton offers rolling door and grilles from Kinnear® and North American™ lines. Brochure features fire and security doors, scissor grilles, rolling counter shutter doors, frames, and motor operators.

Wayne Dalton 327



08350

Folding Doors
The Opening Glass Wall™ features large openings (up to 18'), multi-functional operations, energy efficiency, weathertightness, and security against forced entry. Made from select Douglas fir.

Nana 328



08360

Upward Acting Doors
GADCO manufactures a full line of garage doors combining polystyrene insulation, heavy gauge steel, a pre-finished exterior coat, and a raised-panel design. Available in various sizes.

General American 329



08400

Entrances & Storefronts
Entrance doors by Brite Vue®, a division of Kawneer, are illustrated in this literature. All-glass walls, sliding-glass doors, balanced doors, frameless doors, shower doors, and revolving doors are shown and described.

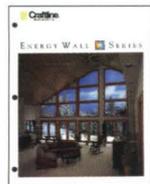
Kawneer 330



08500

Metal Windows
The Rondo line offers a variety of round, lacquered aluminum windows in a wide selection of sizes, from 16" to 63", and operating systems: pivoting, fixed, awning, and French and Italian styles.

Baudisson 331



08500

Metal Windows

The Craftline Energy Wall Catalog features a complete line of energy-efficient windows. Options include low-E glass, clear metallic coating that transmits light but reflects heat, triple pane windows, and wood framing.

Craftline 332

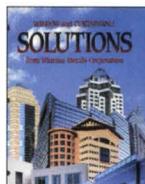


08500

Metal Windows

Catalog features custom aluminum windows for churches, malls, and libraries manufactured as fixed, projected, and casement windows in any shape or size, with or without true muntins.

J. Sussman 333



08500

Metal Windows

Wausau's brochure highlights fixed and operable aluminum windows and curtainwall systems. All windows are modified to meet desired glass thicknesses and finishes. Drawings, photos, and specs included.

Wausau 334



08610

Wood Windows

This complete guide to the company's clad wood windows and doors contains dimensioned elevation drawings, details, opening sizes (in metric and imperial units), and ample photography of installed products.

Andersen 335



08610

Wood Windows

Benchmark features clear, all heart, kiln-dried redwood casement windows that are naturally insect and decay resistant. Brochure includes answers to commonly asked questions, specifications, and ordering information.

Benchmark 336

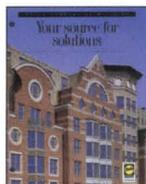


08610

Wood Windows

This commercial catalog describes the entire line of wood and wood-clad windows. Product styles, performance characteristics, and design possibilities are all described, along with the company's support services.

Marvin 337



08610

Wood Windows

A 33-page commercial products guide provides detailed size charts to help designers identify the right products and performance information to let specifiers describe the proper application procedures.

Pella 338

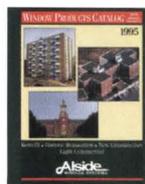


08610

Wood Windows

SealRite features premium wood windows and doors with designer glazing. Options include brass and zinc came, beveled grooved glass, and etched and stained glass. Made to order in any pattern, size, and shape.

SealRite 339

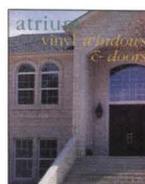


08630

Vinyl Windows

Alside manufactures a full line of vinyl windows for renovation, new construction, and light commercial needs. Windows feature the PPG Warm-Edge Intercept Spacer System and are available in custom and standard sizes.

Alside 340



08630

Vinyl Windows

Atrium's comprehensive catalog features complete line of vinyl windows and doors. New in the series is the tilt single hung and slider windows. Includes product specifications and sizing information.

Atrium 341

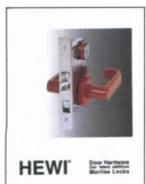


08710

Finish Hardware

Hiawatha's catalog features a line of 1 1/4" tubular pulls and pushes and 1" and 3/4" round pulls and pushes in a variety of combinations and finishes including brass, bronze, chrome, and stainless steel.

Hiawatha 342



08710

Finish Hardware

Hewi's Mortise Locks and lever handles are made of nylon with steel inserts, available in 13 colors. Products have a nonporous surface with concealed fasteners, meet ANSI and ADA standards, and are fire-rated.

Hewi 343



08716

Exit Devices

NT Monarch Hardware offers a condensed brochure featuring its panic and fire exit devices and trims. Includes detailed information on construction features, specifications, finishes, and photographs.

Newman Tonks 344

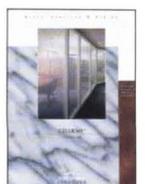


08720

Operators

"Dura-Glide" line of automatic sliding doors includes the single slide, bi-parting, telescoping, access-controlled, and all-glass doors. Choice of activation systems and finishes to match any decor.

Stanley 345

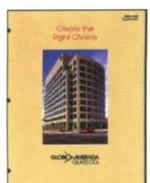


08810

Glass

Charme® Glass, an acid-etched screen-printed glass, can be used in interior applications: partitions, doors, balustrades, and walls. Product available in eight standard patterns which are tempered or laminated for safety.

Euroglass 346

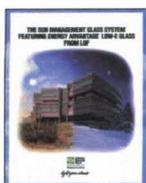


08810

Glass

Globe manufactures attack- and bullet-resistant security glass with a fire-rated glazing up to 1-1/2 hours with cold hose. Other products include sound-control laminated glass and specialty laminates for zoos and aquariums.

Globe Amerada 347



08810

Glass

LOF's Sun Management Glass System combines Energy Advantage® Low-E glass with a variety of solar control glasses to optimize the thermal performance of insulating units. Available in six colors.

Libbey-Owens-Ford 348



08810

Glass

Bentemp®, fully tempered curved glass, is available in different thicknesses, sizes, shapes, types of glass, and fabrication options. Ideal applications include staircases, elevators, and storefronts.

North American Glass 349

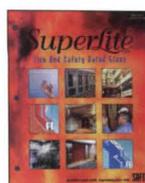


08810

Glass

A six-page brochure provides color, finish, and size information on the company's NEOPARIES and NeoClad lines of crystallized architectural panels. Technical and ordering information is also provided.

NEG 350



08810

Glass

Superlite™ clear fire-rated safety glass may be used in fire-rated wood and steel framing systems where high impact performance and 20 to 30 minute fire ratings are required. Brochure includes test data.

SAFTI 351



08810

Glass
Schott offers Okalux®, light-diffusing and insulating glass panels. Brochure provides detailed technical and performance data, photos, and descriptions of applications worldwide.

Schott 352



08820

Decorative Glazing
The Chromafusion® line of graphic glass, a decorative interlayer permanently laminated between two lites of glass, is available in a wide range of standard and custom designs, colors, textures, and densities.

Cesar Color 353



08840

Plastic Glazing
Polygal, a polycarbonate structured sheet, is ideal for windows, skylights, atria, canopies, swimming pool enclosures, and greenhouses. Polygal has 200 times the impact strength of glass at 1/4th the weight.

Polygal 354



08850

Glazing Accessories
Brochure contains information on four fire-rated glazing materials: Pyroswiss, FireLite, FireLite Plus, and Pyrostop. Descriptions and specs on fire/safety-rated glass and transparent wall panels.

Technical Glass 355



08870

Glazing Film
Llumar solar-control window films, a laminate of polyester and metallized coatings, provide solar insulation for all types of glass. Available in reflective and non-reflective finishes.

Courtaulds 356



08900

Glazed Curtain Walls
This structural composite panel system consists of fiberglass insulation sandwiched between translucent fiberglass sheets and aluminum channels. Brochure contains details, specs, technical data, and photos.

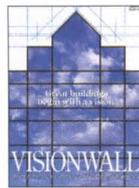
Kalwall 357



08900

Glazed Curtain Walls
Pilkington features the Planarclad system, a flush exterior all-glass surface with aluminum mullions and a stainless steel bolt system. Brochure includes component information, finishes, benefits, and detail drawings.

Pilkington 358

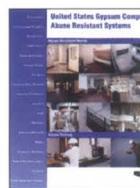


08900

Glazed Curtain Walls
Brochure illustrates high-rise curtain-wall installations and details of insulating-unit components with drawings. The suspended film systems are available for curtain walls and punched and strip window applications.

Visionwall 359

Division 09- Finishes



09250

Gypsum Board
USG introduces its Abuse-Resistant Wall Systems for dry-wall, cement board, and plaster systems in this brochure. Meets requirements of three levels of abuse-resistance: surface abrasion, penetration, and security breaches.

U.S. Gypsum 360



09300

Tile
Commercial Products Catalog features a comprehensive selection of colors, textures, sizes, and applications. Line includes glazed wall and floor tiles, porcelain pavers, quarry tiles, and glazed and unglazed ceramic mosaics.

American Olean 361



09300

Tile
Castaic Brick's brochure outlines their full line of commercial, common, and veneer fireproof clay bricks and tiles. Available in standard and custom sizes, colors, and finishes.

Castaic Brick 362



09300

Tile
The French Quarter, a line of multi-color, random slate pavers, are illustrated and described in this four-page brochure. Sizes, uses, and maintenance requirements of the tiles are also presented in the literature.

Dal-Tile 363



09300

Tile
Brochure displays product line ranging from traditional Mexican and Spanish designs to contemporary and European designs. Traditional solids and patterns, hand-glazed liners, and mouldings are available.

Mexican Tile 364



09300

Tile
Comprehensive catalog features Saturnia Stone, from Tuscany, Italy, available in a variety of sizes, designer colors, and finishes. Accessories such as mouldings, tables, and fountains are also offered.

Paradiso 365



09300

Tile
Quarella manufactures conglomerate marble in 50 colors for use in floor tiles, trims, claddings, curtain walls, stairs, vanity tops, and kitchens. Catalog includes product applications and technical specifications.

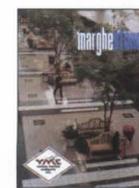
Quarella 366



09300

Tile
The U.S. Guidebook features over 40 different ceramic tile manufacturers from Spain, with information on type of products and U.S. distributors. Included are photos of glazed floor and wall tiles, trims, and pavers.

Trade Com. of Spain 367



09300

Tile
Verona manufactures Marghestone, a precast material composed of selected marble chippings, bonded together with special resins. Available in tiles and slabs for floors, walls, treads, risers, and skirtings.

Verona Marble 368



09500

Acoustical Treatment

The company's line of acoustical ceiling and wall panels is detailed in this 12-page brochure. Descriptions, specifications, acoustical properties, and hanging details are just some of the information provided here.

Conwed 369

09500

Acoustical Treatment

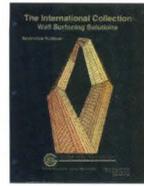
The Armstrong Ceiling Systems Catalog is a comprehensive offering of commercial ceilings with detailed product data, a fire-ratings table, an acoustical performance summary, drawings, and a compatibility chart.

Armstrong 370

09500

Acoustical Treatment

Full-line brochure features metal ceiling systems: open cell/ decorative, linear metal, metal planks, and tiles. Systems are acoustically-rated, recyclable, and available in a variety of colors and finishes.

Hunter Douglas 371

09540

Special Wall Surfaces

A complete line of decorative Tambour® is stocked in solid wood, wood veneer, metallic, and HPL finishes. Available with a Class A fire-rating in poplar, red and white oak, ash, maple, cherry, and mahogany.

Global Specialty 372

09545

Special Ceiling Panels

Interfinish™ offers open cell, linear metal, luminous, and metal panel ceiling systems in a wide range of styles, colors, and options. Color brochure highlights systems with photos, information, and accessories.

Chicago Metallic 373

09550

Wood Flooring

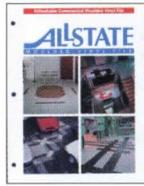
Complete product line includes acrylic-impregnated, urethane-finish, wax-finish, and unfinished hardwood floors. Brochure features technical information, testing standards, and applications.

Bruce Hardwood Floors 374

09550

Wood Flooring

Brochure presents full line of hardwood flooring, both prefinished and unfinished, in custom classics, accents, borders, planks, and parquets. Information on choice of woods, fire resistance, and related millwork included.

Kentucky Wood Floors 375

09650

Resilient Flooring

The Allstate catalog highlights moulded vinyl tile in 36 chip designs and 35 solid and semi-solid accent colors. The heavy duty tile has long-term load, rolling load, and abrasion resistance.

Allstate Rubber 376

09650

Resilient Flooring

Altro's® brochure features six lines of slip-resistant sheet vinyl safety flooring in a variety of thicknesses, styles, and colors. Full descriptions, applications, and technical information also provided.

Altro 377

09650

Resilient Flooring

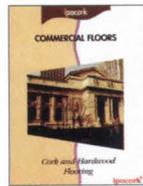
Brochure describes Burke's rubber flooring products, consisting of rubber tiles and stair treads available in 46 colors and four designs and textures. Accessories and care and maintenance requirements are included.

Burke 378

09650

Resilient Flooring

Forbo offers a variety of resilient flooring products in linoleum and vinyl, sheet and tile. Brochure features seven styles, an extensive color line, recommended applications, and specifications.

Forbo 379

09650

Resilient Flooring

Ipcork's selection of commercially rated cork tiles, Madeira strip flooring, and plank floating floors are featured in its 1995 brochure. Current product lines, specifications, and color photos are included.

Ipcork 380

09650

Resilient Flooring

This tough, long-wearing, easily maintained resilient flooring comes in a range of colors and embossed wave, diamond, and plate patterns. The 12-page brochure provides product descriptions and technical data.

Lonseal 381

09650

Resilient Flooring

This nicely designed brochure details the Fields® line of inlaid sheet vinyl, providing information on installation, specifications, stain resistance, maintenance, warranties, colors, and application possibilities.

Mannington 382

09650

Resilient Flooring

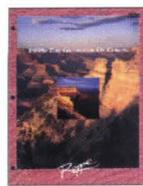
Marley's resilient sheet and tile combine durability for commercial applications with ten coordinated colors and designs. Watertight, hygienic, and stain-resistant for hospitals, food, and retail uses.

Marley Floors 383

09650

Resilient Flooring

Literature features fire safety stair coverings, entry flooring, floor coverings, and a raised design tile in 10 solid colors or 11 marbled colors. Textures include the Disco, square, diamond, lo-disc, grooved, and flat.

Musson Rubber 384

09650

Resilient Flooring

The 1995 Roppe catalog looks at the rubber and vinyl flooring lines. The Cerrito collection features six new Southwest colors for rubber bases, tiles, and treads. Available in square, circular, and textured patterns.

Roppe 385

09700

Special Flooring

The TacFast System greatly eases the installation and rearrangement of carpet. The loop underside of the carpeting is held in place by a hooked tape adhered to the subfloor, resulting in design flexibility and lower costs.

3M 386

09800

Special Coatings

ProSoCo's Defacer Eraser® Graffiti Remover removes spray paints, marking pens, lacquers, and other coatings. Suitable to use on masonry, wood, and metal. Also protects and maintains masonry buildings.

ProSoCo 387

09800

Special Coatings

Rainguard features an anti-graffiti protective coating system. Literature describes uses of permanent and sacrificial clear protective coatings, providing easy graffiti removal from most building materials.

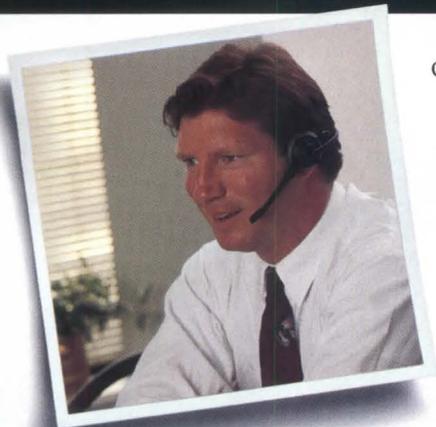
Rainguard 388

Expert advice. Technical support.
Up-to-date product regulatory information.
Sherwin-Williams makes each available to you
with our toll-free Paint DataBank® hotline.

Our consultants provide solutions to your
toughest coating and VOC compliance questions.
Which saves you time and helps avoid costly
mistakes. And with over 2,000 locations, we're
conveniently near your job site.

With Sherwin-Williams, you'll get the most

**The project covers 1.5 million square feet,
85 stores, 3 restaurants and a cineplex. But you
can specify the paint with a single call.**



complete line of quality
paints and coatings in over
1,600 colors. And each of
our labs and manufacturing
facilities are registered by the
Quality Management Institute
under the ISO 9000 series of
quality systems standards.

So no matter how complicated your project
may be, the solution remains simple. Ask Sherwin-Williams.
Call the Paint DataBank at 1 800 321-8194 between 8:00am
and 7:00pm EST, Monday through Thursday or 8:00am-
5:00pm EST on Friday.



Circle **No. 875** on Reader Service Card

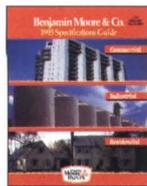


09900

Painting Materials

Catalog of paint products presents thorough descriptions, characteristics, application methods, and specifications for over 100 coatings. A selection chart for paints and a listing of VOC requirements are also given.

Sherwin Williams 389



09900

Painting Materials

The company's commercial, industrial, and residential coatings are described in this guide. Exterior product selection charts, with recommended finishes, vehicles, and primers are also helpful for specifying paint.

Benjamin Moore 390



09950

Wall Coverings

Brochure outlines extensive testing illustrating the positive characteristics that make Xorel fabrics environmentally safe for all applications. Fabric is flame retardant, has low emission toxicity, and has anti-bacterial qualities.

Carnegie 391



09950

Wall Coverings

Douglass offers contract upholstery textiles for hospitality and healthcare facilities including jacquards, velvets, vinyl, dobbies, and tapestries. Flammability and toxicity of textiles discussed in brochure.

Douglass 392



09950

Wall Coverings

Eurotex features wool carpet, carpet tile, and wall carpet in 12 textures for vertical surfaces in commercial and institutional interiors. Applications chart and data on sampling are included.

Eurotex 393



09985

Prefinished Panels

Forms + Surfaces features embossed metal walls and vertical surface accents available in prefabricated panel systems, with base components or in sheet form. Select from 40 patterns and seven metal/finish options.

Forms + Surfaces 394



09986

Sanitary Wall & Ceilings

The Clestra wall and ceiling system is a fully modular component system using demountable monoblock panels and the SYLAB walkable ceiling to design ultra-clean application layouts.

Clestra Cleanroom 395

**Division 10-
Specialties**



10155

Toilet Compartments

The Bobrick Classic Series™ offers recessed and surface-mounted washroom accessories and laminated plastic toilet and dressing compartments. Includes more than 175 models in 15 product categories.

Bobrick 396



10155

Toilet Compartments

Color catalog serves as a specifications and details guide for Metpar's extensive line of toilet, shower, and dressing enclosures. Includes color charts, hardware displays with cost comparisons, and ADA guidelines.

Metpar 397



10240

Grilles & Screens

Cross Garden Accents offers all vinyl arbors and fence systems, pre-fabricated for easy assembly. Lattice panels available in several patterns, sizes, and colors. Moisture, weather, and insect proof

Cross 398



10260

Wall & Corner Guards

The Boston Bumper®, a collection of flexible, impact-absorbing vinyl bumpers with an aluminum spine, protects walls and surfaces against equipment impact. Available in seven profiles and 28 colors.

Boston Retail Products 399



10270

Access Floors

Access floors, for use in offices, equipment rooms, and cleanrooms, are available in 24 inch or 60 cm square panels. May be covered with carpet, high-pressure laminate, or vinyl tiles.

Tate Access Floors 400



10290

Pest Control

Bird Proof, a non-toxic, non-lethal bird repellent, is harmless to structural and ornamental metals. One application protects property from messy bird deposits for one year. Available in liquid spray or cartridge.

Bird-X 401

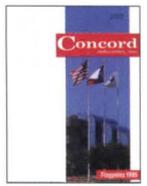


10290

Pest Control

A humane bird control product featuring spring-tempered stainless steel prongs with needle-sharp points arranged in strips that extend to repel and discourage birds from landing and roosting on protected surfaces.

Nixalite 402



10350

Flagpoles

Concord produces a complete line of flagpoles, in aluminum or steel, along with fittings and accessories. Brochure contains specifications, dimensions, line drawings, and a wind-velocity map.

Concord 403



10420

Letters & Plaques

Cast Architectural Signage catalog presents plaques, letters, logos, and ADA signage, in bronze, aluminum, white bronze, and yellow brass.

OMC 404



10426

Signage & Graphics

Complete line of architectural signage that direct pedestrian and vehicular traffic in shopping centers, office parks, universities, and hospitals. Brochure includes information on usage, finishes, and colors.

Charleston 405



10426

Signage & Graphics

Kroy booklet features ADA signage for room identification, directional, and regulatory purposes. Brochure includes sizes, colors, text, and pictogram recommendations.

Kroy 406



10520

Fire Protection Specialties

J.L. offers a full line of fire extinguisher cabinets recessed and semi-recessed styles, including the Fire-FX™ fire-rated and ADA compliant cabinets. Fire extinguishers, fire blankets, and accessories are also available.

J.L. Industries 407

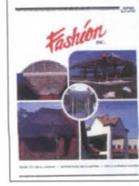


10520

Fire Protection Specialties

Catalog offers a complete line of fire extinguishers, cabinets, hose and valve cabinets, and accessories. New fire-rated cabinet enclosure recesses into fire-rated walls. Available in steel or aluminum.

Samson 408



10530

Protective Covers

Fashion designs, manufactures, and installs protective metal canopies, metal roofing systems, fascia systems, and walkway covers. Available in a broad selection of colors with fluorocarbon finishes.

Fashion 409

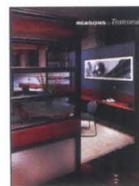


10615

Demountable Partitions

JG's Palette™ line of component desk systems features modular desk components, a laminate veneer finish, horizontal wire management, and personal computer interfaces available in freestanding or drywall mount.

JG Furniture 410



10615

Demountable Partitions

Reasons, an interlocking stacking panel system, creates office spaces including work surfaces and overhead storage. Total wire management provided by four-inch-thick panels in unlimited colors.

Reasons 411



10650

Operable Partitions

Modernfold's catalog contains detailed information on their complete line of operable and accordion partitions, folding doors, and portable panels, including manual and electric operations and UL fire ratings.

Modernfold 412



10670

Storage Shelving

The Compass™ line features gently sculpted file and storage solutions. Compass offers lateral files, vertical files and pedestals, storage cases, and bookcases in steel and in a range of colors.

Meridian 413



10800

Toilet & Bath Accessories

Catalog offers 32 pages of comprehensive material on stainless steel washroom accessories: soap, towel, and toilet tissue dispensers, hand dryers, mirrors, waste receptacles, shower seats, and grab bars.

A&J Washroom 414



10800

Toilet & Bath Accessories

The Bradley Express® Lavatory System is a group lavatory fixture that looks like a series of individual units. Made of a stain- and burn-resistant solid surfacing material, the lavatory also has infrared metering controls.

Bradley 415



10800

Toilet & Bath Accessories

Four-page brochure gives complete listing of push-button and sensor hand/hair dryers, in surface-mounted and semi-recessed styles. Brochure includes color options and recommended mounting heights.

Jetair 416



10800

Toilet & Bath Accessories

ADA compliant wheelchair access systems from Truebro includes the molded, anti-microbial Lav-Guard and the impact-resistant vinyl Basin-Guard undersink enclosure.

Truebro 417



10800

Toilet & Bath Accessories

This brochure details the company's extensive line of hinges, pulls, and grab bars for showers. The hardware comes in a variety of metal finishes including brass, aluminum, bronze, chrome, and stainless steel.

Hiawatha 418



10800

Toilet & Bath Accessories

This well-designed brochure illustrates Hewi's line of bathroom accessories. Made of smooth, non-porous nylon, the products include soap trays, cup holders, shower shelves, ashtrays, and toilet brush units.

HEWI 419

**Division 11-
Equipment**



11000

Equipment

The Raynes Rail, a Braille and Audio Handrail System, provides a continuous way-finding system, with Braille on its inner face, allowing blind visitors to guide themselves independently through unknown buildings.

Coco Raynes 420



11000

Equipment

Nitrotec generators provide for on-site nitrogen gas production. Exclusive, high performance Pressure Swing Adsorption produces high-quality gas from compressed air at extraordinary savings over liquid nitrogen.

Nitrotec 421



11000

Office Equipment

This data sheet describes the company's wall desk. Made of high-density particle board, with a laminate surface, the product is dimensioned and finish, ordering, and shipping information is provided.

LUI Corp. 422



11000

Office Equipment

Peter Pepper's product supplement features multimedia carts, mobile computer stations, lecturns, easels, wardrobes, and illuminated displays. Available in aluminum frames, anodized finishes, and 27 colors.

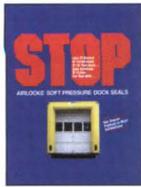
Peter Pepper 423



11000

Office Equipment

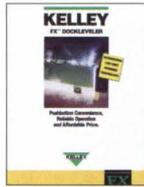
This guide to high-density storage and retrieval systems provides illustrations, dimensions, and layouts of the various types of storage units. The Aisle-Saver®, the Power File, and the No Walk® are three of the units described. **White 424**



11110

Laundry Equipment

Milnor's brochure describes the benefits of installing a tunnel washing system for laundries in smaller institutions. Brochure includes sample layouts, describes system components, and answers typical questions. **Milnor 425**



11160

Loading Dock Equipment

Airlocke brochure describes its full line of inflatable dock seals that form a tight seal against weather extremes, dust, and pilferage. Brochure includes general specifications and installation information. **Airlocke Dock Seal 426**



11160

Loading Dock Systems

Kelley offers the new FX™ dock leveler, using air-bag technology. Kelley also offers a complete line of hydraulic and mechanical dock levelers, trailer restraints, and auto chocks. **Kelley Dock Systems 427**



11190

Detention Equipment

J.L. Detention Specialties brochure offers security panels and cabinets. Also featured are lock and hinge options, detention guards, security lock boxes, and guide specifications. **J.L. Industries 428**

Division 12- Furnishings



12505

Blinds, Shades & Shutters

Levolor's window treatment systems designed for the commercial market include the Riviera, Mark I, and Monaco lines of horizontal and vertical blinds, in wood or metal. **Levolor 429**



12505

Blinds, Shades & Shutters

Pinecrest shutters are available in every form, shape, size, wood, and finish. Color catalog features a complete line with specifications, construction drawings, reference chart, and product index. **Pinecrest 430**



12505

Blinds, Shades & Shutters

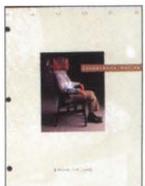
Springs provides an extensive offering of commercial window treatments. Catalog provides detailed product information on horizontal and vertical blinds, pleated and cellular shades, and drapery hardware. **Springs Window 431**



12625

Healthcare Furniture

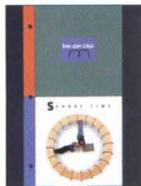
The fully upholstered Westford, Stafford, and Camden seating collection features a hardwood frame for institutional applications. Options include waterproof interliners, fire code provisions, and oak arm caps. **Adden 432**



12625

Healthcare Furniture

Laurelwood Motion Patient Chair features a plybent wood armrest, rocker box motion, and choice of two back heights. Brochure contains performance, construction, and general specifications. **Sauder 433**



12627

Classroom Furniture

Kin-der-Link™ features maple bent-plywood modular interlocking stools for kids 3 to 10. Stackable units double as both seats and desks and are finished with a water-based acrylic in primary colors or natural finish. **Skools 434**



12662

Seating

Artistic Frames' full color seating collection catalog features carved wood chair frames in 36 designer finishes. The collection includes styles varying from Regency, Tudor, Jacobean, to Russian and French. **Artistic Frame 435**



12662

Seating

Gardenside offers benches, dining tables, chairs, planters, parasols, and chaise lounges suitable for commercial and residential applications. Brochure includes drawings, specifications, and ordering information. **Gardenside 436**



12662

Seating

This overview of casegoods, tables, systems, and seating contains detailed descriptions and ample photos of the various product lines. A discussion of the company and its environmental activities is also included. **Kimball 437**



12662

Seating

Kron's brochure features its complete series of contemporary ergonomic executive, task, lounge, and pull-up seating. Brochure includes photos, line drawings, sizes, and options available. **Kron 438**



12662

Seating

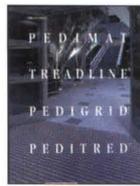
Texacraft's catalog features its complete lines of cast aluminum, wood, wrought iron, and vinyl strap outdoor furniture and accessories; restaurant furniture; outdoor fiberglass products; and indoor seating collections. **Texacraft 439**



12690

Floor Mats & Frames

Arden's entrance flooring systems include aluminum grates, aluminum and low-density polyethylene hinge mats, and stainless steel grates. New additions include a fire-retardant floor covering. **Arden 440**



12690

Floor Mats & Frames

The brochure profiles four lines: the Pedimat®, Treadline®, Pedigrd®, and PediTred™. The entrance mat and grid systems offer an interlocking design, lateral stability, and 400 lbs.-per-square-foot loading. **C/S Group 441**



12690

Floor Mats & Frames

Kadee's eight-page brochure features stainless steel, aluminum, and bronze gratings along with carpeted/vinyl entrance grids and roll-up mats. Applications vary from tree grates to ceiling air grilles. **Kadee 442**

Division 13-

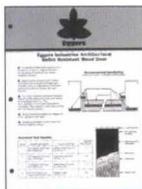
Special Construction



13046

Shelters & Booths

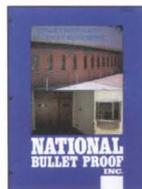
B.I.G. manufactures a complete line of security, revenue control, transit, and equipment shelters. Shelters are constructed utilizing the pan and post system, of heavy gauge steel, and include all amenities.

B.I.G. Enterprises 443

13070

Bullet Resistant Protection

Bullet resistant architectural wood door and frames in ratings up to and including high-powered rifle and 20 minute fire-ratings. These are available in foreign and domestic veneers and high-pressure laminates.

Eggers 444

13070

Bullet Resistant Protection

Literature includes details and specifications for bullet-resistant, security, and detention products. Door assemblies, window framing, pass-thru windows, guard enclosures, fire-rated, and custom products are presented.

National Bullet Proof 445

13090

Radiation Protection

Clear-Pb lead-impregnated, transparent, plastic shielding combines radiation protection with panoramic visibility. Available in modular, track, fixed, or mobile barriers with on-site installation.

Nuclear Associates 446

13123

Glazed Structures

Skytech's solariums are available in thermally broken aluminum and wood frames, with Perma-seal glazing. Other products include folding glass walls, patio rooms, commercial units, and accessories.

Skytech 447

13123

Glazed Structures

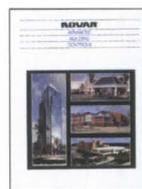
Brochure illustrates sunroom additions suitable for residential and commercial installations. Constructed of aluminum frame with 1" insulating glass, units are pre-cut and pre-drilled with various glass options.

Sunbilt 448

13152

Swimming Pool Equipment

KDI offers total system solutions in competitive and recreational swimming pool deck and underwater equipment. Products include starting platforms, lifeguard chairs, diving stands and towers, and grab rails.

KDI Paragon 449

13800

Building Automation

Novar's Logic One® is designed to economically automate mechanical and electrical operations of all types of buildings and manufacturing processes. The system features integrated digital controls for lighting and HVAC.

Novar Controls 450

Division 14-

Conveying Systems



14200

Elevators

The 1996 Architectural Planning Guide describes the company's hydraulic, traction, escalators, and power walks and ramps. Dimensional requirements, weight capacities, and standard equipment are provided.

Montgomery KONE 451

14200

Elevators

Schindler's planning guide describes complete line of vertical transportation products. Included are details on lowrise and high-rise elevator systems, escalator systems, moving walks, and preventive maintenance.

Schindler 452

14235

Residential Elevators

Elevette® handles weights of 500 or 750 lbs and can be fitted with up to three gates, permitting access from different sides of the car. Operates on a monorail steel channel with a cantilever suspension.

Inclinator 453

14420

Wheelchair Lifts

Porch-lift, a vertical platform lift that addresses access problems and ADA compliance, has several models, all of them illustrated and described in this brochure. Colors, features, and specifications are also provided.

Access Systems 454

Division 15-

Mechanical



15440

Plumbing Fixtures

1995 International Designer Collection features whirlpool baths, faucets, and the J-Dream™ Family of shower systems. Each style shows specifications, features, and dimension drawings.

Jacuzzi 455

15445

Fittings, Trims & Accessories

United McGill supplies a complete line of high-quality duct and fittings for exposed ducts. Fitting shapes include round, flat, oval, and rectangular, and include special duct materials.

United McGill 456

15455

Drinking Fountains

Catalog showcases Haws indoor and outdoor drinking fountains and water coolers designed to meet ADA standards and lead-free standards. Also highlights the emergency drench shower and eye/face wash line.

Haws 457

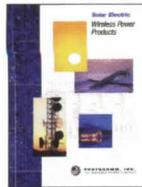
15942

Registers & Diffusers

Flowbar offers air distribution products that integrate with all ceiling systems. Diffusers available in continuous linear, incremental linear, and square configurations. Brochure includes performance data.

Titus 458

Division 16- Electrical



16000

Electrical
Photocomm's catalog features an extensive line of solar electric power systems. Products utilize renewable solar energy to deliver electric power to a range of residential, commercial, and industrial applications.
Photocomm 459



16000

Power Protection
Brochure describes the company's background, power-protection technology, and product lines. These include uninterruptible power systems and single- and three-phase power-conditioning products.
On-Line Power 460



16000

Power Protection
PowerGuard™ brochure describes complete line of extreme isolation transformers and power-line conditioners. The equipment prevents voltage transients and stops disruptive electrical noise problems.
Xentek 461



16000

Power Switching
PowerPincher™ is a line of products from Steelcase aimed at saving energy in the office. Consisting of an occupancy sensor and a power strip, these products can save as much \$165 annually per worker.
Steelcase 462



16110

Raceways & Conduits
Hubbell's four-hour fire-rated poke-through combines large through-floor capacity with a low-profile two-gang service pedestal. Brochure includes features, benefits, and technical data sections.
Hubbell 463



16110

Raceways & Conduits
Raceway Components color brochure illustrates through-floor electrical fittings. Ten product categories, available within four basic floor types: Poke-Thru, Raised Floor, Concrete Boxes, and Cellular Floor Fittings.
Raceway Components 464



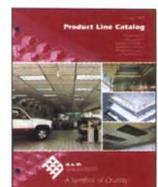
16500

Lighting
Energy-saving fluorescent lighting fixtures for indoor and outdoor applications. Easy installation with patented "plug-in" connection system. Water, weather, flame, and vandal resistant. NEMA 4X rated and UL listed.
Beghelli 465



16500

Lighting
The MR-SNAP-16 Halogen lamp is designed to fit in most existing track-lighting systems. The lamp features a compact design for easy installation, different wattages, and a selection of beam spreads.
C.E.W. Lighting 466



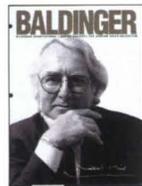
16505

Lenses & Louvers
A.L.P.'s Product Catalog highlights plastic and aluminum parabolic louvers, lenses, diffusers, and other components for fluorescent fixtures. Catalog also features security, moisture-resistant, and decorative lighting panels.
A.L.P. Lighting 467



16505

Lenses & Louvers
KSH Series Energy Catalog includes information on the KSH 3E and TRIUMPH series of energy-saving light-control lenses, louvers, and related specification-grade products for fluorescent and H.I.D. luminaires.
ICI Acrylics 468



16510

Interior Luminaires
New brochure features lighting collection designed by architect Richard Meier. Includes ADA-compatible wall sconces and ceiling fixtures with a variety of finishes, diffusers, and lamping options.
Baldinger 469



16510

Interior Luminaires
New four-page flyer shows Bega lighting products that conform to ADA standards. Back-page index denotes lamp and dimensions for each product and its corresponding page number in the Bega Catalog #6.
Bega 470



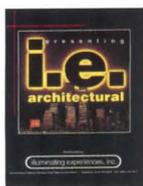
16510

Interior Luminaires
Updated 32-page track lighting catalog presents a full line of energy-efficient fixtures for retail, commercial, and residential applications. Accessories include cable-suspension mounting and "Twist and Lock" sockets.
Con-Tech 471



16510

Interior Luminaires
The Italiana Luce catalog features decorative contemporary lighting. All portables and fixtures are designed and manufactured in Italy. Product line includes table, floor, wall, and ceiling lamps.
Italiana Luce 472



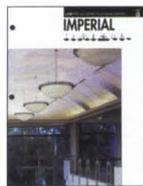
16510

Interior Luminaires
The I.E. product line includes the Sirrah, Leds, and Lucitalia lamps employing simple, geometric, or highly stylized designs in a variety of fabrics, metals, glass, and polycarbonates. Castings in aluminum or brass.
I.E. Architectural 473



16510

Interior Luminaires
New line of Wall Forms wall-mounted luminaires features four face configurations: full, half, cutoff, or shallow cutoff face; multiple light sources; and two mounting styles. Constructed of heavy die-cast aluminum.
Kim Lighting 474



16510

Interior Luminaires
The new color brochure features the Imperial line, pendant and ceiling- or wall-mounted indirect lighting fixtures that are available with economical HID or BIAx fluorescent lamp sources.
LAM Lighting 475



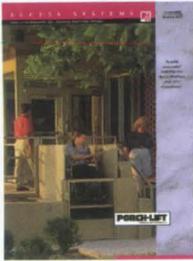
16520

Exterior Luminaires
The Fiberscape collection features six fixture designs, with their new fiber optic landscape lighting system. Brochure contains full specs on illuminators, fiber tubing, lamp power and life, configurations, and dimensions.
Fiberstars 476



16535

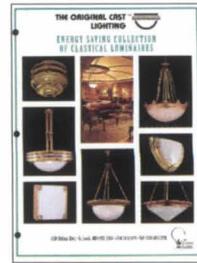
Emergency Lighting
Pex, Prescolite's line of thermoplastic exit signs, offers energy savings, enhanced by Lite Strip™, whose features maximize the efficiency of LEDs. Brochure includes savings chart, product features, and ordering information.
Prescolite 477



PORCH-LIFT® Vertical Platform Lifts from Access Industries raise and lower a wheelchair passenger from one level to another. Lifting heights are available from 1" to 144" for both commercial and residential indoor and outdoor applications. The lifts carry loads up to 750 pounds. The units provide space- and cost-efficient access to meet ADA requirements without costly ramps or building modifications. **Access Industries. Circle No. 900**



Event offers a contemporary alternative to conventional guest seating, with options such as seven back styles, a full fabric offering, bookracks, tablet arms, ganging capabilities, sled base, or four-leg stacking models. Event is the natural choice for training rooms, conference rooms, and more. **Kimball. Circle No. 903**



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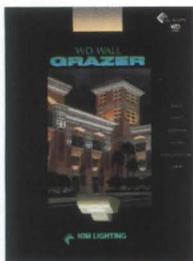
TeamCover is DPIC's project-specific professional liability insurance for the whole design team. It is noncancelable with a dedicated limit and guaranteed premium rate for the life of the project. Partnered TeamCover includes project coverage and partnering: DPIC helps to pay to get the design and construction teams working together to bring the project in on time, on budget, and with no disputes. **DPIC Companies. Circle No. 901**



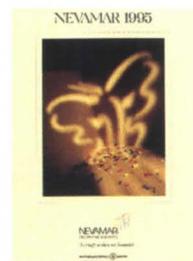
Musson Rubber's product literature includes information on its Fire Safety, Grit Strip, Visually Impaired, and other rubber floor and stair systems. The systems are available in marbled or plain versions with raised or surface designs and in many popular new colors. Also featured in the catalog is the Disco, Low Disc, Square, Diamond, Fluff Cord, and Traffic Tiles, with colorful illustrations and helpful specifications. **Musson Rubber Co. Circle No. 904**



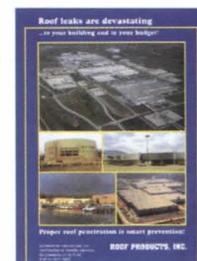
Pavestone® Company manufactures the broadest and deepest product line of interlocking paving systems, retaining wall systems, and patio landscape systems. Multiple shape and color options, combined with an infinite range of pattern possibilities, enable the designer to relate well to varied building materials and diverse environmental settings. Pavestone products bring a distinctive touch that is functional and attractive. **Pavestone Company. Circle No. 907**



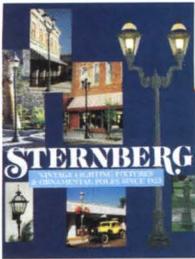
WD Wall Grazer is the most recent addition to KIM's Wall Director™ series. When used for uplighting, the Wall Grazer produces dramatic nighttime effects on buildings that have distinctive wall textures, reliefs, projections, and other embellishments. For downlighting, the Wall Grazer can provide increased security lighting for building perimeters. **KIM Lighting. Circle No. 902**



The Decorative Products Division of International Paper offers beautiful, durable surfacing materials that fit every application and style: Fountainhead by Nevamar® solid surfacing sheets, sinks, and bowls; Nevamar® decorative laminates with the exclusive ARmored Protection™ surface; LamMates™ coordinated HPL sheets and MCP panels; Vitricolor® and Nevamar Impressions™ high-gloss acrylic surfaces. **Nevamar. Circle No. 905**



Before you purchase or specify rooftop equipment for new or retrofit construction projects, contact Roof Products, Inc. They have the knowledge, the experience, and the technical staff to analyze the project and determine the best applications for a leak-free, cost-efficient job. RPI will supply the solution and the curbs, adapters, and other accessories needed to change equipment without disturbing the roof or the substructure. **Roof Products, Inc. Circle No. 908**



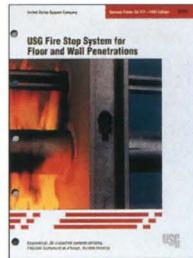
Sternberg Vintage Lighting has introduced its 1996 catalog. The 72-page, full-color catalog includes: new Traditional, Colonial, and Art Deco fixtures; new ornamental poles and bollards; and many new photographs of installations where Sternberg lighting has been used to complement and complete a project. Request your copy today.
Sternberg Vintage Lighting. Circle No. 909



The TacFast™ Carpet System offers a revolutionary way to make carpet installations quicker, easier, and more economical than ever before – thanks to a built-in loop backing and a 3M hook tape. The innovative system has no offensive adhesive odors and offers flexible design opportunities.
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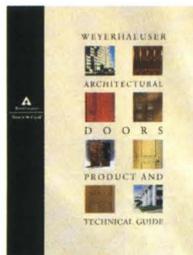
Structures Unlimited is the only single-source manufacturer of structural skylights, sky-roofs, and entire translucent structures that provides services from design through installation. The unique box-beam system – flat or curved structural composite translucent sandwich panels from Kalwall® combined with a preengineered aluminum structural system – can span more than 100 feet. It is energy efficient and light-diffusing.
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Massachusetts Institute of Technology Tenure-track Positions in Building Construction and Structures

The Department of Architecture invites applicants for two tenure-track positions in Building Construction and Structures. These positions require a balance of teaching and research, in both cases at the intersection of building technology and architectural design. The new faculty members will teach introductory and advanced building construction and structures subjects to students in architectural design and will present subjects to students majoring in building technology. Teaching must be based on a solid understanding of engineering principles and an appreciation for the impact of technology on architectural design. In addition, the faculty member will establish an active area of scholarship focused on building systems, construction, materials or structures and consisting of research or professional practice. Candidates should have substantial experience in the building industry, obtained via professional practice or education leading to an advanced degree in a field embracing construction, structures, mechanics or materials. Candidates should also have education in architectural design, or experience in teaching building technology subjects to architectural design students, or experience working with practicing architects. The faculty appointments will be at the level of Assistant or Associate Professor; a tenured appointment will be considered for a particularly well qualified candidate. Positions as Adjunct Professor may be considered. The appointments are in the Building Technology group which supports the education of students of architectural design and directs a joint interdepartmental graduate program offered by the Departments of Architecture, Civil Engineering and Mechanical Engineering. The group carries out research on structures, building systems, construction, thermal science, computer graphics, airflow simulation and measurement, controls, and building environmental science.

Prospective candidates should send resume and a list of three references to Building Technology Search, Room 5-418, Massachusetts Institute of Technology, Cambridge, MA 02139, telephone number 617/253-1876. Please indicate that the application is for the position in Building Construction or Structures. Consideration of applications will begin November 15, 1995, but applications will be accepted until the position is filled. MIT is an Equal Opportunity/Affirmative Action Employer.

Established architectural planning and interior design firm seeks a Director of Design who is experienced in managing design teams, helping others to further develop their talents and taking lead responsibility for the firm's design standards. If you are articulate, outgoing, committed to your work, but sensitive to others, with 15+ years of experience, we would like to hear from you. We are a self-motivated, goal-oriented, entrepreneurial firm and offer an opportunity for career advancement within a supportive team environment with the desire for a long term relationship. Please write HR Manager, P.O. Box 68750, Portland, Oregon 97268-0750.

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Beginning Academic Year 1996-97

An assistant professor position is available beginning in academic year 1996-97 for a person qualified to offer graduate-level instruction in architectural design plus courses in a secondary specialty such as visual studies, design theory, construction, or science and technology. This full-time position may be filled for a fixed initial term, normally of three years, with responsibilities for teaching, scholarship, and administration. Candidates should have some teaching experience and their creative work in design, scholarship or professional practice, or a combination thereof, should indicate strong promise of creative achievement in the field.

Applications are invited before 15 October 1995 on the application forms available from: Harvard University Graduate School of Design, Office of Faculty Planning, 48 Quincy Street, S203, Cambridge, MA 02138, Attn: Search Committee; FAX (617) 496-5310. Applicants should not send portfolios or dossiers with their applications. Harvard University is an Equal Opportunity/Affirmative Action employer.



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Cornell University

**The Department of Architecture is
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Position in Architectural Technology.**

The Department of Architecture at Cornell University invites applications for a full-time tenure-track faculty position in architectural technology (environmental controls). Candidates must be qualified to teach in the following areas: lighting, acoustics, passive solar, and mechanical systems. In addition to teaching required undergraduate courses in the areas listed above, the position requires developing and teaching advanced elective courses in related areas; serving on undergraduate and graduate thesis committees; participating in design studio reviews; research/scholarly work; and administrative committee responsibilities. Candidates will be evaluated according to the following criteria: previous teaching experience, professional degrees at the graduate level, professional experience in the areas listed above and research/scholarly work. Rank and salary will be commensurate with experience. Screening of applications will begin Jan. 22, 1996 and will continue until the position is filled. The appointment is expected to begin Fall 1996. Submit letter of application, curriculum vitae, and a brief statement outlining your teaching and research/scholarship objectives to: Architectural Technology Search Committee, Department of Architecture, 143 East Sibley Hall, Cornell University, Ithaca, NY 14853-6701. Cornell University is an Equal Opportunity/Affirmative Action Employer.

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DEPARTMENT OF ARCHITECTURE AND URBAN DESIGN

Chairperson

The department of Architecture and Urban Design of the School of the Arts and Architecture at UCLA invites applicants for a full-time tenured position as Chair of the department beginning the academic year 1996-97. The department is seeking a distinguished, independent, and energetic candidate with strong leadership capabilities and an appropriate background in education. The department is newly located within the School of the Arts and Architecture with a unique opportunity for interdisciplinary studies. The Chair will have an important role in recruiting for open faculty positions. Los Angeles itself is a center for creative work in a variety of disciplines which are already shaping the emerging urbanism of the next century. The Chair is expected to maintain and enhance the department's national and international reputation, and support innovations in programs, and diversity in faculty, students, and staff.

Qualifications: A degree in architecture or related field, with recognized accomplishments in one or more of the following: scholarship, teaching, practice, research, professional service or civic contribution. The applicant should be able to meet University criteria for appointment as professor with tenure.

Send letter of application, curriculum vitae, and a list of five academic and/or professional references by January 1, 1996; the position will remain open until filled. Send to Kathleen Ryzek, UCLA School of the Arts and Architecture, 303 East Melnitz, Box 951427, Los Angeles, CA 90095-1427.

Proof of U.S. citizenship or eligibility for U.S. employment will be required prior to employment (Immigration Reform and Control Act of 1986). The University of California, Los Angeles is an Equal Opportunity/Affirmative Action Employer.



Tenure-Track Positions School of Architecture

SYRACUSE UNIVERSITY – The School of Architecture is conducting a search for expected full-time tenure-track positions in Architectural Design and Technologies at the rank of Associate or Assistant Professors beginning Fall 1996. For each position, candidates must demonstrate an interest in pursuing intellectual goals through scholarship, research and professional practice and have the ability to communicate effectively with students.

Architectural Design (three to four positions)

Teaching responsibilities include teaching required undergraduate and graduate design studios as well as elective courses. One of the following areas of expertise is required: Computer Applications, Drawing, or Urban Design. Candidates should demonstrate a capacity to teach undergraduate and graduate studios and have, as a minimum, a first professional degree in Architecture with experience in professional practice. Applicants should explicitly state their area of secondary expertise. The salary level will be commensurate with experience.

Architectural Technologies

Teaching responsibilities include teaching basic technology sequence, as well as related elective courses. In addition, candidates should have a willingness to serve on design reviews and be consultants in studio teaching. A professional degree in Architecture with an advanced degree in architectural technologies (or equivalent professional experience) is required.

Candidates for either position should send curriculum vitae, a minimum of fifteen photocopied samples of design work (not to be returned) a statement of interest and goals, and the names of at least three references, by Friday, December 29, 1995, to: **Chair, Faculty Search Committee, 103 Slocum Hall, School of Architecture, SYRACUSE UNIVERSITY, Syracuse, NY 13244-1250.** Syracuse University is an Equal Opportunity/Affirmative Action Employer. Women and members of other traditionally under-represented groups are encouraged to apply.

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Person seeks position as pilot in an architecture-related field. Has bach. of architecture, bach. of arts, cfi,mei,meii, emt,emd,buildg insp., and other credits. Contact if serious at 916-451-1487. Can be teaching or military field. Salary considerations.

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Telephone, 44(0)295-271003
Fax: 44(0)295-272801

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Improving on the Master

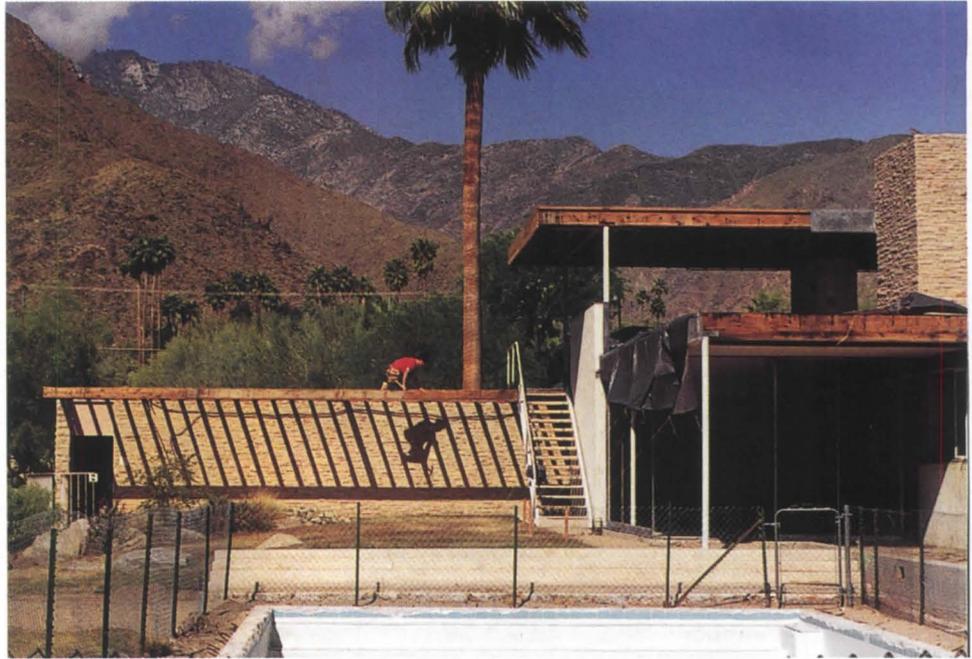
CSI SECTION 07631

The old chestnut about Modern architecture was that you couldn't leave it out in the rain. Leaking from the time it was finished in 1946, Richard Neutra's Kaufmann Desert House was a case in point. Neutra had made scant provisions for drainage of the residence's vast flat roofs, using only minimal slopes and intermittent gutters. In restoring the house (see p. 72), the Santa Monica design/build firm of Marmol & Radziner has undertaken radical corrective measures that require knocking back the roofs to the steel and wood bones of the structure.

The overhang sheltering the breezeway between the house's main and guest wings was particularly problematic, not having any gutter at all (detail, center right). Over the years, water ponding had caused significant damage to the wood soffit.

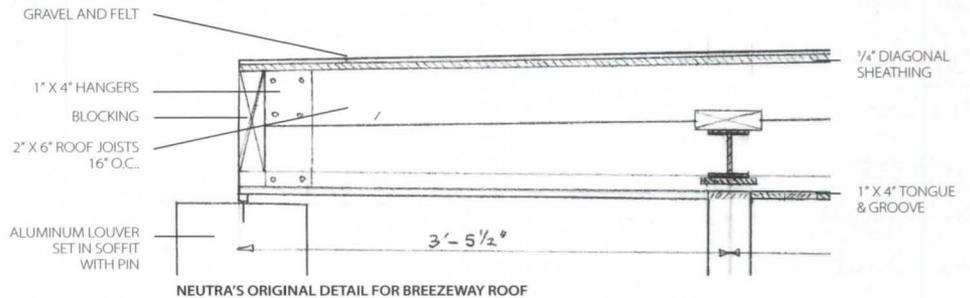
In the reconstruction, all the roof slopes will be substantially improved, and the original gutters will be rebuilt with details virtually identical to Neutra's. For the gutterless breezeway roof and other similar conditions, the restorers have devised a new detail (bottom right) for a recessed gutter that does not affect the elegant slenderness of the roof profiles, which were purposely emphasized by the late master with aluminum-painted crimped metal fascias.

Ziva Freiman

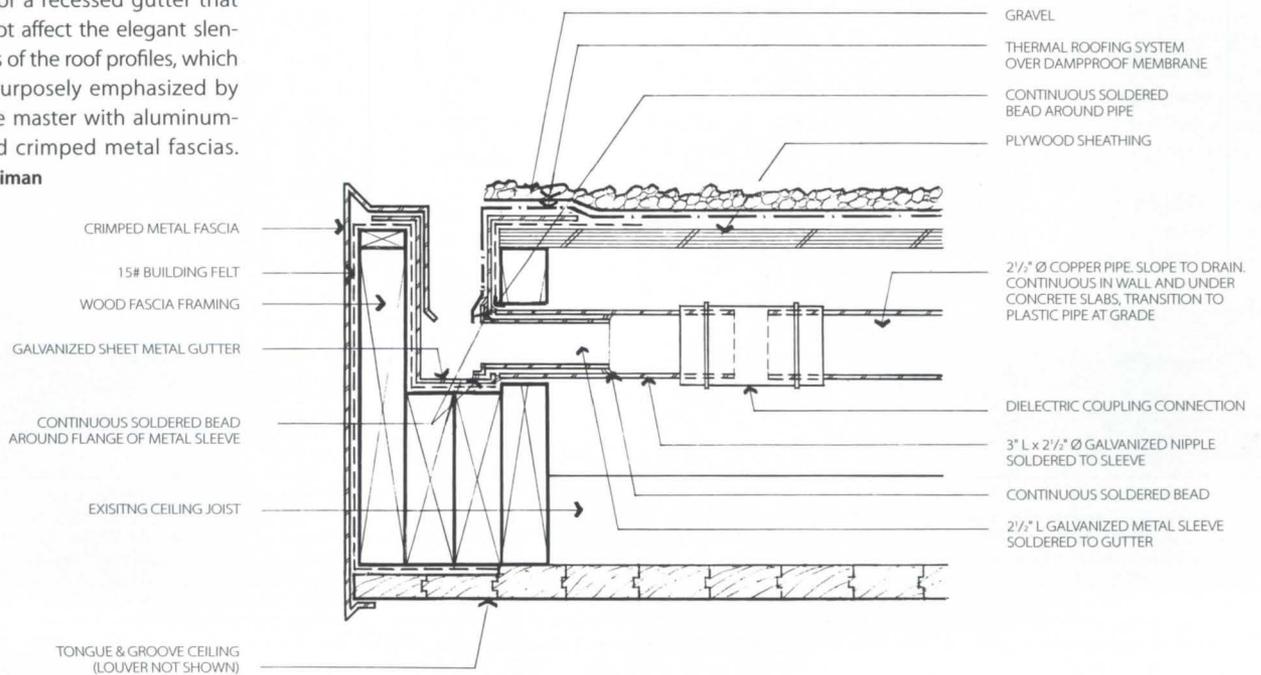


KAUFMANN HOUSE RECONSTRUCTION: VIEW OF EXPOSED STRUCTURE

Courtesy: Marmol & Radziner



NEUTRA'S ORIGINAL DETAIL FOR BREEZEWAY ROOF



NEW DETAIL FOR RECESSED GUTTER