

ARCHITECTURAL RECORD



MONONA TERRACE

Is It
Really
Wright?

The State of Architectural Criticism
by Suzanne Stephens

Key Players in Health Care

Retail Trend: Main Street Comes to Suburbia





EDITORIAL

Prudence in Good Times

BY ROBERT A. IVY, FAIA

Have you caught yourself daydreaming recently about the jazzy new BMWs? If so, know that your automobile mania is shared by many architects, symptomatic of an optimistic spirit at a moment of success. Your fascination underscores the larger truth: that prosperity has arrived for architects. There are individual exceptions, but the fact is, these are good times. The indications are irrefutable.

First, the Dow Jones and Standard & Poor's indices have broken record highs. Statistics confirm that architects are profiting from this boom: according to AIA statistics, we added an average of 3,000 jobs per annum to architectural firms during the last decade, and 1,400 more employees should join the payrolls every year in the future. Construction starts are strong nationwide. Even California and Massachusetts, hard-hit in the late '80s and slow to recover, are rebounding.

Good times take effort to sustain, however. Architects continue to complain of tight margins and heightened competition. The most persistent question raised by firm principals when they gather seems to be, "Where can I find good, experienced employees?" Many younger architects dropped out of the field during the late '80s and early '90s, leaving a gaping void in our current hiring pool.

Management seems to be in a hiring frenzy, characterized by more aggressive recruiting techniques. Headhunters now routinely lure experienced architects away from current jobs with promises of higher salaries and sign-on bonuses. Recent graduates with strong computer skills and little experience find themselves actively recruited and moved cross-country.

Architects treated like star athletes? Hold everything! News this startling demands a second look. What follows are pointers to help shift your focus from immediate gratification to longer-term reality. While this advice may seem astringent, it could encourage valuable strategic planning:

Remember the realities of the marketplace. Our collective economic life in the construction universe follows a sine curve like a powerful wave,

and no wave ever rose continuously without breaking. Remember, too, the taste of the recession and the salty tears—not just your own—when your boss had to cut back on an inflated staff.

Exercise prudence. Watch hiring levels. Bank your money. Don't overextend staff size or credit. Both can come back to bite you. Friendly bankers quickly grow cold and stare hard over their glasses as loans draw due. Make careful choices. Learn to say no to nonproductive jobs or difficult clients. This can be an architect's hardest lesson.

Plan for change. What equipment will enhance productivity? What steps will encourage orderly firm succession and allow for retirement for the partners? What training will better position the company for shifting roles and markets? What new areas of concentration will broaden the firm's opportunities? How, after effort and time, should your new-found resources be deployed?

Architects deserve to plan for their own companies as well as they plan for their clientele. A consultant might help clarify objectives and set priorities for your own organization's careful, sustainable development; that is, after all, what architects do for others. Something a consultant cannot do, however, is to offer advice about whether it's time for your personal Euro dream machine. Just be sure to consider a nimble, affordable vehicle that can maneuver the slippery downward slopes as well as the peaks.

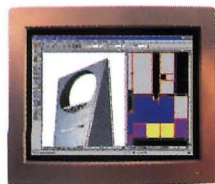
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LETTERS

More on the A.R.E.

There are tangible benefits to NCARB's computerized licensing exam—the greater number and better distribution of test sites, the increased frequency of exams—but they are not the ones Ann Chaintreuil stresses in her defense of the exam [Letters, January]. She claims that the fundamental advantage of the computerized exam is that it has eliminated the "gray area" that once separated passing and failing. But the uncertainty that she's trying to eliminate is what makes evaluating architectural quality different from grading a math test. There is never a clear line between designs that work and those that don't. That is why experienced human architects provide the best system for grading.

Chaintreuil also claims that the new exam "closely resembles" practice. Wrong again. Practicing architects don't receive complex design problems predigested for them into discrete single-issue vignettes. Past exams, with one comprehensive design problem, were much closer to the real problems architects must master. Furthermore, pencil and paper continue to be the tools of choice for preliminary design in the profession and the schools, and they are likely to remain so, despite the relentless hype promoting the computer.

Instead of defending their misstep, NCARB, and the profession as a whole, should be asking if the growing influence of the organization's bureaucracy—and the reductive vision of "architecture" it promotes—truly serves the best interests of the public, the profession, and the discipline.

—Daniel Willis, AIA, and Amy Forsyth

Department of Architecture
Pennsylvania State University
University Park, Pa.

Your recent poll on the A.R.E. clearly showed the unfairness of the cur-

rent exam. Chaintreuil's letter states that the new exam is better than the old, but it has actually made things worse for our interns. NCARB does not seem to understand that most interns are not able to pay for the overpriced exam and that they are screaming for a better deal. Why is no one listening?

I recently passed the exam and became a licensed architect. This would not be the case if I had not taken most of the exam in the paper-and-pencil format, with only a couple of sections required on the computer. I never would have been able to afford the cost of taking the new exam.

As co-chair of the National AIA Intern/Associate Committee, I hope to work with the AIA, NCARB, and our profession to address the A.R.E. dilemma, and I look forward to finding solutions soon. I am very concerned that nothing is changing and that the system is collapsing.
—Peter Levasseur, Associate AIA
Portsmouth, N.H.

I recently read the article that appeared in your April 1997 issue entitled "How Many Times Is Enough: A Designer Who Has Failed the NCARB Design Exam 30 Times." In the professional engineering exam, a test taker may ask to see his or her test and the method used for scoring. (In New York there is a small fee to do this.) I know of at least one case (not mine) where a visit to the State Education Department to review the applicant's answers on the test proved beneficial in revealing what areas the test taker was in need of improving. This beats the shot-in-the-dark method of repeatedly taking a licensing test. Test takers may believe they are strong in areas they are actually weak in, according to the grading system used. If a similar program existed for the NCARB exam, it would prove more enlightening than repeatedly taking licensing review courses.

—C. Ellis, P.E.
via E-mail

Applying architectural skills

I agree with Lee Waldrep [Speak Out, January] about how valuable skills learned in architectural education can and should be applied to careers in other disciplines. He writes, "One need not become a licensed, practicing architect to make a contribution with these skills." Unfortunately, the architecture profession in general does little to support this view.

Many states do not allow unlicensed individuals to use the title "architect." Since licensure can be achieved only through traditional practice, many architectural graduates are forced to take that career route so that one day they may use the title for which they have worked so long in school. The AIA promotes this train of thought by offering full membership only to licensed individuals. If the profession were truly proud of its "broad, creative, problem-solving skills," it would not exclude those who exercise them through alternative careers.

—Lisa Chronister Gray, AIA
Oklahoma City, Okla.

The status of the intern

In your January Letters column, Stacy Rudd said that after completing the Intern Development Program she was not ready to take the A.R.E. exam, having spent much of her internship "drawing stair and toilet details." It is apparent that this was not a proper internship. Not only are interns required to fulfill value units in areas from programming to construction administration, but these units are to be documented and signed by sponsors and advisors.

In addition, although architectural firms are supposed to provide the opportunities for an intern to gain broad experience as defined by NCARB, it is the intern's responsibility to track his/her training based not only on the IDP requirements but also on his/her own goals.

In the same Letters column, I take issue with Casius Pealer's understanding of an intern's standing in society. He should bear in mind that graduates who pursue a

license to practice architecture are considered both interns and associates. If you are proactive in the IDP, become a member of the AIA's Young Architects Committee, and are visible in your community, there is no reason you should be a "second-class citizen." If your career goal is to make an impact on the built environment, there is no better training than that of an architect.
—Kris Pettersen, AIA
Cambridge, Mass.

Research on Archigram

For research being conducted on Archigram, the writer would appreciate information, anecdotes, or recollections relating to the British group, which published a newsletter in the 1960s and early 1970s. Please write Simon Sadler at 21 Trinity Green, Mile End Road, London E1 4TS, Great Britain, or E-mail s.j.sadler@open.ac.uk.

Corrections

In a news story in the January issue, the architect of the Museum of African American History should have been identified as Sims-Varner Architects & Associates, whose president is Harold R. Varner, FAIA.

Contrary to what was stated in "America's Best-Managed Firms: How to Succeed with Expanded Services" (January), SmithGroup does not have a separate company for building-engineering services; engineering services are integral to the architectural practice.

In RECORD's January coverage of Commerzbank, legend number 14 on the isometric drawing (page 77) should have identified the air-intake extrusion rather than the air-exhaust extrusion below it. Legend number 21 on the same drawing should have been deleted. ■

RECORD may edit letters for grammar, style, and space availability, taking care not to change the author's meaning. Letters sent by post or electronic mail must include the sender's full name and address.



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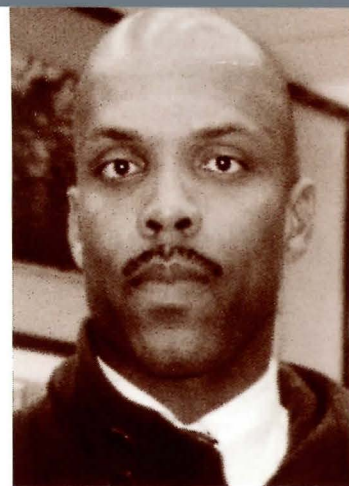
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CIRCLE 9 ON INQUIRY CARD

SPEAK OUT Of race, monuments, and memorials: it's time for a national slavery museum.

RICHARD SMITH II



Richard Smith II, an associate member of the American Institute of Architects, is currently a staff architect with Steven J. Karr, AIA, Inc., in Wheaton, Maryland. He is a graduate of the University of Maryland School of Architecture.

This past summer President Clinton commissioned an initiative on race relations with a mandate to hold panel discussions and dialogues across the country and to work toward finding solutions for ongoing racial problems. In the spirit of contributing to such a dialogue, I would like to propose that the time has come for a national memorial or museum dedicated to slavery to be conceived and constructed in our nation's capital.

As we approach the dawn of the 21st century, the impact of black slavery in the United States still lingers. Black slavery lasted in this country for approximately 250 years, from the early 17th century to 1865, during which time 9 out of 10 blacks living in the United States were slaves.

Legalized segregation and discrimination lasted for another 100 years—and some would argue even longer. In 1900 most adult black Americans in the United States had been born into slavery. That would mean that the great-grandfather of a 30-year-old black man today was probably a slave. Slavery was not so long ago.

The impact of slavery on 20th-century Americans as a whole and black Americans in particular has been both obvious (Jim Crow laws in the South and housing discrimination laws in the North) and not so obvious (poverty, poor education conditions, joblessness). Up to the present day, observers have blamed the woes of black Americans on economic circumstances, forgetting our country's sordid past.

For 250 years blacks were lit-

erally the chief commerce of the South, helping to give wealth to the North, East, and West. Even after slaves had been freed, blacks were allowed to fight in the two World Wars only by executive orders from the president; meanwhile, on the homefront, blacks were suffering every day from de jure discrimination. Black citizens were required to take the back seats on trains and buses; even German prisoners of war in this country were allowed better accommodations on these same vehicles. Black Americans today still feel the sting of the indignities that were suffered by their grandparents.

In the past, the United States has dealt with racial injustice legislatively through Congressional resolutions, bills, and executive orders of the president, yet the possible positive effects of these measures have often been challenged through curtailment or defeat.

Those in power seem not to have considered one of the world's most powerful social solutions: architecture. One need only look to the Vietnam Veterans Memorial, the United States Holocaust Memorial Museum, and the proposed National Museum of the Native American to see architecture that addresses social issues of right and wrong, good and evil, or redemption and reconciliation.

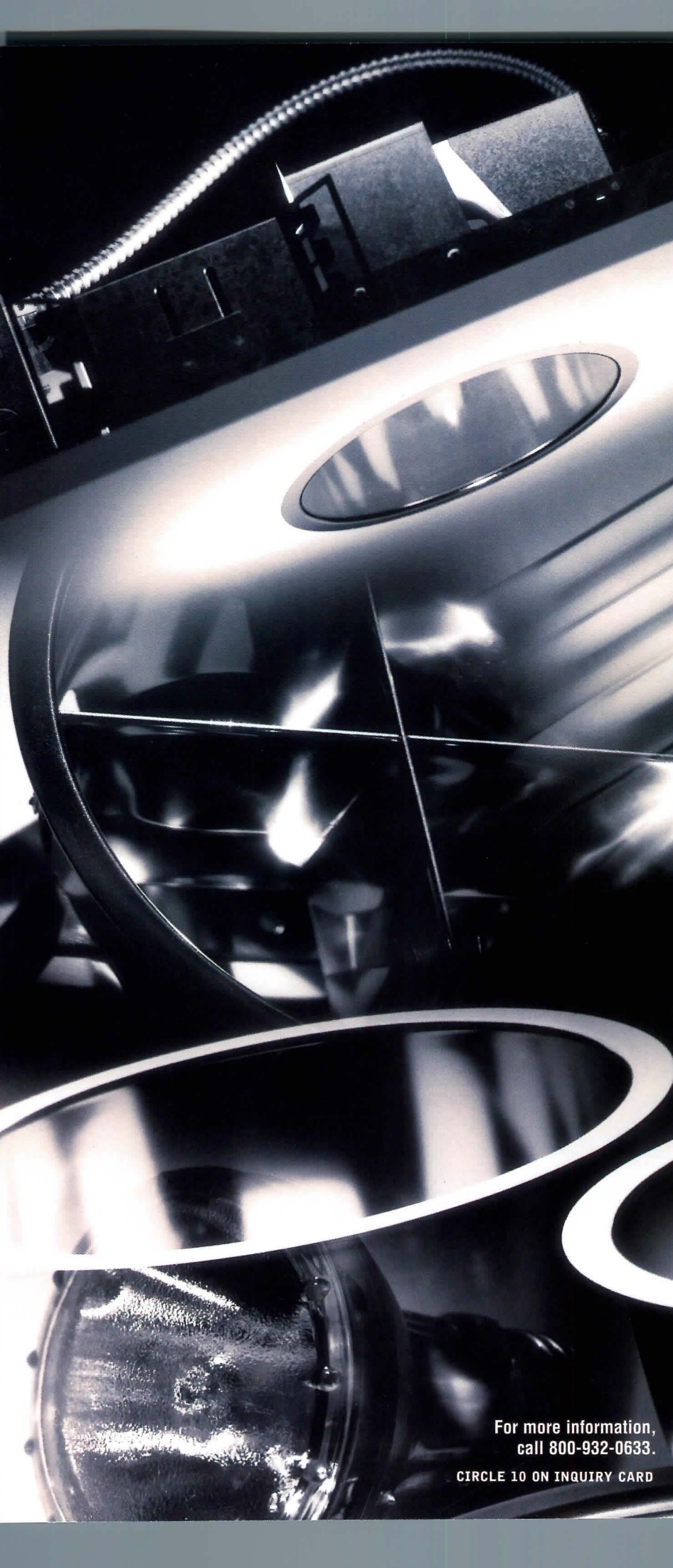
As these examples attest, architecture that is well designed and implemented becomes not only a visual means for societal introspection but also an elixir for soothing social discord and a mediator of social injustice. A national

memorial or museum dedicated to the issue of black slavery in the United States is at least 130 years overdue.

Failure by the architectural community at large to support and promote the idea of such a memorial in the United States will continue to leave the crimes of the past devoid of acknowledgment and the victims and their ancestors without closure. If we can recognize the perpetration of genocide against people outside our country through national memorials or museums, shouldn't we be even more concerned with recognizing what took place here for more than 200 years?

A proposal for a national slavery memorial may be a political hot potato, but the necessity of such a structure has never been more evident, its absence more egregious. Regardless of the controversy surrounding such a project, this country must make it a reality in order to reconcile the past and move at least partially cleansed into the 21st century. Black slavery in the United States is an issue we must never forget. ■

Contributions: *If you would like to express your opinion in this column, please send submissions by mail (with a disk, if possible) to Speak Out, Architectural Record, 1221 Avenue of the Americas, New York, N.Y. 10020; by fax to 212/512-4256; or by E-mail to rivvy@mcgraw-hill.com. Essays must not exceed 700 words. The editors reserve the right to edit for space and clarity. Where substantial editing occurs, the author will receive final text approval.*



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CIRCLE 10 ON INQUIRY CARD

STAFF 

MENTORS What firefighting has taught one architect about how all design professionals should address fire safety.

Scott G. Nacheman, an associate member of the American Institute of Architects, is an architectural designer and engineer with LZA Technology, a multidisciplinary firm specializing in building investigations and failure analysis based in New York City. He is also a firefighter with Guardian Engine Company No. 2 of the Jericho (New York) Fire Department.



Colleagues often ask me what being a firefighter has taught me about architectural design. While at first these two professions appear to be completely unrelated, firefighting has important lessons for architects. How should architects approach designing for fire safety? What attitudes should they bring to the task?

As a firefighter I have had the unfortunate but educational opportunity to observe the effects of fire on buildings and on occupants of these spaces. I have witnessed the devastation of people's property, livelihoods, and irreplaceable memories. I have learned that fire destroys everything. It takes lives—not only the lives of the users of a space but of the firefighters whose job it is to enter burning buildings. In the United States alone, more than 2,000 people die every year as a result of fire and smoke.

While the architect can do only so much to prevent fires, the effects of fire and smoke often can be mitigated by better design and material selection. If we recognize the importance of such details, we will be better prepared to correct the problems, thereby reinforcing the commitments we made when we entered the profession.

One element of responsible design should be universal: our buildings should provide safety. The seemingly endless hours of programming, design, and refinement are ineffectual if people are not safe in the built environment. Safety comes in many forms: safety from

the elements, safety from intruders, and, among the most important, safety from fire and smoke.

While building codes specify certain criteria that must be adhered to, these directions should not be thought of as final solutions to fire safety. Good judgment and careful analysis are equally important to a design that will provide adequate fire and life safety to a building's users.

Although clients often do not want to devote project funds to things they don't see, they should understand the importance of the "invisible dollars" that are spent on fire and life safety. Such worthwhile expenditures include additional sprinklers, not only in locations that are required by the code but in every space of every building, occupied or not. Even more important is fire suppression in void spaces such as ceilings, plenums, large wall cavities, and raised floor systems.

A premium is usually paid for materials with higher fire ratings; however, a wall or door that resists flame can limit fire and smoke extension and provide the occupants of a space with the valuable time needed to evacuate a building.

The flame-spread and smoke-development ratings of materials should be considered seriously when selecting equipment, finishes, and furnishings for a space. After all, smoke caused by the combustion of these products is the largest cause of fire-related deaths.

Lightweight construction materials should also be taken into account when designing. Modern engineering has provided us with

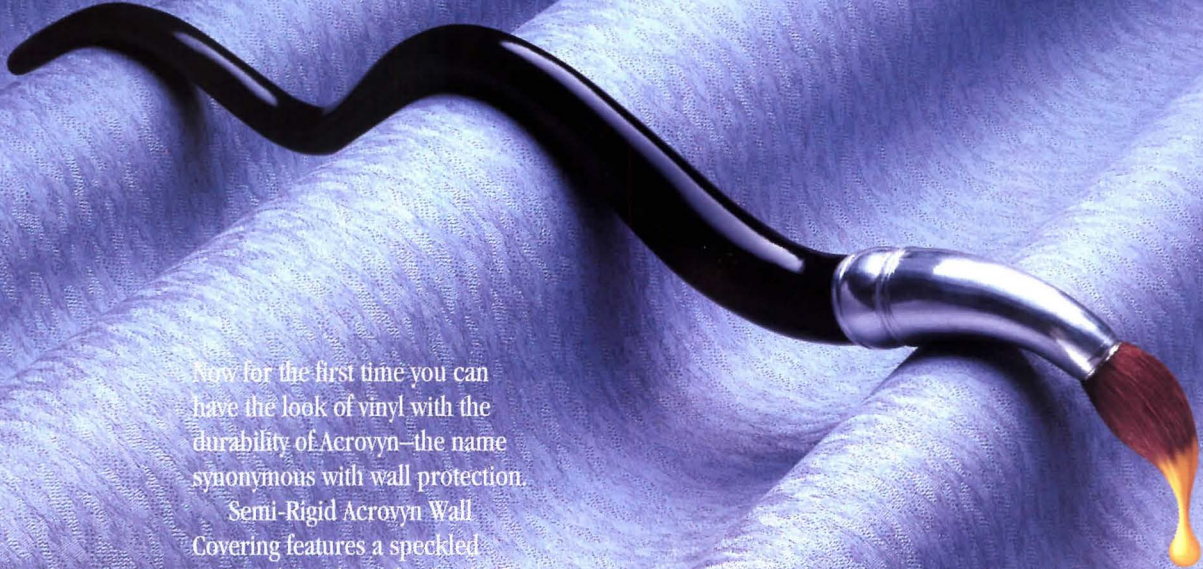
some extremely economical and versatile structural members, yet they are also among the most deadly. Perhaps the biggest culprits are "gang nail" or "gusset plate" trusses and joists. Early fire-induced failure of these lightweight members has been the cause of an increasing number of firefighter deaths in recent years. If these materials must be used, a considerably higher level of fire protection and suppression should also be provided.

No listing of examples of appropriate designs for fire safety could possibly be complete. A much more effective means of enhancing the well-being of the public is to create an improved awareness of the importance of fire safety.

We cannot put a price on human lives. Although an entire project budget cannot be devoted to fire and life safety, we should provide sufficient protection for the users and rescuers in our buildings. I urge the design profession as a whole to be continuously aware of the importance of fire safety. Designing spaces with safety in mind will undoubtedly allow us to fulfill our professional and moral obligations, and, ultimately, to save lives. ■

Questions: *If you have a question about your career, professional ethics, the law, or any other facet of architecture, design, and construction, please send submissions by mail to Mentors, Architectural Record, 1221 Avenue of the Americas, New York, N.Y. 10020; by fax to 212/512-4256; or by E-mail to rivy@mcgraw-hill.com. Submissions may be edited for space and clarity.*

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CIRCLE 11 ON INQUIRY CARD

PULSE RECORD readers were asked: Should state governments require continuing education for licensure of practicing architects?

YES: 70%

NO: 30%

Yes: I am a regulator for the Maryland State Board of Architects, and in that capacity I have seen that keeping licensed practitioners current with the latest information in the field is in the public's best interest. Continuing education also has a tremendously positive impact on a practice—my partners, my staff, and I have all gained from it.
—*Al Rubeling, Jr., FAIA*
Rubeling & Associates
Architecture + Interior Design
Towson, Md.

Yes: Since life-safety requirements and building-material technology advance on a regular basis, state continuing education requirements should be mandated for all practicing architects. AIA members and nonmembers profit from having to meet continuing education standards similar or equivalent to those

currently required by the AIA. My local chapter certainly offers an excellent program, which benefits its current members and attracts new ones.
—*Michael S. Andersen, AIA*
Tate and Snyder Architects
Henderson, Nev.

Yes: In all professions there are new technologies, products, and processes. An architect, like anyone else who wants to be at the top of his or her game, has to keep up, and continuing education is the logical way to do it.
—*Leah R. Karpen*
Asheville, N.C.

Yes: Either we are "professionals" committed to education or we might as well become builders.
—*Kaya K. Doyle, AIA*
Lake Zurich, Ill.

No: As practicing architects in the Information Age, we all know that in order to provide the best service possible to society we must constantly evolve both as humans and as businesspeople. It's survival of the fittest out there. If we aren't continually learning and applying our new knowledge to our practices, we fall short, our clients realize it, and we lose new commissions. To *require* architects to spend their precious time tabulating learning units and completing self-report forms is a patronizing way for our professional associations and licensing boards to keep an eye on us. One cannot hide ignorance for very long; if we don't make keeping up our own responsibility, we shouldn't be practicing in the first place.
—*Mary Ellen Lynch Comisso*
Toronto, Ont.

No: There is no cry from the public for this. Why impose more regulations on ourselves?
—*Robert Clough, FAIA*
Loebl Schlossman & Hackl/Hague Richards
Chicago

No: I have been a licensed architect, building contractor, and real estate broker for more than 25 years, and have been burdened with continuing education requirements to maintain my broker's license in California. Calling the requirements educational is a joke. All they have done is increase my cost of doing business and take up valuable time. Mandatory continuing education for architects is pointless: professionals research and study without the state having to tell them to.
—*Harry L. Martin, Architect*
San Diego, Calif.

This Month's Question

Does the increasing concentration of architectural services within large firms benefit architects and their clients?

Although architecture remains primarily a profession of small firms, recent surveys confirm that larger firms are consolidating their influence. According to Kermit Baker, Ph.D., large firms account for a "disproportionate amount of growth" in the industry. More than 30 percent of all employees in the profession work at firms with 50 or more persons. The 50 largest firms, according to government statistics, account for 18 percent of total employment.

Does the increasing concentration of architectural services within large firms benefit architects and their clients? Yes No

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BOOKS The ground rules for getting a monograph published—whether you're a star or not—and a look at a few recent examples.

BY MILDRED F. SCHMERTZ, FAIA

Mildred F. Schmertz, FAIA, writes about architecture for several magazines, including *Architectural Digest* and *ARCHITECTURAL RECORD*. She has contributed essays to several architectural monographs, such as Hardy Holzman Pfeiffer Associates, Zimmer Gunsul Frasca, and Mitchell/Giurgola Architects.

Alexander Gorlin: Buildings and Projects, introduction by Paul Goldberger; essays by Vincent Scully and Alexander Gorlin. New York: Rizzoli, 1997, 160 pages, \$35 (paper).

Ricardo Legoretta Architects, edited by John V. Mutlow. New York: Rizzoli, 1997, 240 pages, \$65.

Centerbrook, Volume 2, by Andrea Oppenheimer Dean; essays by Vincent Scully and Nicholas Negroponte. Gloucester, Mass.: Rockport, 1997, 208 pages, \$40.

Fumihiko Maki: Buildings and Projects, edited by Maki and Associates. New York: Princeton Architectural Press, 1997, 288 pages, \$60 (cloth), \$40 (paper).

Today, architecture is a more popular subject for the general reader than it used to be. The audience for books on architecture is catching up with that for art books, and many more architecture publications are found in bookstores.

In the past the readers of architectural monographs were mostly architects, students, historians, and a few devotees. Now, as Rizzoli architecture editor David Morton points out, "If the subject of the book is a superstar—like Richard Meier or Frank Gehry—the book will attract a wide readership, go into a second and third printing, and earn profits for the publisher as well as royalties for the architect."

Even newly published monographs of the work of out-of-fashion Postmodernists can become best-sellers today. Rizzoli's latest Michael Graves monograph, for example, a book of great graphic beauty even if its contents are sadly *démodé*, is in its second printing. "The work of cool young kids, the brightest members of the forthcoming architec-

tural generation, can also be good material," Morton reports.

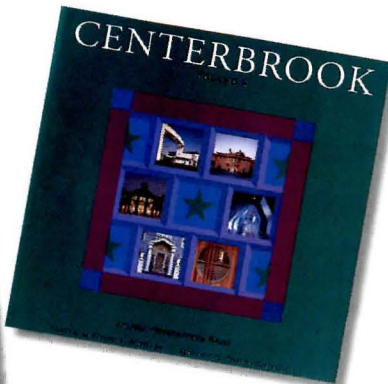
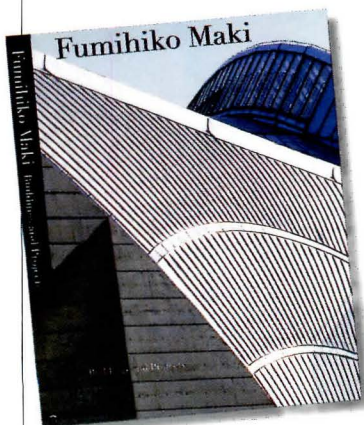
While monographs are becoming increasingly more expensive to publish and costly to buy, an architectural firm that proposes a book that is expected to sell well is not required to directly subsidize publication by agreeing to purchase a given number of books. The firm must, however, provide free of charge to the publisher all texts, photographs, and drawings, as well as a bibliography, project list, index, and whatever other documentary material is required.

As a rule, the firm does not have to pay the cost of designing the book, unless it wishes to hire its own graphic consultant. Nor does it have to pay for the book's introduction, for which the publisher usually pays a small honorarium. All production and distribution costs are sustained by the publisher.

Creating a monograph is more difficult for a practice not headed by a superstar or a leading trendsetter. In addition to the aforementioned expenses, such firms must agree to reduce the publisher's risk by purchasing a significant number of discounted copies of the monograph—usually about 2,000.

Unfortunately, several publishers report that because the monograph market is currently flooded, they plan to bring out fewer next year. Among this year's crop are some fine examples. Those reviewed here represent four different approaches. All well serve their purpose of documenting and displaying a firm's best work.

(continued on next page)



Where theory drives design

Paul Goldberger, former architecture critic and chief cultural correspondent of the *New York Times* who now writes for the *New Yorker*, has contributed a masterly introduction to *Alexander Gorlin: Buildings and Projects*. Both critic and architect appear to live in the intellectual stratosphere of the architectural world—where history and theory drive design.

Goldberger is able to bring strong insights to the story of Gorlin's creative life—where he has been, what he is doing now, and where he is going. The architect, he notes, began to practice during the temporary demise of Modernism, free from its canonic imperatives and able to invent buildings within what Goldberger calls "the Postmodern value system."

The critic traces Gorlin's beginnings as a Classicist, and argues that his current shift to Neomodernist and Deconstructivist design does not signify that he has replaced one

gospel with another. "[Gorlin] sees both classicism and modernism as different means of exploring certain fundamental architectural truths, and it is the struggle to explore these truths, not their superficial stylistic garb, that motivates him."

In one essay Gorlin argues, "The most legitimate direction leads to the creation of an architecture that is neither ancient nor modern, one that evolves from a ground of archetypal elements common to all architecture...with an immediacy and direct, intimate reality."

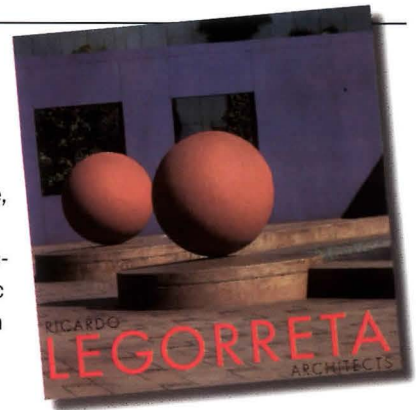
A poetic architecture

Ricardo Legoretta Architects has little historical or theoretical content. But it is a handsome book that presents 25 of the architect's finished works, their brightly painted, exaggerated geometries splendidly photographed by Legoretta's daughter Lourdes. The projects are well documented with drawings, along with texts covering each building's purpose, site, and materials.

The introduction, by architect John Mutlow, who also teaches at the University of Southern California, discusses Legoretta's uses of the wall plane, light, scale, geometry, and color, and includes much that is instructive about the emotive and poetic qualities of the architecture. In an interview conducted by Mutlow, Legoretta is articulate, offering insights into his background and feelings.

Unfortunately, the architect's preface and personal commentary reveal that, guided by platitudes, he lives in an idyllic, squalor-free Mexico of his own invention. He writes, "Mexican villages with their vernacular architecture are an example of the correct Mexican lifestyle, successfully mixing ethnic, cultural, and economic differences in a human and harmonious environment. They have been and will remain endless sources of inspiration and happiness."

Reading this, anyone who has



ever visited a remote Mexican village will find it hard to believe that Legoretta has ever been in one.

Forgoing the theoretical

Centerbrook, Volume 2 is essentially the work of one good writer, Andrea Oppenheimer Dean, who has furnished the introduction and all the descriptive and interpretive texts for a total of 40 built projects. Her book maintains a unity of tone and expression that monographs with essays and project descriptions by several writers often lack.

(continued on page 30)

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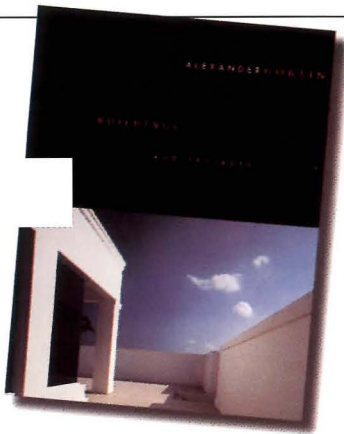


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It is without critical theory, doubtless because, as Dean points out, the firm's six partners—Mark Simon, Jefferson B. Riley, Chad Floyd, William H. Grover, Robert L. Harper, and James C. Childress—“are convinced that profound or brilliant design begins not with moralistic ideologies, abstract theories, or trend-driven stylistic formulas. Transcendent architecture, they believe, starts with fulfilling elemental human needs [to make] an uplifting place out of the particular situation and budget available.”

Only two very brief essays have been added to Dean's text. In his foreword, Vincent Scully discusses the way Centerbrook's founders continue to honor late partner Charles Moore, citing their “delightful furniture, often wonderfully zany, happily conceived residences of all kinds and, increasingly, highly sympathetic institutional buildings.”

The afterword by M.I.T. Media Laboratory director Nicholas Negroponte celebrates Centerbrook's felicitous expansion of the lab, describing the ways that carefully designed space, color, plants, and even toys contribute to what he calls “nerd pride.”

A quintessential Modernist
Fumihiko Maki: Buildings and Projects is an extraordinary monograph, surely one of the best ever published, with a beautiful piece of graphic design by Sara Stemen, splendid printing, and black-and-white photographs that are as handsome as those in color. It con-

sists of 25 projects, built and unbuilt, chosen by 1993 Pritzker Architecture Prize winner Maki from over 100 that constitute almost three decades of work.

It is the only book available on his architecture. The images of Maki's technologically inventive, transparent, light, quintessentially Modernist design flow in white space—not a single spread is crowded—yet each project is allocated all the photographs, drawings, and text it needs to be well understood.

The thorough, very carefully written texts describe and interpret the architecture in all its design and structural aspects, and they fully discuss the influences that shaped it. Like Gorlin, Maki inhabits the intellectual life of architecture. His book contains several historical, critical, and theoretical essays, by himself and others, and is required reading for anyone who hopes to understand this great architect and his work.

Briefly Noted

1100 Architect, introduction by Pilar Viladas and essay by Pat Morton. New York: Monacelli, 1997, 192 pages, \$35 (paper).

David Piscuskas and Juergen Riehm of 1100 Architect have been practicing a rigorous but sensual brand of Modernism since 1983. Well known in the art and fashion worlds for their residences, galleries, and stores, Piscuskas and Riehm show 24 projects in this handsome book, which they designed themselves.

Koetter Kim & Associates: Place/Time, introduction by Alan J. Plattus; essays by Colin Rowe and Fred Koetter. New York: Rizzoli, 1998, 224 pages, \$60, \$40 (paper). From Boston to Ho Chi Minh City, from academic buildings to new city centers, Fred Koetter and Susie Kim have developed an impressive body of work that bridges the gulf between Modernism and the New Urbanism. Thirty-two projects are included in the book. ■

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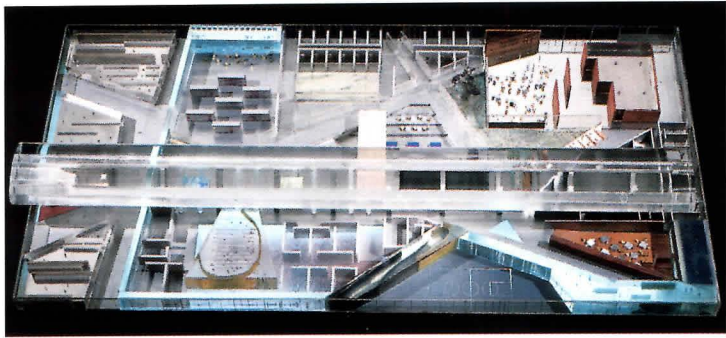


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RECORD NEWS



KOOLHAAS TO APPLY HYBRID THEORIES TO HISTORIC IIT CAMPUS

Rem Koolhaas has been named the winner of an international competition for a campus center at the Illinois Institute of Technology (IIT), a much-coveted commission because of the Chicago university's historic link with Ludwig Mies van der Rohe. The center, which will be the first new building at IIT in 25 years, gives Koolhaas a chance to realize urban theories from his cinderblock-size 1995 book *S,M,L,XL*. The other finalists were Peter Eisenman, FAIA; Helmut Jahn, FAIA, and structural engineer Werner Sobek; Zaha Hadid; and Kazuyo Sejima and Ryue Nishizawa.

For a site one block north of Mies's Crown Hall, Koolhaas proposes an innovative one-story, 100,000-square-foot building running beneath Chicago's elevated railroad tracks. A stainless-steel tube on the structure's roof will

The winning scheme by Rem Koolhaas (above) and a detail of Peter Eisenman's scheme (below).



encircle the tracks and block out noise. The glass-walled, rectangular exterior appears orthodox, but the interior is decidedly unconventional.

Slicing through it are diagonal passageways based on Koolhaas's observation of how people now cross the empty site. In between are hives of activity, like 24-hour shops, a bookstore, and a café, to encourage random encounters. Literally building on Mies's legacy, Koolhaas even suggests including the master Modernist's Commons Building under the roof of his campus center.

Koolhaas's idea is to provide a vibrant connection between the academic buildings to the west and the residential buildings to the east, reurbanizing an urban void on Chicago's South Side. The building emanates from a theory Koolhaas expressed in *S,M,L,XL*: "If there is to be a 'new urbanism,' it will not be based on the twin fantasies of order and omnipotence; it will be the staging of uncertainty... [and] about discovering unnameable hybrids."

Members of the four-member jury—chaired by Mack Scogin, AIA; James Ingo Freed, FAIA; Phyllis Lambert, director of the Canadian Centre for Architecture; and Michael Hays, professor of architectural theory at Harvard University—cited Koolhaas's "hybrid" vision in choosing his design. IIT officials said they expect construction of the \$25 million project to begin next year and be completed in the spring of 2000.

Blair Kamin

AUTODESK COMPETITORS COOPERATE TO MAKE DESIGN SOFTWARE CHEAPER

Major AutoCAD competitors have formed an alliance that they hope will undercut AutoCAD's dominance of the design-software market. The OpenDWG Alliance, as it is called, now allows free downloads of computer code that, in the hands of programmers, can create DWG translators and thus make AutoCAD files compatible with other design software programs.

Autodesk has never released full technical details of DWG, the file format for AutoCAD, choosing to provide technical support for DXF and IGES file formats only.

The Alliance software comes from MarComp, which has been selling it to CAD vendors since 1990. Implementation quality varies, but it may improve now that Alliance

members such as Intergraph, DataCAD, and Nemetschek have pledged to share information.

MarComp was just purchased by Alliance ringleader Visio, which is on the verge of marketing a cheap AutoCAD "clone" that uses DWG as its native format (that is, no translation is necessary to exchange files with AutoCAD). Neither the clone nor MarComp's utilities can completely handle ARX, the latest wrinkle in AutoCAD technology.

The code and manuals can be downloaded from the Web at www.opendwg.org. Commercial use requires OpenDWG membership (\$25,000 for the first year for commercial developers, \$5,000 for firms that use the software internally).

Steven S. Ross



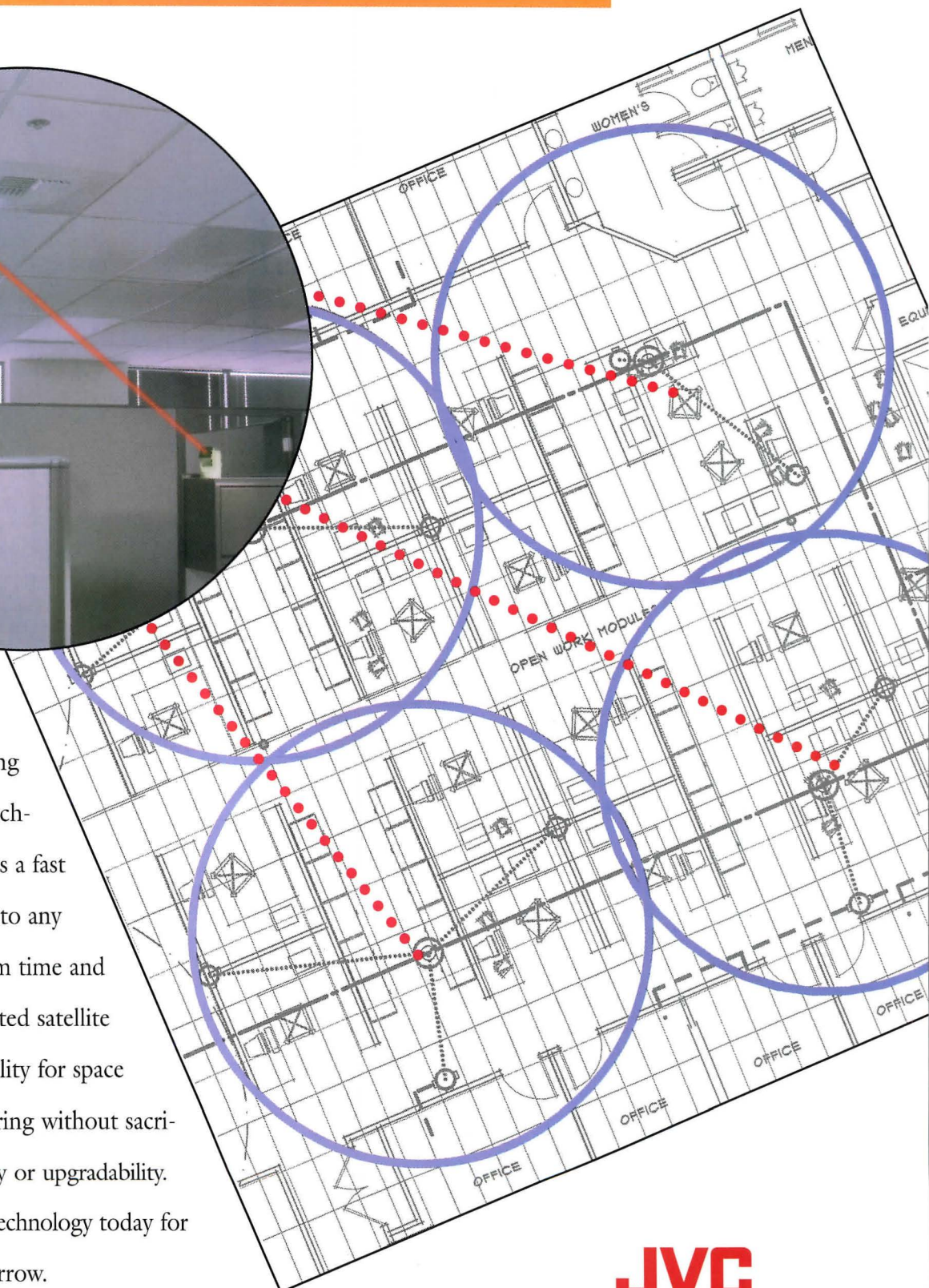
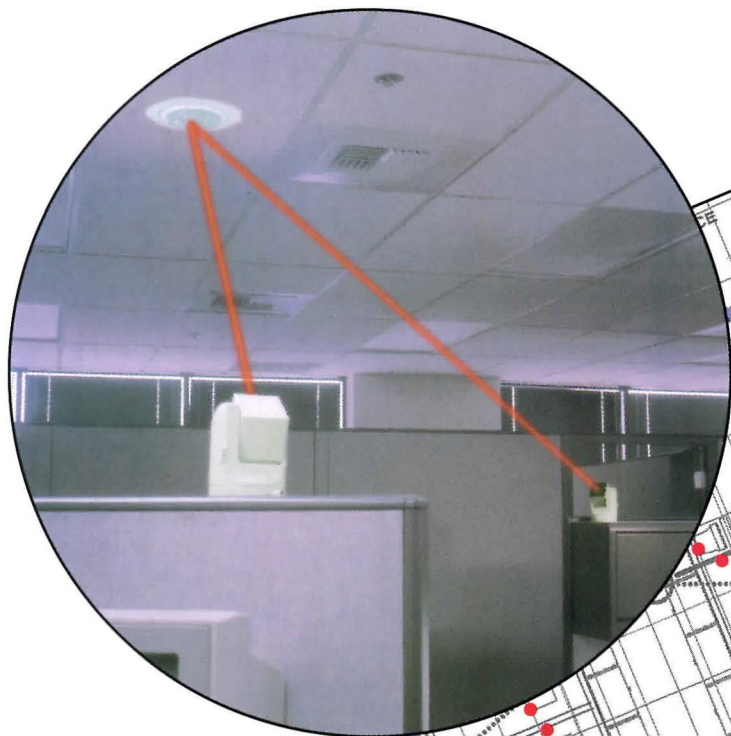
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OPEN-HOUSE APPROACH TO URBAN RENEWAL IN PARIS On the eve of revitalizing the Grands Boulevards, the Right Bank avenues stretching from the Place de la République to the Place de la Madeleine, Paris city planners are breaking with tradition. Instead of unveiling an urban plan and then holding public hearings, the city is consulting the public *before* heading to the drafting table.

For the next two years, a city architect will be on hand at the newly opened *Maison des Grands Boulevards* on the Boulevard des Italiens to answer questions and listen to public concerns. Visitors may also write their thoughts in notebooks, which urbanists, businesspeople, and city officials will review. The city's objective is to boost the economic and cultural life of the neighborhood by improving lighting, signage, and urban furniture. Safeguarding architecture—from the area's covered passages to its banking palaces to the Art Deco Rex Theater—is also on the agenda.

For the moment, public opinion is running against the scrubbed-clean urbanism of the Champs Elysées renovation, favoring the less predictable mix of residential buildings and entertainment facilities that has long defined these grand boulevards. *Claire Downey*

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IN EXPANSION, FREED GIVES THE ISRAEL MUSEUM A LITTLE LOUVRE

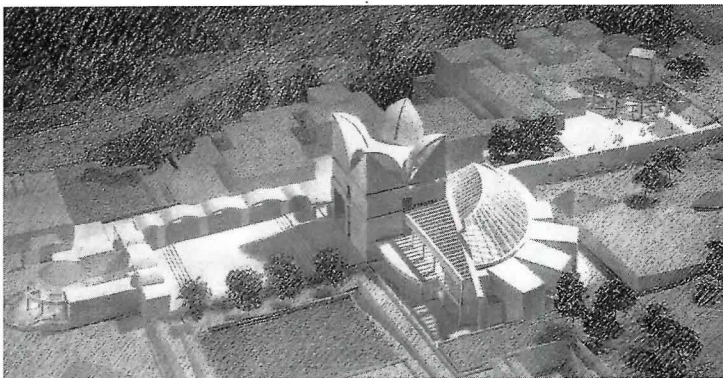
The Israel Museum in Jerusalem last year commissioned James Ingo Freed, FAIA, to do for the institution what his partner I. M. Pei, FAIA, did for the Louvre: unify disparate components of a large complex into a comprehensible whole. Since its founding in 1965, the museum has grown rapidly into a sprawling campus with a half dozen buildings and several gardens straddling a hill. "We've lost the center by expanding over the years," says museum director James Snyder. "It's hard to know where to get in."

In his plan, Freed places a small pavilion at the street entrance and a large, 130,000-square-foot pavilion at the center of the campus, joining the two with a plaza. This welcoming center will house orientation rooms, food stalls, a gift store, restrooms, a 600-seat auditorium, and an underground parking

garage. Covered passageways link the pavilion to other museum buildings. The project will cost about \$50 million and is expected to be completed within four years.

Freed will build in the luminous white Nazareth marble of the existing museum buildings rather than use the normally mandated golden Jerusalem stone. The roof of the welcoming center, visible from anywhere on campus, is a dome cut into four quarters, with each quarter rotated outward, "a joining of Modernism with the existing Middle Eastern architecture," according to Freed.

The pavilion will make the museum a prominent feature of the Jerusalem hillscape, forming an axis with the Knesset and the Supreme Court. "This is a city of hills," says Snyder. "Every hill has to have something." *David Simon Morton*



ARCHITECTS ARE WELL PLACED TO KEEP SEATTLE'S BUILDING BOOM IN CHECK

The value of projects issued building permits in Seattle reached a dizzying high of \$1 billion in 1997. In addition to abundant commissions for the design community, this boom has brought prominent political positions. One of four architects and planners who recently won city and county council seats around Puget Sound is Peter Steinbrueck, AIA, the first architect on Seattle's city council. "My constituents see me as a watchdog during this period of major new construction," he says.

Seattle's new mayor, Paul Schell, Hon. AIA, is considered an ally by many architects because of his experience as director of the Department of Community Development, dean of the University of Washington's College of Architecture and Urban Design, and developer of prominent urban projects.

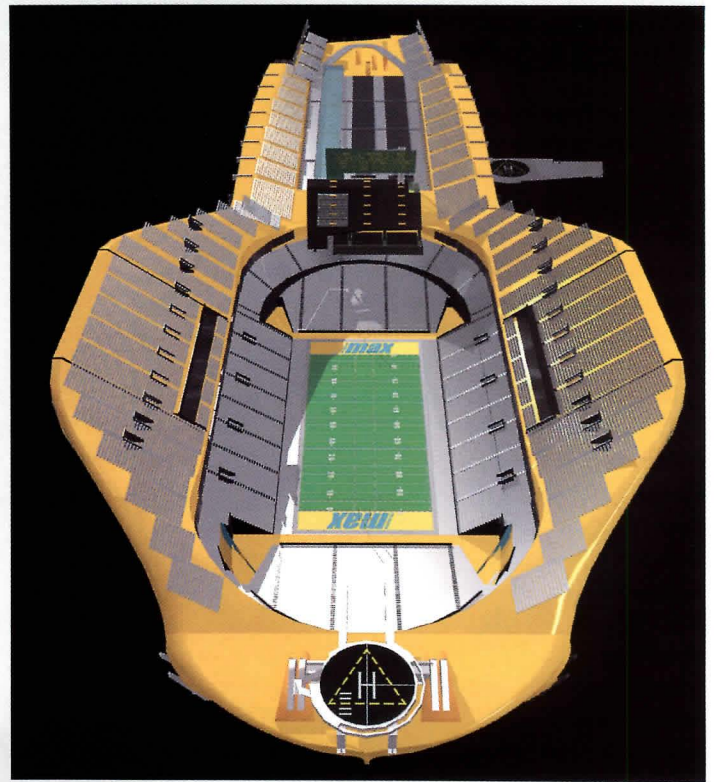
Managing the region's unprecedented growth—the population of metropolitan Seattle has increased by 376,000 since 1980—was a decisive factor in the November

mayoral race. While Schell promoted increased density, his opponent believed development should take place beyond city limits. At a town meeting sponsored by Space.City, a local design forum, the mayor enlisted the help of architects in finding creative ways to build new housing without destroying the single-family character of existing neighborhoods. One suggestion was an annual small-houses-for-small-lots design competition with winning plans available for free to builders.

And Schell is not afraid to revisit decisions made by the last administration, including plans to

move municipal functions into a downtown tower. "A high-rise office building is not an appropriate image for City Hall," he says.

Also hotly debated was a proposal to build a scaled-down central library incorporating apartments, a hotel, and retail space. "The mixed-use component would provide an opportunity to knit the library into the city fabric," says Schell. Given Seattle's tradition of economical, uninspired civic buildings, Steinbrueck voiced concern: "The library doesn't have to be monumental, but it should be an expression of civic pride." *Sheri Olson, AIA*



A FANTASY STADIUM FOR A DREAM TEAM The Los Angeles-based Academy of Architecture, Arts and Sciences asked architects to design a stadium that would lure a new football team to the city, remedying L.A.'s abandonment by two football teams in the last two years. The competition was conceived as a fantasy—the stadium was to be sited on Santa Monica beach—but the winning entry was perhaps the most sensible of the submissions.

Heneghan Peng Architects of New York proposed a seaworthy stadium capable of docking in any city a football team chooses to call home. A stadium ship has obvious entertainment value, making it attractive to a prospective football team owner. If and when an owner moves a team out of town, a city can recoup its investment by selling the stadium to the team's new home city. The stadium's hull is traced from that of the largest supertanker in the world, so it should float. *D.S.M.*

JORDANIAN ARCHITECT RASEM BADRAN GETS COMMISSION FOR QATAR MUSEUM

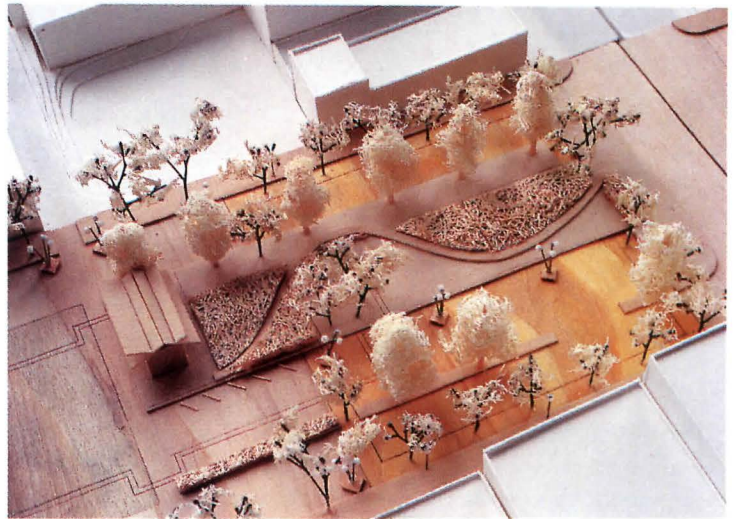
When the Al-Thani family, hereditary rulers of Qatar, needed a new home for their vast collection of historical artifacts, they asked the Aga Khan Trust for Culture to organize a competition. An international jury of prominent architects unanimously recommended Charles Correa's scheme as the standout among the entries, which also included projects by James Wines, Oriol Bohigas, Richard Rogers, and Zaha Hadid.

Shiekh Hamad bin Khalifa Al-Thani, Qatar's emir, however, opted for a design by Jordanian architect Rasem Badran, citing its reflection of the city's history and its clear expression of Muslim heritage. Correa's entry met the competition's budget and space stipulations, but Badran's was half again as sizable

in both cost and square footage.

The Museum of Islamic Arts, as it is to be called, will sit on a sloping triangle of 27 acres in Doha, Qatar. Designed in a vernacular Persian Gulf style, the \$52 million, 402,000-square-foot structure incorporates not only past forms but also past patterns and typologies. In his design Badran has taken advantage of programmatic distinctions to separate the various galleries into discrete units arranged in a village-like grouping. He clusters the galleries along an internal street that curves along a reconfigured shoreline.

Inauguration of phase one of the museum is planned for 2000; the full construction schedule has not been finalized. *James Steele*



A BLIGHTED STREET'S REVITALIZATION BEGINS IN MACON, GEORGIA

Oakland landscape architect Walter Hood has won the competition to redesign Poplar Street in Macon, Georgia. Once the hub of the city's vibrant cotton and produce markets, Poplar Street is now a blighted strip of vacant lots and boarded-up storefronts interspersed with stunning historic buildings. The design competition, funded by HUD and organized by the Mayor's Institute on City Design at Harvard University's Graduate School of Design, was conceived as a critical first step toward reversing that decline and bringing businesses and residents back downtown.

Hood's proposal converts three blocks of Poplar Street into a series of "backyards" serving various purposes. One would contain a new produce market, another a pavilion and an outdoor movie screen, the third a shallow creek meandering through groves of trees. Parking, bus stops, and other basic services would be housed within the yards, which are intended to evolve with the life of the street.

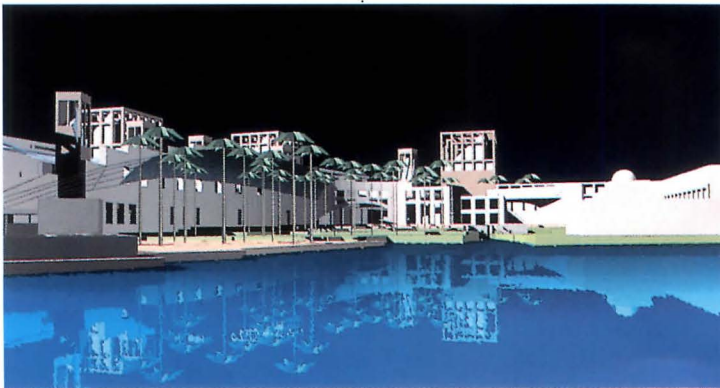
"With my work you have to be willing to take risks," says the jubilant Hood. "I am grateful that Macon is willing to take that risk."

"Walter's design breaks new ground," adds jury spokesman Ken Greenberg, an urban planner in Toronto. "It acknowledges the complexity and flux of public space, and recognizes the elusive character of collective history. It offers citizens of Macon an invitation to participate in shaping their own narrative."

Hood will refine his design in a series of community workshops; construction should be completed by mid-1999. The \$3 million project is being funded through the county's road-improvement program.

Mayor Jim Marshall praised the competition for reacquainting Macon with its own history. "We have an extraordinary asset here, and everyone has a responsibility to protect that asset," he says.

David Dillon



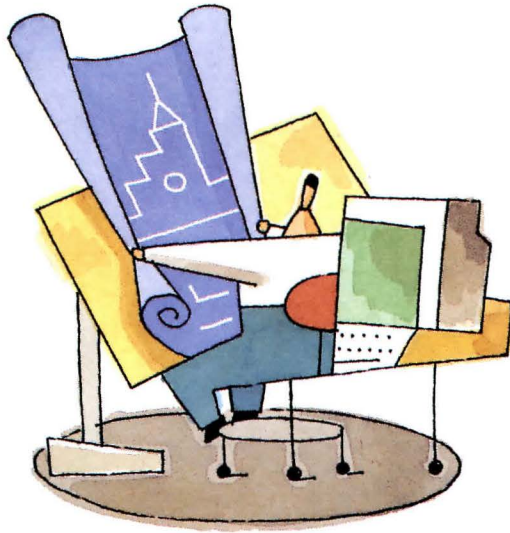
THE NEWEST CANADIAN EXPORT: AFFORDABLE HOUSING McGill University's School of Architecture in Montreal has designed an affordable housing prototype specifically for the Mexican market. Responding to the need for inexpensive housing in Mexico—which is expected to rise by about 700,000 new units a year until at least 2005—the school's Affordable Homes Program unveiled the Casa a la Carta at the ConstruExpo show in Guadalajara last year. The concrete-panel casa was manufactured in Quebec and constructed on site.

Reaction from Mexican officials prompted Avi Friedman, director of the program, to create a home-building systems export business with the support of the university, the private sector, and the provincial and federal governments. Promexpo hopes to ship some 100 homes to Guadalajara this year.

La Casa a la Carta is designed with horizontal or vertical expansion in mind, to suit more than one generation of typically close-knit Mexican families. Houses range from 500 to 1,120 square feet, with a living room, a dining area, two bedrooms, a kitchen, and a bathroom. Friedman and his students consulted Guadalajara architect Guadalupe Dipp Reyes to ensure that the design was culturally and financially attuned to the market.

Major elements of the houses and their finishes will be manufactured and shipped from Quebec and then assembled by Mexican labor. The total cost is about \$15,000. "The house is aimed at average wage-earners, who will probably be assisted with down payments and monthly mortgage payments by a government agency or a private lender," says Friedman.

Using exclusively Mexican labor and technology, Friedman notes, it would take 12 to 14 months to build an equivalent house. A Casa a la Carta, on the other hand, will take about two weeks to complete once the components arrive in Mexico. *Albert Warson*



The architect had big plans—but his client's wallet had other ideas.



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NORTH ST. LOUIS TRIES URBAN RENEWAL, SOUTH AFRICAN STYLE

Can the lessons of community-based architecture projects in South Africa be applied successfully to inner-city neighborhoods in the United States? Jo Noero, an architect who was recently appointed director of the graduate program of architecture at Washington University in St. Louis, hopes so. Along with his students, he plans to develop prototypes for the rehabilitation of North St. Louis, a blighted neighborhood in desperate need of intervention.

"The idea in North St. Louis is to develop so-called building hives, where the neighborhood rehabilita-

tion is performed by residents themselves, much the way it is done in South Africa," says Noero, who is South African himself and maintains a practice in Johannesburg. "Residents attend school to learn the trades involved in rehabilitating and upgrading. Building cooperatives are formed to buy materials in bulk. Business classes teach participants to manage the financial aspects of urban renewal."

Once building centers are set up in North St. Louis, banks will be encouraged to locate there so residents can secure mortgages, and courses in subjects like architectural

drafting will be offered so local technical skills can flourish. At some stage, Noero says, the building hives will outgrow their usefulness and be turned into community centers or adult education facilities.

"The goal is not gentrification," says Noero. "The idea is to stabilize a marginal neighborhood, to prevent it from becoming a dumping ground for people who are already marginalized."

In the early 1980s Noero's work drew the attention of Archbishop Desmond Tutu, who hired him as architect for the Anglican church in Transvaal. His involvement with church and black community leaders in the townships resulted in the creation of experimental hous-

ing units, low-cost community buildings, and career centers.

The North St. Louis project will be linked to the centenary of the 1904 World's Fair, which has prompted the city to begin a number of new municipal works. But unlike other urban renewal projects timed to coincide with events such as the Olympics, the residents affected by the transformation will have a say in what goes on. "One of the prime preconditions is the engagement of locals in decision making from day one," Noero says.

Residents of North St. Louis, an area with 60 to 70 percent unemployment, will also benefit from the creation of construction jobs. *Julie Moline*

DOWNTOWN DENVER GETS AN UPSCALE HOUSE — A LIVE-IN MUSEUM OF SORTS

Denver's lively Lower Downtown National Historic District—known as LoDo—is one of the nation's great historic preservation success stories. Home to a number of late-19th-century commercial buildings, LoDo has been transformed from a skid row into an upscale residential neighborhood, with lofts, restaurants, and art galleries. Richard Moe, president of the National Trust for Historic Preservation, called the district "the single best example of a downtown bringing itself back."

Now, thanks to local oilman Frederick Mayer and his wife, Jan, LoDo is getting its first single-family residence, the Red House. Designed by the Seattle firm Olson Sundberg Architects, the multimillion-dollar house sits comfortably between a seafood restaurant and, at least for now, a parking lot. Tired of commut-

ing from their suburban home, the Mayers—longtime art collectors and patrons of the Denver Art Museum—wanted to be able to walk to their downtown office. "And we wanted a place with a lot of wall space and high ceilings—big enough for major pictures," says Frederick Mayer, whose varied collection includes pre-Columbian artifacts, Mexican decorative arts, 20th-century lithographs, and Ming Dynasty furniture.

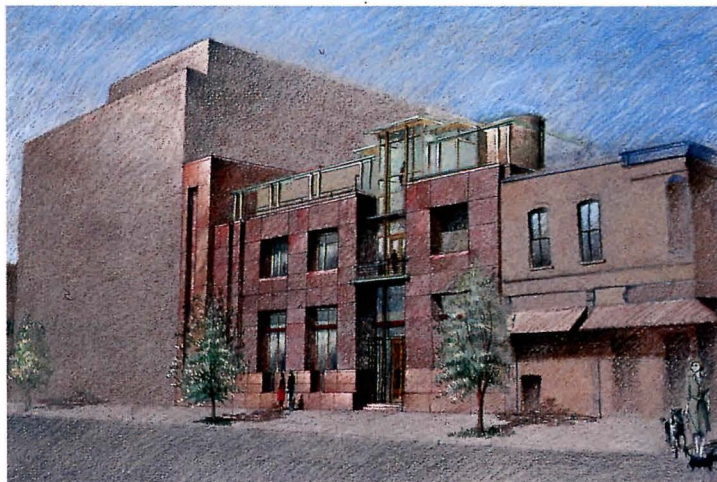
After interviewing a number of architects, the Mayers turned to Olson Sundberg, largely because of the firm's experience in designing homes for art collectors. The result is a three-story, red-sandstone-clad box that blends nicely with LoDo's mostly red-brick warehouses. "I wanted it to be a good neighbor to the surrounding buildings," says Jim

Olson, FAIA, the firm's principal, "but still be a contemporary piece of architecture." Olson had no trouble getting his plans approved by LoDo's tough design review board.

The U-shaped house, scheduled to be completed by late spring, includes a courtyard, a first-floor living room and dining area that will be used to display artworks, a

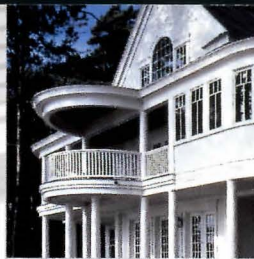
second-floor master bedroom plus two small guest rooms, and, on the third floor, a small, windowless gallery.

Mayer says he's especially looking forward to entertaining guests on the Red House's rooftop sculpture garden, "where people can sit and have a drink and look up at the stars." *David Hill*



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COMMERCIAL DEVELOPMENT PROVIDES CENTER FOR SPRAWLING TORONTO SUBURB

The 130,000 citizens of Vaughan, Ontario, have never had a place to call downtown; they don't even have a main street. This classic case of urban sprawl just northwest of Toronto is the result of 20 years of fitful expansion: a bland, free-form assortment of villages, strip malls, light industrial buildings, and business parks. But work has begun on a downtown core with some 3 million square feet of commercial development, which, city planners predict, will get this suburb centered.

Vaughan's official plan for its "corporate centre code" includes two superstores within five miles of each other near three major highway intersections. And the recent Canadian mania for urban entertainment centers has not escaped the city's planners. Here are a few of the developments approved or awaiting final approval, most of which will be completed this year:

- A \$175 million, 1.4-million-square-foot "super-regional, destination-oriented megamall" will sit on a 180-acre site across from Paramount Canada's Wonderland theme park. The megamall is a joint venture of Cambridge Shopping Centres, in Toronto, and the Mills Corporation, of Arlington, Virginia; the architects are Bregman+Hamann, of Toronto.

- AMC Theatres of Canada, in Toronto, a subsidiary of AMC Entertainment, of Kansas City, Missouri, will put up a 30-screen, 110,000-square-foot megaplex in the Interchange, a multiuse development designed by Young & Wright Architects of Toronto.

- Directly opposite the AMC megaplex, Famous Players, a Toronto-based subsidiary of Viacom, which is in New York City, will build a \$12 million, 100,000-square-foot, 18-screen (including an IMAX) entertainment center it calls the Colossus (above). Page+Steele Architects and Planners, of Toronto, designed its top to resemble a flying saucer 180 feet in diameter.

Vaughan's official plan states that the long-term development of the downtown will be based on the "main street model rather than the shopping center model of an urban center, with a finely textured mix of uses and ownerships which allows for continual change and intensification along the central streets and intersections." A.W.

ON THE WEB: EASING TOWARD A SUSTAINABLE ARCHITECTURE EDUCATION

Calling prevailing models of architecture education outmoded, a new Web site is offering up a smorgasbord of ideas aimed at promoting a more collaborative, "sustainable" brand of professional education. The site, which was launched on January 30, is the brainchild of Marvin Rosenman, chair of Ball State University's architecture program and founder of the project, Educating Architects for a Sustainable Environment (EASE), and Joseph Bilello, associate dean of Texas Tech University's College of Architecture. Region 5 of the U.S. Environmental Protection Agency provided the major funding for the project.

The site, at www.ease.bsu.edu, addresses complaints that are familiar to many critics of architecture education: that many schools still regard architecture solely as art; too many teachers adopt a "master-pupil attitude" in studio; and design at most programs overshadows all other curricular areas.

As an antidote, the EASE site lays out some 140 reform ideas, the product of three conferences between 1994 and 1996 that attracted students, educators, and

industry leaders. Many are provocative and practical: more multidisciplinary juries; using technology to break through the isolation and clannishness of the studio culture; awarding student prizes for effective teamwork. Others are more doctrinaire, such as "overcome the fear of a tyranny of dogmatic values" or "remodel attitudes toward automobiles, bicycles, and beef."

For schools willing to think beyond piecemeal suggestions, the EASE site includes five model interdisciplinary curricula, each based on principles of more sustainable education and building design. As the authors note, openness to rethinking old practices and adopting more environmentally and community-conscious architecture training is in the air in the profession itself and in some schools, such as the University of Virginia, a pace-setter in sustainable education.

The goal of the EASE site, says Rosenman, "is to get all schools to do something. There is not a single right place to start or a single right approach. Any of these ideas would be a step in the right direction." Lee D. Mitgang

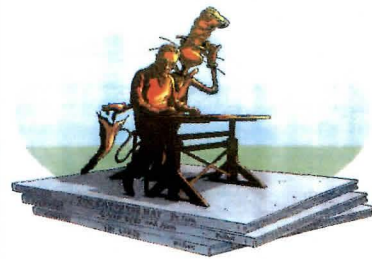
AND TO THINK THAT THEY'LL SEE IT ON STATE STREET! The Springfield Library and Museums Association will erect the Dr. Seuss National Memorial in Springfield, Massachusetts, the author's birthplace and boyhood home, late next year. The tribute to the children's book author will consist of six bronze sculptures created by his stepdaughter, Lark Gray Dimond-Cates.

One of these will be a bas-relief of the text of *And to Think that I Saw It on Mulberry Street* (Dr. Seuss's first book), which will sit on State Street, just blocks from the real Mulberry Street.

The other five pieces in the \$4 to \$6 million project will be placed in the Springfield Quadrangle cultural district, across State Street. Ron Henderson of Stephen Stimson Associates, the landscape architects working with Dimond-Cates, says simple granite walkways and pavement set in grids will contribute to the classical atmosphere of the Quadrangle, which houses the library, several museums, and a cathedral, designed in Italian Renaissance revival and Romanesque styles.

So how do Horton the Elephant and Yertle the Turtle fit in? That's the challenge facing the sculptor and the landscape architects. "I want something that has dignity to it," says Dimond-Cates, who remembers her stepfather, whose real name was Theodor Geisel, as a shy, elegant man. "I want people to always remember Ted and his work."

Among other sculptures will be one of Geisel with the Cat in the Hat looking over his shoulder and a 16-foot tower of Yertle the Turtle figures in a children's garden. With winding paths and fanciful park benches, this will be the only area where the quiet order of the Quadrangle yields to Seuss's whimsy. Debra Morgenstern Katz



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CIRCLE 24 ON INQUIRY CARD

WHEELCHAIR RAMP DRIVES RENOVATION OF NEW SCHOOL COURTYARD

The new Vera G. List Courtyard at the New School for Social Research provides a rare haven from the hustle and bustle of New York City.

Tucked between two 1950s-era buildings on 11th and 12th Streets, the courtyard was originally a sculpture garden. By 1989 the space had deteriorated, and a second-story skyway—the only wheelchair access between the buildings—loomed oppressively above. The renovation program called for wheelchair access to the courtyard; ample seating for socializing, classes, and outdoor events; new planting; and minimizing the intrusion of the overhead bridge.

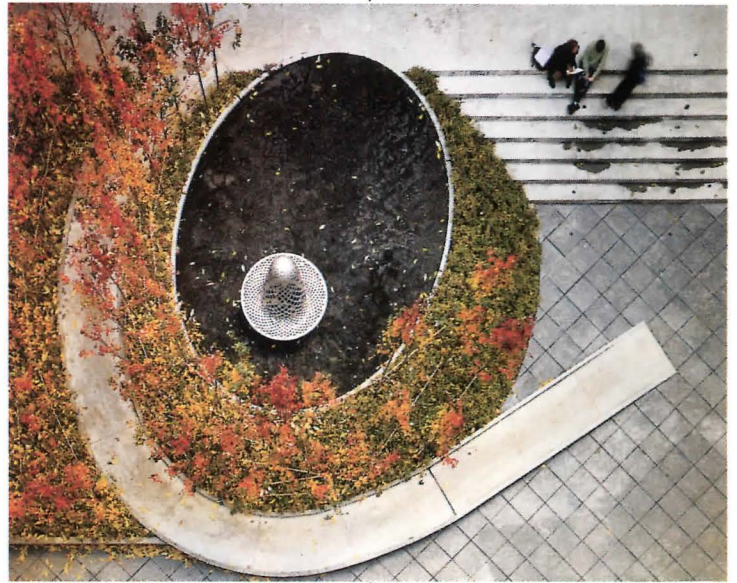
The design team of sculptor Martin Puryear and landscape architect Michael Van Valkenburgh embraced the access requirement as a driving force, expanding the program to include the dual-level 12th Street lobby. Mitchell/Giurgola

Architects and engineers Ove Arup and Partners were crucial players in the reconfiguration, which cost \$2.6 million and took eight years.

The designers replaced the lower-lobby curtain wall with a luminous glazed shed shifted 12 feet into the courtyard, creating a deck that provided sufficient height for stairs to the courtyard level, which double as seating.

A second ramp, with a shallow grade to dispense with obtrusive handrails and a radical curve to accommodate the resulting length, flows down from the deck. Its curvilinearity is reiterated in Puryear's sculptural benches in wood, stone, and steel, and the amphitheater fragment of double-height steps whose arcs embrace the courtyard.

Texture, color, and vegetation expand the space visually. Scored into vast, quiet rectangles of gray stucco, the freestanding 21-foot-



high east and west walls recede into the background as their red cedar louvers allow glimpses of sky and neighboring trees. The courtyard's east perimeter is lost in the indeterminate depth of a dense stand of bamboo, while the ramp winds through a thicket of red maples.

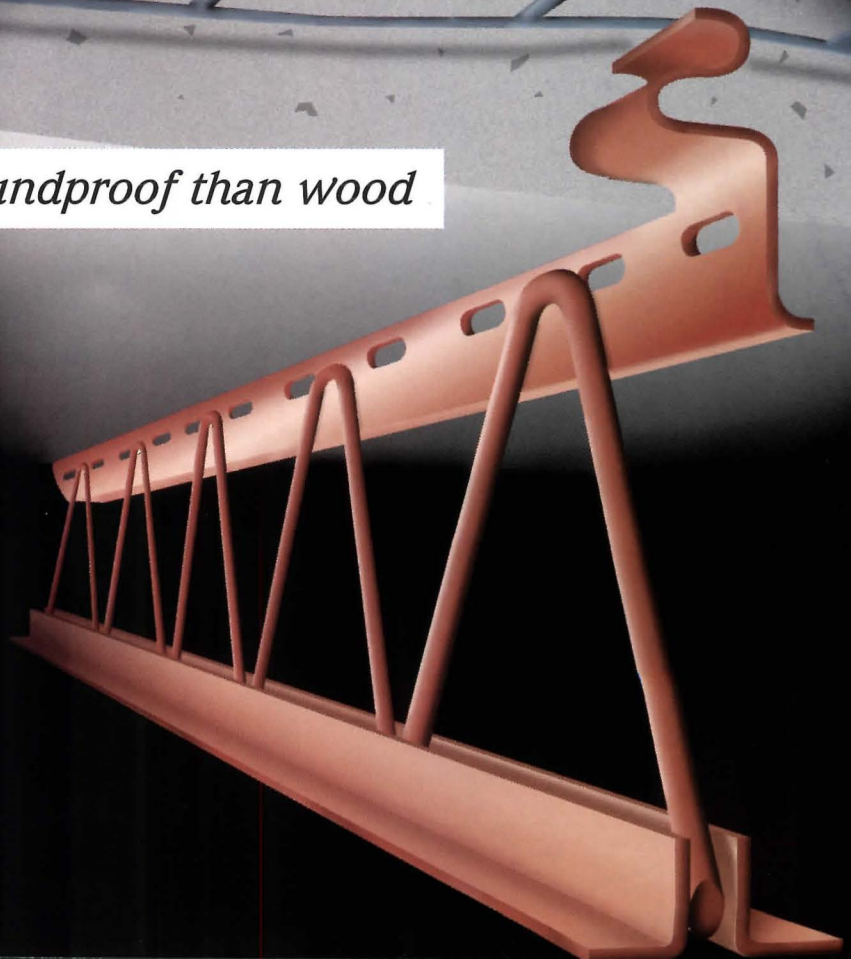
Translucent glass wings have

transformed the imposing overhead bridge into a soaring canopy that emphasizes and shelters the main circulation axis. A ground-floor cafeteria by Ohlhausen Dubois Architects now faces the courtyard from the 11th Street building, completing its integration with the surrounding interior space. *Andrea Truppin*

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NO ARCHITECTURAL ICONS FOR AMERICA'S NEXT OLYMPICS

Winter Olympic Games of the recent past impressed us with iconic works of architecture, such as the Viking ship at Lillehammer (1994) and this year's steel-armored M-Wave speed-skating arena at Nagano. The architecture of the next Winter

Games, to be held in Salt Lake City in 2002, is sure to be humbled by its predecessors.

"We're not building much in the way of buildings," says Jerry Anderson, head of facilities for the Salt Lake games. The budget for all new

construction is about half the \$266 million spent on Nagano's M-Wave arena alone, with most resources devoted to engineering marvels like ski jumps and the bobsled run.

While host cities in other countries benefit from full government support, these games are funded by private interests, with contributions made by local governments and the State of Utah. Salt Lake organizers will make the most of temporary facilities and facilities already in place, such as the Delta Center and the University of Utah's Rice Stadium, which will be expanded by FFKR (shown at left, a new press box), a local firm that has received a number of Olympics-related commissions.

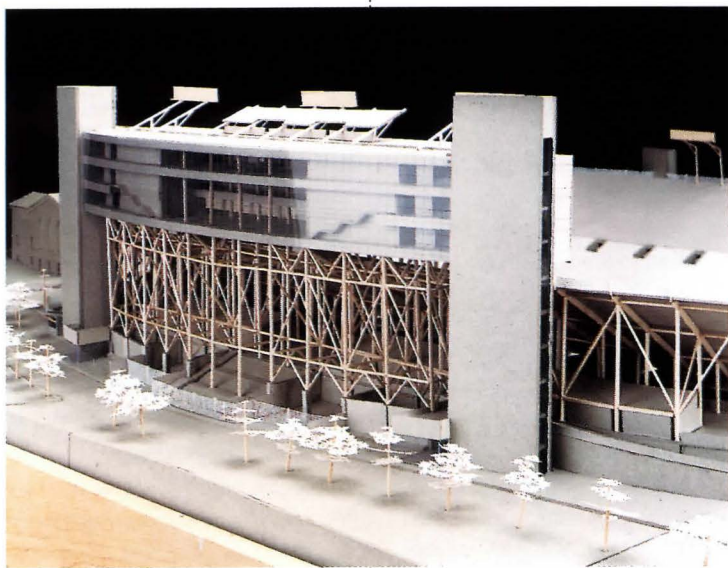
The best designs for new buildings may be those that answer meager budgets with a fierce pragmatism of clean and simple lines. Some arenas designed by FFKR successfully take this approach, and the soon-to-be-named architect of the speed-skating oval at Oquirrh



will have to, given available funds.

The recently completed Event Center of West Valley City (above), blessed with \$55 million in local funding, repeats the recent successes of arenas elsewhere in the United States. With equal portions of glass and brick, the center—designed by VCBO, a local firm, and HOK Sport—makes no regional or iconic statement of its own.

The real legacy of these games will be the high-tech athletic facilities Jerry Anderson has promised to build: unlike those of former host cities, Salt Lake's will have no trouble staying in operation thanks to an endowment created by the Olympic Committee. *D.S.M.*



3

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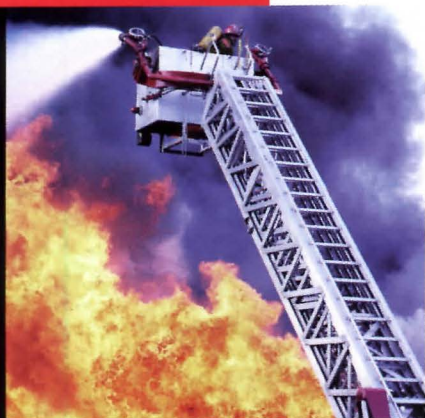
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CIRCLE 25 ON INQUIRY CARD



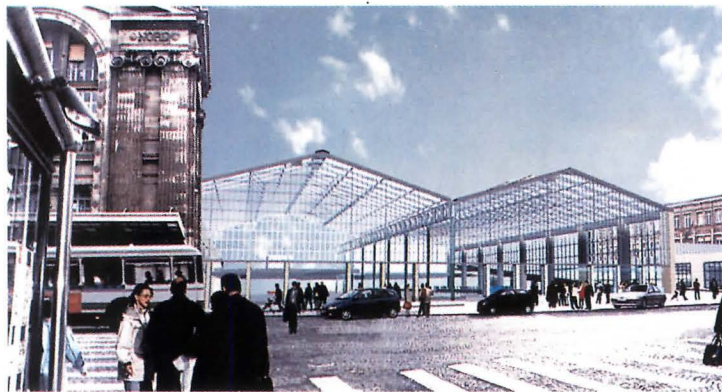
NEWS BRIEFS

Gare du Nord renovation

January saw the start of a three-year, \$50 million renovation of Paris's Gare du Nord, Europe's busiest train station, by the French national train system's in-house architects. To handle the 520,000 travelers who pass through the station each day, the station needs a complete restructuring of its maze-like concourse system and ticketing and reception areas. The most dramatic change will be the renovation of the glass-roofed suburban train hall and the building of a new light-filled hall to replace the adjacent concrete parking deck, which has long marred Jacques Hittorff's magnificent 1864 facade.

Downtown vacancy rates low

American downtowns are on the rebound as commercial vacancy rates continue to decline. According to a report published by Cushman & Wakefield, the international real



Paris's Gare du Nord, the busiest train station in Europe, as it will appear after renovation.

estate services firm, the cost differential between cities and suburbs is narrowing, making it "easier and more cost effective to consolidate intellectual capital downtown rather than suffer attrition by moving." The biggest gainers in the past year were Manhattan, Houston, Chicago, and San Francisco, which now leads the country with its thin 3.3 percent commercial vacancy rate.

Radio show for architects and builders

A talk radio show focusing on the construction and design industries went nationwide last month. *Build America*, hosted by a practicing architect and a building contractor-environmental consultant, can now be heard in 13 million homes in 28 states through the Cable Radio Network and FM radio. The show can also be accessed on the Web at www.buildamerica.com.

Well-tuned architecture Russell Johnson, designer of performance

spaces for such venues as the Meyerson Symphony Center in Dallas and Symphony Hall in Birmingham, England, has been awarded the Wallace Clement Sabine Medal, the highest honor given for achievement in architectural acoustics. Johnson is a pioneer of adjustable acoustics, having introduced movable canopies that can adjust a concert hall for the intimacy of a trio or the larger sound of an orchestra. He is only the 11th person to receive the medal since it was first awarded in 1957.

Labor-intensive design The Hanjin Container Terminal in Long Beach, California, is unusual for a work of portside architecture. As is customary, union contracts required that the terminal administrative building fully segregate management's facilities from those of workers. Caldwell Architects and Robert Stewart, AIA, responded by introducing unifying elements: wrap-around brises-soleil and a uniformly

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white exterior. Despite the tensions inherent in the program, the building's exterior presents a coherent, single-purpose entity among the clutter of port facilities. It earned an honor award from the Long Beach/South Bay chapter of the AIA, a rare occurrence for an industrial project.

Another new airport in China

Building relentlessly, Chinese officials just commissioned the country's 10th airport in five years, the fifth to be awarded to Toronto-based B+H Architects International. The design for the \$100 million first phase of the Hangzhou Xiashan International Airport incorporates curving glass that evokes both natural forms and the wings and fuselages of airplanes.

Firm's new home is old triumph

Detroit-based SHG is relocating its offices to a building the firm designed in 1929. The 36-story Guardian Building, with its polychromatic brick, glasswork, and Native

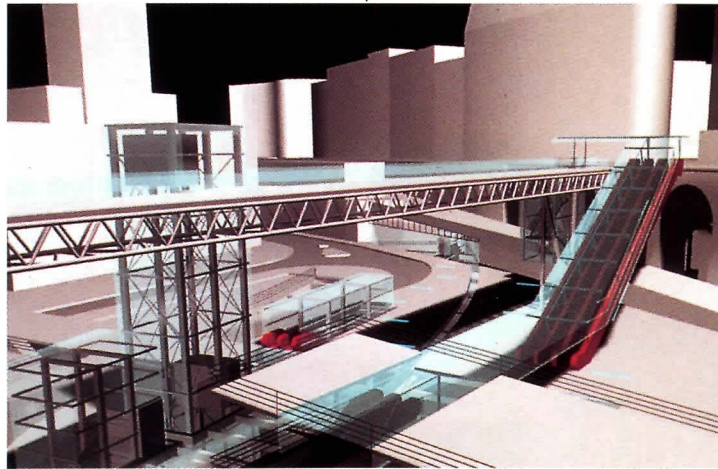
American-inspired ornament, is exemplary of Detroit's peculiar strain of Art Deco. The move allows 143-year-old SHG to proudly display its contribution to the Detroit skyline and regional architecture.

Tschumi and Merlini in

Lausanne Construction has finally begun on the \$30 million Interface Flon rail station in Lausanne, Switzerland, designed by Bernard Tschumi Architects and Luca Merlini,

a former Tschumi employee. The underground station is the only part of the 1988 master plan for the industrial valley of the city to go forward thus far. Vertical glass elements and a pedestrian bridge join the station to the city, a revision of a plan to connect the areas with "inhabited bridges."

A new train station for Lausanne, Switzerland, designed by Bernard Tschumi Architects and Luca Merlini.



Skytherm house donated for study Harold Hay has donated his famous energy-conserving house in Atascadero, California, to the architecture school of California Polytechnic State University at San Luis Obispo. A passive solar heating and cooling system Hay invented uses pools of water on the roof to absorb and release solar energy and keep the house's interior temperature between 68 and 72 degrees year-round. Built in 1973 in the midst of an energy crisis, the house will now be used for student research and as guest quarters for visiting faculty.

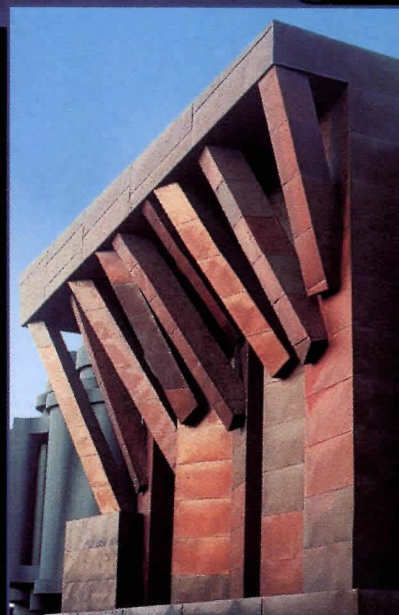
Philip Johnson is back A year and a half after his heart attack, Philip Johnson, FAIA, has started working full-time again. Despite his condition, the 91-year-old architect spends half the week traveling, often to Texas, where he is overseeing the construction of the Cathedral of Hope and the Amon Carter Museum. ■

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CIRCLE 28 ON INQUIRY CARD

DATESEVENTS

Calendar

Signs and Wonders: The Lights of Times Square

New York City

Through March 8

Actual signs as well as photographic records are on display in this exhibition tracing the development of technology and imagery in Times Square advertising. New-York Historical Society. 212/873-3400.

Zaha Hadid: Painted Projects San Francisco

Through March 10

The first solo museum presentation of the work of the Iraqi-born British architect includes two dozen paintings of cities and buildings in assemblages of exploded lines and planes. San Francisco Museum of Modern Art. 415/357-4000.

Temple Bar: Dublin New York City

Through March 11

Several buildings designed by young Irish architects, all planned in 1991 by Group 91 for an area of Dublin's medieval city center, are presented. Urban Center. 212/935-3960.

New Courthouses in Historic Contexts

New York City

Through March 15

Models and renderings of 16 new courthouses designed by New York architects are displayed in this exhibition, sponsored by the AIA's Committee on Architecture for Justice. United States Court House at Foley Square. 212/683-0023.

Robert Adam: From Sketch to the Finished Drawing

New York City

Through April 5

An exhibition of the work of architect Robert Adam (1728-1792), considered the father of the Classical Revival in Britain, includes 65 drawings, models, objects, and books on loan from the Sir John

Soane Museum in England. Frick Collection. 212/288-0700.

Fabrications

New York City, San Francisco, and Columbus, Ohio

Through April 12 (Columbus); April 28 (New York and San Francisco)
Organized jointly and presented simultaneously at the Museum of Modern Art in New York, the San Francisco Museum of Modern Art, and the Wexner Center for the Arts in Columbus, Ohio, this exhibition features full-scale commissioned projects by such architects as Eric Owen Moss, Smith-Miller+Hawkinson, Hodgetts+Fung, and Mockbee/Coker. 212/708-9400 (MoMA).

Full Circle: Invited Designs for Columbus Circle

New York City

Through April 15

Visions of Columbus Circle by the Olin Partnership, Kennedy & Violich, Dan Kiley, Machado and Silvetti, Michael Sorkin, Rafael Viñoly, and Weiss/Manfredi. Municipal Art Society. 212/935-3960.

Fresh Furniture Pittsburgh

Through April 18

A survey of contemporary furniture designed and crafted in the United States. Society for Contemporary Crafts. 412/261-7003.

L.A. Obscura: The Architectural Photography of Julius Shulman Los Angeles

Through April 18

A survey of 85 works by a photographer best known for his pictures of mid-century Southern California architecture, particularly the Case Study Houses. Fisher Gallery, University of Southern California. 213/740-4751.

Sweet Farm 1994-1997 Toronto

Through April 30

Documentation of a series of archi-

tectural, sculptural, and landscape interventions on an 85-acre site in Quebec by Christopher Pommer and Lisa Rapoport of PLANT. Ballenford Books. 416/588-0800.

Shiro Kuramata

New York City

Through May 2

Works on view by the late Japanese designer include 35 notable pieces of furniture, 30 smaller objects, and 20 photographs of interior designs. This touring exhibition is the first major retrospective of the visionary designer's work. Grey Art Gallery, New York University. 212/998-6780.

Japan 2000: Architecture for the Japanese Public Chicago

Through May 3

This exhibition features architectural drawings, models, and photographs representing museums, dams, bridges, police stations, health-care facilities, and stadiums by well-known and emerging Japanese architects. Co-organized by the Art Institute of Chicago and the Japan Foundation. Art Institute of Chicago. 312/443-3600.

Arquitectonica: The Times Square Project

New York City

Through May 10

The first solo exhibition in New York of work by the Miami-based firm. The show focuses on the architects' design of a mixed-use complex combining a hotel with entertainment and retail components, to be built at 42nd Street and Eighth Avenue. Cooper-Hewitt Museum. 212/849-8300.

Civics Lessons: Recent New York Public Architecture Washington, D.C.

Through May 11

Projects in New York initiated by public agencies working with architects in the period from 1985 to 1995. Organized by AIA/New York and the New York Foundation for Architecture, the show emphasizes the link between public investment

in architecture and the economic, social, and aesthetic quality of the city. National Building Museum. 202/272-2448.

The Gardens of Rome Atlanta

Through May 17

Etchings of the Villa Borghese gardens, the Farnese gardens, and the Belvedere gardens of the Vatican, from the 17th-century *I Giardini di Roma*, by Giovanni Battista Falda and Simone Felice. Michael C. Carlos Museum at Emory University. 404/727-4282.

Alvar Aalto: Between Humanism and Materialism New York City

Through May 19

Marking the 100th anniversary of Aalto's birth, this large-scale retrospective is the first in the United States to present original drawings and models of work by the renowned Finnish architect, designer, and town planner. Included are video walk-throughs of several of his most important buildings. Museum of Modern Art. 212/708-9400.

Montréal Métropole Montreal

Through May 24

This exhibition covering the years 1880 to 1930 charts the physical growth of Montreal from a small merchant city into an international port, a continental transportation hub, and Canada's financial center, emphasizing the role of changing building types. Canadian Centre for Architecture. 514/939-7000.

Toy Town Montreal

Through May 31

An exhibition exploring how toys from several cultures have represented the village, town, and city. Twenty-six toy towns from the collection—ranging from early 19th-century German wooden villages to recent CD-ROMs—are on display. Canadian Centre for Architecture. 514/939-7000.

(continued on page 177)

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CIRCLE 33 ON INQUIRY CARD

Assessing the STATE of ARCHITECTURAL CRITICISM in Today's Press

by Suzanne Stephens

Listen to any conversation among architects today and you can sense the malaise and cynicism about the state of architectural criticism in magazines and newspapers. There seems not to be as much of it around as there was 20 years ago. With few exceptions, the criticism that does exist is enervated. Journalistic or practical criticism relies too much on description or impressionistic response (such as calling a building "wonderful") and lacks a conceptual framework. While the United States has never been known for the consistently vigorous criticism that survives in England, it has had its higher moments.

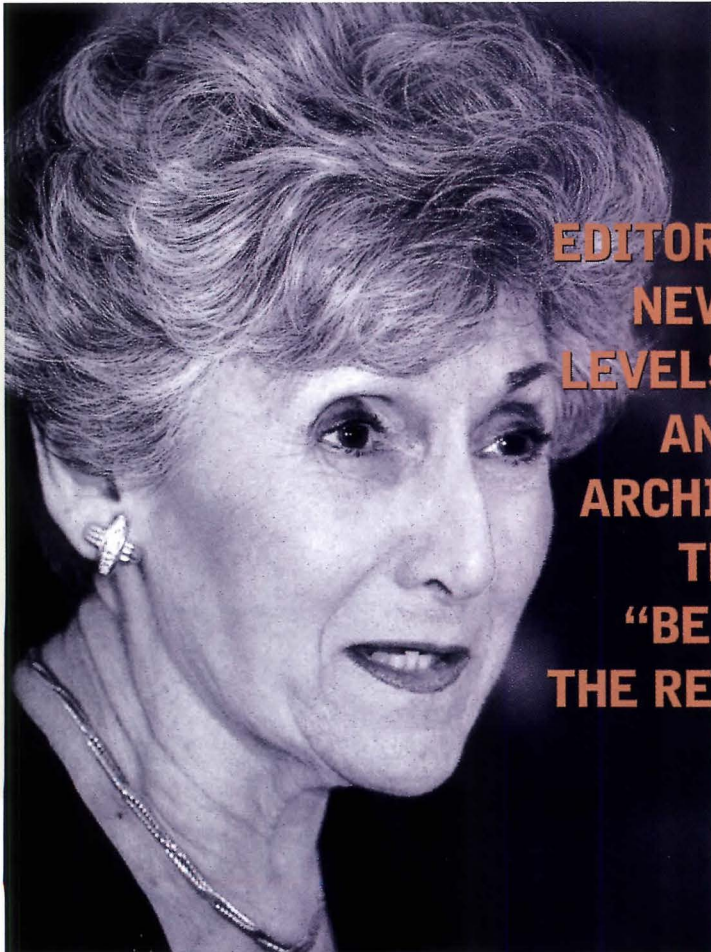
In addition, the most intense discussion in the U.S. now occurs in small academic journals. Indeed, theory appears to be a growth industry supported by books, pamphlets, symposia, and doctoral programs at architecture schools. Yet here language is often too abstract and the content so arcane that a larger public, even architects, can't understand it.

Because of the language (and thought) barrier, a split has occurred between "practical" criticism by journalists about cities and buildings and theoretical criticism by academics investigating certain philosophical issues relating to architecture.

The split didn't really exist before the 1980s. Practice had been integrally wedded to theory, and during some periods, such as early Modernism, both were endowed with an overriding sense of purpose. Now this vision is missing. At various times in the past 150 years critics have been accused of emphasizing certain criteria to the exclusion of others. Aesthetics were thought to have dominated structural and programmatic expression, for example,

or functionalism was stressed more than symbolic representation and contextualism. Today many critics find "criteria" too constraining. What should criticism do or be then?

First let's make it clear what we mean by criticism. Using both the senses and the intellect, the critic analyzes and evaluates the built environment and its effect on its inhabitants and users. As Miriam Gusevitch articulates so well in *Drawing Building Text* (1991), "Criticism is riskier than commentary. It is willing to judge and to condemn, to stake out and substantiate a particular position.



EDITORS AT SOME NEWSPAPERS SHOW LEVELS OF KNOWLEDGE AND INTEREST IN ARCHITECTURE THAT MAY BE "BELOW [THOSE] OF THE READERSHIP."

—Ada Louise Huxtable

Suzanne Stephens is a contributing writer for Architectural Digest and is currently working on her doctoral dissertation on American architectural criticism at Cornell University.

Serious criticism is not sheer negativity; it is the careful and thoughtful disclosure of dimensions that might otherwise elude us.”

While Gusevitch’s last point makes sense, for all practical purposes, criticism still means taking a stand that will point out the flaws of the building or urban environment.

Journalist critics: a report from the front

Ironically, journalistic criticism once seemed on the ascendant. Ada Louise Huxtable, the architecture critic and editorial board member of the *New York Times* from 1963 to 1982, was largely responsible for bringing a public consciousness of architecture to the newspaper reader. *The Times*, of course, was a top-notch vehicle; she, in turn, was the cause for its becoming an irrefutable authority in architectural matters.

Other newspapers began systematically adding architecture critics. Cathleen McGuigan, senior editor for the arts at *Newsweek*, notes that besides more criticism, extra coverage of trends, projects, and personalities was encouraged by Postmodernism and then by Deconstructivism. “The styles were placed within clearcut categories with key players that the public could relate to, like football teams,” she notes.

But faddish proliferation of styles led to disenchantment; economic recession in the late 1980s caused a drop-off in construction, and the downsizing in newspapers and magazines shrunk the space devoted to architectural criticism. For example, Diana Ketchum, architecture critic of the *Oakland Tribune* from 1979 to 1993, and Michael Sorokin, architecture critic of New York’s *Village Voice* from the late 1970s to the late 1980s, weren’t replaced when they left their respective papers. After Beth Dunlop, the architecture critic of the *Miami Herald* from 1979 to 1993, departed, her spot was taken by a “writer.” As Dunlop explains, “The newspaper didn’t want ‘criticism’; it wanted writing that would boost projects.” Jayne Merkel, the architecture critic at the *Cincinnati Enquirer* from 1977 to 1988, also ran into boosterism problems on the part of the city’s economic and real estate interests. As she comments, “The paper liked the idea of an architecture critic, it didn’t like the reality.”

One exception to this trend is Chicago, says Blair Kamin, the architecture critic for the *Chicago Tribune* and a contributing editor to ARCHITECTURAL RECORD. Not only did the *Tribune* make Kamin architecture critic in 1992, shortly after his predecessor Paul Gapp died, but it has given him a great deal of space in its daily and Sunday editions. In addition, the Chicago Sun-Times has an architecture critic, Lee Bey.

On the West Coast, the *Los Angeles Times*, without a steady architecture critic in the palmy days of criticism in the 1980s and 1990s, finally hired Nikolai Ouroussoff in 1996. However, in 1997 its well-regarded editor, Shelby Coffey, was dismissed, and the newspaper has been reorganized with a heavy business and editorial interdependence. Ouroussoff is still optimistic. Although he doesn’t have a regular column, he publishes frequently in the Calendar section and writes profiles and news stories.

Another L.A. paper, the *Herald-Examiner*, had an architecture

**THE ROLE OF
THE CRITIC IS
“TO INTERPRET THE
BUILDING. EVALUATION
IS ONLY PART OF
WHAT CRITICS DO.”**

—Herbert Muschamp

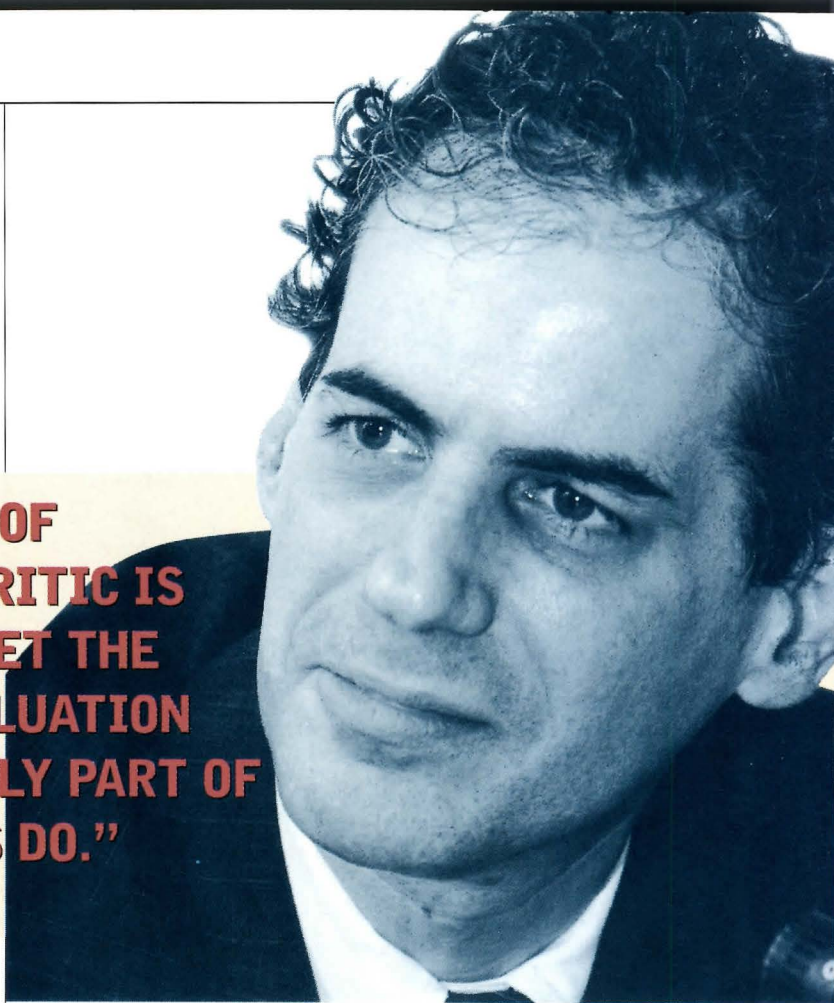
and urban design critic, Joseph Giovannini, from 1979 to 1983. Fortunately for Giovannini, when the newspaper folded in the mid-1980s, he had already joined the *New York Times*’s Home section. Today Giovannini, who writes criticism for *Architecture* magazine and contributes columns to the Home section of the *Times*, finds his work often is a “hybrid of criticism and feature writing.” He says this is fine: “I don’t have to engage in a pure act of criticism to enjoy writing.”

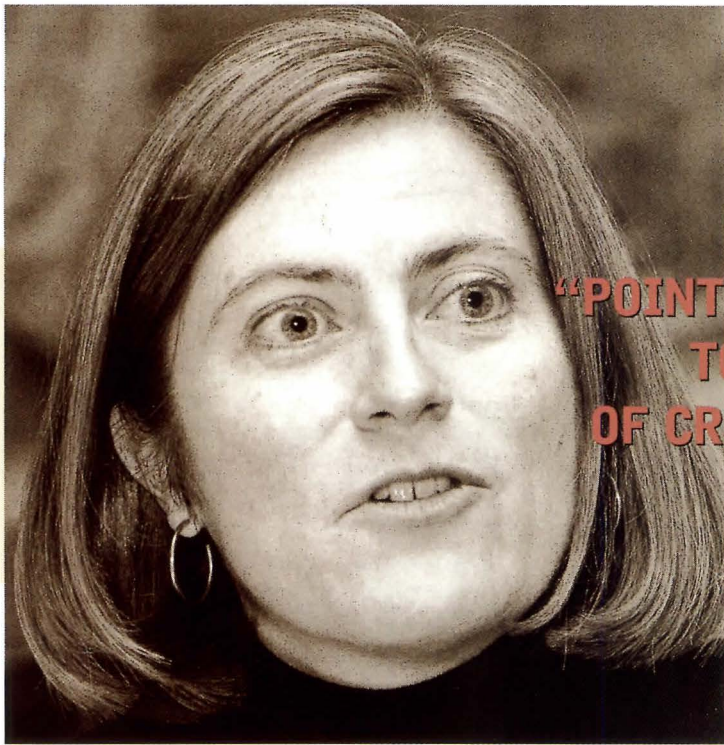
The dominant trend in general interest and consumer magazines over the last 20 years, however, has not been toward a hybrid that includes any “criticism.” Instead, it is weighted even more heavily to profiles and biographies, where criticism may be an uncomfortable intrusion into the tone of the piece. Glossy residential magazines are understandably reluctant to eviscerate a house the client has agreed to publish, thereby embarrassing him or her and, of course, alienating the designer. In both the consumer press and the professional press the increase in color photography over the last 30 years, yielding highly seductive presentations, has tended to render negative commentary anomalous.

Vitriol from the past

Tough journalistic criticism was not uncommon in more genteel times. In the late 19th and early 20th centuries Montgomery Schuyler often castigated examples of eclecticism in the pages of the *New York World*, the *New York Times* and ARCHITECTURAL RECORD. His most vitriolic pieces were anonymous, especially in his “Architectural Aberrations” series for RECORD. Later Lewis Mumford, known for his humanist vision, wasn’t averse to scorching New York’s Chrysler Building in the *New Republic* in 1931, on visual grounds.

OK, so that was then. But contentiousness was even more pervasive just ten years ago in general audience magazines than it is today. As the articles on Michael Graves’s Whitney addition, Gwathmey Siegel’s





“POINTS OF ACCESS” ARE NEEDED TO ENCOURAGE “MORE VOICES OF CRITICISM AND, WITH THEM, MORE RIGOROUS CRITICISM.”

—Cynthia Davidson

Guggenheim wing, and Moshe Safdie’s Coliseum project show, criticism wasn’t just a polite discussion of favorable and weak attributes: it was condemnatory and activist.

What has happened since then? Are there fewer controversial projects? In a sense, yes, since construction did fall off. McGuigan feels the sense of importance of architecture has decreased: “With the exception of Frank Gehry’s Bilbao Guggenheim and Richard Meier’s Getty Center in L.A., there are not many must-do stories.” Linked to the perceived lapse in public interest in architecture, McGuigan adds, is the increased devotion to mass culture in the weekly magazines. With a crunch in pages, the latest “alien” film gets the space, not architecture.

Dunlop contends, “Today the daily newspapers are wimpy.” Furthermore, she adds, “They rely on focus groups and market studies rather than carving out a mission and saying, ‘This is what we stand for.’”

Dilemmas of timing

Since architecture is treated as an “event,” as in the case of the Guggenheim Bilbao or the Getty Center, the deadline determines whether the criticism is substantive or hasty. The *Chicago Tribune*’s Kamin is particularly vehement about “jumping the gun.” When McGuigan wrote in the January 13, 1997, issue of *Newsweek* that Gehry’s Guggenheim Bilbao was “shaping up to be a masterpiece,” Kamin responded in the *Trib* that this article, published eight months before the opening—before all the cladding was up, much less the art installed—was “the most egregious example of a broader problem that warps our thinking about the buildings that shape our world.” Fortunately for *Newsweek*, McGuigan’s perceptions held up, and subsequent criticism raved not only about the exterior but also the interior setting as a dramatic container for art. Nevertheless, the future is not always so perfect, and Kamin’s point is well taken: more time and actual evidence can only help criticism. But tell that to an editor who wants to be first with a story.

Having time to write is extremely important, maintains Ada Louise Huxtable, now the architecture critic for the *Wall Street Journal*. No longer does Huxtable put out a weekly column, as she did at the

Times. At the *Journal* her agreement calls for a minimum of six pieces a year, which usually appear on a Thursday.

Herbert Muschamp, currently the architecture critic for the *New York Times*, also has felt that the *Times* deadlines were too draining. He quit the paper last winter to join *The New Yorker*, had second thoughts after a meeting, and returned to the *Times* with an arrangement: “I begged to be relieved of the Sunday Arts and Leisure column for a year

and to write in other sections,” he explains. “The Sunday editors need to fill space every three weeks with articles of national interest. There’s no flexibility. And I did that for five years without a break.”

This is a sympathetic deal for the critic, but readers who expect architecture to be served up on Sunday are left looking in vain among the ads for antiques and art. You get the impression that architecture has been demoted. This must really appear to be the case to national readers in the habit of getting the *Times* only on Sundays.

Needless to say, the climate of support for criticism (and the critic) is very important. Often critics say the problem with criticism is the editors who lack knowledge or interest: “It’s sometimes below the level of the readership,” says Huxtable. Diana Ketchum notes, “The editors often ask if this architecture is part of a trend. You have to justify the piece.” Martin Filler, who has been a long-time contributor to the *New York Review of Books* and to *House Beautiful*, observes that periodicals don’t know why they are doing a story. “Fashion-oriented publications often don’t engage in sufficient discussion with the writer about how they see the article. They have an unarticulated vision,” he says.

Paul Goldberger, the main architecture critic at the *Times* from 1981 to 1992, headed for *The New Yorker* after Muschamp had decided against it. There is no regular slot for “The Skyline,” the column that Lewis Mumford made famous. “Every idea has to sell itself, not just the quality of writing,” Goldberger says.

The late Brendan Gill, the long-time drama critic for *The New Yorker* and then its architecture critic before Goldberger came on board, said that weekly reviews of plays, movies, and art exhibitions still have a place. But, as Gill pointed out in an interview shortly before his death, “Reviewing tells the readers whether to see the play; criticism addresses the work of art and the maker.”

Being nice or nasty

Highly charged or even mean-spirited criticism is, of course, a good read. Michael Sorkin’s diatribes against Paul Goldberger and Philip Johnson in the *Village Voice* in the 1980s made him famous, or notorious, in New York architectural circles. But more compelling than Sorkin’s argument about abuse of power was the issue involved in using ad hominem assaults to make a point about the work. Today Sorkin denies malevolent intentions, although he acknowledges he might have influenced more critics to engage in similar tactics.

Critics often hate to cause pain to architects by being negative about them or their work. And so they lie low. "Terrible things are done in cities in urban design and architecture, and the critics don't stand up and say so," says Robert Campbell, architecture critic of the *Boston Globe* for 24 years. "I myself don't do enough of it: I'm nice," he says. "The critics in England are more brutal." Muschamp also says, "I don't get pleasure out of causing pain." He argues that the role of the critic is "to interpret the building. Evaluation is only part of what critics do." Others, such as Merkel, agree with this orientation.

Professional magazines also may hate to hurt an architect's feelings. But the reasons are more practical. If criticism is negative, architects may decide to be difficult in future situations since they control access to their presentation drawings and often share the high costs of photography with the magazine. Now, with only two magazines where once there were three or even four journals, architects have little choice but to cooperate if they want to be published.

Already both *RECORD* and *Architecture* are conscientiously publishing more criticism, although it is often assigned to contributors instead of staff writers. While this policy placates an established architect who may resent being criticized by a lesser-known staff member—or worse, some "kid"—it also limits the chances of bringing up generations of journalistic critics who learn on the job. This strategy tends to restrict critical coverage to the "big event" by the big-name architect. The American landscape would be better served by serious evaluations of all the many important but low-profile buildings that are published.

The power of the gray (now color-rinsed) lady

Critics are criticized too, just not much in print. The architecture critic for the *New York Times* is read, talked about, and quoted more than any other, owing to the reputation and reach of the "gray lady." Since Muschamp pursues a very personal style of criticism, he is perhaps more controversial than Goldberger. Not that Muschamp's approach is anything like Goldberger's, who, as the joke goes, so desired to appear balanced that the reader got whiplash going from one side of the argument to the other. (This mannerism seems to have been jettisoned in his writing for *The New Yorker*.)

Supportive readers of Muschamp find refreshing his filtering of building analysis through his personal and emotional state; others consider it narcissistic and self-absorbed. Muschamp rejoins by saying that "narcissism, voyeurism, and psychology are all interesting to me intellectually. I've been a practicing Buddhist for years," he adds. "In Buddhism, enlightenment means a fusion of subjective perception and objective reality."

Critical criteria change over time

How the critic frames the argument is one question; another is what criteria are used to evaluate the architectural work. Since architectural criticism began appearing in American journals in the early part of the 19th century, different criteria have developed according to values and design principles of the time. The 19th-century emphasis on visual aesthetics based on classical harmony, proportion, and rhythm gave way to the belief in truthful expression of materials, structure, and function, along with "propriety."

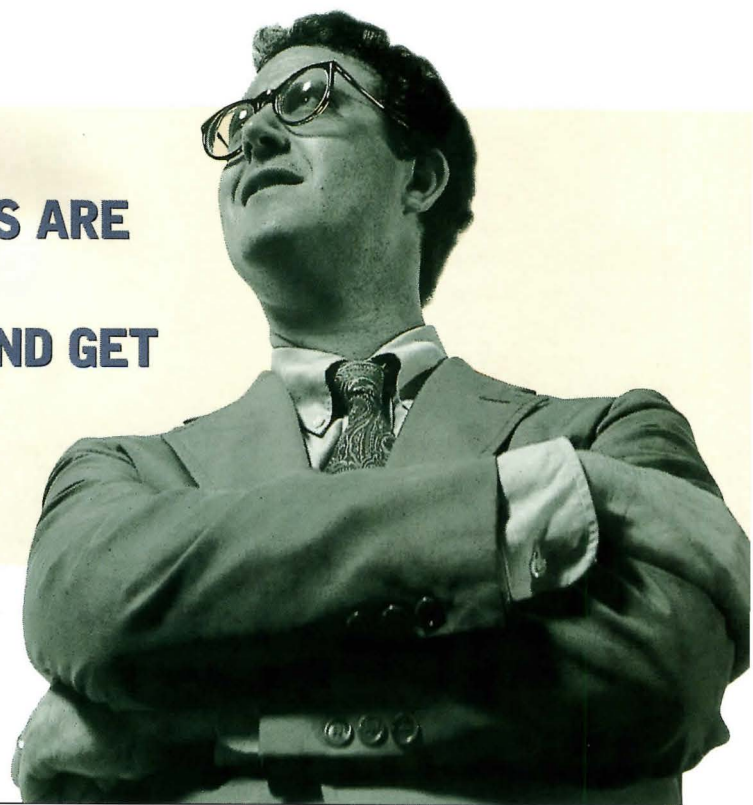
As functionalism and honesty of structural and material expression gained ascendancy in the early 20th century, aesthetic criteria began to include Modernist attributes of volume (as differentiated from mass), irregularity (as opposed to symmetry), and absence of ornament. By the middle of the century, kinesthetic experience, that is the visual and haptic sensations the observer perceives moving through architectural space, began to manifest itself more dramatically in architectural criticism. In the late 20th century, symbolic representation, contextualism, and authenticity came to the fore, followed by a reemphasis on tectonics of craft, structure, and space.

When many journalistic critics writing today are asked about their criteria, they assume the term refers to an ideology or a set of unidentified rules. Since evaluation is based on criteria formed by the intellectual climate and conditioned by the values and attitudes of the times, the tendency to regard criteria with suspicion is mystifying. Robert Campbell suggests that a critic may not be aware exactly of their presence but points out, "On some level, you are looking for something that the

**SINCE ARCHITECTURE IS TREATED
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—Blair Kamin

Muschamp's own feelings about a building or urban complex are, as he puts it, "nailed to the mast." But he defends his personal form of criticism as analytic rather than impressionistic. As he explains, he attempts to investigate the psychological motives of the architects and clients as well as his own response to the work. He also considers the way "psychological conflict manifests itself in the city."



building will help you say about issues that go beyond the building.”

So what happens in the final analysis? In addition to all the external factors outlined above, what unacknowledged factors and psychological pressures affect judgment? The absence of well thought-out standards for evaluation, a weak cultural context for debate, and the critic’s need to write for several audiences with different needs and levels of knowledge are significant barriers. Add to that the lack of editorial support, too little time, even too little money, and it is not hard to see how the critical operation is hampered.

The ultimate question, of course, is does all of this matter? Do the journalistic critics have any influence? Sorkin has said, “I flatly refuse to acknowledge having had any impact at all in the real world.” Yet Kamin and Dunlop point to certain examples in which taking a strong position did affect the outcome. Other critics, such as Ouroussoff, say they can’t claim to have stopped or promoted a project, but at least they have stirred up debate and discussion.

Whether Muschamp’s personal approach is something that will change the practice of criticism in positive or negative ways depends on one’s view. Joseph Giovannini says that “through his ‘identity criticism,’ Muschamp has broadened the scope of what can be done with criticism today.” Diana Ketchum warns, however, that “subjectivity can be detrimental in writing about architecture if the critic gets trapped into his or her own autobiography and can’t get beyond that to engage anyone else.”

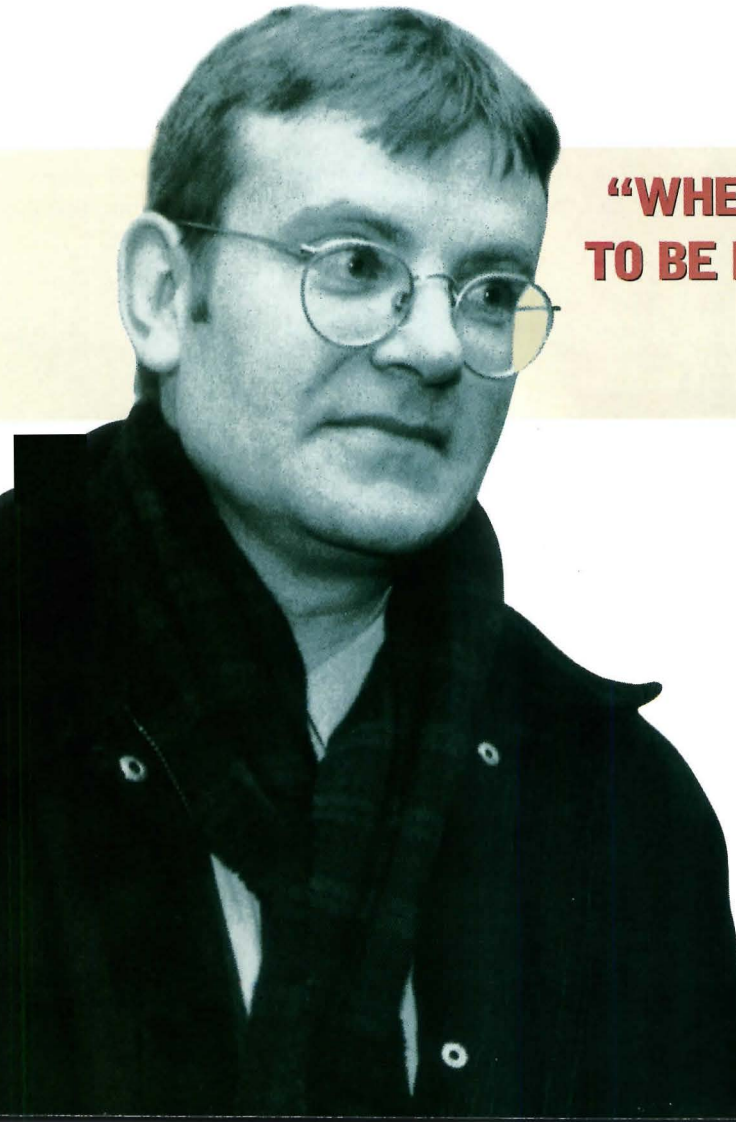
Theoretical criticism: a growth industry

Over the last 30 years theoretical criticism, as distinguished from practical or applied criticism, has been a growth industry in academe. Theory has, of course, been integral to architectural practice and criticism since before Vitruvius.

Nevertheless, the latest era of theoretical research in architecture is different in its loosened allegiance to practice and in its separation from the concerns (including accessibility of prose) of journalistic criticism. In the 1980s a younger generation of architectural theorists appeared, trained in architecture and often equipped with doctorates. They continued the previous generation’s attempt to incorporate concepts from other disciplines, such as literature, philosophy, and psychology, into architectural discourse but changed the emphasis.

“For the first time specialists in architectural theory emerged who no longer claimed to be practitioners—and they had no guilt about it,” explains K. Michael Hays, founding editor of *Assemblage*, the leading American journal of theoretical criticism. To be sure, exceptions remained, such as Peter Eisenman and Bernard Tschumi, who theorized what they practiced, and vice versa. Yet something else was in the air.

The focus of discussion shifted from ideas about built work to ideas about ideas. The split between theory and practice, and between theoretical critics and journalistic critics, widened quickly to a chasm during the 1980s, a problem pointed out as early as 1987 by Catherine Ingraham, a theorist writing in *Inland Architect*. One factor encouraging the split, observes Joan Ockman, editor of *Architecture Culture, 1943–1968* (1993), was that scholars were wary of the way Postmodern architects had seized upon and watered down semiotic or structuralist theory in the late 1970s. While the hermetic impulse of the 1980s may have kept theory from being too quickly consumed, it also had its down side. As Mary McLeod, a Ph.D. trained as an architect, has pointed out, the



“WHEN THEORY IS PREPARED
TO BE MICROWAVEABLE,
IT HAS NO VALUE.”

—Mark Wigley

social and political dimension of architecture was still being ignored.

Now, however, the breach between theory and practice is being addressed. Grounding theoretical discussion in actual architectural examples or in sociocultural issues such as gender, race, and identity politics seems on the rise. Books such as *Sex of Architecture* (1996), of which Diana Agrest is a co-editor, and Mark Wigley’s *White Walls, Designer Dresses: The Fashioning of Modern Architecture* (1996), as well as history-theory books—such as Beatriz Colomina’s lucid discussion of Adolf Loos and Le Corbusier in *Privacy and Publicity: Modern Architecture as Mass Media* (1994), or George Baird’s *Space of Appearance* (1995), uniting theory and building criticism—do much to integrate the world of ideas with concrete matters, to the benefit of both.

In the meantime, opinion continues to differ about whether the gap exists or not, and if it does exist, if it is a problem. Mark Wigley, who teaches the theory of architecture at Princeton, argues that there is no real gap between theorists and practitioners, and that if there is a gap between theoretical critics and journalistic critics, that’s as it should be. Claiming he has noticed a wide audience internationally for theory, Wigley

maintains, "The most astute statements I've heard come from practicing architects." He doesn't feel, nevertheless, that journalistic critics should bone up on theory and take it to the masses. "When theory is prepared to be microwaveable, it has no value," he states. "Also, the journalistic critic no longer is acting as the public's representative." Agrest also sees the need for separate languages for separate audiences. "Architects are like physicians," she says. "They have to work in a special language to advance the state of science and develop concepts."

"TODAY THE DAILY NEWSPAPERS ARE WIMPY... THEY RELY ON FOCUS GROUPS AND MARKET STUDIES RATHER THAN CARVING OUT A MISSION."

—Beth Dunlop

At the same time certain theorists, such as George Baird, a Toronto architect and Harvard professor, argue that journalistic criticism is not "rigorous." According to Baird, "It would be healthier if there were more of a crossover." Cynthia Davidson, editor of *Architecture New York (ANY)*, an "intellectual tabloid" which is part of Peter Eisenman's Anyone Corporation, contends that "points of access" are needed to encourage "more voices of criticism and, with them, more rigorous criticism."

One of the most insightful examples of theory applied to practice was demonstrated by Peggy Deamer in the essay "The Question of Form: Probing the Work of Charles Gwathmey" in *ANY* 11 (1995). Deamer, an architect with a Ph.D., analyzes Gwathmey's early work according to his formalistic use of composition, abstraction, and space. Rather than faulting Gwathmey, as others have, for being overly formalistic, she argues that he hasn't taken his formalism far enough into the larger "realm of material, tectonics, scale, and bodily enjoyment."

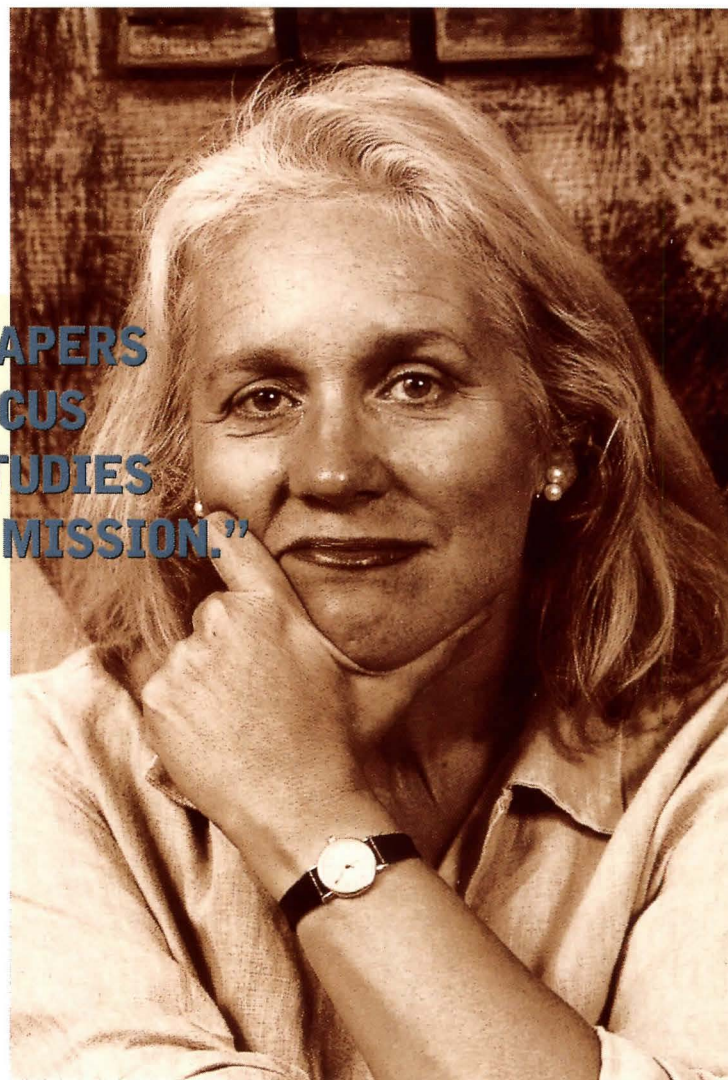
With an expanded definition of formalism, Deamer's discussion points to an assessment based on one's own subjective experience determined by visual and kinesthetic factors. She is not alone. Others are investigating "the place of the subject in perception and experience of the work of architecture," to put it in Agrest's words. But they all underscore the danger flowing from this inward-turning type of investigation: the exclusionary trap of purely autobiographical exploration.

Criticizing the critics

The question that needs to be confronted is how far a critic can go with communicating his or her subjective experience to the reader before the assessment turns too personal. To function successfully, the subjective response still has to be shared or understood on a generalized level.

This subjectivity issue was highlighted last fall in a much-discussed passage by Herbert Muschamp on the Guggenheim Bilbao in the *New York Times Magazine* (September 7, 1997). Muschamp, comparing Gehry's shimmering, curvilinear, titanium-clad building to Marilyn Monroe, mused, "What twins the actress and the building in my memory is that both of them stand for an American style of freedom. That style is voluptuous, emotional, intuitive and exhibitionist. It is mobile, fluid, material, mercurial, fearless, radiant and as fragile as a newborn child. ... And when the impulse strikes, it likes to let its dress fly up in the air."

Clearly, the association is provocative. That passage in particular



generated vociferous remarks from readers. Many liked it for its arresting imagery; others thought it pandering. This reader was left with several questions, such as why a 1950s American sex symbol is a relevant image for a work of architecture, a museum, in the Basque region of Spain in 1997. Without Muschamp's development of the implications of his analogy or the interpretations of freedom underlying his phrasing, one senses all this is merely an attempt to make a visual link between billowing skirts and wavy walls seem substantive.

Nevertheless, Muschamp's acknowledgement of the subject's position in criticism is important, since the critic who authoritatively delivers opinions as if they are objective fact has proved too often to be myopic. Linked to subjectivity is the kinesthetic experience, or the critic-as-subject perceiving the building on many different levels as he or she walks through it. Since this experience is shared by others as well as felt by the subject, it provides a basis for evaluation that can be understood by the general public as well as professionals.

While the kinesthetic experience is not recognized as a familiar criterion for judging architecture, as is aesthetics or functionalism, it nevertheless appears in strong and weak description, in any number of appraisals. One rich example is Richard Meier's Getty Center in Los Angeles, which opened with enormous critical coverage in December. In discussing the Getty, Martin Filler, Lawrence Wechsler, Nikolai Ouroussoff, Robert Campbell, Aaron Betsky, and Blair Kamin, among others, invoked coherence as a criterion for *(continued on page 194)*



Opposite: *Burial, Angles with Backhoe, 1994. Right: Theatre, 1994. Below: Museum with Excavated Courtyard, 1994.*



Through the Viewfinder: Worldly Remains



As a photographer, Richard Barnes leads a double life. He divides his time between commissioned work for architects and design magazines and longer-term “personal” projects such as the black-and-white photographs of excavations in Egypt and Lebanon that he has been taking over the past seven years.

In 1994 these two worlds merged when Barnes was hired by the Fine Arts Museum of San Francisco to document the renovation and expansion of the California Palace of the Legion of Honor. While digging trenches for the building’s seismic upgrade, workers uncovered a 19th-century burial ground—some 800 graves from what was once the Golden Gate Cemetery. Barnes was there to capture the discovery (and its implications) on film.

His photographs of human remains juxtaposed with construction debris are a haunting portrait not only of a museum’s role in society but also of the architectural endeavor. “Mid-excavation photographs of the museum,” says Barnes, “reveal a symmetrical facade above and a cavernous underworld below, conjuring images of the human psyche—the ordered conscious ideal looming over the hidden, dark unconscious realm.” Part of a traveling exhibition entitled “Still Rooms and Excavations,” the photographs will be on view at the International Museum of Photography at the George Eastman House in Rochester, N.Y., in June and at The Architectural League of New York in the fall. *Karen D. Stein*



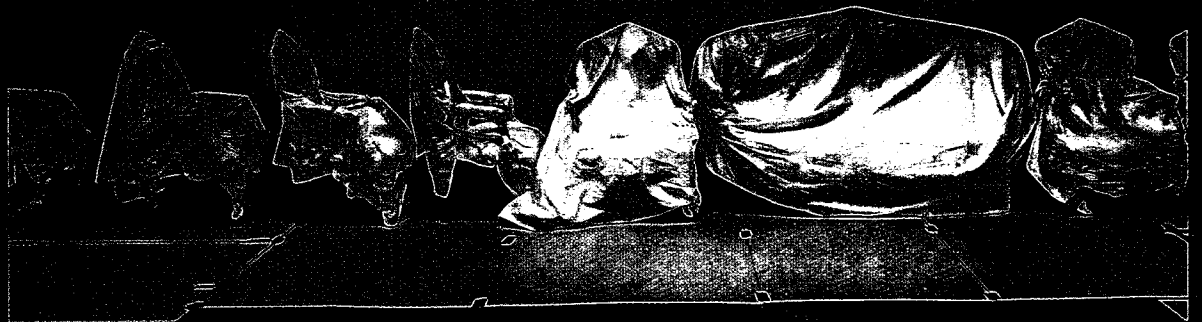
*Above: Mythological
Painting and Steel
Cabinet, 1995.*

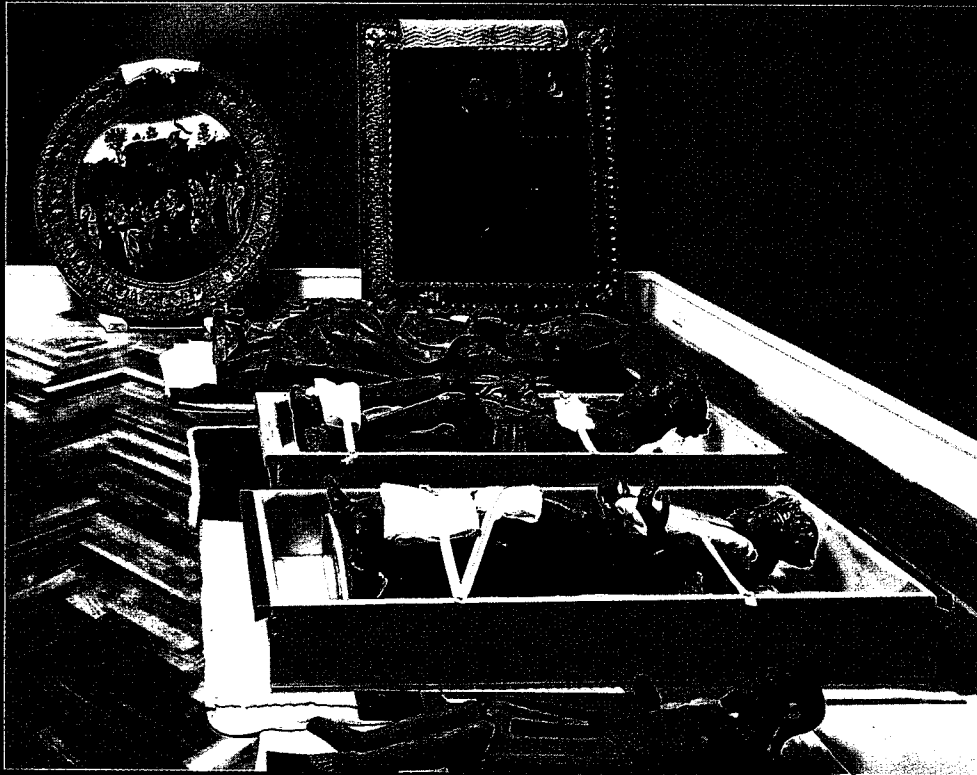
*Opposite top: Gallery
Installation with
Chairs, 1995.*

*Top left: Grand Court,
Ductwork, 1994.*

*Opposite bottom:
Bones on Plywood,
1994.*

*Bottom left: Excava-
tion with Buttons, 1994.*

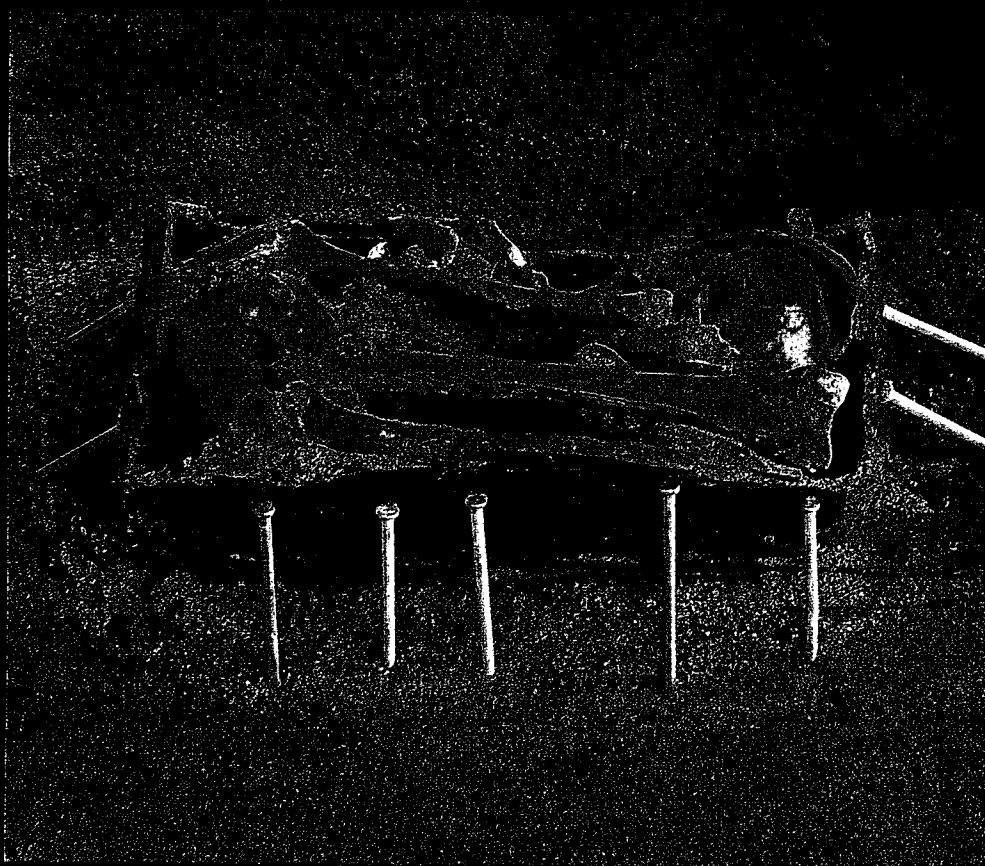




Top left: *Prone Religious Figures*, 1995.

Bottom left: *Burial with Nails*, 1994.

Opposite: *Arch*, 1994.





Key Players in Health Care: The Clients To Know

NEW TECHNOLOGIES AND NEW WAYS OF DELIVERING HEALTH CARE ARE RESHAPING THE FIELD. HERE'S A LOOK AT SOME OF THE COMPANIES LEADING THE WAY.

by Clifford Pearson

After a decade of revolution in the health-care field, rapid change will remain a constant for the foreseeable future. Mergers and acquisitions of hospitals, the expansion of managed care, a growing emphasis on outpatient treatment, and a new generation of medical and electronic technologies are continuing to transform the face of the industry. In the process, the key players in the field are changing, and so are their needs for new facilities. To get the commissions for the health-care facilities of the next century—and to design them intelligently—architects will have to know who the hot clients are and where they are headed.

The good news is that the changing industry is creating many new opportunities. The bad news is that a lot of old clients are disappearing. “We will see consolidations and mergers, even hospital closures, continue through the remainder of the 1990s and into the next century,” says Richard Wade, a senior vice president for the American Hospital Association. “The fact is that we still have excess capacity,” he says. For example, the occupancy rate of beds in community hospitals in the United States is less than 60 percent, reports Wendy Everett, director of

the Institute for the Future, a Menlo Park, California, think tank. In 1990 there were 950,000 beds in community hospitals nationwide. By 2010 that number is expected to drop to 650,000, says Everett.

Driving most decisions is the need to contain costs. Although the nation's health expenditures as a percentage of the gross domestic product continue to rise (they're nearly 15 percent today), the growth rate of health-care costs is dropping—to 9.3 percent in the public sector and 4.8 percent in the private sector for the period 1991 to 1995, compared with rates of 13.3 percent and 10.6 percent for the period 1960 to 1990. The growth of managed care, of course, has been one of the most important factors in reining in health-care costs. In 1985 only about 22 million Americans were covered by health-maintenance organizations (HMOs); by the middle of 1996 that figure had exploded to 62 million.

Not surprisingly, hospital construction has dropped significantly during the past decade, from a peak of nearly 60 million square feet in 1988 to about 20 million in 1996, reports the F. W. Dodge division of the McGraw-Hill Companies' Construction Information Group. Opportunities abound, however, in clinics, which provide a growing array of outpatient services and are being built faster than ever—accounting for more than 60 million square feet in 1997, up from just 15 million square feet in 1991. Dodge is forecasting a mild 3 percent drop in total health-care construction for 1998, with the building of hospitals remaining flat and that of clinics easing off its recent surge.

With so much change happening, it's not easy for architects to know how to devise strategies for success in this field. One way to plan for the future, though, is to understand the driving forces in the industry as well as the key players. To that end, this article identifies four types of organizations that are leading the way to the future: HMOs; hospital networks; disease-management programs; and technology companies.

The managed-care revolution

Although consumer criticism of HMOs and calls for more government regulation of managed care are getting louder, there seems to be little chance that the growth of HMOs will be stopped. “Managed care is here to stay,” states Wayne Ruga, president and CEO of the Center for Health Design. Because they reduce costs and encourage a less centralized system of delivering health care, HMOs are positive forces in the industry, he says. Rather than relying mostly on expensive hub hospitals, HMOs are “unbundling” health services and encouraging providers to offer more



Coming to a strip mall near you: **A. O. Fox Memorial Hospital** in Oneonta, New York,

converted a vacant shopping center into a **90,000-square-foot outpatient clinic**

(above) last August. The clinic has medical offices, outpatient testing, and even a café.



Sutter Maternity and Surgery Center in Santa Cruz, California, designed by Kaplan McLaughlin Diaz, is part of a new generation of specialized-care facilities where design helps sell the product.

care at outpatient centers, neighborhood clinics, and other freestanding facilities. "HMOs are getting more services out of the hospital and into the community," Ruga reports. He sees more moderately sized outpatient facilities (around 30,000 square feet) being built adjacent to banks, food markets, post offices, libraries, day-care centers, and other places connected to most people's daily activities.

"HEALTH CARE IS MOVING AWAY FROM BEING A COTTAGE INDUSTRY AND TOWARD BEING A COMPETITIVE, CUSTOMER-SERVICE INDUSTRY."

A good example of getting health care into alternative locations is a new outpatient facility built in an old shopping center in Oneonta, New York, by A. O. Fox Memorial Hospital. So far about two-thirds of the 140,000-square-foot strip mall has been converted by the hospital and includes offices for doctors, a cardiac and pulmonary rehabilitation center, an outpatient testing facility, a community-education center, an OB-GYN and women's wellness clinic, and even a cybercafé where patients can get food and surf the Internet for health information. In the

past, most of these services would have been provided at the hospital, where space costs about \$150 a square foot, says Roger Panther, president of facility development for Quorum Health Resources, which owns 19 hospitals and manages 244 others around the country. According to Maggie Barnes, director of communication for Fox Memorial, the hospital's new outpatient center cost \$8 million, which includes the land and

the conversion of 90,000 square feet for the first phase. Not only is this arrangement much less expensive than building at a hospital campus, but it is also more convenient and less intimidating for patients.

Hospitals find strength in numbers

In the not-too-distant past the independent hospital was a fixture on the American health-care landscape. Today it is a dinosaur, pushed to the brink of extinction by the growth of networks and chains of hospitals.

MANAGED-CARE COMPANY

Harvard Pilgrim Health Care

One of the oldest managed-care organizations in the country, Harvard Pilgrim Health Care, is looking to the future. In the process, it is rethinking the way its facilities are organized to take full advantage of computer technologies that will soon control

Harvard Pilgrim, founded in 1969 as the Harvard Community Health Plan, one of the first HMOs in the nation, is the product of a series of mergers. The company provides health care to 1.2 million members via 25,000 physicians, many of whom are

Ultimately, health-care centers will become multispecialty practice sites organized according to the needs of the users. Instead of grouping one kind of physician in a single facility—all the orthopedic doctors, for example—clinics will house a range of disciplines. The number of physicians and the amount of space devoted to each department will vary according to the population of an area; a more elderly population would demand a different array of physicians than one that is younger and suburban.

Radiating from a core

These centers will be arranged around a core of services all patients tend to use—a pharmacy, a radiology suite, a check-in area, and one big waiting room.

Already the company is transforming its check-in and check-out procedures to meet this model. Currently, patients check in directly at the department where they will be seen—radiology or pediatrics, for example. The problem is that each of these departments must then maintain separate databases. "If you're going to two different departments, you have to check

the computer system, it gives the patients a degree of privacy—they can't look at one another and know what department they're visiting. The waiting room is also plush, comfortable, and noninstitutional in appearance—far from the orange vinyl furniture, blaring television, and posters depicting the warning signs of various diseases that characterize most medical center waiting rooms.

However, patients still check out at individual departments. "This requires confidential space, a place to order medications or talk about more personal subjects, such as referrals and future appointments," Bowditch says.

Personalizing service

Nearby is a small, comfortable office area where patients can meet with their physician or nurse-practitioner to ask questions, leaf through a pamphlet together, or, perhaps, watch a video. Creating such a room is part of another trend that seems in direct opposition to the push for greater technology: personalizing medical services.

In the future, patients will be smarter than ever about medical procedures and, therefore,



everything from record keeping to the way patients are checked in.

"We not only have to address the computer systems in use now, we have to think to the future, to where we'll be in another 30 years," says Helen Bowditch, director of strategic facility planning for the Brookline, Massachusetts-based company. Someday, according to medical scientists, robots will guide the hands of surgeons, biosensors will track the progress of the chronically ill, and patients will consult with physicians at remote locations by video technology.

Within the next few years, almost all the paperwork involved in caring for a patient will be stored and transmitted electronically. That will mean that retrieving a complete patient history, making progress notes, taking vital statistics, and placing orders at the pharmacy will all be done by computer. The same system will be used for marketing; patient names, for example, will be sorted so people can be notified electronically when they're due for immunizations or tests.

in group practices, and 138 hospitals. All of the company's affiliated physicians, health-care centers, and hospitals are located in New England.

Greater specialization

According to Gordon Moore, a professor of ambulatory care and prevention at Harvard University's medical school, with which Harvard Pilgrim is affiliated, hospitals will become increasingly specialized. "The only people using them will be those who are absolutely too sick to be at home," he explains. All but the most critical medical procedures will be done at remote health-care facilities.

Even now, oncological care has moved away from the hospital and into independent centers. There, patients report to chemotherapy, radiation, or infusion rooms. "All this makes the treatment more accessible, more personal, and less taboo. You no longer get locked away in a hospital somewhere if you have a serious, chronic disease," Bowditch says.



in twice. And both departments need waiting rooms, which eat up a lot of space," Bowditch explains.

The solution is to create a single check-in area as part of a spacious waiting room. Doing so not only centralizes the staff and

stronger decision makers. As a result, personal interaction between patient and doctor will be critically important and the design of health-care facilities will have to accommodate more one-on-one contact and consultations. Wendy Talarico

"What you're seeing is a rationalization of facilities," explains Arnold Milstein, the head of the clinical consulting practice of William M. Mercer, a large employee-benefits consulting firm in San Francisco. This means that some hospitals have closed, while others have merged with their one-time competitors. Duplicate services in the same area are being squeezed out. "Health care is moving from being a cottage industry to being a competitive, customer-service industry," says Milstein.

While a typical health-care client in the past was a hospital executive who might be involved in just one large construction project in an entire career, today's client is often someone who oversees dozens of construction jobs a year and is often trained as an architect. "It's a more sophisticated, knowledgeable client today," states Milstein. "The bar has been raised significantly."

With the reduction in the number of beds and the growing emphasis on outpatient care, hospitals are getting smaller. "And we're seeing a tremendous focus on rethinking the mix of services provided at the hospital," says Milstein. Essentially, hospitals are reinventing themselves to serve fewer patients, who are more acutely ill and require a higher level of care. In many cases, major renovation work is needed to transform large, old hospitals into new, streamlined health-care centers. In some cases, hospitals are learning that it is better to start from scratch, building replacement facilities designed especially for the new approaches to health-care delivery and reimbursement. "If the chassis was designed for a different set of needs, it doesn't always make sense to pour new dollars into an old car," explains Quorum's Panther.

While the new networks and chains are closing some hospitals, they are converting others to provide different kinds of care in each facility. For example, after the merger of three local hospitals, the Citrus Valley Health Center in California is focusing each of them on different "centers

MUCH OF THE CHANGE IN HEALTH CARE IS BEING DRIVEN BY TECHNOLOGY.

of excellence," such as a state-of-the-art obstetrics center or cardiology department, reports Michael F. Ross, managing director of SMP/SHG Architects in Los Angeles, whose firm is designing a new \$23 million birthing center for the hospital. Another strategy is to offer different levels of care at each hospital within the same region.

After several years of fast growth, some of the large hospital chains such as Columbia/HCA are confronting serious problems managing their sprawling operations. "One thing Columbia has learned is that all health care, like all politics, is local," states the American Hospital Association's Wade. "I think you'll continue to see hospitals come together in networks, but they'll have a local or regional focus to their operations." The challenge for architects working for these chains will be to give each facility a local identity without losing the cost advantages that come from chainwide standards.

New types of clients are emerging

Hospitals aren't the only players hoping there is strength in numbers. As a way of gaining clout in negotiating with HMOs and hospitals, physicians are flocking to large group practices. And with the emphasis on ambulatory care and new technologies that allow more procedures to be done in a doctor's office, these group practices are taking business away from hospitals. "A lot more care is taking place in physicians' offices," states Milstein. The implications for architects are that the medical office of the near future will have to accommodate a broader array of procedures and large medical practices may be an increasingly important type of client.

DISEASE-FOCUSED CARE PROVIDER

Total Renal Care

Specialize and grow is the strategy Total Renal Care (TRC) has taken since it became an independent company in 1994. It seems to be working. From 37 kidney dialysis centers in 1994, the company expanded to 203 units by the beginning of 1998. In February of this year TRC was about to merge with one of its major competitors, Renal Treatment Centers (RTC), which would bring the combined company's total number of dialysis centers to 389.

"We are a high-growth company, very entrepreneurial," explains Lois Mills, vice president of operations for TRC's western division. A publicly traded company, TRC will have net revenues of \$800 million once it merges with RTC.

Higher quality, lower costs

By focusing on one chronic disease, companies such as TRC are able to provide high-quality care at lower costs, says Wendy Everett, director of the Institute for the Future, a think tank that reports on health-care trends, emerging technologies, and international business topics. Often called disease-management companies, such health-care providers develop specialized systems for disease management, then replicate them, explains Everett.

Total Renal Care provides dialysis treatment and ancillary services in mostly freestanding outpatient clinics but also offers acute care in some hospitals as well as dialysis treatment at some patients' homes. The company also provides pharmacy services and pre- and post-transplant services, and has a renal research group. Although TRC does not offer complete disease management yet, the company is moving in that direction, says Mills.

In terms of growth, the com-

pany tries to cluster its facilities in geographic markets by opening new clinics, acquiring existing ones, and establishing alliances with hospitals. After its merger with Renal Treatment Centers, TRC will have dialysis centers in 32 states, as well as Washington, D.C., Guam, Puerto Rico, Argentina, and Italy. The company's goal is to keep expanding both in the United States and abroad.

Putting the patient at ease

A typical TRC dialysis center is between 5,000 and 8,000 square feet and includes between 15 and 25 treatment stations. Patients spend three to four hours there three times a week getting treatment, so creating an attractive, comfortable environment is important. Windows, plants, aquariums, and murals are all used by the company to create relaxing patient-care areas, says Mills.

A new dialysis center under construction in Redding, California, will have a library and computers that patients can use in researching their condition and learning more about kidney disease.

Design challenges

One of the challenges facing architects designing TRC facilities is that many clinics occupy leased spaces not specifically built for medical care, notes Mills. Architects often must address problems like providing daylight and establishing a sense of spaciousness in places with low ceilings and few windows. "The idea is to create the best possible setting for treating the patient," she says.

As for the future, Mills says, "We have to keep our entrepreneurial spirit while providing the best care." At the same time, she admits, the pressure to contain costs will remain constant. C.P.

HOSPITAL NETWORK

Intermountain Health Care

The Wasatch Front, the western slopes of the Wasatch Mountains, which stretch between Provo and Ogden, Utah, is in the midst of a population explosion. A dry climate, impressive scenery, and an expanding economy are strong magnets for growth. But on the east side of the mountains, it gets rural fast: there's plenty of sagebrush but few people.

Maintaining quality and service among small rural clinics and big urban centers, though, is one of the accomplishments of Intermountain Health Care, a nonprofit provider serving Utah and parts of Idaho and Wyoming.

Intermountain has 23 hospitals and about 100 clinics. Facilities range from part-time, single-physician clinics, set up in a back room at the fire department or the school nurse's office, to the 650-room LDS Hospital in Salt Lake City.

Standardizing procedures

Part of Intermountain's success lies in timed, standardized treatments for many ailments, states Mike Falck, a regional vice president. These standards are contained in the company's sophisticated computer network, which, by the end of this year, will

link all the company's facilities so that every patient's records can be accessed at any of the company's clinics.

Intermountain is also developing a strategy to integrate all the professions involved in caring for patients, from the physicians, nurses, and technicians to the people in the accounts-payable office. "If we're all on the same team, we can work together instead of pulling in different directions," Falck says.

To accommodate this approach, facilities will be organized according to clinical processes—cardiovascular, gastrointestinal, or musculoskeletal, says Stephen Dibble, AIA, manager of facility development.

The \$60 million Utah Valley Women's and Children's Center, now under construction, is a good example. Clinical operations that focus on women (mammography, labs, and examinations) are on the first floor, while the second floor is for labor and delivery, and upper floors are for pediatrics and neonatal care.

The success of this paradigm will affect future construction. Within the next six years, Dibble will spend a big portion of the \$5 billion budgeted for con-



struction, technology, and equipment. In the works are three hospitals (all replacements of existing facilities) and numerous primary- and secondary-care centers and clinics.

Design strategy

Intermountain's buildings, like the care the company provides, are standardized. The atrium-like waiting areas are spacious enough for patients to establish a comfortable distance from others. All of the interior finishes and furnishings are similar in color and style so items can be moved around without trouble.

Secondary-care clinics are built in pods that accommodate six physicians and a shared waiting area. When a center gets too crowded, another pod is added.

Local hospitals in rural areas are designed for flexibility. "We needed to find a way to scale back and still offer the same amenities as a big hospital. We had to be ready for that one birth every three or four weeks or the occasional car accident," Dibble says. Patients' rooms can be converted into an intensive-care unit, while the emergency room can double as an operating room.

Someday, Falck predicts, technicians will be able to hook up sensors to and focus a camera on patients so physicians can diagnose them from a remote location. Until then, Intermountain will accommodate its vastly different populations with innovative buildings and a strong reliance on technology. *W.T.*

RESEARCH AND FORECASTING FIRM

Institute for the Future

With so much change happening so quickly, forecasting the future of health care has never been more difficult—nor more important. But Wendy Everett, director of the health-care programs at the Institute for the Future (ITF) seems undaunted. Indeed, she recently completed the 156-page report "Piecing Together the Puzzle: The Future of Health and Health Care in America."

The report covers everything from health-care costs to changes in the delivery of care, the supply of medical professionals, emerg-

ing medical and information technologies, and the consumers of health care. It includes 12-year forecasts of supply, demand, and costs in the industry and wraps up with three different long-term scenarios of the future.

The forecast generally shows expansion, with the ITF predicting 6.4 percent annual growth in health-care expenditures, "equivalent to just under 1 percent more than monetary GDP growth." In this regard, the institute predicts the next seven to 12 years will resemble the

moderate-growth period of the last five years more than the inflationary era of the 30 years before that.

Based in Menlo Park, California, on the northern edge of Silicon Valley, the ITF is an independent, nonprofit research organization that tracks, analyzes, and forecasts data in the fields of health care, emerging technologies, and international business. It was founded in 1968 by scientists from the Rand Institute and started tracking health care in the mid-1980s.

Everett sees many factors shaping the future of health care. "Managed care will be an increasingly important part of the system," she predicts, and a better-educated population will be healthier. Another key factor for the future is the growing oversupply of physicians.

Perhaps the most important influence on the future, though, is the development of new medical and information technologies that will transform how and where medicine is practiced. Stay tuned. *C.P.*

Another emerging source of clients is the growing number of what are called disease-management companies, which offer specialized care. Perhaps the best known of these for-profit companies is Salick Health Care, which operates cancer centers around the country. By focusing on one kind of chronic disease or health condition, companies such as Salick have been able to provide a very high level of expert care while minimizing costs at the same time. Some of these companies have

“WE’RE SEEING A FOCUS ON RETHINKING THE MIX OF SERVICES THAT WILL BE PROVIDED AT THE HOSPITAL.”

gone public with stock offerings and are pursuing aggressive growth strategies in the United States and abroad. “Wall Street has opened its eyes to the health-care industry, and all of a sudden there are companies out there that are able to raise a lot of money to spark growth,” says Milstein.

Some disease-management companies oversee treatment and run programs for HMOs or hospitals in existing facilities. For example, Clinical Partners, an AIDS-care company based in San Francisco, provides its services to Kaiser Permanente and has no facilities of its own. But Salick and a few other disease-management companies that have their own centers understand the importance of architecture in establishing a strong corporate identity and attracting customers. Indeed, Salick has hired the architecture firm Morphosis to design an extremely sophisticated cancer center and other structures.

Technology set to make sweeping changes

“Much of the change we’re seeing in health care is being driven by technology,” states Quorum’s Panther, citing innovations in electronics and biological sciences. “Many hospitals are spending more on technology than on facilities,” he adds.

On the electronic end, new digital technologies are making it easier for health-care companies to store and transmit all kinds of information—everything from X-rays to records. This is reducing the amount of space hospitals need for patient records and allowing doctors in different locations to examine the same information. As a result, these electronic developments are reinforcing the move to less expensive satellite facilities.

At the same time, advances in biotechnologies are radically changing the way many diseases and conditions are treated. New kinds of genetic testing are alerting patients to conditions they may develop in the future, less invasive surgery is reducing the length of hospitalization for many patients, and new drugs are eliminating the need for some kinds of surgery. “Advances in biotechnology will replace so many of the procedures that we’ve built our hospitals around,” states Molly Joel Coye, vice president of the Lewin Group, a medical consulting firm. For example, a new polymer paste that is injected into bone fractures starts to replace bone within 24 hours, and within four weeks is almost indistinguishable from real bone. Such a development might revolutionize the field of orthopedics.

No matter what kind of health-care facilities architects are working on, clients are asking them to answer two questions, says Ruga of the Center for Health Design: how can you reduce our costs and how can you improve our customers’ satisfaction? Architects who can show how their services address these questions will find themselves acting as key players in health care, along with HMOs, hospital networks, disease-management companies, and technology firms. ■

TECHNOLOGY COMPANY

OpTx Corporation

Health-care professionals are foundering in an ocean of information. All those medical journals, research papers, patient files, treatment protocols, and reimbursement forms can become a burden rather than the critical resources they were intended to be.

Enter OpTx Corporation. A Winnipeg-based company with about 80 employees, OpTx provides software and consulting services to health-care providers, insurers, managed-care companies, and research institutions dealing with catastrophic diseases such as cancer. What OpTx does is consolidate all the clinical information a company uses into a form that is electronically stored, easily accessible, and continually updated.

The impact on health-care facilities of such technology may well be quite dramatic, significantly reducing the amount of space needed for patient records and reinforcing the current trends toward smaller facilities and more decentralized health-care systems.

More dispersed facilities

By allowing more information to be shared simultaneously among different sites, the technology makes it possible for higher levels of care to be provided at more dispersed facilities.

For example, not only are patient records kept electronically and made easy to distribute to satellite facilities (such as a local clinic near the patient’s home), but all of the guidelines and protocols for treating a patient’s disease are accessible at the touch of a button—reminding the physician what each step in the treatment program should be.

If a doctor wants to check the latest research on the disease, he or she can pull it up on screen instead of running off to the library. “The science and

knowledge of the disease” are made available to the physician, explains Patrick Jeffries, CEO of OpTx.

All patients’ treatment histories and clinical outcomes are also recorded, so the companies that provide care and those that pay for it can see which treatment programs have the best results. The system even takes care of payment records, automatically updating billing forms at each step during treatment.

The OpTx technology was developed about 10 years ago by the accounting firm of Price Waterhouse, and in 1993 OpTx became a private company.

Focus on specialty care

OpTx began by focusing on cancer care but now has expanded to include other chronic and catastrophic diseases such as heart disease, diabetes, AIDS, and orthopedics. According to Jeffries, these five areas of care account for 30 to 40 percent of all expenditures on health care.

Jeffries likens the impact of his company’s information technology on the health-care industry to that of the now-ubiquitous bar code on retailing. According to Jeffries, the bar code allowed stores to reduce their inventories, adopt sophisticated pricing strategies, and make decisions based on accurate information about exactly what products were selling.

“Once this kind of information is available, it roars through a system, changing it forever,” he says.

The OpTx technology might also change the responsibilities of doctors and nurses, relieving them of much paperwork and giving them more time to focus on patients.

In addition, it may result in more successful treatment programs due to better information made available to physicians and nurses. C.P.

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DESIGN

FOR THE FUTURE

In 1938, Frank Lloyd Wright designed Monona Terrace with a vision of grace and style. Today, the completed project embodies the timeless elegance of a superior design.

YOUR EDGE

FOR THE FUTURE



*Monona Terrace Community and Convention Center
Madison, Wisconsin*

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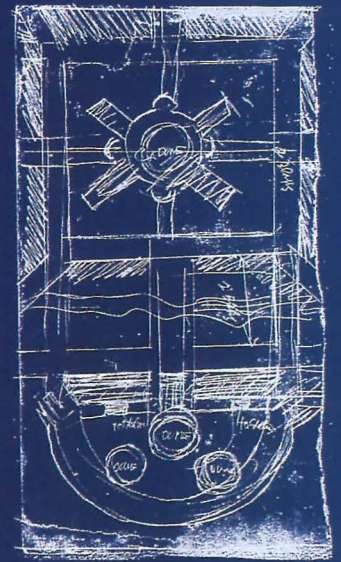
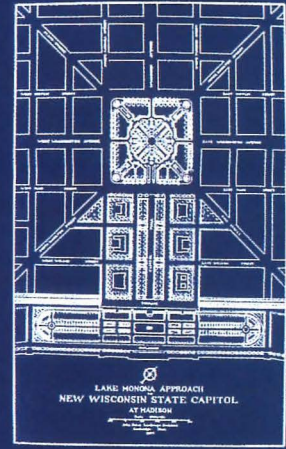
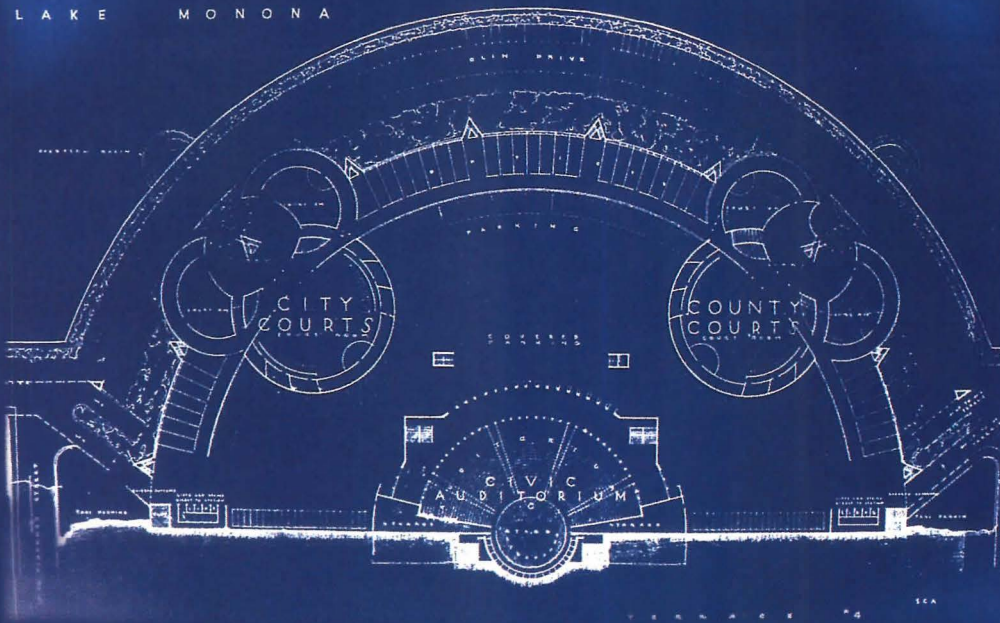
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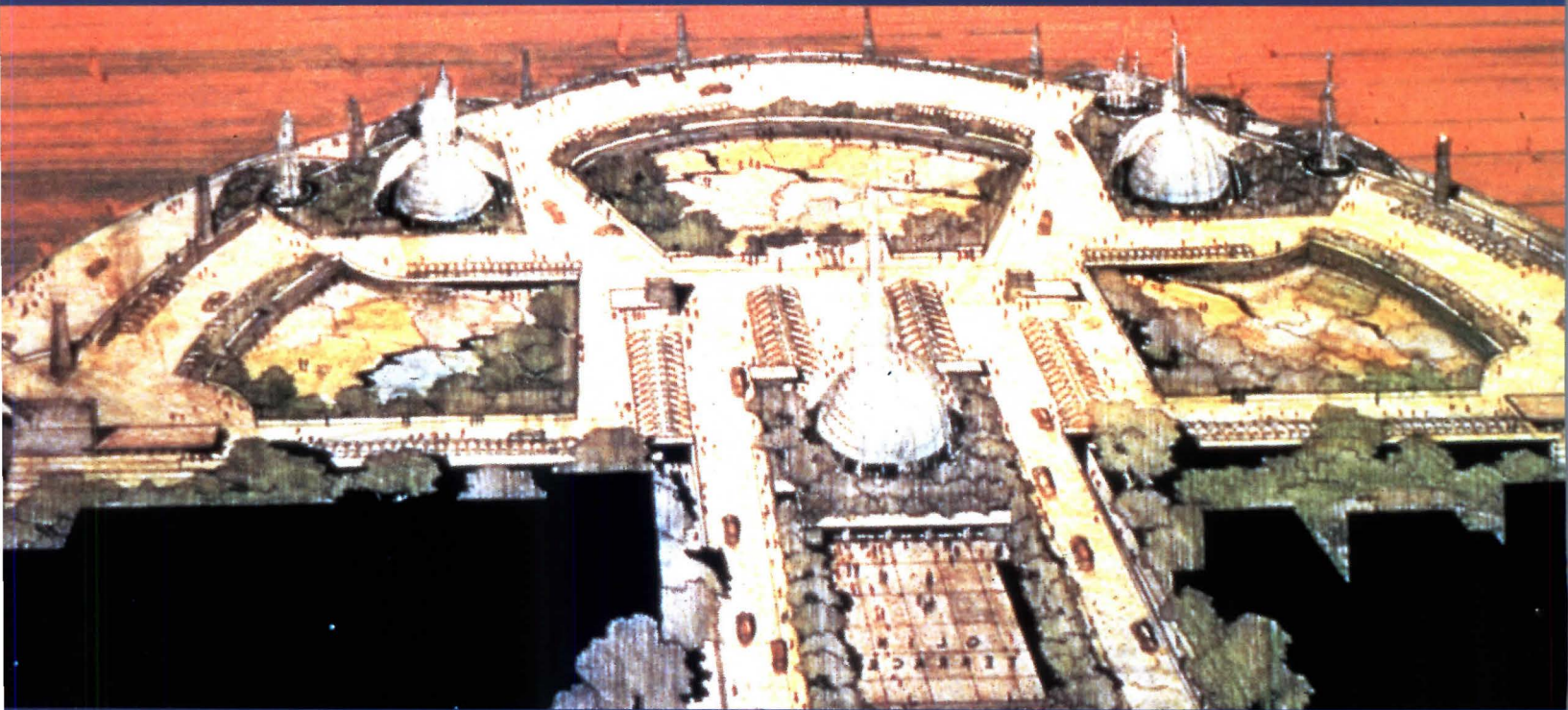
CIRCLE 35 ON INQUIRY CARD

L A K E M O N O N A



Wright's earliest sketches (right) took inspiration from the City Beautiful scheme uniting capitol and waterfront drawn by John Nolen (top right).

Wright's 1938 scheme is shown rendered below. Above is Terrace 4, in which courts and a hemicycle of offices open to the encircling lakeside boulevard.



PROJECT DIARY One of Frank Lloyd Wright's great visions, **MONONA TERRACE**, is transformed and opens after 59 tumultuous years.



The Monona Terrace project had already gone through several iterations by the time this photo was taken in the late 1950s. Wright (center) is flanked by a member of the Terrace commission (left) and Ivan Nestingen, the mayor of Madison at the time.

When the Monona Terrace Conference and Convention Center opened last July 18, it was almost as if Frank Lloyd Wright had reached out from the grave, presenting us one last masterwork nearly 40 years after his death. And perhaps he had. The design of Monona Terrace has so long held the imagination of the citizens of Madison, Wisconsin, that they finally built it 59 years after Wright's first proposal. The history of Monona Terrace is an unusually tumultuous one, even by the operatic standards of Wright's life. For all the stories architects can tell about battles and delays, few can top the Monona experience. The project history that follows (up to 1960) is greatly indebted to research done by Mary Jane Hamilton and David V. Mollenhoff, whose book, *Frank Lloyd Wright's Monona Terrace: The Enduring Power of a Civic Vision*, will be published later this year by the University of Wisconsin Press. David Dillon offers criticism, beginning on page 94.

1938 Madison's unusually beautiful setting has always attracted Frank Lloyd Wright, a native son, who spends much of his life in Spring Green, Wisconsin, only an hour away. Madison stretches along an isthmus that separates Lake Monona from Lake Mendota with the state capitol presiding from a high point. Officials of the City of Madison and Dane County plan a consolidated structure to house offices and courts. Paul F. Harloff, a civic leader, concludes that the proposed site, in the central business district near the capitol, is a poor choice. He and a group of other citizens ask Wright to design what they hope will be a genuine civic adornment: a lakefront city and county building culminating an elegant three-block-long boulevard, Monona Avenue, that leads from the state capitol.

by James S. Russell, AIA

Wright is not the first to recognize the site's potential, but its promise has proved difficult to realize. Monona Avenue ends ignominiously at the top of a 60-foot-high bluff. Reaching the lake means bridging a moat of railroad tracks. In 1910 John Nolen, a prominent landscape architect and city planner, had designed a City Beautiful-style landscaped mall linking the capitol with a formal garden terrace at lakeside (opposite, top right), only a small fragment of which was built.

Wright begins to sketch a much grander vision, drawing the streets from the capitol quadrangle across the tracks and opening them out onto a grand hemicycle of gardens and fountains that step in a graceful tier down toward the water's edge. The size and location of the fountains echoes the domes of the capitol, knitting capitol and esplanade together into a single, urban-scaled composition (opposite, bottom right). The architect rewrites the Beaux Arts rules, however, proposing domes of glass, not stone, and topping them with water jets so the interior spaces below would be constantly dappled with water-filtered light.

For what he dubs Olin Terraces (a name already associated with the place), Wright carves large openings and a grand stair in the top esplanade to expose gardens one level below. Called Terrace 2, this level is the uppermost of three levels of separate county and city functions tucked below the esplanade. He places a hemispheric civic auditorium

Project: Monona Terrace Community and Convention Center, Madison, Wisconsin

Owner: City of Madison

Architect: Monona Terrace Design Venture—Anthony Puttnam, principal-in-charge; R. Nicholas Loope, AIA, Peter Rott, Denise Weiland, William Mims, Sarah Robinson, Charles Montooth, James Booth, Philip Weddle, Jay Jensen, Jon Keiser, Don Larry, Jack Peterson, AIA, Elizabeth Rosensteel, Barry Petersen, Richard Hofmeister, Michael Standish, Dan Watson, Gustad Irani, Ivan Shongov, Chris Bernotes (Talesin Architects); David Lawson, AIA, principal managing partner;

Warren Bauer, AIA, David Engelke, AIA, Mike Clark, AIA, Paul Wagner, AIA, Bill Gray, AIA, Tim Usher, AIA, Karl Kraemer, Kim Smith Spoden, AIA, Lois Braun-Odde, Mark Mattes, AIA, Jan David Horsfall, AIA, Jim Horavec, AIA, Peter Crennel, AIA, Jim Sines, AIA (Potter Lawson Architects)

Engineers: Arnold and O'Sheridan (structural, mechanical, HVAC, plumbing, electrical—also part of the joint venture)

Consultants: Convention Center Design Consultants (center layout); PHA Lighting Design (lighting); SRI (roofing and waterproofing)

Construction Manager: Findorff

under the largest, central dome and the courtrooms on two levels in interlocking curved forms under the lakefront domes (page 88, left). An enormous ring of offices at the lakeside edge of the hemisphere offers either water or garden views. The courtrooms can be entered at the lowest and broadest terrace, where Wright plans an encircling boulevard linked to a future lakefront parkway. Ramps connect the boulevard to the streets that lead to the capitol (rendering, page 88).

Without being asked to, Wright places a train station at the rail level, one level below the boulevard. Waiting travelers are offered a Piranesian water view through the gigantic triangular piers that rise out of the lake and support the cantilevered lowest deck of the project. Wright calls these piers ice-breakers—a romantic conception of the forces of nature in this northern location. Situated between two pairs of the ice-breakers are circular jails, accessed by stairs within the mighty piers. Wright also locates boathouses and moorages under the lowest terrace.

Though Wright is 71 years old, an age when most people would at least consider retirement, his career appears poised to hit heights not seen since the prairie period of the early 1900s. With the completion just

1941 The City of Madison proposes to build a large civic auditorium and engages architect Ferdinand Kronenberg to devise preliminary designs. Wright sees an opportunity to revive Olin Terraces, since it already contains such an auditorium and the need for city and county facilities remains. Making minor changes to his earlier scheme, he submits the proposal. It is endorsed by the *Wisconsin State Journal* and prominent local figures but is shelved because of World War II.

1953-59 After the war, the project for a combined city and county building is revived. Wright's earlier proposal is not even considered. The commission goes to the Chicago firm of Holabird, Root & Burgee. The civic auditorium project is also revived, Wright galvanizes considerable citizen support, and the next year voters narrowly approve \$4 million in bonds, affirm the Monona Avenue site, and approve Wright as the architect.

In early 1955 Wright presents the revised scheme, by now rechristened Monona Terrace. The three domes remain, and Wright places an exhibition hall, an art gallery, a little theater, and a dance hall

A WRIGHT ENEMY ATTEMPTS TO ENLIST ANTI-COMMUNISTS AND THE FBI TO BRAND THE ARCHITECT AS UN-AMERICAN.

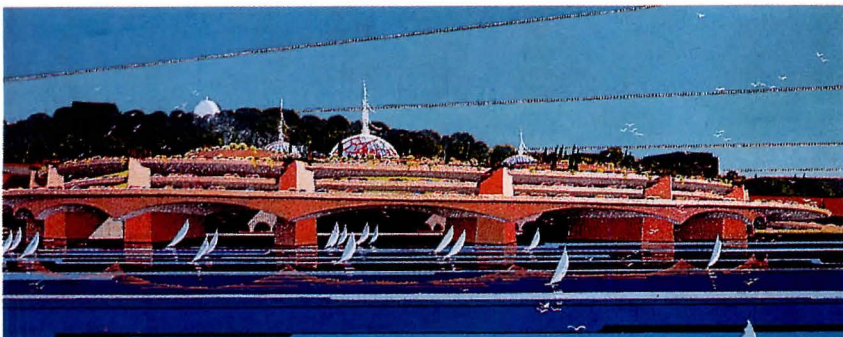
one year earlier of Fallingwater and construction in full swing on the much-anticipated Johnson Wax headquarters, Wright has triumphantly emerged from the critical wilderness. The economy is rising from the depths of the Great Depression, and he might have hoped that Olin Terraces would be his first completed urban-scale masterpiece.

As breathtaking as this conception is, however, Wright is already playing catch-up. By the time he unveils his scheme, the officially sanctioned design for the city-county building, by the Madison firm Starck, Sheldon and Schneider, has been endorsed by government officials and citizens in a referendum to approve a sale of bonds. Wright does not help his cause by deriding the George B. Post capitol building as “neither gentlemanly nor scholarly” and calling Madison a “highbrowed community of provincials.” Still, he sufficiently impresses the Dane County Board that it decides by a one-vote margin to postpone issuing the bonds for the endorsed design. Wright's alternative reignites a smoldering power struggle between the county board and the Madison Common Council. The Starck, Sheldon and Schneider project does not proceed, but neither does Wright's. Federal funding is withdrawn, for which some blame Wright. Wright continues to lobby for the proposal, but to no avail.

under two of them. A much smaller lounge takes the place of the grand ring of offices linking the circular elements below the esplanade. The main auditorium remains central. The lakefront boulevard also remains, but much of the lower two decks of the project becomes parking. The scheme retains the railroad station and boathouses.

The political fissures opened by Wright's first scheme have intensified over the years. The project has attracted zealous followers since its inception. (One fan circled the capitol in his car, using a rooftop-mounted sign and a megaphone to rally support for the project.) Wright himself attracts a virulent form of opposition. His enemies see him as the embodiment of artistic and moral degeneracy because of his messy amorous liaisons, his handling of money (his personal profligacy in the face of unpaid debts turned creditors into enemies), his presumably left-leaning politics, and his projects' tendency to come in wildly over budget.

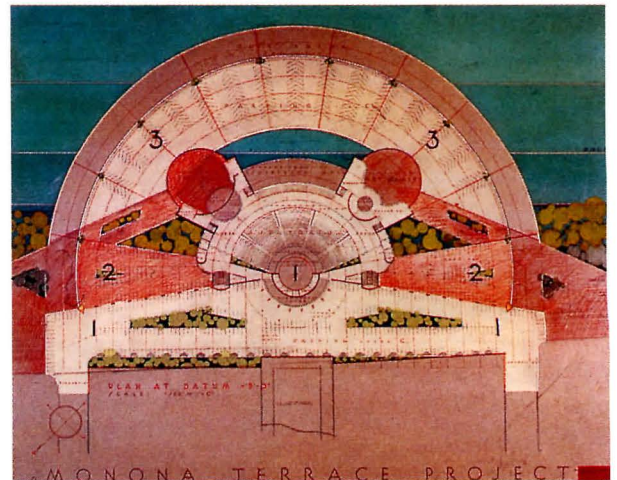
Opponents prevent awarding a design contract to Wright. They convince the state attorney general to question the constitutionality of the design as an impairment of the public's right to use the lake. The dispute gets as far as the state supreme court before its constitutionality is affirmed. The city finally makes a contract with Wright in 1956 but asks for



The view from the lake side (above) was made in 1953 but reflects the tiered 1938 concept.

A rendering (opposite top) and floor plan (right), both from 1955, reflect alterations

made by Wright to accommodate a civic auditorium and other functions.





MONONA TERRACE PROJECT
MADISON WISCONSIN
FRANK LLOYD WRIGHT ARCHITECT

further changes. Wright begins scaling back what he once called “a great civic expression.” The building area permitted to cover the lake is greatly reduced, the two lower decks and the ice-breaker pylons are eliminated, and the shore drive is rerouted through rather than around the structure. The train station is removed, making room for a community center.

Opponents lobby the legislature for what is called the Metzner Bill, which would prohibit any structure taller than 20 feet on the isthmus side of Lake Monona. Its passage would kill Wright’s scheme. After rancorous debate, the bill passes in 1957, but the outrage it inspires contributes to the political downfall of its proponents.

One of Wright’s opponents, Joseph Jackson, has long been compiling what he dubs the Wright Record, in which he depicts Wright as a nonconformist, portraying him as un-American in his activities and affiliations. In this Cold War era, Jackson seeks the assistance of Wisconsin’s notorious communist witch-hunter, U.S. Senator Joseph R. McCarthy, and inspires an investigation by the FBI. Though a file remains on Wright, no charges come out of it; nor does McCarthy pursue any public castigation of Wright. The Metzner Bill is repealed in 1959. One month later, in April 1959, Wright dies at 91.

Though he had done a great deal of work in his last two decades, none of Wright’s great landscape visions (urban or rural) had been realized in his lifetime. His chief late-life accomplishment, the Solomon R. Guggenheim Museum, in New York City, is completed after his death.

1960-90 William Wesley Peters becomes the architect in charge of Monona Terrace, and the newly formed Taliesin Associated Architects, Wright’s successor firm, embarks on further modifications and reductions in scale. Bids for the revised project come in at \$12 million, far above the \$5.5 million that had been approved. A referendum on whether to proceed with the project is placed on the ballot, and the project is rejected, this time, it would seem, for good. Taliesin must go to court to collect outstanding fees.

In the late 1960s Taliesin is commissioned to master plan the development of the entire western shoreline of Lake Monona. The Monona Basin Project (page 93) integrates Wright’s Monona Terrace project into a system of parks and buildings proposed for three miles of lakefront. The city asks Taliesin Architects (the name had changed over

the years) to design the first phase of the master plan, a 2,500-seat performing arts center. Bids come in well over budget, and a new mayor halts the project. The entire Basin project is abandoned in the 1970s after yet another referendum. The civic auditorium idea finally comes to fruition in 1980 with the conversion of a movie theater and former Montgomery Ward store into an auditorium and art center by New York City architects Hardy Holzman Pfeiffer Associates.

1990-94 In preceding years the city has solicited proposals and debated the merits of a convention center, but the efforts are turned back at the polls. Having all but given up on the idea, Mayor Paul Soglin finds himself separately approached by a powerful alderman, a local developer, a prominent engineer, and the city's tourism director, each of whom urge him to consider whether Wright's scheme can be adapted to make the convention center more appealing to voters.

"What excited me was that all these folks with their different views and interests were supportive," says Soglin. "All of them saw great possibilities in the Wright design." The mayor contacts Taliesin Architects, who, under the leadership of Anthony Puttnam (who was only 19 when he worked with Wright on Monona Terrace), conclude that the design can be adapted.

The revived project is still controversial. A group dubbed It Ain't Wright assails the cost, the need for the project, its environmental impact, and whether it legitimately can be considered a Wright design. In 1992, however, voters approved the project. Over the three ensuing years financing is assembled with contributions from the city, state, county, and individual and corporate donors. The Monona Terrace Design Venture is formed, uniting Taliesin, which has overall design responsibility for architecture and interiors, with Potter Lawson Architects, responsible for detailed documentation of the exterior envelope, code compliance, project team coordination, and construction administration. The team includes Arnold and O'Sheridan Engineers, which handles the civil, structural, HVAC, electrical, and plumbing engineering for the project.

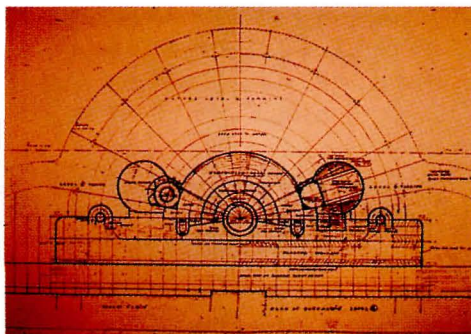
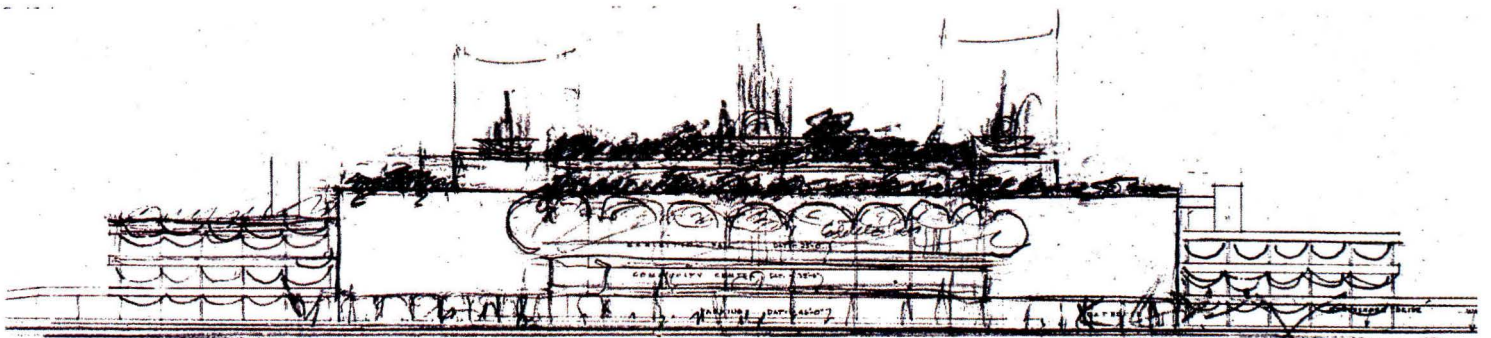
1994-96 With such a dramatic change in program, the question is which of Wright's ideas can be kept as the design is revised. "What we're doing now is Monona Terrace eight," says Puttnam, Taliesin's principal-in-charge for the project. The convention center cannot spread out horizontally over the lake in the way Wright first proposed. Taliesin digs out versions of the design Wright had sketched before he died in which he had begun to rework the project without the broad lower tier and lakeside drive. One of these (below) becomes the basis of the elevations the joint venture develops. In plan, the broad curve generated by the semicircular auditorium seen in 1956 drawings and its

"WHAT WE'RE DOING NOW IS MONONA TERRACE EIGHT," SAYS TALIESIN'S ANTHONY PUTTNAM.

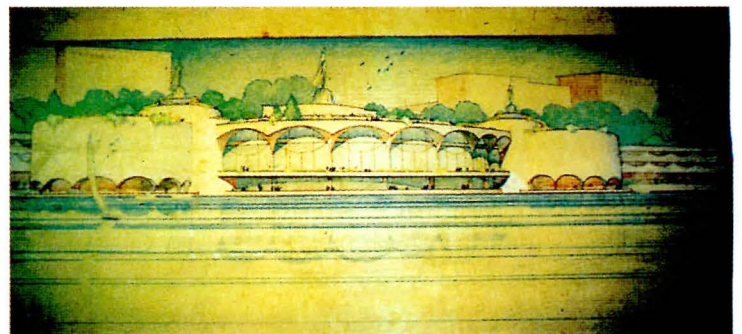
two satellite domed shapes form the external envelope within which the new program is packaged.

However, none of the geometry of overlapping, interlocking curved forms that was characteristic of Wright's late work survives in the interior development—the needs of the 250,000-square-foot convention center prove too complex (see plans, pages 99 and 101). The central auditorium is squared off for an exhibition hall, and the satellite curved forms facing the lake now house mainly orthogonally organized services. While most internal spaces in Wright's earlier schemes offered either garden or lake views, only three public rooms—the Lakeside Commons at grade, a community room above it, and the Grand Terrace at the fourth level—open onto the water.

The framing is changed from concrete to steel for easier and more economical erection. The higher floor-to-floor heights demanded by the program push the volume of the building a full floor above the elevation of Martin Luther King, Jr., Boulevard (the new name for Monona Avenue). This is not unprecedented. Wright had recognized in the auditorium schemes that the stage house would project above street level, blocking the vista down the avenue, but he apparently never resolved the



Wright's design for a project without the broad lowest tier and lakeside avenue in 1956-57 includes a plan (left), the envelope of which Taliesin took as a starting point in the 1990s. Above and right, two contemporary studies.





PARK AND GARDEN AREAS

problem. Taliesin develops a ramp system to move pedestrians up to a planted rooftop terrace (pages 98–99), which takes the place of the esplanade envisioned by Wright. From the lakefront, a measure of the horizontality Wright earlier achieved is recovered by extending parking ramps along the lake on each side (pages 94–95). A narrow bike path circles the building’s lake elevation, instead of the grand, landscaped boulevard once dreamed of.

1997 Touted as “a public place by Frank Lloyd Wright,” and costing \$67.1 million, Monona Terrace opens on July 18. The realization of a major project by the key American architectural figure of the century 38 years after his death attracts attention in print and broadcast media nationwide. The Wright connection is key to the marketing of the center in a city not heretofore known as a convention destination, and promotional material advertises it as a “Frank Lloyd Wright design.”

The Wright connection is a boon to Madison, a city that had spurned its native son so often while he lived. The attention helps book-

The Monona Basin Project in the 1960s included a further revised Monona Terrace (above) as part of a three-mile-long lakeside park system.



In claiming that the center is “designed by Frank Lloyd Wright,” its owners are, strictly speaking, inaccurate. Puttnam says officially it is “a design based on” that developed by Wright, though he says Monona Terrace is “certainly predominantly a Wright design.” Two Wright scholars, Neil Levine, who teaches at Harvard University’s Graduate School of Design, and David De Long, a professor of architecture at the University of Pennsylvania, say history will record it as “based on” or “inspired by” Wright.

Does it matter that even to the little-trained eye this Monona Terrace does not look much like what Wright struggled more than 20

MADISON AND WRIGHT KEPT COMING BACK TO EACH OTHER BECAUSE EACH HOPED THAT A KIND OF TRANSCENDENT GREATNESS COULD BE ACHIEVED.

ings, say officials, and boosts fund-raising to complete such unfinished elements of the scheme as a terrace fountain. “We have not just conventioners, but people coming from around the world as tourists to see the center,” says director Joan LeMahieu.

Given that so little of what was envisioned as a spectacular public amenity has survived in built form, are the designers and owners hiding behind the imprimatur Wright’s fame has conferred? Such questions of authorship have a long tradition in architectural history, say scholars. The question also would have a simpler answer if Wright himself had not so dramatically and frequently altered the scheme. “Who was the consummate remodeler? Frank Lloyd Wright,” claims David V. Molinoff, after long study of the project. “What was inside the building was not as important in Wright’s mind as the overall statement.”

years to achieve? “My original take on Wright’s design was that it was not a building,” comments Levine, who says the design’s greatness lies in its prescience: “In today’s way of thinking, we’d almost regard it as a site-specific sculpture. As it’s built, it’s much more a building.” De Long lauds construction of the project, even if it’s only a “version” of what Wright hoped for.

Had any of Wright’s earliest schemes been built, they would perhaps be judged as aesthetic masterpieces and functional failures. The fountains over glass domes and the multiple levels of elevated gardens would surely have proven enormously difficult to construct and maintain. The acoustics and sight lines of the auditoriums would be found wanting today. And the courts would be seen as inadequate and insufficiently flexible. On the other hand, Wright himself was never able to (*text continues*)

Is this Monona Terrace really Wright?

by David Dillon

Monona Terrace was Frank Lloyd Wright's way of knitting together a fragmented city. As his broad boulevard sloped down from the capitol on the hill, it would open onto a plaza that spanned a tangle of highways and railroad tracks, then descend and radiate in graceful circles out from the shores of Lake Monona. This "plaza" was to be part garden and part parking deck, beneath which would sit a city-county office building with a jail, courts, and its own railroad station. In one grand stroke he would reconnect community, government, and landscape and write "finis" to planner John Nolen's 1910 scheme for a capitol mall.

But Monona Terrace turned out to be one of Wright's most divisive projects. The building that finally opened in July 1997, 38 years after his death, isn't the megastructure Wright planned but instead a 250,000-square-foot convention center with five levels of exhibit halls and meeting rooms, bracketed by helical ramps leading to a 560-car parking garage. The basic curvilinear form is Wright's, but most of the interior spaces are new, as is the whole idea of a convention center, which dates only from the early 1990s.

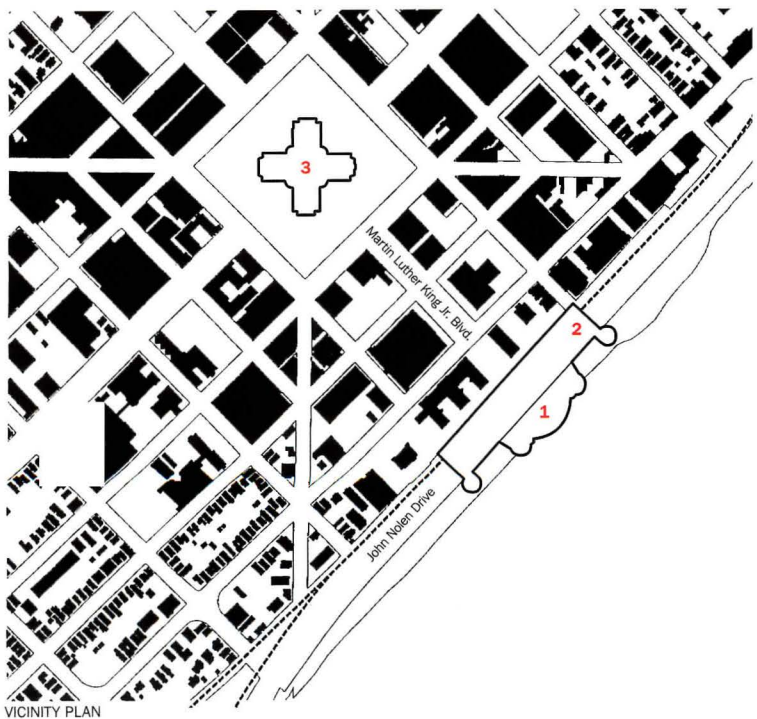
So if the first question we ask of any building is how well it fulfills its designated purpose, of Monona Terrace we must also ask whether it expresses Wright's unique architectural and urban vision. Is it ultimately his building or merely an earnest approximation by his associates?

As urban design, Monona Terrace works reasonably well. From the state capitol, Martin Luther King, Jr., Boulevard (once Monona Avenue) flows two blocks to a small urban plaza, Olin Terrace, which merges with a footbridge leading to Monona Terrace. While not the grand ceremonial approach that Wright proposed, the bridge makes a reasonably smooth transition from street to structure. The architecture of the capitol is recalled in a streamlined classicism of circles, columns, domes, and arches, while Monona Terrace's central promenade is on axis with Martin Luther King, Jr., Boulevard and the capitol.

For all its exotic geometry, Monona Terrace is a rigorously symmetrical building, though an unusual upside-down, inside-out one. Visitors enter at the top, then walk down to the lobby and the principal meeting rooms, which are clustered in the "rear" of the building, overlooking the lake, instead of inside the front door. Three main public rooms bow out over Lake Monona—though not the full 650 feet that Wright intended—to give visitors a sense of connection to nature. A trail for hiking and cycling runs along the base of the building, an attenuated version of the parkway in Wright's later schemes. Yet considering how

Contributing editor David Dillon is the architecture critic for the Dallas Morning News. He wrote about the Georgia O'Keeffe Museum in RECORD's January 1998 issue.





- 1. Convention center
- 2. Parking ramp
- 3. State capitol

The lake view of the project (above) and a final design rendering (below) show the relationship of the center to the capitol. Parking ramps stretch to either side on the land side of the center. The glass

domes Wright intended to echo the capitol's dome have been replaced by cast-in-place concrete drums. A bike path (opposite) replaces the landscaped boulevard that Wright envisioned.





The plaza atop the center recalls the esplanade Wright first sketched (this page). Seen from along the lake, the center lacks the broad, horizontal extension Wright once hoped for (opposite).

dumb and claustrophobic convention center spaces usually are, these terraces are pleasantly open and transparent.

Far less inspiring are the lower-level views back to the city. Here the principal vistas are of parking ramps and concrete retaining walls slammed up against a cliff. And the highway and railroad tunnel is grimness itself, with none of the spatial or visual generosity of Wright's original scheme.

Since opening last July, Monona Terrace has hosted nearly 500 events, including 28 small conventions and an assortment of academic symposia, bar mitzvahs, and high school proms. The rooftop garden has become a popular spot for brown-bag lunches as well as a setting for concerts and other public events. Since Wright always considered Monona Terrace a community building, this potpourri of uses is entirely suitable.

On the other hand, much of Monona Terrace's initial popularity derives from its being marketed as a Frank Lloyd Wright building. "A Public Space by Frank Lloyd Wright," says the promotional literature. It's

between architect and client that shapes most buildings, and that might have made this one sing, never took place. Wright left only a few sketches and finish schedules for the interiors, which Taliesin Architects had to flesh out as best it could. The basic color scheme—red, cream, and terracotta—belongs to the period of the Guggenheim and the Marin County Civic Center, but it doesn't have the delicate touch, the tactile richness we expect from Wright. The detailing is frequently fat-fingered and occasionally cheap, as in the acoustical-plaster ceilings in the ballrooms. Away from the grand terraces, with their sweeping views of the lake, the rooms feel low and cramped.

So instead of a "Wright building" we should speak of a building "inspired by Wright" or "in the style of Wright." He provided the broad outline that others have filled in, the synopsis for a novel ultimately written by others.

Predictably, Madisonians continue to debate the merits of Monona Terrace, some calling it a civic treasure and the key to a down-

THE MISSING ELEMENT IN THIS EQUATION IS WRIGHT HIMSELF. THE ONGOING GIVE AND TAKE THAT MIGHT HAVE MADE THIS BUILDING SING NEVER TOOK PLACE.

become the showpiece of local architectural tours and the mainstay of the burgeoning Wright industry. Its gift shop is stocked with Wright ties, coasters, books, and postcards.

"There's no question that being a Frank Lloyd Wright building gives us an edge for small conventions," says director Joan LeMahieu. "We're a convention center and a tourist destination. We have been singled out as pointing the way to the future because we're not just a box with docks. We've incorporated the natural surroundings into our design."

The problem with all of this, of course, is that even though Wright revised the design of Monona Terrace at least four times, he was not involved with the version that finally got built. The idea of turning it into a convention center surfaced only in 1990, after a public referendum on a new convention center on a different site had failed. Wright's successor firm, Taliesin Architects, then persuaded city officials that Monona Terrace could be adapted for such purposes.

As far as project architect Anthony Puttnam is concerned, this is entirely consistent with the history of the Monona Terrace project. "We have a building that is within one foot of accuracy of his 1958 design," he explains. "We look so much like that design I don't know who could say we aren't a Frank Lloyd Wright design. Ninety-eight percent of people are not going to be concerned if a detail is by Wright or by one of his students. It wouldn't be here, in this place, if it hadn't been for Frank Lloyd Wright."

As for the dramatic shift in use, Puttnam points out that Wright himself constantly changed what went on in the building. "He wasn't stuck on what was in it. What mattered to him was what the building did for the city. It carried forth another vision of Madison."

The missing element in this equation is Wright himself. The ongoing give and take

town revival, others dismissing it as a "Wright elephant" and shuddering at what it may cost to maintain it.

Convention centers are typically the Agent Orange of urban architecture, killing all life for blocks around. Monona Terrace uses its immediate surroundings more effectively than most, helping to reclaim the waterfront for public use as Wright intended and integrating what is essentially a visitors' building into the life of the building. The landscaped roof garden should be wonderful, even without Wright's dramatic glass domes with their fountains and sculptures. The entire building has an intriguing nighttime profile, especially when seen from across Lake Monona. Compared with convention centers in Des Moines, Dubuque, and other competing Midwestern cities, it has cachet, and it allows us to see Wright as an urban visionary.

But compared to what Wright dreamed of, and to what the building might have become had Madison risen above its provincialism, Monona Terrace remains an unrealized "dream civic center"—intriguing, one of a kind, but not the dramatic exclamation point at the end of Wright's brilliant career. ■

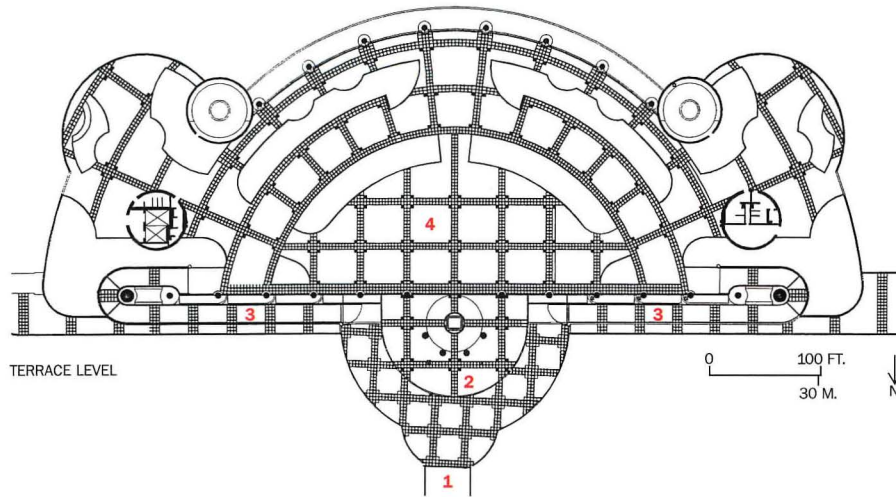




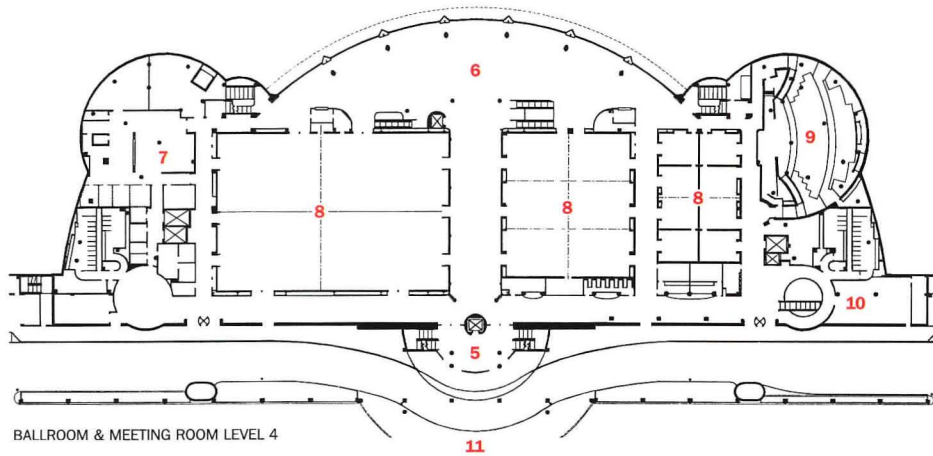
Though Wright had hoped his esplanade could extend the avenue from the capitol without a grade change, Taliesin was forced to push the terrace one level up (above). Switchback

ramps offer access (opposite bottom). Visitors on foot arrive at the center across a bridge that spans the parking ramp (right). Railroad tracks and a roadway pass underneath.





1. Bridge to Martin Luther King, Jr., Boulevard
2. Entrance below canopy
3. Ramp to terrace
4. Rooftop terrace
5. Entrance
6. Grand Terrace
7. Kitchen
8. Meeting room
9. Lecture hall
10. Gift shop
11. Parking



Accommodating the convention center meant forsaking the interlocking-circle planning Wright had proposed for earlier schemes (plans left and page 101).



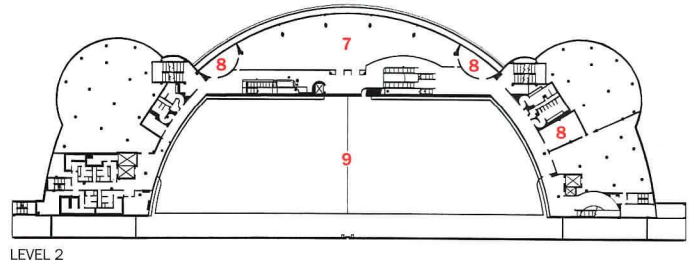
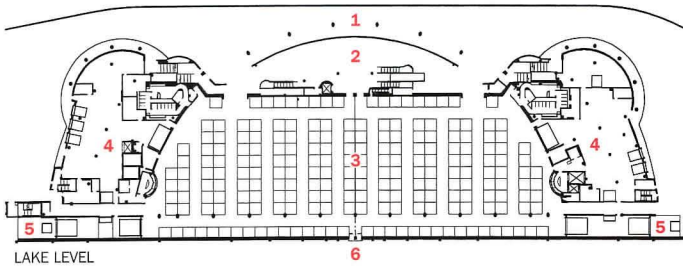




Taliesin was guided by some tentative Wright decisions in designing the interiors. The exhibition floor (below), the Grand Terrace (left), and the Capitol Promenade (opposite).



- | | | |
|-----------------------------------|----------------------|----------------------------------|
| 1. Lakeside walkway and bike path | 4. Receiving | 8. Meeting room |
| 2. Lakeside Commons | 5. Truck dock | 9. Open to exhibition hall below |
| 3. Exhibition hall | 6. John Nolen Drive | |
| | 7. Mezzanine terrace | |



take the design beyond the most preliminary stage, so it is impossible to know just what he might ultimately have made of it.

Akin to a couple who marry, divorce, and remarry, Madison and Wright kept coming back to each other for so many years, stormy as the relationship was, because both sides hoped that some kind of transcendent greatness could be achieved. While arguably failing to build the work of singular genius Monona Terrace had the potential to become, the design venture finally delivered to the city the building it wanted for what it wanted to pay. Indeed, the public is rarely tolerant of Wrightian excesses, even when genius has been certified. The unending political squabbles that dogged Monona Terrace can be seen as predating today's contentious urban-development climate. Consider the difficulty encountered by Frank O. Gehry in realizing the Walt Disney Concert Hall in Los Angeles.

So it is ironic that although Wright's structures tended to be wildly expensive and often suffered (indeed still suffer) from leak-prone detailing, the master's star rides higher than it ever has among both architects and the general public. Eager aficionados snap up the endless supplies of books, postcards, reproduction furniture—even neckties—licensed by the Frank Lloyd Wright Foundation, of which Taliesin Architects is a part. "Who could imagine," asks De Long, "that a building

designed in 1938 could so capture the imagination that it would be built today?"

What captures our imagination about Wright's work may be precisely his penchant for overreaching the bounds his clients set for him. The lesson of Monona Terrace may be that genius sets standards that are well nigh impossible to realize in today's increasingly complex design and construction environment—and we may be the poorer for it. ■

Sources

Exterior cladding: *International Concrete Products (precast panels); Glass Fiber Reinforced Concrete (lake-front arches); Sto (exterior insulation and finish system)*

Exterior pavers: *Wausau Tile*

Roofing: *Siplast*

Window wall: *Kawneer (metal); PPG (glass)*

Doors: *Kawneer, Curries, Overhead Door, VT Industries*

Hardware: *Schlage, Hager, LCN, Forms and Surfaces, Locknetics*

Acoustical ceilings: *International Cellulose, Chicago Metallic*

Premolded coves and arches: *Classic Plaster*

Carpet: *U.S. Axminster*

Lighting: *National Cathode Corp. Kramer, Sterner, Louis Poulsen, Hydrel, Devine, Bega, Norbert Belfer, Drama Lighting*

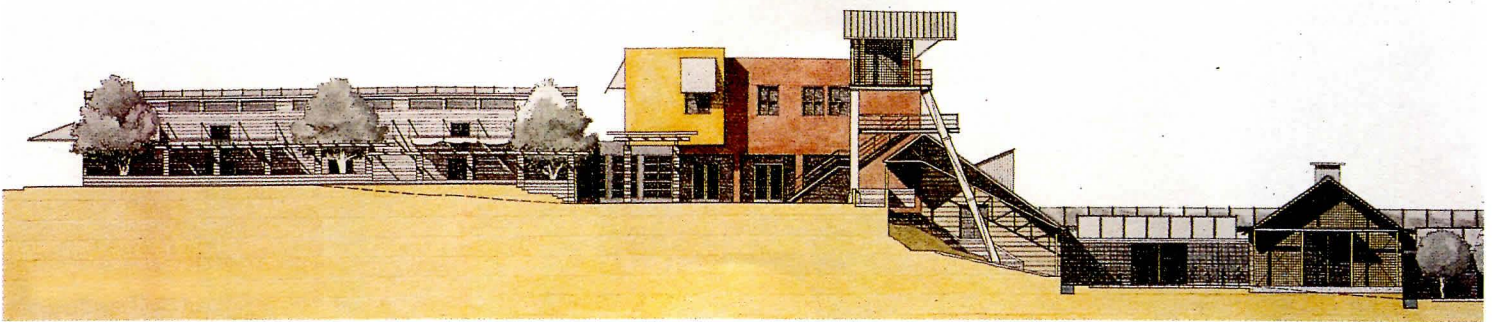
Elevators: *Schindler*

The 1990 competition entry (opposite) shows the final form of the museum, with exhibit space extending down the hill. In this first phase of construction, the building ends with a balcony over the site (this page).



In a new twist on fund-raising, the **NAPA VALLEY MUSEUM** builds one-third of its proposed design to raise the entire budget.

by Karen D. Stein



Some architects spend years entering design competitions before they actually win one. Not Richard Fernau, FAIA, and his partner, Laura Hartman. Although landing a significant commission always seems to involve some contest, real or imagined, the duo entered what Fernau calls their “first *real* competition” in 1990 to design the Napa Valley Museum. After a staggered interview and design process that involved winnowing down an initial list of some 70 potential firms, the museum’s selection committee awarded the Berkeley-based architects the job.

Fernau & Hartman Architects was already known to some in the region for its residential work—most notably, the Berggruen House in the Napa Valley town of Rutherford [RECORD, Mid-April 1989, pages 50–55]. The corrugated-metal and wood-clad components of the house typify Fernau and Hartman’s distinctive brand of “reluctant regionalism,” an architectural strategy inspired by the casually sited but powerfully sculptural buildings that seem as much a part of the Napa Valley landscape as the vineyards.

At the time of the competition, the Napa Valley Museum was at a turning point. It had been housed for several years in a former high school located in the town of St. Helena but was barely able to serve its constituency because of the inappropriate facility. John Livingston, a local vintner and president of the board during the architectural competition, remembers it as “inadequate, the unfortunate model of an upside-down museum,” with storage areas for large artifacts inconveniently placed on the top floor of the three-story structure. In fact, the evolution of the institution itself was somewhat backward. The museum, says Livingston, was conceived when a citizens’ group got together to come up with “something to do with that high school,” a sentimental architectural

favorite of St. Helenians. As the museum sought to extend its audience during the late 1980s, other deficiencies were even harder to overlook: handicap access was inadequate, and the structure did not conform to up-to-date seismic safety standards, so schools were not allowed to bring their students to participate in the museum’s planned educational programs. A new building seemed to be the only answer.

Fernau and Hartman felt an immediate kinship with the museum’s mission. “The program was remarkable,” recalls Fernau, “because it stressed the landscape. It spoke of the landscape as having a didactic quality, and our design took off from that idea.” The architects literally wove the rolling, grassy terrain through their competition scheme. They proposed a series of outdoor galleries between a linear structure housing the permanent exhibition area and a series of planted swaths in the landscape intended for agricultural displays. (*text continues*)

Project: *The Napa Valley Museum, Yountville, California*

Architect: *Fernau & Hartman Architects—Richard Fernau, FAIA, and Laura Hartman, partners-in-charge; Mark Macy and Tom Powers, project architects; David Kau, Turk Kauffman, Anni Tilt, design team; Ariel Dunkel, Henry Kitchell, Ramon Ramirez, Susan Stoltz, Alice Lin, project team; Keith Dubinsky, Sean Gilmore, Aaron Thornton, Geoff Gainer, Emily Stussi, Hugo Marrack, presentation*

Engineers: *Steven Tipping & Associates (structural); William Mah Engineers (mechanical); O’Mahoney & Meyer (electrical); Reichers, Shinnamon & Spence (civil)*

Consultants: *Steven Arns Landscape Architect (landscape); Phoenix Geotechnical (geotechnical); Britton Tree Services (arborist); Academy Studio (exhibit display); Dimensional Dynamics (gallery panels, lighting)*

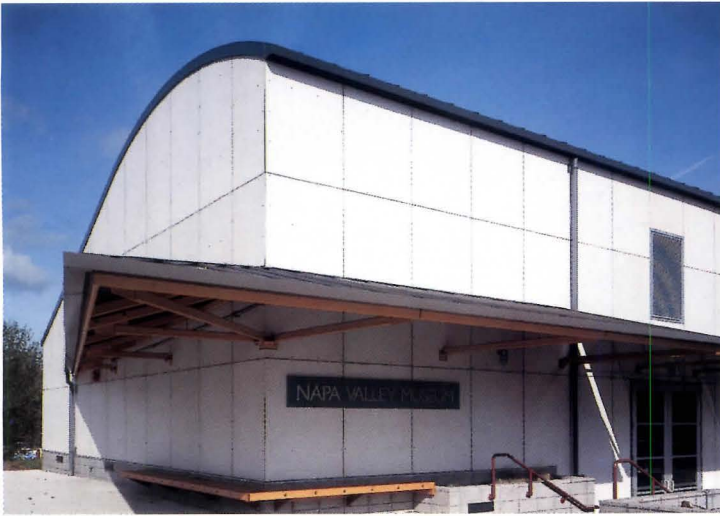
General Contractor: *Wright Contracting*



To meet rigorous seismic standards, the building has a post-tensioned concrete slab secured on cast-in-place concrete and concrete masonry

foundations. Off-white fiber cement siding panels are used as cladding. The elevator tower is covered in custom-fabricated Cor-ten steel.





“The museum’s most important artifact is the valley,” claims Fernau. “The building shouldn’t pretend to be a winery or an art gallery.” In fact, the architects looked not to far-flung Loire Valley wine museums as precedents for their design but to the Napa Valley itself, its history and its architectural idioms. They were particularly inspired by the mining camps that were once a significant contributor to the valley’s economy. Livingston, a trained geologist, was impressed by the architects’ knowledge of Napa Valley history.

After looking around the Napa Valley for an appropriate site, the

“THE MUSEUM’S MOST IMPORTANT ARTIFACT IS THE VALLEY,” SAYS ARCHITECT RICHARD FERNAU.

museum entered an agreement with the state to lease land from the California State Veterans Home, which is located in the town of Yountville, not far from St. Helena. Then, the museum board embarked on an ambitious capital campaign. While board members were sorting out exactly what kind of building they wanted—“something contemporary that reflects the region and something that goes beyond the typical Spanish Mission style,” says Livingston—they started to look for the money to make it happen.

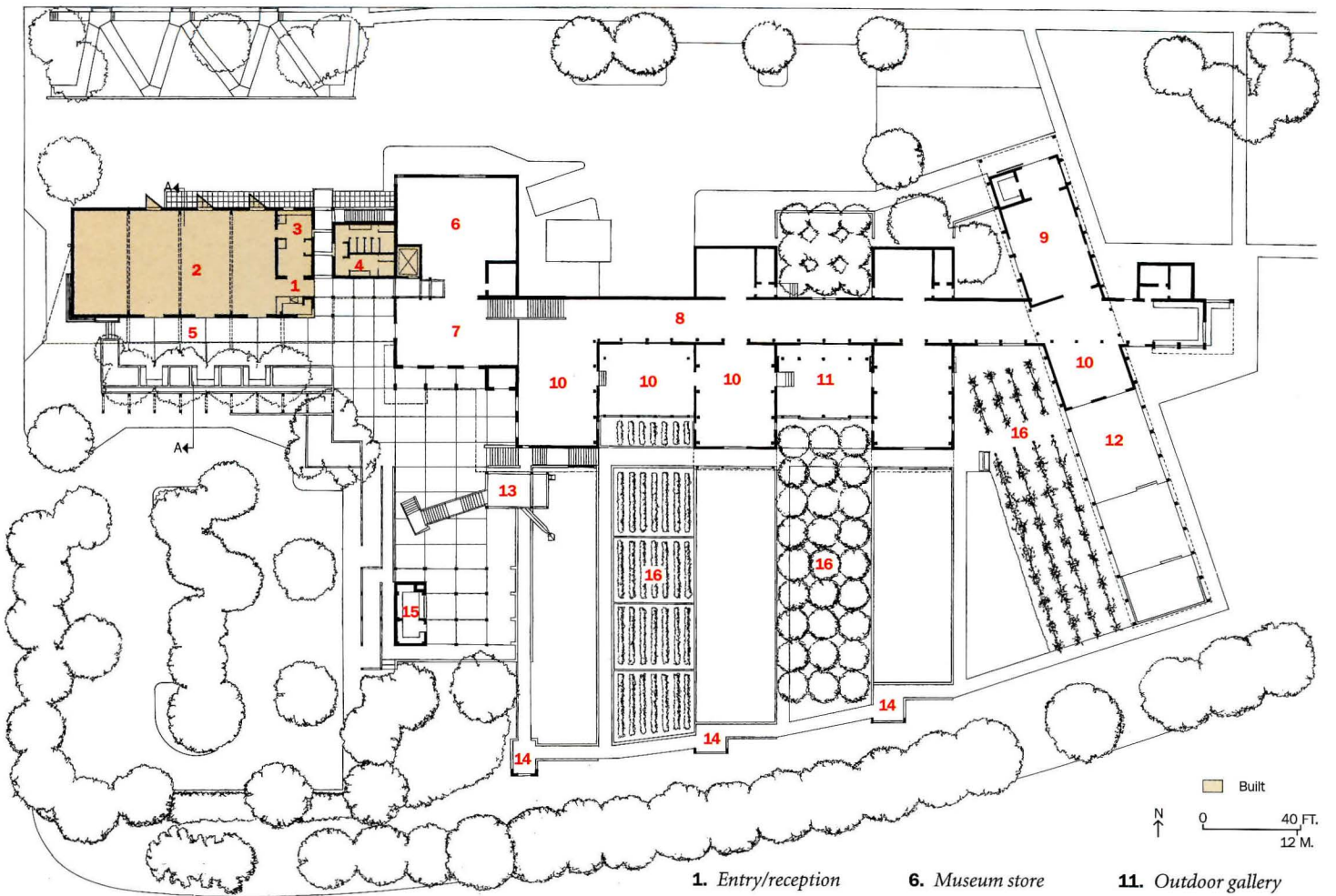
As Fernau and Hartman’s scheme moved into the design devel-

A plaza wraps around the south end of the museum, creating what Fernau calls a “great shelf” in the hill for the building.

opment stage, the mission of the museum became increasingly elaborate and expensive. “We kept adding and making changes to the program,” says Randolph Murphy, who joined the institution as curator on the heels of the competition. “The budget went from \$4 million to \$6 million to \$8 million and then, as more time went on, even more.”

Also growing increasingly complex was the approvals process. Because of its location, the museum discovered it needed permits from three entities: the town of Yountville, where it was moving; the State of California, which owns the land; and the County of Napa, which oversees such projects. The proposal for the new museum was “sufficiently big and sufficiently different that all the various agencies were not sure *what* to do about it, but they were all sure that they wanted to be involved,” explains Livingston. Since the town had loose, often-changing aesthetic guidelines—regarding the use of concrete block on exteriors, for example—and the county and state had other requirements—regarding, for one, the type and depth of foundations—getting the proper permits from all three took more than a year, reports Murphy.

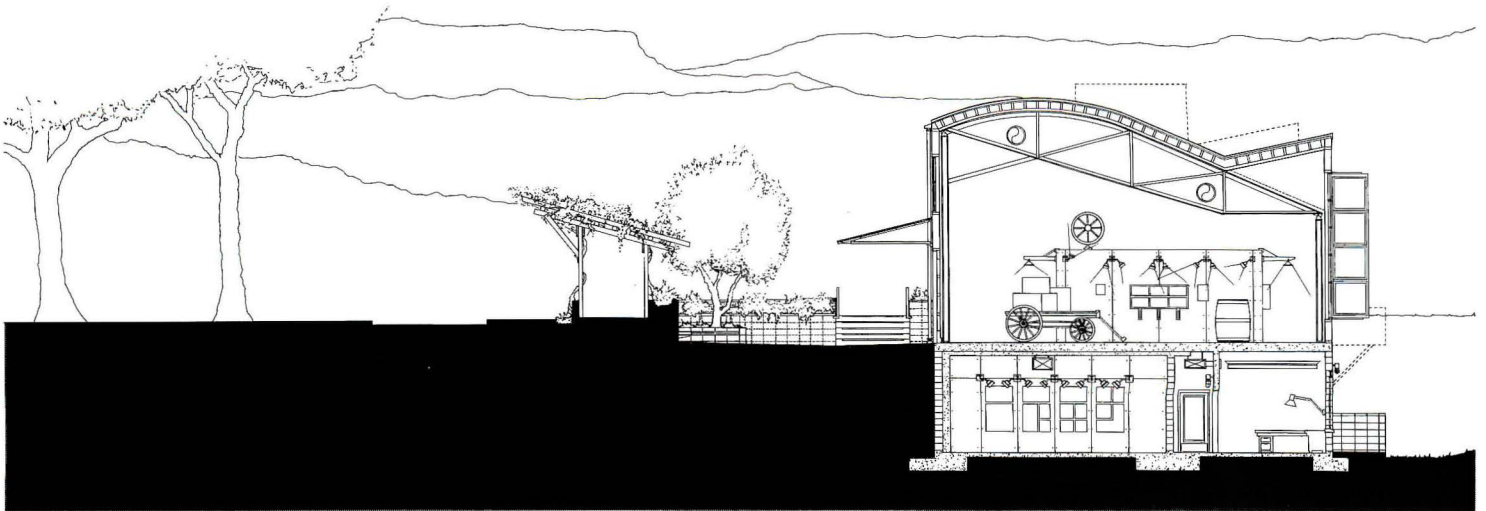
When it came to raising the necessary funds, the museum found that it had a “core of supporters,” says Murphy, but by 1995 it hadn’t come close to reaching its campaign goal of \$10 to \$12 million. “We didn’t have



- | | | |
|----------------------------------|--------------------------|---------------------------|
| 1. Entry/reception | 6. Museum store | 11. Outdoor gallery |
| 2. Temporary exhibitions gallery | 7. Lobby | 12. Garden exhibit |
| 3. Kitchen/storage | 8. Permanent exhibitions | 13. Observation tower |
| 4. Restrooms | 9. Education wing | 14. Docent outpost |
| 5. Donor courtyard | 10. Gallery | 15. Café |
| | | 16. Agricultural exhibits |

When all phases of construction are complete, the loftlike area currently used for temporary exhibitions will be transformed into a public events space.

The partially subterranean zone, now used for a display of wine-making techniques, the museum store, and offices, will be turned into storage.



SECTION A-A



a proper facility to show the community that we were worthy of being trusted with that amount of money,” explains Murphy. “So we decided something concrete would show people what we were all about.” To make its point, the building committee broke construction down into phases, a strategy eased by the additive nature of Fernau and Hartman’s architecture.

Pinpointing the exact end of the first phase proved tricky. With about \$4 million to spend, museum officials started at the top of the site, located at the west end of the property adjacent to the road, and planned to gradually expand the facility down the hill as funds became available. Reprogramming that front portion of the design to contain as many of the proposed functions as possible, the architects managed to shoehorn temporary and permanent exhibition space, curatorial and staff offices, a small shop, and storage into a 12,000-square-foot block. A plan to reor-

A YELLOW-FRAMED CANOPY POINTS HOPEFULLY TOWARD THE SKY AS A PROMISE OF THINGS TO COME.

ganize those spaces when the museum achieved its full 33,000 square feet was devised. But if the first phase of construction were to end just at the precipice, the museum’s public face to the valley below and the town of Yountville would be rather crude: a shed of bathrooms and an elevator tower—albeit a highly sculptural one, clad in weathered steel.

“It’s phase 0.5,” jokes Fernau of the truncated design. After all the delays in permitting and the decision to break the construction process into more manageable chunks, the first wing of the museum opened to considerable fanfare in February. The number of people who came to look at contemporary art and displays of wine-making tech-

niques in a single day was more than the number of visitors to the old museum in six months.

“We wanted to make a definite architectural statement,” says Murphy of the museum’s bold colors, forms, and materials. “We wanted to show everyone that we’re fulfilling our mission. Now that we are able to do that, fund-raising will be easier.” Livingston echoes those thoughts, noting that he hopes the second phase comes soon. The architects couldn’t agree more. “The extent of the first phase of construction is not what we thought it would be,” admits Fernau, but he says he and Hartman saw it as an opportunity for architectural improvisation. So they clipped a cantilevered observation deck onto the bathroom shed. A yellow-framed steel canopy points hopefully toward the sky as a promise of things to come. ■

Sources

Concrete masonry units: *Calstone*

Exterior pavers: *Basalite*

Elevator tower cladding: *Custom-fabricated Cor-ten steel*

Fiber cement siding panels: *Eternit, Inc. (E-Flex)*

Built-up roofing: *GAF*

Painted-steel narrow batten roofing: *BHP*

Aluminum windows: *Ventana Aluminum Manufacturing Co.*

Green-tinted glass: *Solex*

Aluminum entry doors: *U.S. Aluminum*

Hollow metal doors: *CECO*

Locksets, hinges, closers: *Schlage, Stanley, Norton*

Exit devices: *Von Duprin*

Perforated corrugated aluminum acoustical ceiling: *Reynolds*

Paints and stains: *Dunn-Edwards, Cabots*

Resilient flooring: *Marmoleum*

Interior ambient lighting: *Forum, Well-Made, Lithonia, Alkco*

Interior downlights: *ALR Litelab, Prescolite*

Exterior lighting: *Stonco, Bega, Rudd, Architectural Landscape Lighting*

Elevator: *Dover Elevator*

On the east side, double doors open onto a paved courtyard. The open-span central space is for temporary exhibitions (opposite). A perforated corrugated aluminum ceiling reinforces Fernau and Hartman's material-driven aesthetic.





Is it ever too soon for a facelift? Even towering twenty-somethings like **HOUSTON INDUSTRIES** are sharpening their looks to keep up with the competition.



by Gerald Moorhead, FAIA

A 63-foot-high extension with square cutouts on all sides and an oculus on top helps the revamped Houston Industries Plaza stand out among the city's eclectic lineup of towers.

Houston Industries, the parent company of Houston Lighting and Power (HL&P), had wanted to consolidate its far-flung empire. Because the company's home in the 27-story Electric Tower, built in 1967, did not provide sufficient room, HL&P considered various properties around the city. Ultimately, however, Houston Industries' board of directors, led by CEO Don Jordan, opted to stay downtown rather than move to a new suburban facility. By

May 1992 the Houston Industries search team had closed in on 1100 Milam, three blocks south of the Electric Tower. It was about the right size, with an optimal floor plate for corporate offices of 24,000 rentable square feet, and it happened to be the largest building available downtown. What's more, although feasibility studies revealed problems, Houston Industries could still save some \$50 million by not commissioning a new building. Twenty months of discussion led to the unprecedented building swap: Prudential Insurance, the owner and original developer of 1100 Milam, traded it for the Electric Tower. "The economics kept us focused," says David George, AIA, facilities manager for Houston Industries.

The complex deal closed in December 1993, and asbestos abatement and demolition started in March 1994. Construction of the newly christened Houston Industries Plaza was largely complete by July 1995, a schedule made all the more remarkable by the fact that only the

The last high-rise in downtown Houston was completed in 1987, three years after the oil market went bust and the city's economy collapsed. For the next decade, businesses disappeared from the depressed city at a steady pace, leaving office towers virtually empty and inspiring those in commercial real estate to dub this dismal period the see-through years. But with the economic recovery of the mid-1990s, Houston's high-rises are packed again. With vacancy rates at less than 10 percent and large blocks of leasable space no longer available downtown, companies in need of a full floor or more are forced to flee to the suburbs, where a fresh crop of medium-size buildings for major tenants is sprouting in the Texas low country.

In the last few years, owners of several older downtown high-rises have responded to this shortage of Class A office space by renovating their buildings and "repositioning" them in the real estate market. Houston Industries Plaza, the former 1100 Milam Building, extensively refurbished by architect DMJM Keating, is the most significant of these projects. Built in 1973 by JV III (a joint venture of Koetter, Tharp & Cowell; Caudill Rowlett Scott; and Neuhaus & Taylor), the 47-story tower occupies a prime site amid newer skyscrapers on the west side of downtown. The renovation of the once-lackluster tower for Houston Industries goes well beyond the typical lobby-and-toilets remodeling of spec office buildings and indicates a new direction for buildings of the near past.

A unique real estate deal got the ball rolling. In recent years,

Contributing editor Gerald Moorhead, FAIA, is an architect based in Houston.

Project: *Houston Industries Plaza, Houston*

Architect: *DMJM Keating—Richard Keating, FAIA, design principal; Jose Luis Palacios, AIA, senior designer; Michael Mann, AIA, project manager; William Gerstner, AIA, technical coordinator; Robert Jernigan, AIA, technical director; Daniel Allen, Cory Ticktin, John DiGregorio, David Gonzalez, design team*

Associate Architect: *Kendall Heaton Architects—Bill Kendall, FAIA, Warren Carpenter, AIA, and*

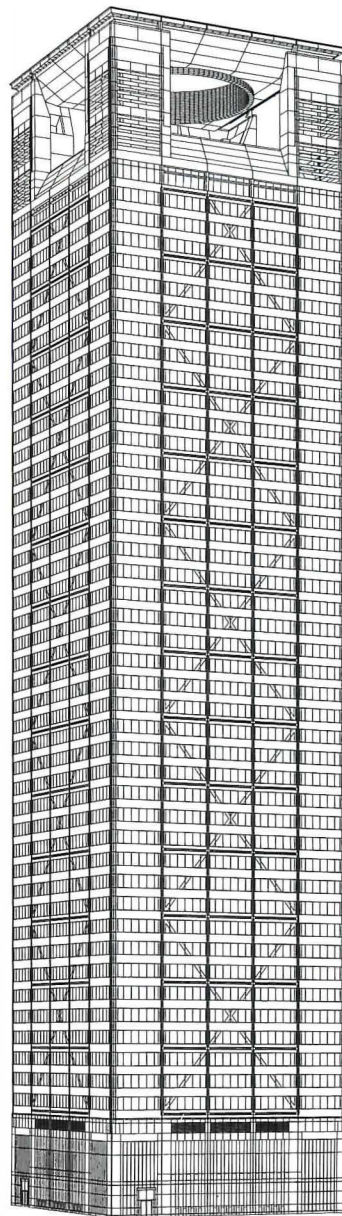
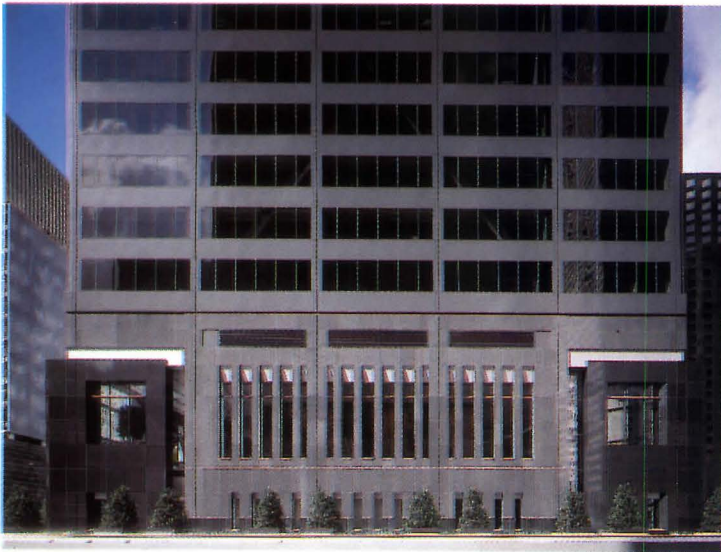
Wayne Schull, AIA, project team

Engineers: *CBM Engineers (structural); I. A. Naman (mechanical, electrical, plumbing)*

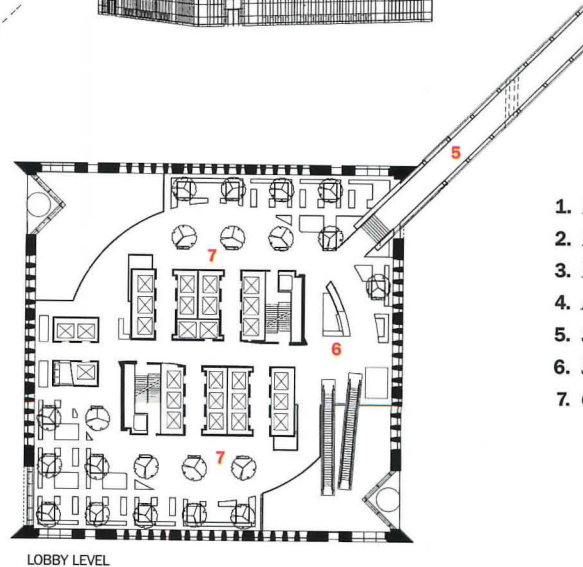
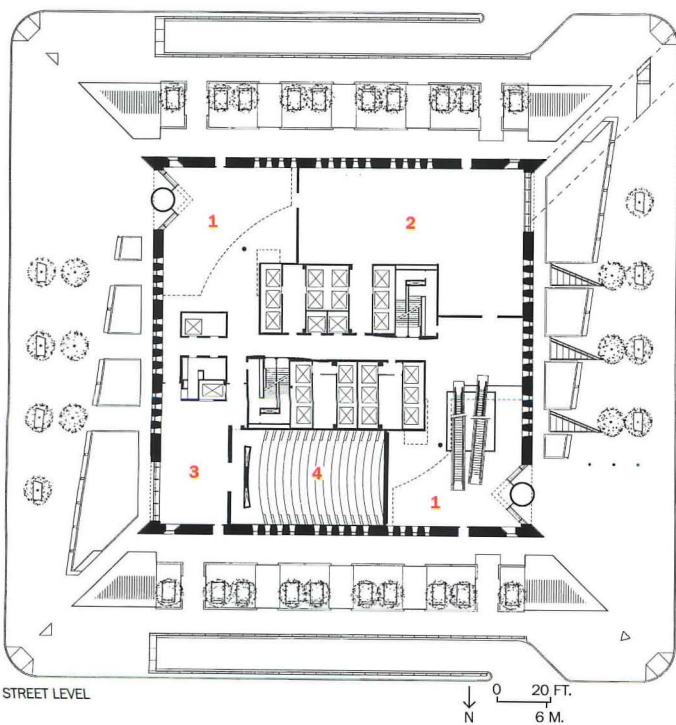
Interior Designers: *Lehman Smith Wiseman (executive floors); Ziegler Cooper (typical floors)*

Consultants: *Clark Condon Associates (landscape); Fisher Marantz Renfro Stone (lighting); Cerami Associates (acoustical); Hines Interests Limited Partnership (real estate)*

General Contractor: *Miner Dederick*



Architect DMJM
Keating replaced the sloped glass skirt of the 1970s with a two-story granite base but retained the original curtain wall above (top left). Luminous glass forms delineate the perimeter of the Houston Industries site (below left and opposite). The X-shaped braces were added behind the existing curtain wall to increase wind-load resistance (drawing left). Unlike those in the drawing, the actual braces are invisible from outside.



1. Lobby
2. Leasable space
3. Prefunction area
4. Auditorium
5. Sky bridge
6. Security desk
7. Garden

LOBBY LEVEL

STREET LEVEL
0 20 FT.
6 M.
N



sidewalk from the building face to the curb was available as a staging area.

Among the most substantial problems to be resolved in the renovation was the building's curtain wall, an homage to the taut skin of Skidmore, Owings & Merrill's 140 Broad Street in New York City, built in 1967. Due to leaking at the curtain wall's flared base, buckets tinted to match the mullions had become permanent fixtures at 1100 Milam. Two

IN AN UNUSUAL SWAP, THE COMPANY TRADED BUILDINGS WITH A NEIGHBOR.

decades of exposure to Houston's blazing sun had given the dark bronze anodized-aluminum surface a dingy appearance.

In addition, retail areas on the ground level under the base had never been commercially viable and were not needed by an owner looking for sole occupancy. Because of obscure entries, hard-to-find escalators to the second-floor elevator lobby, and an eccentrically arranged core that confused circulation, the first two levels required complete reorganization. The building had been notorious for its exaggerated sway, and

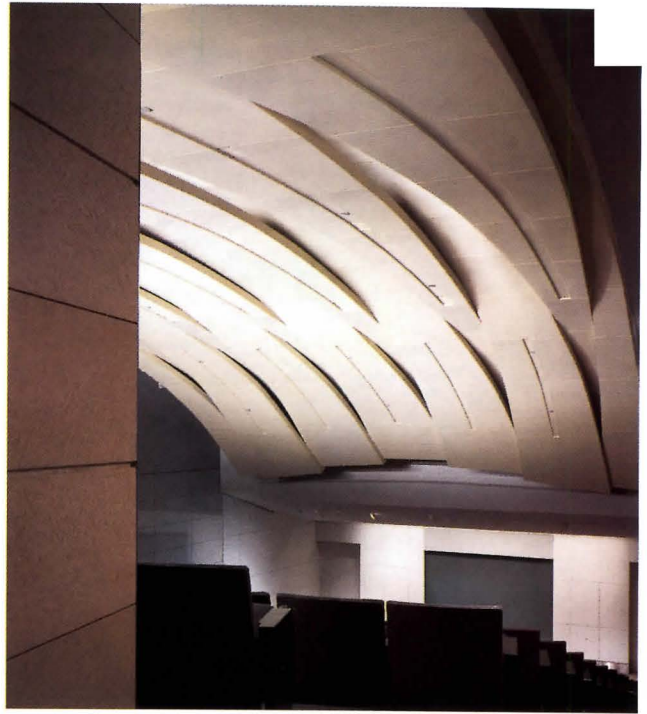
studies revealed that it was not up to current codes for wind loading. And, as if the structural and organizational deficiencies weren't problematic enough, the dark, square-topped tower, squat in comparison to its neighbors, projected an undistinguished corporate image on the skyline.

The redesign draws attention to the top and bottom of the tower—the long view and the close-up—leaving the curtain wall in place from the third floor to the roof. After studying sloped, peaked, and spired shapes, the architects decided on a 63-foot extension at the top of the building with large cutouts on each side and a huge oculus on the top. "Windows on the sky" is how Jose Luis Palacios, AIA, the project's senior designer, describes the effect. By eschewing a more stylized design for the building's top—one that would quickly date itself—DMJM Keating provided Houston Industries with a cleaner, more enduring signature on the skyline, according to design principal Richard Keating, FAIA. And because the cutouts can be seen from up the street, they help to reinforce the building's image with pedestrians.

The top of the tower is graphically simple, and the new base is similarly restrained. Where the sloped base and the second floor used to

Circular volumes were used to organize the lobby, which is treated as an urban garden.





Newly positioned escalators now allow visitors clear access to elevator lobbies on the second floor (left). The design of the audi-

torium's gypsum-board ceiling (above) was inspired by the patterns that vacuum cleaners leave in carpets, say the architects.

be, a sheer facade of black granite pulls the tower's mass straight to the ground. Two-story-high glass entrances are set into the corners, opening on reorganized lobbies. Within the lobby, the bird's-eye-maple and frosted-glass-sheathed elevator cores are freestanding elements surrounded by the black-granite shell. The points of entry and new circulation path to the elevator banks are now clear and direct, improvements due in part to the newly carved-out double-height space.

THE REDESIGN FOCUSES ON THE LONG VIEW AND THE CLOSE-UP.

The complex sidewalk treatment complements the simplicity of the tower's form. A sequence of edgy, triangular frosted-glass and stainless-steel skylights projects sharply from the landscape buffer between the building and the sidewalk, bringing light to Houston's subterranean world of restaurants, shopping, and services (this is, after all, a town where most of what passes for street life takes place in tunnels). Back on the surface, illuminated bollards are arranged like a dotted property line around the city block, demarcating the public thoroughfare from the more-private company sidewalk.

The resolution of the structural problems was as bold as, if less visible than, the solution to 1100 Milam's public-image and circulation problems. The tower was reinforced by the insertion of nine-story-tall steel cross braces on each side of the building behind the existing curtain wall, extending from the foundation to the roof. The second column from the corner was tripled in size to accommodate the force of these new braces. Surprisingly, the powerful cross braces and supercolumns have only a modest impact on the interior.

The other major problem to be solved in creating Houston Industries' new headquarters was as much a legal issue as a technical one. The tower was part of an original development package that included a Hyatt hotel on an adjacent block; the tower and hotel had always shared the mechanical plant on the roof of the hotel's parking garage. Part of the Houston Industries and Prudential Insurance tower swap was an agreement to continue sharing the plant. Cold water from the plant chillers is piped through the hotel and across an existing pedestrian bridge, which connects the hotel to the tower. Upgraded air-handling and distribution systems were installed in the tower.

As a final touch, the tarnished curtain wall from the third floor to the roof was painted with a fluoropolymer coating. Although outdoor spray painting is not permissible in many other cities, it is allowed in Houston, making for an economical solution to a condition that might otherwise have called for an entirely new skin for the tower.

While several other downtown high-rises have undergone substantial renovation, Houston Industries' transformation of the skyline sends another message to a city suddenly in search of premium office space: even 20-year-olds can benefit from a little cosmetic surgery. ■

Sources

Coated aluminum and glass panel exterior cladding, windows: Hayley Greer, Baker Metalproducts

Fluoropolymer coating: PPG (Duranar)

Exterior stonework: Lucia, Campolonghi Italia

Stainless-steel skylights: Berger Iron

Sliding-glass entry doors: Tajima

Fire-control doors, security grilles: Cookson

Plastic-laminate finishes: Formica

Base building carpeting: Prince Street

Wall coverings: Carnegie (Xorel)

Escalators: Schindler

Woodwork: Brochstein's



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RETAIL FACILITIES

Main Street Goes Suburban

WITH RESIDENTS OF AMERICAN SUBURBAN SPRAWL CRAVING COMMUNITY, DEVELOPERS ARE RESPONDING BY MAKING NEW PLACES WITH TRADITIONAL DIVERSITY.

by Charles Lockwood



1

Orlando, Florida

A neoclassical landmark and elements borrowed from live music concerts inspire SPF:a's design for a Virgin Megastore.



2

Roseville, California

Architect Mark Dziewulski reinvents the strip-mall formula by including sculptural exterior forms and shopper-friendly amenities.



3

Edwards, Colorado

Circle West Architects makes a precast-concrete office/warehouse complex appealing to retailers through careful detailing and adaptable spaces.

While building totally new suburban main streets may prove to be among the most powerful retail trends of the next few years, as Charles Lockwood explains below, the projects that follow reflect a range of design approaches.

In the hit-or-miss world of retail, where a new idea may fizzle out only months after the paint dries, the regional mall has reigned supreme for decades, not only as the place to purchase everything from power tools to pasta but also as the center of what passes for public life in suburbia. Only recently has the mall's retail hegemony finally faced a real threat, and it is, of all things, Main Street.

Once again, the idea of Main Street—a friendly, small-scale place where people and activities mix in a relaxed way—has captured the imagination of retailers, developers, and shoppers. For decades older towns and cities across America have fought an often-losing battle against highway strip centers and freeway-ramp-entwined megamalls. Now some post-World War II suburbs—which had never seen a parking lot they didn't like—may co-opt their old rivals through the sincerest form of flattery by building new kinds of main streets from scratch.

"Every major metropolitan area has two or three new suburban main street projects, which means at least 50 to 100 such projects are under way or planned across the country," claims architect Richard Heapes, AIA, of Cooper Carry & Associates, which has designed a number of these projects. Main streets are sprouting up everywhere. For some evangelists, the approach could go much deeper and represent a new and more sustainable way of building and rebuilding suburbia.

A genuine main street is not determined by a particular architectural style. Like pre-World War II small-town main streets, say proponents, the new suburban main streets should have a range of everyday uses and activities—including office, retail, entertainment, hotels, housing, and civic institutions like public libraries—that put people on the street day and night within a pedestrian-friendly environment.

The scale is important: it's not as vast as the regional mall or "power center" of big-box discounters. Nor does it need to be a region-wide tourist-destination festival marketplace to succeed. "You cannot have the major stores or big-box retailers on a pedestrian-oriented street," notes Calvin Platt, FAIA, chairman of the SWA Group, an international

Charles Lockwood, based in Topanga Canyon, near Los Angeles, has written seven books on American architecture and cities.

land planning and landscape architecture firm. "Their buildings and their parking lots are simply too big for the main street scale. Main streets are appropriate for smaller, employee-oriented, high-service shops and professional offices, not low-employee, low-service big retailers."

Certainly, New Urbanism—as represented by the Walt Disney Company's new town of Celebration—has influenced the main street idea, but the retrofitting of auto-oriented suburbia in the main street mode could be far more important. "Since the Second World War, most suburban development has focused on the house, the car, the shopping center—it has created a collection of isolated pieces," says Philip J. Enquist, AIA, a partner at the Chicago office of Skidmore, Owings & Merrill. "The street was simply used to move cars around. Many people forgot the broader role of the street in the community's civic life—as a place for people to shop, to walk after dinner, or simply to come together in a shared public realm."

In the last five decades, the prevalent low-density patterns of urban development webbed with freeways conspicuously avoided the kind of potentially messy, diverse public places of traditional cities and towns. For years, architects and urbanists seemed to be shoving such places down the unwilling throats of suburbanites. "Now the pendulum is swinging back the other way," Enquist says. "More and more people want

apartments on the second floors. "We don't have a written code," says Kramer, as such traditional new developments as Seaside, Florida, have. "But the basic plan, which was pre-approved by the regulating agencies, designates the location of buildings and other big-picture issues. When other architects design a building, I meet with them and try to come up with a satisfactory approach to materials, scale, and colors."

Haile Plantation's gently curving new main street has garnered strong market acceptance, which distinguishes it from less mature neo-traditional developments, some of which have had trouble inspiring commercial development at the desired neighborhood scale. More than 40 buildings line the street. About half of the commercial property is owner-occupied. "We have the traditional mix of main street uses—plenty of shops including a corner grocery store, a dry cleaner's, a post office, a dentist, a stockbroker," says Kramer. "We didn't create a list, and say, 'We've got to have those people.' They came to us, so there must be a demand for our kind of main street." Planned projects include a town hall, a 100-unit apartment complex, an assisted-living facility, and a 75-unit lodge and conference center.

More and more, municipal governments aren't waiting for developers to build main streets. They are moving ahead on their own. Schaumburg, Illinois, a vast swath of office parks near Chicago's O'Hare

FOR SOME EVANGELISTS, THE MAIN STREET APPROACH COULD REPRESENT A MORE SUSTAINABLE WAY OF BUILDING AND REBUILDING SUBURBIA.

a return to the traditional main street, particularly its sense of belonging and community. In the near future, we may look back on the postwar decades as an anomaly—as the only time when new communities lacked a true main street."

How does main street fit into the world of car culture?

The new suburban main streets take many forms—from several-block-long streets (narrower than normal to slow the pace) to tree-shaded town squares. In Valencia, California, 30 miles north of downtown Los Angeles, the Newhall Land and Farming Company is building a \$100 million, half-mile-long main street called Town Center Drive (page 127). The street forms a pedestrian-oriented bridge linking a development of several hundred apartments to Newhall Land's successful five-year-old regional mall. Patrons approach the mall not across the usual parking-lot wasteland, but via the main street, the end of which actually abuts the mall concourse.

Thus, explains Thomas L. Lee, Chairman and CEO of Newhall Land, "the mall will benefit Town Center Drive, and vice versa, by virtue of their proximity and direct pedestrian connection." Both mall and main street are a far cry from the megastructure downtown that Victor Gruen's 1965 master plan called for. "We wanted a lively, small-town main street," Lee continues. "So we planned a traditional mix, including offices, housing, entertainment, and distinctive shops and restaurants—both large and small—that really serve local needs and demographics."

At Haile Plantation near Gainesville, Florida, architect and developer Robert B. Kramer, AIA, and his partner, Matthew Kaskel, are completing a one-third-mile-long main street as the centerpiece of this 1,700-acre master-planned community. "Although our original late 1970s master plan designated a traditional town center at this site," says Kramer, "we couldn't move forward until we had about 1,000 houses built to create the critical mass that would support it."

Construction of the Village Center finally began in 1992. Kramer laid out the street and designed about three-quarters of the stores and professional buildings, which are relatively small and usually have

Airport, has more than 74,000 residents, over 193,000 jobs, and the Woodfield Shopping Center, one of the world's largest malls. But it had no central place that residents could call their own—until now.

Schaumburg's village government assembled a 29-acre site (which included a failed retail center) over several years and developed a Town Square master plan with a new park ringed by buildings for retail, commercial, and civic use (page 126). In 1995 it started selling off parcels to developers. "We didn't want to own the project," says Mayor Al Larson. "We just wanted to create a plan reflecting our vision for the site and the community, and sell parcels to developers who would build our vision."

A 55-foot-tall clock tower stands at the square's main entrance—an instant landmark. The Schaumburg Township Library, now under construction on the west side of the square, is expected to attract one million visitors a year after its September 1998 opening. It will serve as Town Square's primary anchor. A 65,000-square-foot grocery store, located in the parking lots just behind the square, serves as the second anchor. A two-story retail/office building and a single-story retail/office building have been completed on the south side of the park.

Main streets in mixed-use complexes

The main street idea has become a key feature in some new large-scale developments as well. In August 1997 the Winmar Company opened Redmond Town Center, a 1.37-million-square-foot mixed-use project centered around a five-block-long new main street on the site of a former golf course in Redmond, Washington (page 126). It is giving new life to the previously stagnant center of this former farm village at the edge of the Seattle metro area. (Microsoft's headquarters are only a short distance away.) This open-air, mixed-use complex (touted as a "lifestyle center") has many retail stores like the Gap and Abercrombie & Fitch, but it also includes office buildings, housing, restaurants, an eight-screen Cineplex Odeon, a hotel, and 40 acres of parks and open space.

Three thousand miles away, suburban Rockville, Maryland, is replacing a failed downtown mall with a \$300 million, 1.5 million-square-

foot mixed-use development that includes a new four-block-long main street. The goal of the project is to transform the city's image and, as Mayor Rose Krasnow says, to "put the heart back into the city."

Forces fueling the trend

Why are postwar suburbs, which previously celebrated the predictable convenience of the mall and highway-strip center, suddenly building these new main streets? Some of the same social and economic forces propelling New Urbanism into the mainstream are also encouraging the new suburban main street trend.

Americans' hunger for community. In a nation where families move frequently and fewer live in extended-family or multigenerational neighborhoods, more and more Americans feel isolated and alone. With most people now living in places where urban-development patterns have emphasized private space over the public realm, the vast majority of respondents to homebuyer surveys place a sense of community at the top of their list of priorities. The new main streets, derived from New Urbanist principles, are a direct response to our hunger for community.

A need for identity. As more and more look-alike suburbs compete for residents, jobs, conventions, and tourists, they see new main streets as one way to create an easily recognizable—and marketable—identity. The idea is not just to make a place, but a destination.

Suburban renewal. Many suburbs built in the 1950s and 1960s are declining, just as big-city neighborhoods did a generation or two ago. Outside Chicago, for example, the suburb of Park Forest watched its population shrink by 14 percent and its median household income slip

3 percent in the 1980s, compared to a 7 percent increase nationwide. A few years ago its 695,000-square-foot Park Forest Center regional mall was plagued by a 70 percent vacancy rate. Park Forest has bulldozed most of the mall buildings as it seeks revitalization by building a new main street.

A craving for reality. "People are numbed by overstructured, formulaic, prefabricated places," says architect Richard Heapes. Designers, too, are at fault, he claims. "Signage standards, architectural standards, common streetscape elements, special streetlights or brick pavers, all work against a street or a place being real. One strength of main streets is their diversity. They have a few bad buildings, as well as background buildings and look-at-me-buildings, and mom-and-pop stores, which redevelop over the years. This makes main streets real, one-of-a-kind places that people can touch and feel and smell. A mall can't give them that."

Changing demographics. In the first decades after World War II, suburbs housed mostly young families with children. Now suburban residents include many single adults and childless couples who may prefer a townhouse to a detached house, and increasing numbers of older residents who may want to depend less on automobiles. Multifamily housing on or near the new main streets serves their needs.

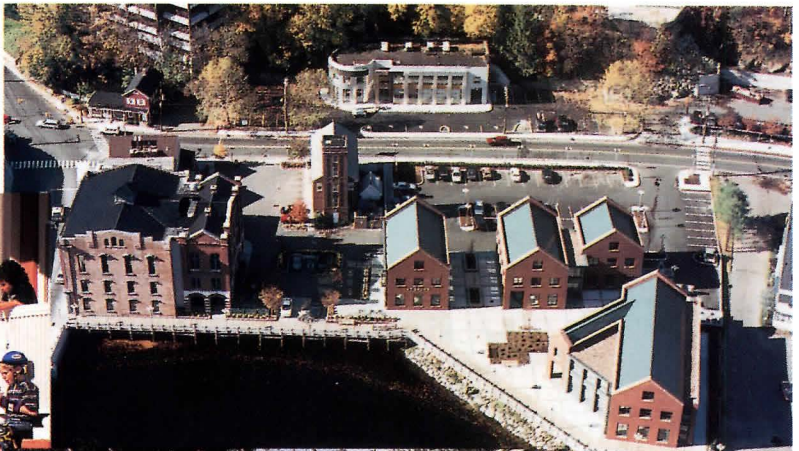
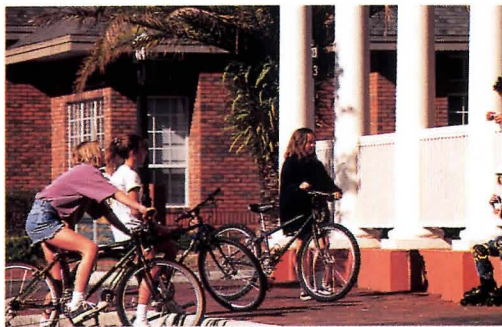
In Redmond, Washington, the 200-unit square-block LionsGate apartment complex, which is built above ground-floor shops and home businesses fronting on the street, attracted older and single residents who wanted to be near the new Redmond Town Center development and its new main street. LionsGate was designed by Seattle-based GGLO.

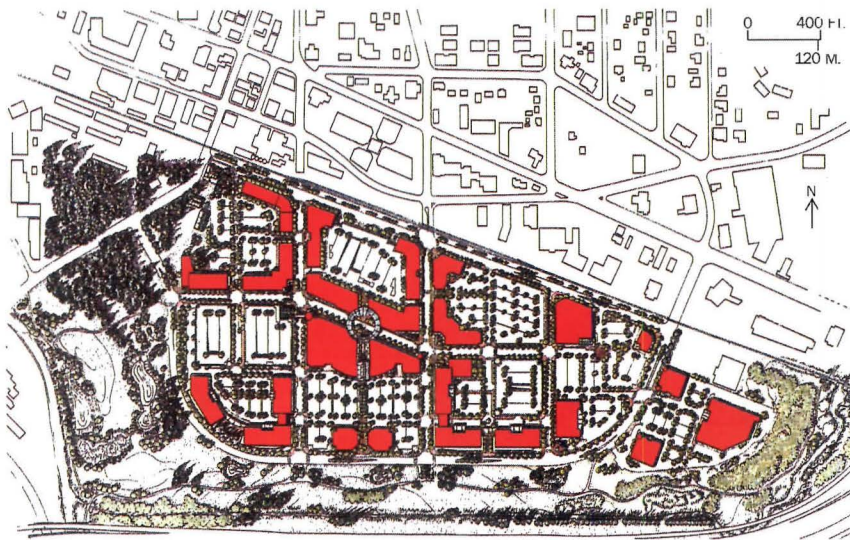
Evolving retail trends. A critically important factor is some retailers' shift away from suburban malls. Some experts claim that retail is

The many faces of the new Main Streetism: Roger Ferriss adds new mixed uses to old in Westport, Connec-

ticut (top right); a gently curving street is the centerpiece of the master-planned Haile Plantation (top left,

bottom right); GGLO makes the 1950s University Village mall in Seattle more intimate (bottom left).





Redmond Town Center extends the city's existing center (left) and has drawn LionsGate, a higher-density housing development (right).



driving the main street trend. Others insist that retail is following it. According to the June 1997 issue of *Stores* magazine, "the revitalization of main street has caught the imagination of retailers, who see neighborhood locations as a viable means of growth."

A number of leading retailers like the Gap, Williams-Sonoma, the Limited Stores, and Barnes & Noble now want the distinct identity—with an individualized storefront or building—that a main street can offer but a mall can't. "We open stores where the consumer is," says Beverly Butler, director of corporate external communications for the Gap, "and work to become part of the fabric of the community. A significant portion of our future sites will be off the mall."

"Today's new suburban main streets are not an entirely new phenomenon," says Alan Hess, architecture critic for the *San Jose Mercury News*. "If you look back to the 1920s and 1930s, you'll see efforts to create a downtown or main street environment in early automobile-oriented suburbs like Country Club Plaza in Kansas City and Westwood Village near U.C.L.A. in Los Angeles. They were laid out to accommodate the automobile yet create an urbane environment for people. Even though these prototypes were quite successful, we unfortunately forgot about them in the 1950s and 1960s suburban boom."

Instead, malls and their oceans of parking grew and became harder to tell apart. But a few pioneering projects—including Mashpee Commons, in Massachusetts, designed by Andres Duany, AIA, and

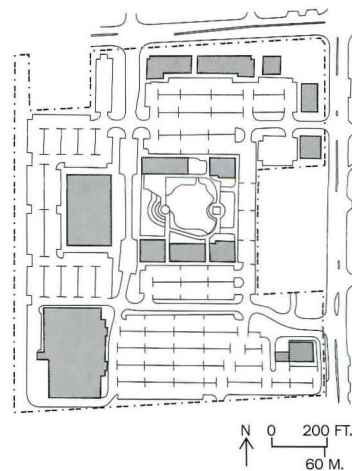
Elizabeth Plater-Zyberk, AIA, for Fields Point Development Company; Mizner Park, designed by Cooper Carry & Associates; and Reston Town Center, in the 1960s "new" town of Reston, Virginia, outside Washington, D.C., designed by RTKL—"really went out on a limb," says Plater-Zyberk, dean of the School of Architecture at the University of Miami and chair of the Congress for the New Urbanism. "They believed, in spite of conventional market wisdom at the time, that people wanted something different than what was being provided."

Although these innovative new suburban main streets attracted widespread attention, the early 1990s recession stifled this new development trend for several years. With the return of prosperity in the mid-1990s, as well as cutthroat competition for market share among retail chains seeking to differentiate themselves, the new main streets came back.

Roadblocks to Main Street's success

Despite its increasing popularity, the new suburban main street trend faces several hurdles. The first major roadblock is money. Constructing a new main street is a long-term project that generally demands deep pockets or a strong tax base. Many developers and redevelopment-minded suburbs have neither. Compounding this problem, most suburbs must pay today's high prices for land before they can even draw up their plans.

A second roadblock is often site assemblage. Building a new main street on a greenfield site is the exception, not the rule. Most



The city government of Schaumburg, Illinois, assembled a site to form a green public center. Patrons of a greenery-surrounded, fountain-splashed pool and a new library (center left in plan) will mix with shoppers. Hitchcock Design Group was the planner and landscape architect.

suburbs, like Schaumburg, must assemble their main street sites through negotiation or eminent domain, which requires political will and funds.

The third roadblock is inflexible municipal and traffic codes, which can wreck an otherwise-promising new main street. Many jurisdictions require rights-of-way too wide for the intimate scale successful main streets require. Newhall Land had to build its two-lane, 53-foot-wide Town Center Drive as a privately owned and maintained street, so it could avoid the publicly mandated four lanes and 64-foot roadway.

Design and planning challenges

Besides these problems, architects and planners must address three critical design challenges with new main streets: the buildings, the street, and the street's integration into the surrounding cityscape. At Schaumburg Town Square, for example, the building fronts with most of the large, pedestrian-pleasing windows face the parking lot. Oriented to Town Square are unappealing expanses of blank wall, vaguely intimidating steel service doors, and emergency exits.

"Whether new or old, a main street should be no more than an easily walked four or five blocks," says Boris Dramov, FAIA, a principal at ROMA Design Group, which has worked on half a dozen main streets in California. "Sidewalks should be wide enough to encourage walking, yet narrow enough to keep people close together near store and office windows to create a feeling of energy on the street."

While a successful main street design can supplant some auto trips, accommodating parking and access is still critical. Poorly designed parking lots and parking structures can isolate surrounding blocks, creating a mall-like destination surrounded by a dead zone. "Small-surface lots will help eliminate any barrier between a main street and the surrounding district," says Dramov. "Then, place retail uses that can't afford main street rents—such as beauty parlors, used bookstores, and family-owned restaurants—in the ground floors of parking structures to help support the transition from the main street to the adjacent streets."

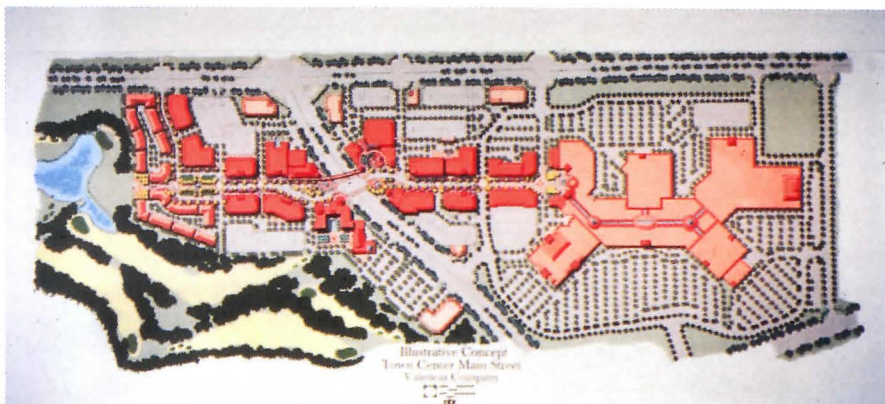
Cookie-cutter main streets

Probably the biggest threat to the success of the new suburban main street is the real estate industry's mania for formulas. Developers and municipalities that see a successful project work in California will replicate it down to the last paver in Texas or Massachusetts rather than create an evolved streetscape based on the market, history, and demographics of a place. Others will strip it down to "get the look" while cutting costs, leaving residents with a stage-set version of a 1950s outdoor mall. Big developers, says Plater-Zyberk, "are jumping on the main street bandwagon without appreciating the intricacies that can make or break a public realm."

Developers of the vast 1.7-million-square-foot Mall of Georgia, now under construction 35 miles northeast of downtown Atlanta, for example, claim that the megamall will include an outdoor "town center," complete with brick facades and traditional awnings for its shops and restaurants. Actually, they're constructing little more than a food court.

Yet, there is real hope that many new suburban main streets won't be corrupted and can live up to their promise. Haile Plantation, for example, has become a must-see for touring developers and architects. "They come here," says Bob Kramer, "and tell me, 'We went to Celebration and liked it, but we don't have Disney's money to do something that large, and all at once. But if a Joe Ordinary developer like you can do it in small market-driven increments, I guess we could do this kind of main street development, too.'"

It's too early to say whether the new main streets can transcend developer formulas, or whether suburban main streets will simply become the latest development device in the supplanting of historical centers in towns and cities. Certainly more diverse public places have the potential to mend the lack of center so often found in sprawling postwar suburbia. Not only can they create real civic realms where none existed, but they can set a direction for the era of suburban renewal that appears to be fast approaching. ■



Victor Gruen proposed a megastructure, international Modernist downtown for Valencia, California, in 1965 (above left), but it was built in a conventional low-density pattern. Newhall Land's Town Center Drive (above)

offers a more traditional vision. It springs from the edge of the existing mall and is lined with mixed-use structures; the one at left, designed by Johnson Fain Partners, houses a bank, offices, and other retail.

1

Virgin Megastore Orlando, Florida

TO EXPRESS THE SPIRIT OF THIS MUSIC STORE CHAIN, A NEOCLASSICAL ARCHITECTURAL IDEAL WAS WRAPPED IN ROCK 'N' ROLL IRREVERENCE.

by Shax Riegler

Project: Virgin Megastore, Orlando, Florida

Owner: Virgin Entertainment Group

Architect: Stenfors Pali Fekete Architects (SPF:a)—Jeffrey S. Stenfors, Zoltan S. Pali, AIA, Judit M. Fekete, S. Daniel Seng, Drew Wilson, Cherry Lietz, Yo Hakomori, Peter Ridley

Associate Architect and Store

Designer: Irvine Johnston Design Consultants

Engineers: W.P. Moore & Associates (structural); Tilden, Lobnitz, Cooper (mechanical, electrical, plumbing)

Consultants: Irvine Johnston Design Consultants (lighting); Pat Stein & Associates (kitchen); Ride and Show Engineering (performance platform); Audiovisions (sound/visual system)

General Contractor: Sunseri Associates

Size: 40,000 square feet on two levels

Cost: \$12 million

Program: Departments for selling music in various formats including compact disc, video, laserdisc, digital-video disc, multimedia games, software, and CD-ROMs; 300 listening stations, 20 video-viewing stations; 6 computer stations; full-service café; book and magazine department; and separate children's area

Bring the energy of a live musical performance at London's Royal Albert Hall to Florida swampland? Such was the directive the Virgin company and its longtime store designers, Irvine Johnston, issued to SPF:a, the small, young Los Angeles-based architecture firm it had hired to design its newest Megastore, in Orlando. The store's site is prominently located within Downtown Disney Westside, the latest addition to Walt Disney World's 120-acre shopping and after-dark entertainment destination.

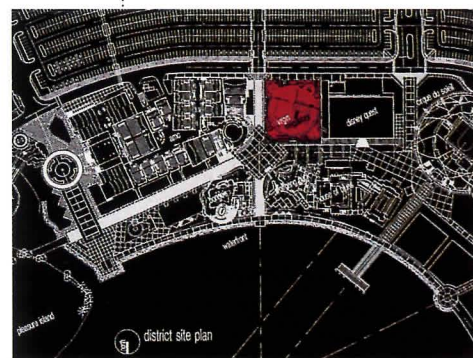
Like other retailers who seek to lure patrons by entertaining them [see Building Types Study 747, March 1997, pages 90–115], Virgin offered a starting theme—in this case, the Royal Albert Hall, intended to evoke Britain's contributions to musical culture. Although the project's production schedule was fairly short (it was designed and built in under two years), Virgin had already established a track record with Zoltan Pali and Jeffrey Stenfors, two of SPF:a's principals, who had been architects on Virgin projects with another firm. Founded in 1995, SPF:a's signature designs were more technological than retro, but the mutual trust among the archi-

Shax Riegler, based in New York City, writes about design for Metropolitan Home, House & Garden, and other publications.

itects, Virgin, and Irvine Johnston secured the job.

"At first, we were looking at this round, neoclassical building and wondering what we were going to do," says Pali. "But more important, it seemed, was that it was a place where the Three Tenors perform and the Stones hold their concerts. It's a building that means music."

The store's site is within a pedestrianized entertainment precinct (right) but faces parking on its south side. On the southern elevation the metal framework is scaled up to hold signs big enough to be seen from a distance (below).



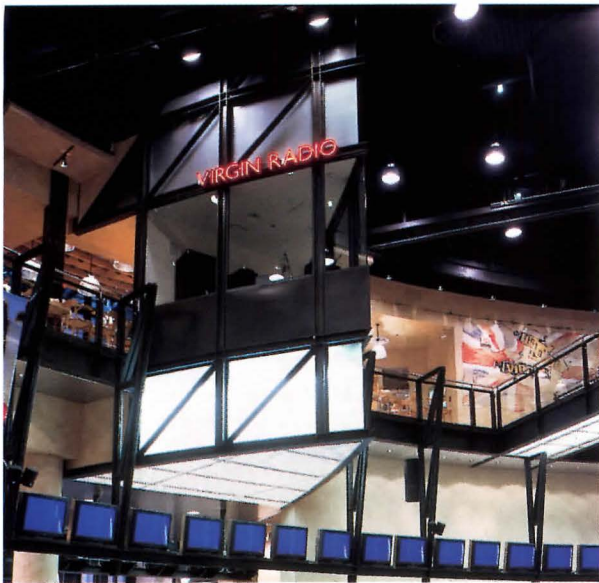


The original neoclassical idea is suppressed in the final scheme—it's merely a metal-clad cylinder. The truss-columned entrance (far left and below) faces a plaza. The canopy is on stage lifts, offering a

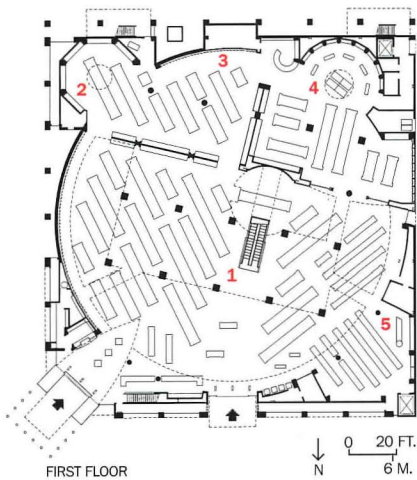
live-performance venue. The external steel framing, evoking rock-concert stage technology, becomes a signage armature. The east elevation (left) addresses a multiplex across a narrow street.



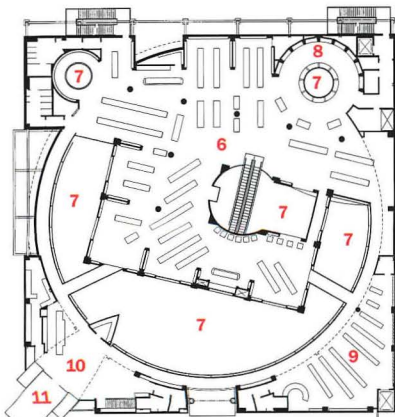




Although the curved forms and building-within-a-building ideas remain, the neoclassical and fantasy-ruin antecedents have largely disappeared. VJ booth (far left) and ground floor (left).



FIRST FLOOR



SECOND FLOOR

- | | | |
|-----------------|--------------|--------------------------|
| 1. Rock and pop | 5. Video | 9. Children |
| 2. Jazz | 6. Bookstore | 10. Café |
| 3. World music | 7. Open | 11. Performance platform |
| 4. Classical | 8. Magazines | |

as well as a 24-theater cinema complex, a Cirque du Soleil performance venue, and the interactive Disney Quest.

Early sketches moved from the initial Albert Hall idea to a Palladian villa. The team members spoke of designing a temple to music, but Disney officials objected to the round plan that was emerging, requesting that the building hold tight to the street adjacent to it in the master plan.

Later the architects asked Virgin to imagine the building as a stone ruin (some stolid London warehouse damaged during the blitz?) that had been invaded and rebuilt by heavily armed “entertainistas.” Explains Stenfors, “It’s like taking a 19th-century bank, or some other archetypal classical building, and invading it with this rock ‘n’ roll idea.”

Ultimately rock ‘n’ roll won out. The architects kept the drumlike neoclassical envelope, an icon of solidity, adding stone-clad towers to hold the corners down. They wrapped the exterior with a steel-frame armature, suggesting the temporary quality of rock-concert lighting towers. The pair of truss-work corner columns dominate the southeast side of Disney’s plaza. What at first glance appears to be an awning inviting passersby into the store is in fact a movable performance platform. It evokes the

temporary stages built for outdoor music festivals.

Shopping as a ride

“Early on we realized, OK, we’re in a theme park,” says Stenfors. “These people are overstimulated, and the building will have to be a ride.” The drama could not end at the door.

The architects brought the stage-house iconography inside, using exposed brick and rough plaster. A high, cylindrical volume opens above the main selling floor. It is crossed by catwalks, like a theater’s flyspace. In the center of the curved opening, sitting slightly askew, is a rectangular mezzanine, suggesting an older structure incorporated into the “new” one. These spatial acrobatics, augmented by sound and video, help create distinct selling environments within the 40,000-square-foot space (see plans).

Though the store is a far cry from the Royal Albert Hall, Virgin says it is pleased with its not-entirely-reconciled aesthetic. Its maverick, anti-establishment air is in keeping with Virgin’s roots. ■

Sources

Cladding: Steward-Mellon (stone veneer); Reyno-Bond (metal panel)
Upward-acting door: Fimble doors
Paint: Devoe
Resilient flooring: Forbo Marmoleum
Signage: Superior Electrical Advertising

2 Rocky Ridge Town Center Roseville, California

A PIAZZA, VARYING FACADE HEIGHTS, AND A HIGH-GRADE PALETTE OF MATERIALS MAKE A SHOPPING CENTER SEEM MORE LIKE A CITY CENTER.

by Shax Riegler

Project: Rocky Ridge Town Center, Roseville, California

Owner: Rocky Ridge Venture LLC, Mark Friedman, developer

Architect: Mark Dziewulski
Architect—Mark Dziewulski, principal-in-charge

Engineers: Cole Yee Schubert & Associates (structural); Morton & Pitalo (civil)

Consultants: Kelly Design Group (landscape); Dixon Deemer (lighting); Rex Moore (electrical)

Construction Manager: Sunseri Associates

Construction cost: \$72 per square foot

Rents: \$18–\$26 per square foot

The *Sacramento Bee*'s rave review of the Rocky Ridge Town Center in April 1996 echoed a feeling that had been growing in the suburban community of Roseville, California; soon after the newspaper's review, the local television station went to cover the shopping center. Architecture had become a big story in Roseville. The hook was that architect Mark Dziewulski and developer Mark Friedman had eschewed both the reigning mania for themed plazas and the sterile shoeboxes of the past, instead breaking new ground with a much more architecturally forward design.

Rocky Ridge didn't look like anything the town had seen before, but residents instantly embraced the benefits of the people-friendly complex. "The community was quite excited by it," says Dziewulski. "It was an amenity being offered to them, not just more retail."

A real roadside attraction

The 105,000-square-foot shopping center houses 24 retailers on a typical, straight stretch of suburban road—replete with the usual uninspired strip malls and endless subdivisions on either side of the speedway. The road is well traveled, but the strip malls have little to distinguish themselves from one another.

To make the shopping center less rectilinear in form than other

generic commercial buildings nearby and to avoid what could have been another bland box, Dziewulski articulated the facade so that each tenant appears to have a separate building. Tenants occupy spaces that range from 1,500 to 10,000 square feet.

"People have started to identify one section as the Borders Books building," notes Dziewulski, "and the round tower has become the Starbucks Coffee tower. Each form has become identified with a particular tenant."

Because it sits far back from the main street, Rocky Ridge as a whole was designed to stand out prominently as a landmark and be easily recognizable from passing cars. Rather than sporting the over-

scaled signage typical of strip malls, the structure's roofline is dotted with sculptural forms that people can identify as part of the center. The building speaks for itself. For example, Blockbuster Video is capped by a large tower of translucent panels, which are illuminated at night, making Rocky Ridge's northeastern end recognizable from up and down the main street.

Creating a town center

Another of Dziewulski's priorities was to foster a sense of community among the citizens of Roseville. Before the construction of Rocky Ridge, Roseville—located 20 minutes from downtown Sacramento and a few hours from San Francisco—had no real downtown or





1. Blockbuster Video
2. Piazza
3. Starbucks Coffee

The arced piazza at the Rocky Ridge Town Center, complete with picnic tables, umbrellas, and cantilevered

canopies that shade shop windows, was designed to convey the feeling of a town center rather than a strip mall.



Most strip malls are identified by monumental streetside signage. In contrast, Rocky Ridge is distinguished by its architectural forms. The glowing tower atop

Blockbuster Video (right), as well as the center's varying building heights, towers, and trellises (opposite), make it easy for passing motorists to spot from the road.



any of the outdoor public spaces that go along with a typical business district, says Dziewulski. While studying other shopping centers in the area, he discovered that people were willing to use any sort of outdoor space to congregate, even if it meant sitting in a place that wasn't specifically designed with seating in mind.

"Unless people wanted to go to a bar and drink beer, there weren't many places to go. In some spaces there was a token table or two and a few chairs," Dziewulski says. "But that was it. So people would sit on planters and walls, since that's all there was." The architect resolved to design comfortable spaces where shoppers could gather at Rocky Ridge.

In addition to several seating areas with café tables and chairs—and even a patch of grass—the main outdoor area, a semicircular piazza, includes a grid of custom-colored concrete paving to create the feeling of a downtown area. "When you enter Rocky Ridge, you can pretend you're entering an old French town—as if you were coming upon a marketplace," says Dziewulski.

An awkward drop of 10 feet from one end of the site to the other was gracefully incorporated into the design of the public spaces, which were broken into smaller areas by a series of two-foot level

changes. Saving the cost of grading and building full-height retaining walls enabled the architect to spend more on extras like the furniture, fabric awnings, steel trellises, towers, and stone tiles.

A successful business venture

Because of Rocky Ridge's varied facades and towers, which make it easy to identify from the street, and the abundant space it provides for people to relax and while away the hours, the shopping center is more user-friendly than other local shopping venues. But these qualities also make it a successful business venture. The fact that well-designed spaces will attract customers has not been lost on merchants, who have been willing to pay rents 20 to 25 percent higher than the area average for retail space in Rocky Ridge. ■

Sources

- Metal stud walls:** Patco/Semco
- Cement plaster exterior finish:** La Habra
- Built-up roofing:** Schuller Roof System
- Single-ply roofing:** Geoflex
- Aluminum storefront and doors:** Arcadia
- Plastic glazing:** Kalwall
- Door hardware:** Schlage
- Stone tile:** American Olean Tile
- Fabric awning material:** Glen Raven Mills
- Concrete coloring:** Davis Colors



3

Edwards Business Center Edwards, Colorado

A RETAIL OFFICE PARK DRAWS ON THE COLORS AND FORMS OF THE ROCKIES OUTSIDE AND CREATES WIDE-OPEN SPACES WITHIN.

by Charles Linn, AIA

Project: Edwards Business Center, Edwards, Colorado

Owner: Remonov & Company

Architect: Circle West Architects—Peter Koliopoulos, AIA, principal-in-charge; Thomas Bosick, project coordinator

Engineers: Monroe & Newell Engineers

General Contractor: Shaw Construction—Dave Hall, project manager

Construction cost: \$6.5 million

Lease rate: \$15 per square foot

When architect Peter Koliopoulos, AIA, was designing a combined office, retail, and residential development in Edwards, Colorado, 15 miles west of Vail, it became apparent that there was a large and as yet untapped market for commercial space in the area. "A lot of people who were getting into retailing or a service business for the first time wanted a storefront, or maybe a garage," Koliopoulos says. "But either they couldn't afford to go into the space we were building or it just wasn't what they needed."

People were clamoring for less expensive, "tenant-friendly" space that could serve a broad range of purposes, such as retail, offices, light industry, or warehousing. So Koliopoulos gave the people what they wanted with Edwards Business Center—adjacent to the more upscale Edwards Village Center—completed in June 1997.

Evoking the surroundings

Koliopoulos wanted the colors and shapes of this assemblage to speak to the rugged Rocky Mountain landscape. He selected extremely durable exterior materials that echoed the gray granite and rust-hued, pyrite-bearing tailings outside abandoned lead and silver mines nearby: precast concrete and reddish brick panels for the roof, floor slabs, and walls, and rust-colored steel for columns, stairs,

and other details. With precast-concrete exterior walls jutting out of the rocks, the buildings step up the side of the inclined terrain, looking as if they had been pushed out of the ground by the same prehistoric seismic collision that formed the Rockies themselves.

In addition to evoking the surroundings, the precast-concrete building system offered such advantages as low cost and ease of fabrication and construction.

Precast gets the floor

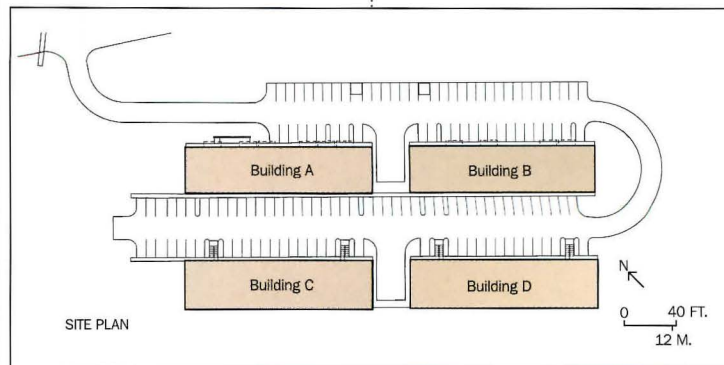
The developer wanted a floor system that would support something as heavy as a car—in case a light-industrial business wanted to move into the second floor. But he also wanted it to span the 50-foot-wide building without needing the support of a forest of intermediate columns that would disrupt the open space below. Since using steel to create a clear span of this size

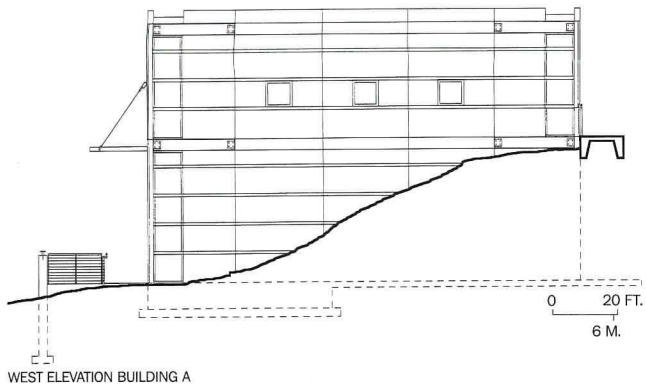
would have sent costs soaring, precast concrete was the obvious choice.

Precast-concrete panels also had the advantage that openings and relief patterns—even brick tile—could be cast in the surface easily and accurately at the factory. The precast fabricator also sent a specialist to spend several days in Koliopoulos's office to help refine the construction drawings.

Construction took place in cold weather—from January to June—when it would have been difficult to work with building systems like concrete block that need warmer temperatures for proper installation. Precast panels can be cast indoors, cured under controlled conditions, and, once ready, can be put up in almost any weather. Similarly, the steel stairs, railings, columns, and other elements could be fabricated indoors and trucked to the site.

"In our detailing of the center,"

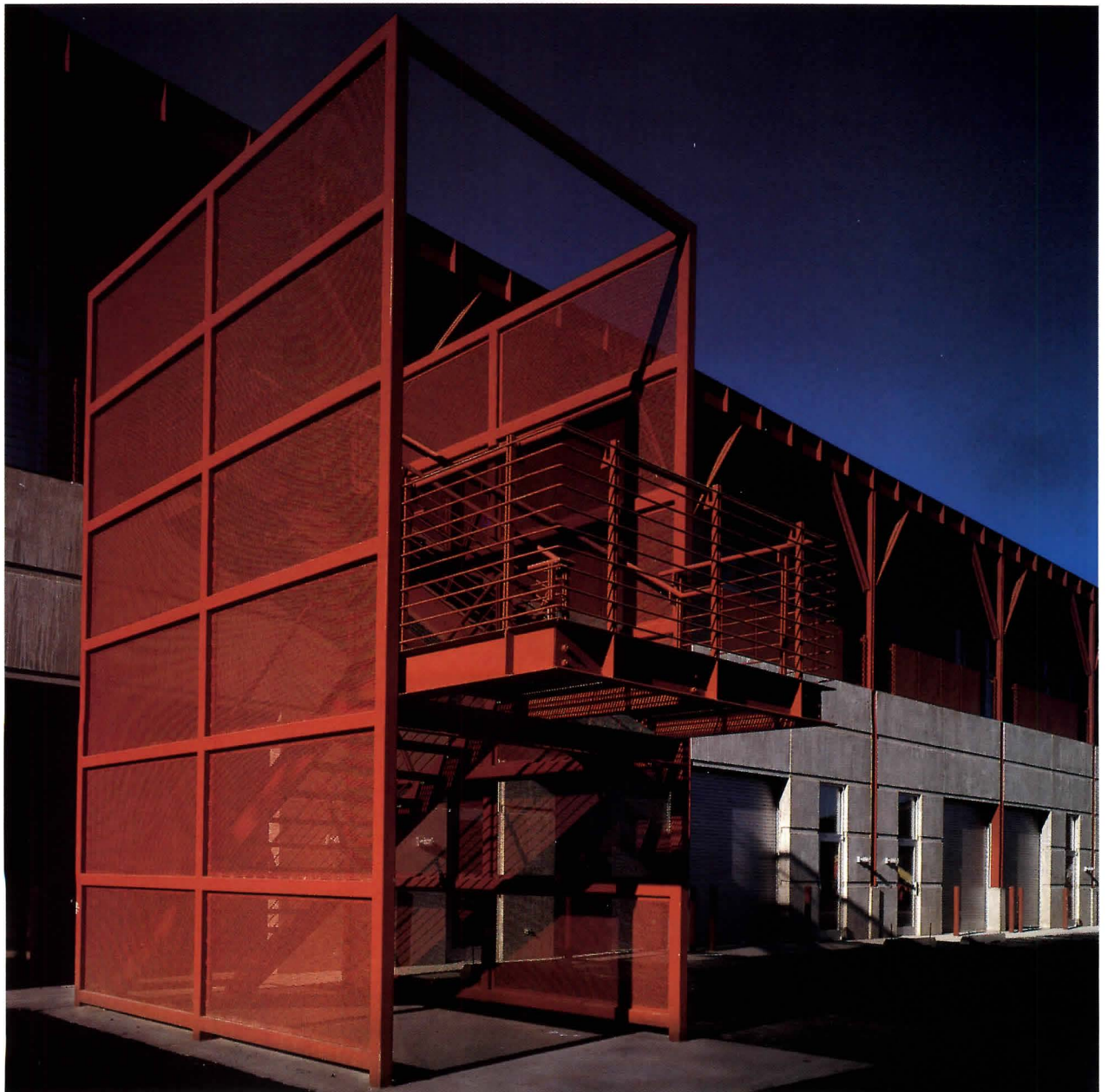


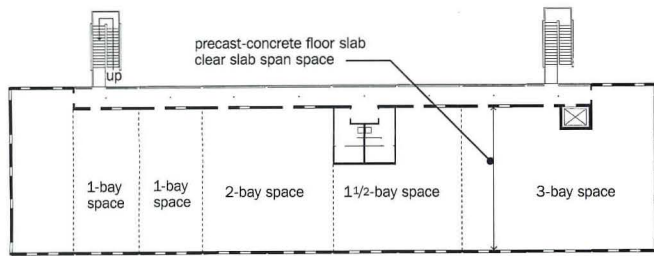


Access to the lower buildings (elevation above and photo right) is from two levels. The

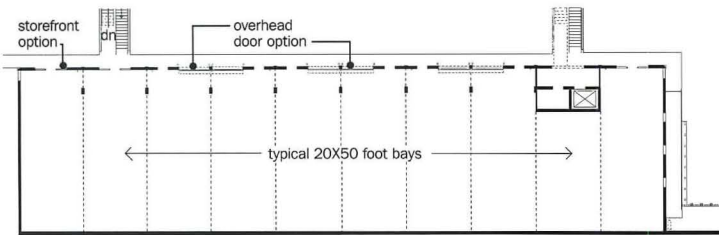
first level is entered from the lower parking lot, the second level from the upper parking

lot. The second levels of the upper buildings are entered via stairways (below).





SECOND FLOOR—BUILDINGS C & D



FIRST FLOOR—BUILDINGS C & D

The precast-concrete floor system has a 50-foot clear span, leaving the spaces free of columns and easing subdivision (plans). Storefront windows or overhead doors are available (right).



says Koliopoulos, “we were trying to express the dynamic tension between materials, between the steel and the concrete.”

Noticeable attention was also paid to the way the various building components fit together. The second-story windows, for example, align with the entry doors and middle section of the storefront on the first floor; horizontal bands in the precast panels align with horizontal mullions in the storefront. Brick-tile diamonds are formed at the same angles as the splayed steel braces welded to the columns elsewhere on the building.

One size doesn't fit all

The long-span capacity of the precast building system is only part of what makes Edwards Business Center practical. Its greatest strength, perhaps, is how it responds to a host of different needs.

The buildings are designed to easily accommodate the varying space requirements of each tenant. The units are 20 feet wide and 50 feet deep, for a total area of 1,000 square feet. Party walls can be placed to give a tenant any multiple of 1,000 square feet in area, with a maximum of 10,000 square feet. Almost all of this space is free of columns.

The panels that form the front elevation of each unit have two openings cut into them. The larger

opening can hold either a storefront window or an overhead door, both of equal dimensions. The second, smaller opening, for an entry door and transom, is located to one side of the large opening.

“We could see when we were leasing the shopping center that for some tenants a storefront wasn't as useful as an overhead door,” says Koliopoulos. “For example, we have a woodworker who builds furniture in the back of his space and has a showroom in the front. Because he moves furniture and equipment in and out, the overhead door is better for him than a storefront. But people making and selling goods want the storefronts, as do people who have offices.”

The architect and the developer's assessment of the market for an affordable, adaptable, and easy-to-build space proved to be accurate: Edwards Business Center was 85 percent sold or leased before the building was complete. ■

Sources

Precast concrete: *Stress-con*

Tile brick panels: *Stress-con*

Curtain wall: *Kawneer*

Entrances: *Kawneer*

Aluminum windows: *Semco*

Insulated glass: *Pinnacle Glass*

Overhead doors: *Colorado Door*

Systems

Hydraulic elevator: *Otis Elevator*

Plumbing fixtures: *Falcon Plumbing*

Designing for Security

SECURITY HAS BECOME A TOP PRIORITY IN BUILDING DESIGN. THE CHALLENGE IS TO MITIGATE DAMAGE WHILE STILL CREATING FRIENDLY ENVIRONMENTS.

by Barbara A. Nadel, AIA

The 1990s marked a flashpoint for architectural design and safety in the workplace. The February 1993 bombing of the World Trade Center in New York City obliterated the American public's sense of immunity to large-scale domestic- and international-terrorist attacks. The April 1995 bombing of the Alfred P. Murrah Federal Office Building in Oklahoma City and the still-unsolved 1996 bombing at Atlanta's Olympic Centennial Park heightened concerns about security in public buildings and spaces. These national tragedies permanently changed the way government and corporate clients locate, plan, and design public facilities. As a result, security will continue to be an essential criterion for planning buildings for the foreseeable future.

Security-design strategies can most effectively minimize the loss of life and property through integrated use of technology, operational policies, and facility planning. Understanding the exact nature of what may threaten a building is important, especially in the early project development phases. From site selection and materials specification to structural systems, every design decision may someday be crucial to saving lives and preventing damage as a result of an attack, accidental explosion, or natural disaster.

Threats, targets, and terrorism

Security design anticipates targets, potential threats, and means of attack. The goals are to protect people, buildings, products, services, equipment, proprietary information, and often possessions and priceless artwork. Most clients prefer not to publicize the threats they receive, unless danger is imminent. Similarly, clients are reluctant to discuss preventive security measures put in place. As a result, the public rarely hears about potential threats unless a disaster occurs. The biggest danger, suggests a former FBI official, may come from loners or small antigovernment groups who can access intelligence information and floor plans on the Internet.

Public buildings are vulnerable to threats, exterior attacks, bal-



Before the Murrah Federal Office Building in Oklahoma City was bombed, no security standards for federal buildings existed.

listic missiles, and vehicle bombs—the last being the most destructive and easiest to create. Chemical and biological threats are a growing concern, particularly after the poisonous serin gas attack in the Tokyo subway. Other threats include civil disobedience, mob or individual acts of violence, package bombs, or unforeseeable events such as fires, earthquakes, and gas-line ruptures. Given so many possibilities, security experts admit they cannot predict or prevent all possible scenarios, but they can recommend reasonable and prudent precautions.

The bombing of the Murrah building—which left 169 dead, 518 injured, and \$100 million in damages—prompted a comprehensive review of security measures for all federal buildings. At the time of the explosion, no security standards existed for federal buildings, says Anthony DiGregorio, senior technical advisor at Applied Research Associates, an Alexandria, Virginia, consulting firm specializing in industrial security and protection. Immediately after the bombing, the U.S. Department of Justice, under presidential directive, developed federal standards on the “hardening” of buildings to explosives and other potential domestic threats based on the findings of the June 1995 report

Barbara A. Nadel, AIA, is principal of Barbara Nadel Architect in New York City, specializing in health, correctional, and institutional planning and design. She is New York State Regional Director on the national AIA Board of Directors.

Continuing Education This month's installment of the ARCHITECTURAL RECORD/AIA Continuing Education series contains valuable lessons from the federal government's approach to building security. Use the following learning objectives to focus your study. After reading the article, complete the questions on page 182 and check your answers (page 184). AIA members may fill in the self-report form on page 184 and send it in for two AIA Learning Units.

—Mark Scher, AIA Director Distance Learning

Learning Objectives After reading this article, you should be able to:

1. Summarize the government's five levels of building security classification.
2. Explain the GSA's four areas of corrective action for enhancing building security.
3. Describe general elements of secure design for buildings with regard to perimeter, entry, interior, and security systems planning; glazing; parking and access; and building systems strategy.



“Vulnerability Assessment of Federal Facilities,” known simply as “The Marshals Report.” As the principal owner or landlord of the 1,300 federal buildings investigated, the General Services Administration (GSA) was designated to coordinate security standards and cost assessments.

In 1993, this damage was caused by a bomb-filled truck allowed into a garage under the World Trade Center.

A multidisciplinary team of security experts classified federal buildings into five categories, or levels, based on facility size in square feet, number of employees, and volume of public access. After continued refinement of the draft report through 1997, the GSA Security Design Criteria were accepted as the guidelines for ensuring public safety at all federal buildings. The criteria will likely remain in draft form, because an act of Congress is required to make any changes.

Generally, the larger the facility, the more employees, and the larger the degree of public access, the greater the need for security. Most federal facilities fall into one of the first four levels of safety requirements, from level one, the lowest, to level four. Facilities critical to national security, such as the Pentagon, have the highest possible security classification, level five. A level-one facility, for example, might not require an entry control system, while a level-four facility would require electronic controls with closed-circuit television (CCTV). A small facility with just a few employees and a low volume of public contact may not need much in the way of security, but some measures are required, such as lighting with emergency power backup.

Federal law enforcement agencies often have their own security needs, and the GSA cooperates with them in meeting these requirements. For example, at the request of the FBI, the GSA directed that the bureau’s new 306,000-square-foot field office in Washington, D.C., receive facade and structural improvements to provide additional blast protection at a cost of \$5.9 million for construction and \$1 million for design fees. The total cost for the building was \$93.4 million, according to the GSA.

Recommendations for improved security

The GSA’s recommendations apply to levels one through four for building design and construction, security systems, operations, and equipment. Design and engineering requirements fall into four general categories of corrective action at perimeters, entries, interiors, and the security planning of the overall facility.

Perimeter security is essential to prevent either a moving or stationary truck bomb attack. The next generation of new federal courthouses, now under design or construction, will integrate landscaping, site planning, and parking controls with more visible security measures, including CCTV monitoring, lighting with emergency backup, and physical barriers or bollards. *Standoff distance* is a term used to describe the limiting of vehicular access through street setbacks.

Entry security is critical at federal courthouses and other facilities containing criminal justice agencies, although individuals may view any building that is a symbol of authority as a target. Thus, the location and design of main entrances, loading docks, mail rooms, and utility mains is of particular concern. At main entrance lobbies, magnetometers, such as those used at airports, and electronic detection devices can identify deadly weapons and explosives.

In recent years, the threat of mail bombs has prompted greater security in mail rooms and more thorough package screening. Loading docks and shipping and receiving areas are also potential targets for larger package explosives or vehicle bombs and are places where an intruder may try to illegally enter a facility. To minimize potential damage, delivery areas should not be located near mechanical areas or underground. Other entry precautions include installing intrusion-detection systems and upgrading current life-safety standards. Many buildings—even in the private sector—now use sign-in procedures for delivery people and packages while limiting their access with CCTV entry controls, secure access to utility mains, and heavy-duty locks at higher-risk facilities.

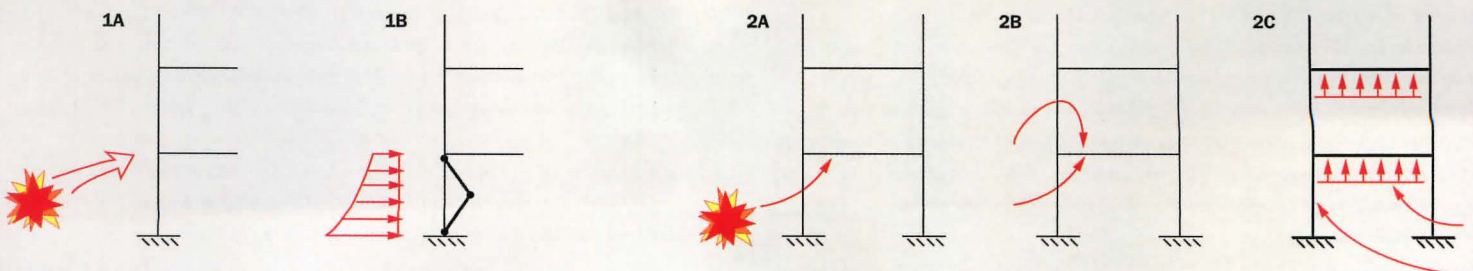
THE EXTRAORDINARY EFFECTS OF BLAST FORCES

An explosion places stresses on a reinforced-concrete building’s columns that are completely unlike the horizontal and vertical loads they are normally designed for. Blast

forces may result in lateral bending stress on columns (1A and 1B). This force also applies upward pressure to the bottoms of floor slabs (2A) that is greater than downward loads

on them (2B). The net result of these upward forces is that the columns may be in tension at the same time they are subjected to lateral bending forces, and can fail.

Concrete columns can be reinforced with steel jackets or by casting steel columns inside them. Spiral reinforcement that confines the core of the column is also beneficial.





A sundeck at a federal courthouse (left) is open only to employees who have cleared security. Large-caliber trees (above) will be planted around this courthouse to prevent cars from coming too close.

Interior security addresses design and construction materials. Street-level retail spaces in government buildings are also carefully evaluated. At the new Ronald Reagan Federal Building in Washington D.C., shops are located on a lower-level arcade near the public spaces and security increases in upper levels of the building.

Other measures include employee identification; controlling visitor circulation; limiting access to building-control centers; and providing emergency power, computer, and phone lines to critical systems. The GSA also evaluates child-care center locations in federal buildings. Future planning will include the hardening of some day-care centers and site assessments to mitigate potential threats by moving them away from high-risk areas.

Security planning includes assessing the specific risks of the various federal agencies—such as the FBI and the Bureau of Alcohol, Tobacco and Firearms. During site selection and planning, consideration is given to whether these agencies belong in an open, multitenant office building or in their own building, located where dangers are minimal.

Paradoxically, there is a fine line between informing design professionals on planning safety design standards and aiding those seeking to circumvent these measures. For that reason, the GSA divulges information about the design criteria on a need-to-know basis to those involved in federal projects. Some architectural firms contacted to discuss how the security measures apply to federal courthouses in various design stages declined to comment or provide photographs, on the advice of the GSA.

The GSA Security Design Criteria

According to Wade Belcher, architect in charge of the security design standards at the GSA Public Building Service in Washington, D.C., “few buildings have been completed with designs based on the security criteria. Many buildings have had components from the criteria included through retrofit projects; however, most have chosen not to disclose what the elements are.” Nevertheless, private-sector security experts, architects who specialize in justice facilities, and structural engineers specializing in blast design, who are familiar with the GSA security criteria, can offer insight into security design measures applicable to many building types.

The main goal of the GSA security criteria is to save lives and prevent injury. Secondary goals are to protect federal buildings and assets. The security criteria provide a performance-based approach to various building systems and components, from window glazing to structural sys-

tems. In the event of a major terrorist or criminal act, structural, mechanical, electrical, and life-safety criteria are aimed at facilitating safe evacuation and rescue.

These criteria address security concerns while considering cost parameters and acknowledging an acceptance of risk. Officials recognize that federal buildings should not be fortresses or bomb shelters, but rather buildings that are open, accessible, and well woven into the community fabric.

A security-risk assessment is required at the early stage of each federal project. Risk factors may be as diverse as a building’s symbolic importance if it is a highly visible landmark or its function if it is considered vital to national interests (such as a national monument, an air traffic control center, or the White House, for example). Other factors to be assessed include the overall effects of an attack, including death and injury, property damage, and workplace interruptions. Costs associated with repairs and replacement are also considered. Designs should allow for the ability to increase security in response to a heightened or temporary threat, such as at a federal courthouse during a high-profile trial. More costly or inconvenient measures, such as prohibiting parking, may be implemented as needed.

Facility planning should follow a tiered defense system, with zones of security starting at the building perimeter and decreasing toward its core. The tiers include the standoff distance in front of the building, building exterior walls, the screening-and-access control area, and safe interior areas for valuable assets. Each building system should support an interdisciplinary approach to mitigate risk and reduce casualties, property damage, and loss of critical functions. Security should be considered in all decisions, from trash receptacle placement to the design of redundant electrical systems. Critical functions and life-safety systems should be located toward the inside of the building, away from the exterior, where they are more vulnerable to explosions.

Parking within the facility should be access-controlled, and surface parking should be controlled with appropriate perimeter barriers; handicap accessibility must be maintained. Magnetometers and X-ray equipment should be integrated into the entrance lobbies. Egress lighting should have emergency power backup. Emergency power units should not be co-located with primary power units, as they were at the World Trade Center, where a single underground explosion disabled both power sources.



Physical barriers—bollards, planters, street furniture—should be considered as a means of lending a building added protection where only a minimal setback from the street is available. A given facility's individual security requirements should be considered when deciding whether to limit direct pedestrian and vehicular access to the building. It is essential to evaluate shipping and receiving areas for potential location in a remote area of the facility. The selection of glazing and fenestration materials should be evaluated based on their performance when subjected to lateral forces.

Site and design issues

The creative use of site planning, perimeter definition, sight lines, and lighting can eliminate the need for awkward engineering solutions that might result in less-than-pleasing buildings. "The challenge to architects is to provide an inviting community environment and deal with physical security. These are not contradictory and can enhance one another," says Ed Feiner, FAIA, chief architect for the GSA. "Physical imagery is important. The most successful federal buildings are 'transparent'—the security elements are in place, but they are not visible to the public."

Feiner adds, "The GSA evaluates each potential threat individually. There is no cookbook to solve all problems; every building is different. The security criteria attempt to define how a solution should perform in any given situation, rather than establishing hard-and-fast rules that can't be tailored to specific needs."

Security planning begins during property and site selection. "The GSA prefers sites with some breathing room," says Feiner. "Not a buffer zone—that's for a fortress. Historically, small city courthouses are

State-of-the-art facilities employ fully integrated security systems, like the built-in metal detector in this courthouse atrium.

set on a lawn on a hill, to create an icon with a grand civic presence for the public. The GSA wants to achieve that image and derive security benefits at the same time."

Even in an urban setting, standoff distance is used to address vehicular traffic and reduce the exponential effect of a car bomb. For example, the new Brooklyn Federal Courthouse project included an experimental program to combine art and architecture by inviting artists to work with structural engineers. The goal is to put the best face on necessary security requirements, with less intrusive, visually interesting perimeter security devices, nonstructural elements, and bollards.

Avoid flying glass

The blast at Oklahoma City's Murrah Federal Office Building resulted in many lessons for future construction of federal facilities, especially relating to glazing, life-safety issues, and structural systems, notes Don Porter, AIA, partner at HLW International, in New York City, and project manager for the Brooklyn Federal Courthouse.

Similarly, the explosion at the Khobar Towers, an American military housing compound in Dharan, Saudi Arabia, provided information on how glass shatters during a blast. Window film was scheduled for installation but had not been applied at the time of the explosion. Most of the fatalities in Oklahoma City and Dharan resulted from shards of glass, which flew as far as 100 feet into the building.

The GSA and manufacturers have studied and tested several types of glass, security window film, and other materials under test explosions. Glazing with protective film may be effective in some cases, but blast experts claim that more testing is required to generate conclusive data. "The data is lacking on how best to protect windows and curtain-wall construction," Porter says. "There is no empirical data on the effects of blasts and no agreement on what works best—glazing, films, and window frames—especially in retrofits. We can't do a 100 percent job on security—then we'd just end up building a bunker—so there are compromises involved."

Fully tempered glass has some problems with spontaneous failure, but experts say it performs better in a blast environment than float or annealed glass; when shattered, it produces small cube-shaped projectiles with significantly higher breaking strength than pieces of float glass. Laminated glass, which consists of a layer of film laminated between two pieces of glass, tends to stick to the laminating film and stay in window frames when broken. This reduces the number and velocity of flying fragments. During failure, float glass creates large, sharp-edged shards

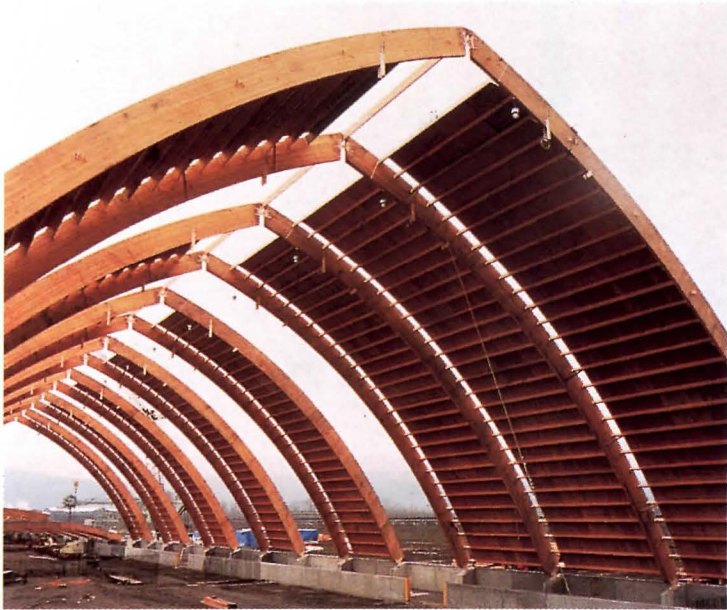
"WE CAN'T DO A 100 PERCENT JOB ON SECURITY—THEN WE'D JUST END UP BUILDING A BUNKER."

resembling knives and daggers, experts say. For window assemblies to stay in place, the glazing, mullions, and anchors must be able to resist blast pressures enough to transfer loads to the adjacent structure.

Courthouse design

Courthouse designers have been addressing issues of enhanced security for state and county projects for a while now. "The federal guidelines raise the requirements to another level. There is no total answer to the best approach," says Don Dwore, AIA, principal and director of the justice facility group at Spillis Candela & Partners, in Coral Gables, Florida. Typically, security comprises 4 to 5 percent of a courthouse project's construction costs, Dwore estimates, and perhaps (*continued on page 196*)

NEW PRODUCTS



PREFABRICATED WOOD JOISTS: LEVELING THE PLAYING FIELD

Of the five top I-joint manufacturers, two have jumped on the APA EWS PRI-400 standard bandwagon and three have not. The result has been a turf war between those who want to see the mass acceptance and production of I-joists and those who want to maintain competition through pricing and added services.

When the APA-The Engineered Wood Association (APA-EWA) first

began talking about I-joint standards, they asked the top producers to participate. Dennis Huston, Boise Cascade's sales/marketing manager for laminated wood-veneer lumber products, says that although the company has APA-EWA member mills and APA-EWA members on the board, "we found no overriding reason to become part of the product standard."



Willamette's I-joists (top) subscribe to the APA's PRI-400 standard. Louisiana Pacific's nonstandard joists (above) are structurally engineered to perform better than solid-sawn wood. Georgia Pacific's joist (left) is standard-stamped.



With the increased use of engineered wood products as alternatives to solid-sawn floors and roof-framing materials, the APA-The Engineered Wood Association recently introduced a performance standard for I-joists. Known as APA EWS PRI-400, the standard makes available a uniform product, with consistent product performance, one set of installation instructions, and a trademarking system for inspection, making I-joists easier to specify and less costly. Some manufacturers have embraced the standards; others have not. The next two pages present both sides of the I-joint argument. —Elana Frankel, *New Products Editor*

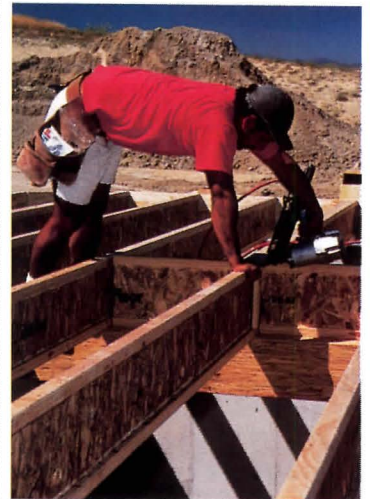
Louisiana Pacific's concern was that the program represented a minority of manufacturers and did not meet the needs of the industry. "We believe there is potential to stifle the growth of product development, a key factor in growing our markets," says Richard Yarbrough, LP's division manager for engineered wood products.

However, Willamette has accepted PRI-400 and recently featured standardized I-joists in a demonstration project house that was displayed at the International Home Builders' Show in Dallas. The project, developed by the APA-EWA, entailed complete framing of a 2,000-square-foot house outside the convention center to show off the benefits of building with engineered wood. It featured Willamette's full product line, including PRI-400 wood I-joists. "The standard simplifies specification and use of I-joists in residential construction, making it easier for architects to include I-joists in their building product mix," says Steve Kilgore, Willamette's engineered wood products general sales manager.

Several factors contributed to Willamette's decision. Especially compelling was a 1995 APA-EWA survey which indicated that 90 percent of home builders support a quality standard for I-joists.

In addition to creating standards, the APA-EWA would also like to represent the industry and be responsible for marketing and working with code authorities for publishing product design values.

"I take very strong exception [to this]," says industry leader Tom Denig, Trus Joist MacMillan's CEO. The industry has grown quickly and established a good track record driven by innovation. Companies have developed new ideas and worked to differentiate their products with added services. With the APA-EWA approach, Denig says, "companies will be less willing to spend money to improve and differentiate prod-



The I shape of Trus Joist MacMillan's Silent Floor TJI joists (left) puts the bulk of the wood where it's needed most—in the top and bottom flanges—and can be installed with standard construction tools (above).

ucts. A standard takes away incentive for marketing, in-field technical assistance, and innovative software to specify products. Industry growth will decline and services to those who handle the products will also decline." ■

AN ARCHITECT SPECIFIES WOOD I-JOISTS WITH NEW STANDARDS IN PLACE

The Bass Lofts project in Atlanta is a multi-unit housing project that includes the complete conversion of a high school built in 1922, an auditorium added in 1927, and a freestanding gymnasium built in 1948 into 103 loft apartments. The back of the site, an old playing field and parking lot, was reconfigured to hold a new five-story building with 30 one- and two-story apartments, a new parking lot, pool, and park.

According to Dennis Hertlein, project designer and partner in the Atlanta-based architectural firm Surber, Barber, Choate and Hertlein, converting older buildings into loft apartments has always been popular in cities like New York and Chicago, but it's now a hot market for more mainstream developers too. A particular challenge for this project, says Hertlein, was to make the old and new look compatible.

Hertlein was adamant about his desire to build a set of unique apartments and not "standard wood-framed apartments like the kind that are put out all over the place." The developer had similar aesthetics in mind but also had financial concerns. "We could not spend a lot of dollars per square foot," recalls Hertlein. "We had to figure out a way to do it economically and still have the high ceilings, big windows, open floor plans, and multiple stories. The lofts needed open space without walls or columns interfering with the design."

To achieve his goals in the Bass Lofts project, Hertlein relied on Georgia-Pacific's engineered wood products for clear spans. He had specified and worked with engineered wood products on other projects and was confident that they could handle the structural demands of 24-foot clear spans for the flooring and ceiling systems on this project. Hertlein also had environmental concerns that were solved by engineered wood's efficient use of resources and manufacturing techniques. For example,

during the manufacturing process, wood components are combined with adhesives to form structural members that maximize the wood's properties; more specifically, I-joists use up to 50 percent less wood fiber in production than conventional lumber joists.

Hertlein was not familiar with the APA-Engineered Wood Association standard when the project started, but he soon learned: "As architects, we have to give parameters to contractors so they can bid a project. The standardization made it easier for us to hand over drawings and get them implemented rather than have to re-spec for different products."

According to Hertlein, standardized I-joists make building more like true wood framing. "The most cost-effective solution is a typical requirement for architects," he says, "and if we are designing and have to choose between the more proprietary or more generic product, we'll choose the more generic. I do proprietary specifying if the product goes above and beyond. But I say, let the free market take its shot."

The Bass Lofts project should be completed next month, and Hertlein estimates that construction costs for each loft, at 950 square feet on average, will come in at \$40,000-\$50,000. Hertlein says that if engineered wood were not available and a more traditional structural framing metal package were used, it would add about 25 percent to the project's cost. ■

Georgia-Pacific, Atlanta. 800/BUILDGP. **CIRCLE 200**
 Louisiana Pacific, Portland, Ore. 503-221-0800. **CIRCLE 201**
 Trus Joist MacMillan, Boise. 800/338-0515. **CIRCLE 202**
 Willamette, Albany, Ore. 541/926-7771. **CIRCLE 203**
 Boise Cascade, Boise. 800/232-0788. **CIRCLE 204**
 APA-EWA, Tacoma, Wash. 253/565-6600. **CIRCLE 205**



The Bass Lofts at Atlanta's Little Five Points is one of the first multi-unit housing projects to include Georgia-Pacific's newly standardized wood I-joists. The project, shown here in various building stages, includes the conversion of a school into lofts and a new apartment building.

PRODUCT BRIEFS



▲ Hurricane hold-down

Millibar, which uses DuPont's bulletproof Kevlar as a continuous reinforcing material, can be run from a building's foundation, up the side wall, over the roof, and back down to resist uplift windloads due to hurricanes, tornadoes, or severe storms. The system wraps around new or existing structures to unify connections and strengthen the outer shell to withstand high winds—and even earthquakes and floods. New Necessities, Gainesville, Ga. **CIRCLE 206**

▼ Product versatility

With the added ingenuity of designer Scott Grandis, Sub-Zero was able to show off their products' design flexibility in this Detroit kitchen. The 700 BR two-drawer base unit is shown in the foreground and the 600 series in the background. Each 600 series refrigerator is offered in three exterior designs (overlay,

stainless steel, or classic framed) and comes with electronic controls, dual refrigeration, and an ice maker. Though it is shown here in a kitchen application, the 700 undercabinet series can be integrated into a bedroom, bathroom, or family room. Exterior cabinetry can be matched to surrounding units. 800/222-7820. Sub-Zero, Madison, Wis. **CIRCLE 207**



▲ 24-hour concierge

ObjectSoft has contracted with the architectural firm of Eugene Coleman to build customized surroundings for the company's Smart Sign kiosk. Using an ATM-like screen, the 7½-inch-deep interactive terminal stores information on dining, theater, hotels, transit maps, and so forth. The kiosk uses the latest computer hardware. But all those paranoid urbanites can rest assured—it's also vandal-resistant. 201/343-9100. ObjectSoft, Hackensack, N.J. **CIRCLE 208**



◀ AutoCAD driver included

That's one new feature of HP's laserjet 5000 series of B-size printers. Other improvements include more pages per minute, 1200 dpi, and a 10,000-page-capacity toner. 800/LASERJET. Hewlett-Packard, Palo Alto, Calif. **CIRCLE 209**

▼ Hit me with your best shot

FireBlock synthetic industrial-surface flooring can withstand repeated blows from hard steel or cast parts and is made from 100 percent recycled nylon. 508/879-1120. Kaswell Flooring Systems, Framingham, Mass. **CIRCLE 210**

▼ Safety by design

The Genesis No-Pinch garage door has a new safety feature: the meeting rails of each section push fingers away so they can't be pinched on the door. 800/4-RAYNOR. Raynor, Dixon, Ill. **CIRCLE 211**



▲ Material archive update

When we last heard from Material ConneXion, the company had approximately 430 companies on its database and 2,600 innovative material samples in its archives. Call for membership information. 212/445-8991. Material ConneXion, New York City. **CIRCLE 212**



▲ A watertight fit

It's estimated that the average American home today contains over 100 Leviton products. These longtime experts on wiring devices have a new and simple innovation: the Raintight While-In-Use outdoor cover, which meets the National Electrical Code and provides seal-tight protection for outdoor applications. 800/833-3532. Leviton Manufacturing Company, Little Neck, N.Y. **CIRCLE 213**

PRODUCT BRIEFS



▲ Functional aesthetics

Kudos to Robern's O-hi-O collection of machine-inspired bathroom accessories, designed by David Zelman, which will be included in the Brooklyn Museum of Art's decorative arts collection. One example, the New Paris towel ring, shown, is sculpted out of aluminum, brass, and stainless steel. 215/826-9800. Robern, Bristol, Pa. **CIRCLE 214**

▼ Pleats are in fashion

Here's a sneak peek at Velux's manual pleated shade, available in April. The shade, for use with all sizes of Velux roof windows and skylights, offers an energy-efficient solution for privacy, glare reduction, or heat loss/gain. Choices include a neutral silver-gray for soft, filtered light or translucent black to darken the room. 800/283-2831. Velux-America Inc., Greenwood, S.C. **CIRCLE 215**



◀ ... and the living is easy

Inspired by the casual, relaxed atmosphere of Scandinavian vacation cottages, Sina Pearson's classic bouclé-textured collection, called Summerhouse, is available in eight colors with black accents. Meets all ACT performance standards and passes Wyzenbeek 50,000 double rubs. 212/366-1146. Sina Pearson, New York City. **CIRCLE 217**

► New, expanded showroom

For 20 years Evanson was tucked away in a hard-to-find downtown Manhattan location. Recently the showroom hauled its commercial and residential furnishings up to the East Side's D&D Building and expanded its business. The Evanson look is about simplicity of form, attention to detail, and luxury of material. Harmony and proportion within each piece are also integral to the total collection. Architect James Evanson and showroom manager Koni Rich are partners in this new uptown space. 212/317-2030. Evanson, New York City. **CIRCLE 219**

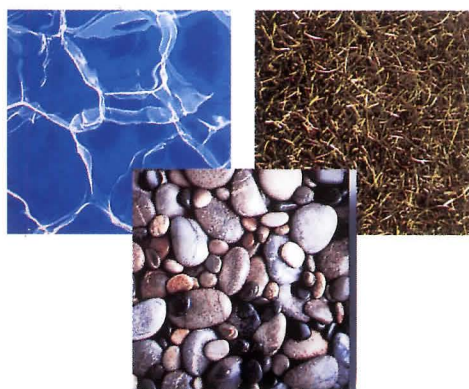


◀ Future filtering faucet

The Moen PureTouch is a faucet and filter all-in-one package that has a replaceable filter cartridge designed by Culligan. For unfiltered water, simply turn on the faucet. To switch to filtered water, just push the button on the faucet's wand. Filtered drinking water is dispensed through a separate channel so it never mixes with unfiltered water. The faucet has a pull-out spout with three spray options— aerated, forceful, or filtered— and the filter carries a 30-day warranty. 800/BUY-MOEN. North Olmstead, Ohio. **CIRCLE 216**

► Mount-a-spout

Concinnity's freestanding, wall-mounted, or lavatory-mounted soap and lotion dispensers are typically designed for bathroom or kitchen applications. For a more luxurious look, though, the wall-mounted dispensers are available with Swarovski crystal details. Spout length for the wall-mounted unit measures 3¹/₁₆ inches; for freestanding, 3³/₈ inches; and for lavatory-, sink-, or tub-mounted, 3³/₈ inches or 5¹/₈ inches. Available with a solid brass, nickel, pewter, copper, gold, polished chrome (shown), or white powdercoat finish. 800/356-9993. Concinnity, Melville, N.Y. **CIRCLE 218**



▲ Nature's bounty

Made from all-natural materials, Imagine Tile's latest series, called Mixed Stone, Water, and Grass, is available as a floor or wall tile in regular (glossy) or slip-resistant (matte) surfaces. The slip-resistant surface has a Class IV+ rating by independent testers Smith-Emery Labs and is suitable for heavy-duty commer-

cial foot traffic, indoor or outdoor. The tiles are also frost- and chemical-resistant, waterproof, unaffected by UV light, and resistant to thermal shock. A full line of coordinating field tile is available. Grouting can be as thin as 1/32 inch in any color available from an installer. 800/680-TILE. Imagine Tile, Jersey City, N.J. **CIRCLE 220**



Before you specify a toilet this year, read what the people of San Simeon did with theirs

They threw them out - all 1,198 of them - and put in low-consumption toilets with Sloan's FLUSHMATE® inside. Their conclusion was FLUSHMATE pressure-assist toilets would solve their water shortage problems better than gravity-type low-consumption toilets. Here's what they found out.

A FLUSHMATE-equipped toilet, using only 1.6 gallons of water per flush, clears the bowl in one flush by using waterline pressure instead

of gravity. FLUSHMATE-equipped toilets have the largest trapway available, so they are less likely to clog. In addition, they have a large water-surface area like older "water-guzzling" models, so they keep the bowl cleaner.

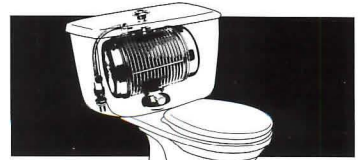
By comparison, new gravity-type, low-consumption toilets may require double flushing, clog easier and require frequent brushing. They simply may not perform to the level you have come to expect.

The rules have changed. Since 1994, the law requires all new toilets for the home to use only 1.6 gallons of water per flush (about half of what most people have been using). If you think you need the performance of FLUSHMATE, or would like to learn more about pressure-assist toilets, call us at 1-800-875-9116 and we'll send you our FLUSHMATE Master Specification Guide.



ISO 9001

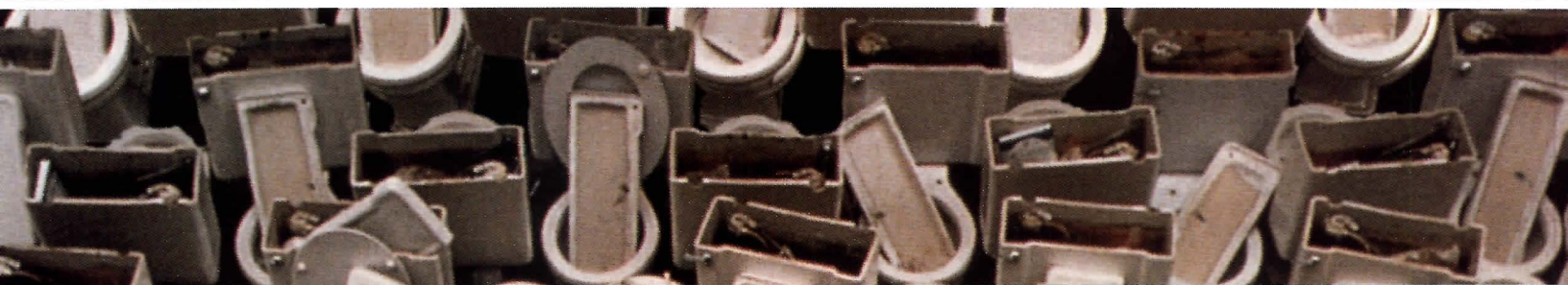
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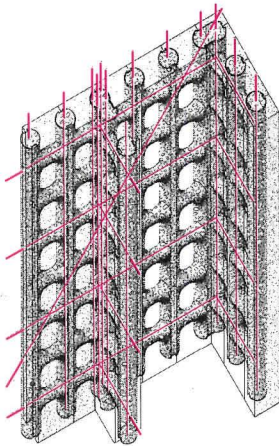
CIRCLE 53 ON INQUIRY CARD



PRODUCT BRIEFS

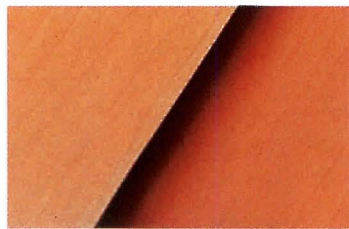
▶ **Environmentally friendly**

Rastra building elements are story-high wall units, 15 to 30 inches wide, that can be vertically or horizontally installed. Cavities inside the unit are grouted with concrete for stability. Thastyron, the raw material used to mold the units, is mixed out of cement, water, and recycled plastic foam. This provides good insulation, heat retention, and vapor transmission. Rastra is very lightweight (no need for cranes) and fireproof. 888/RASTRAS. El Paso. **CIRCLE 221**



▼ **No-slip underfoot**

Assurance is a new line of slip-retardant resilient flooring in 12 inlaid colors from Mannington Commercial. Patent-pending wearlayer technology provides traction under wet and dry conditions. Available in six-foot widths. 800/241-2262. Mannington, Salem, N.J. **CIRCLE 224**



▲ **Blooming veneer prints**

Tulipwood (left) and magnolia (right) are two new veneer prints of decorative laminates from Lamin-Art. Both designs have a simple, straight grain that weaves slightly with the subtle color. Some application possibilities include use in retail stores, health-care facilities, hospitality designs, or exhibit spaces. 800/526-4627. Lamin-Art, Elk Grove Village, Ill. **CIRCLE 225**



▲ **Prefinished patio doors**

Therma-Tru's fiberglass hinged patio doors are prefinished with a white exterior and oak-grained door panels. The interior can be stained or painted to match the decor. New profiled grilles

between the glass make for easier cleaning. The doors are available in full height, replacement height, or eight feet tall. Backed by a lifetime warranty. 800-THERMA-TRU. Therma-Tru, Maumee, Ohio. **CIRCLE 227**



▲ **Elegantly floored**

Amtico has introduced three new designs to their Motif collection of vinyl flooring products. One example, Regal, shown, measures 36 inches square. 888/268-4269. Amtico, Atlanta. **CIRCLE 222**

▼ **Folding casement crank**

The concept for Pella's latest gadget, the folding casement crank, came from customers' frustration with traditional protruding cranks that interfere with shut blinds or drapes. 800/84-PELLA. Pella, Pella, Iowa. **CIRCLE 223**



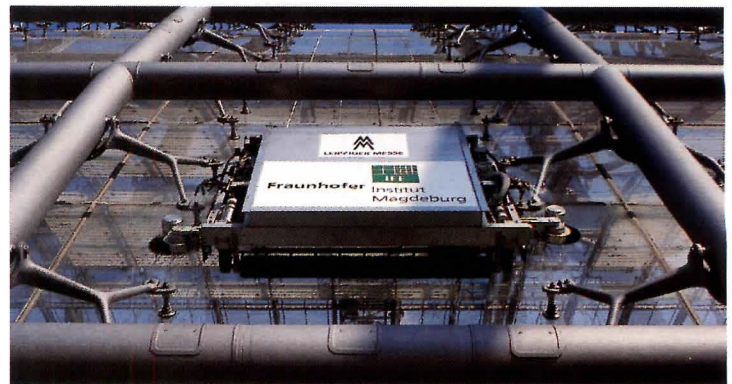
◀ **Pure protection**

InPro Corporation's latest introduction of wood-grain tones to the vinyl Woodland Group of door and wall protection includes Natural Maple, Santa Rosa Oak, Chatsworth Oak, Crystal Oak, and Boston Cherry. The finishes incorporate matching base colors to ensure integrated color throughout the products while also concealing scratches and dents. Accent strips are also available on selected guardrail and wall-guard products. 800/543-1729. InPro Corporation, Muskego, Wis. **CIRCLE 226**

▼ **Reach new heights**

With a new generation of service robots conquering the market, the latest fully automated cleaning system for outdoor facades is now available through the Fraunhofer Technology Center. No detergents are used for cleaning, only high-pressure water. The company claims that its intention is not to replace the tradi-

tional window cleaner with the 2½-by-2½-foot robots, but to use the equipment for dangerous or difficult-to-reach areas. On the grounds of the Leipzig Trade Fair, in Germany, the robots clean the vaulted glass hall, shown, which measures 800 feet long and 265 feet wide. 305/863-9096. Fraunhofer Technology Center, Hialeah, Fla. **CIRCLE 228**



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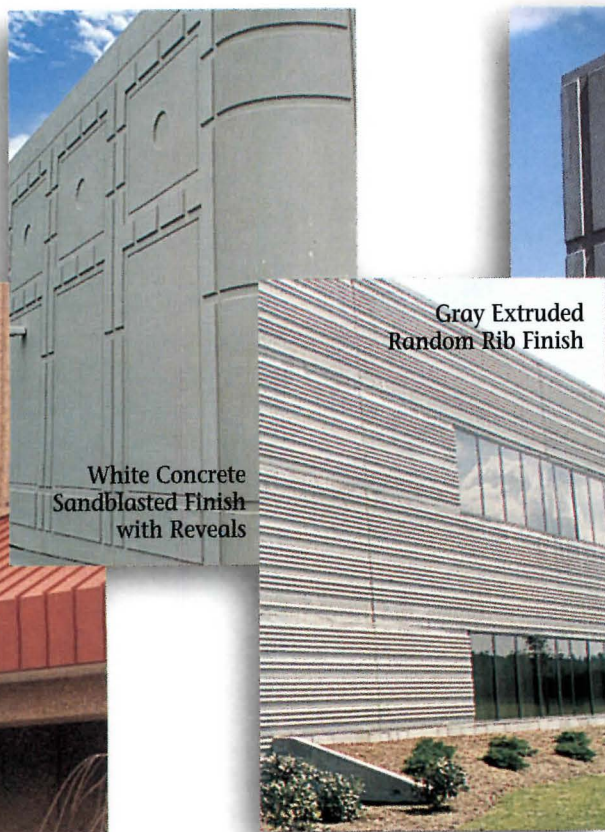
So, whether you are constructing a retail store, warehouse, office building, plant or distribution center, you can rely on precast concrete wall panels to meet specifications and maintain construction schedules.



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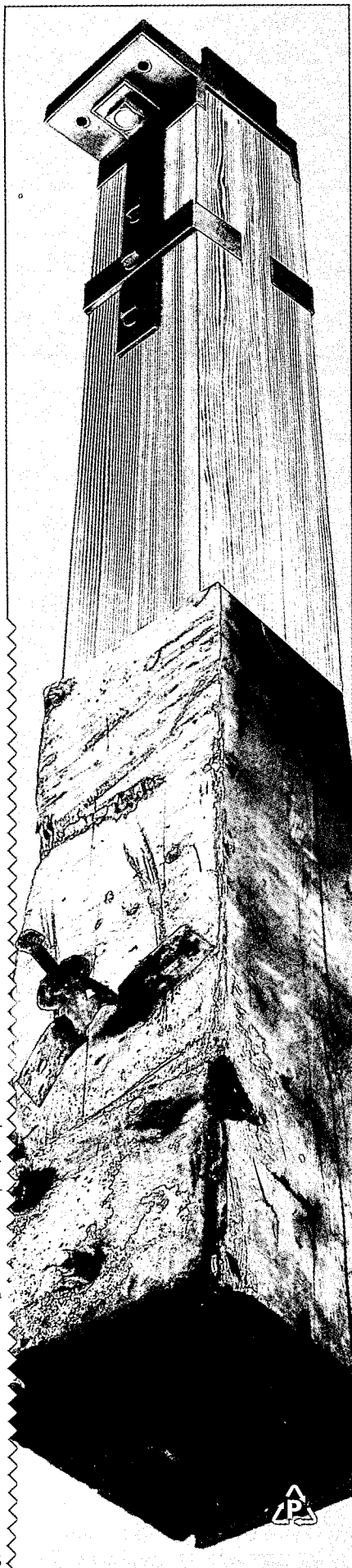
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NRCA's 1998 releases

Among the National Roofing Contractors Association's latest editions is "Residential Steep-Slope Roofing Materials Guide," a 220-page guide on asphalt shingles; underlayer sheets; clay and concrete tile; wood shakes and shingles; slate; and fiber cement, metal, and synthetic roofing products. Also available is "Commercial Low-Slope Roofing Materials Guide," a 700-page report on low-slope membranes, cements, coatings, insulation boards, and roof fasteners. 847/299-9070. National Roofing Association's Education Department, Rosemont, Ill. **CIRCLE 230**

A variety of Pemko products

The new catalog includes information on thresholds, sills, door bottoms, weatherstrips, FireGlaze, continuous hinges, metal/oak molding and trim, and sliding-door hardware. 805/642-2600. Pemko, Ventura, Calif. **CIRCLE 231**

Commercial roofing

Firestone Building Products is a single source for commercial roofing systems, customer service, technical support, and warranty information, all in a 24-page color brochure. 800/428-4442. Firestone, Carmel, Ind. **CIRCLE 232**

Fire-alarm videos

Protection Knowledge Concepts has introduced a four-video series developed by the fire-protection engineering consultants at Rolf Jensen & Associates. Designed to provide basic knowledge on complex fire-alarm systems for specifiers and buyers, the tapes cover initiating and notification devices, control units and their design, and care and maintenance issues. Each tape runs 20-25 minutes. The total cost for the four-video series is \$399. 888/831-4RJA. Protection Knowledge Concepts, Chicago. **CIRCLE 233**

Architectural metals

Southern Aluminum Finishing's designer guide for Division 7 architectural metals covers roofing products that are marketed through the company's perimeter-systems division. Also included are scaled product drawings, material recommendations, and sizing data and specifications. The SAF Web page, called the Aluminum Spec Center, can be found at www.saf.com. 800/334-9823. Southern Aluminum Finishing, Sanford, N.C. **CIRCLE 234**

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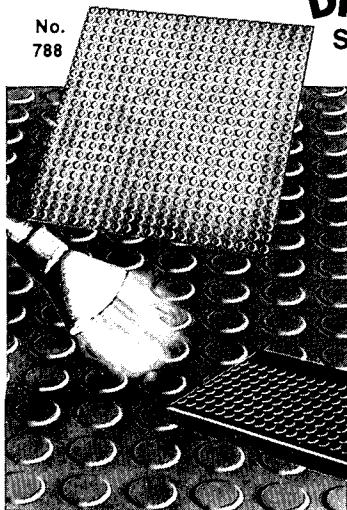
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Zero effect

Information about Zero's complete line of door and window gasketing, thresholds, saddles, and continuous hinges is now available for 1998. The 36-page color catalog provides spec guidance and full-size schematics for components and integrated systems for blocking flames, smoke, air, light, and sound. 800/635-5335. Zero International, Bronx, N.Y.

CIRCLE 235

Designer glass film

Outwater Plastics has recently updated Illusions, a line of designer glass film, and has now released its 1997-99 catalog to include the expanded format of the original series as well as other related products. Originally created as an alternative to etched glass, the film will not discolor and helps prevent glass from shattering. 800/631-8375. Outwater Plastics, Wood Ridge, N.J. CIRCLE 236

Furniture for architecture

Geiger Brickel's electronic corporate overview and catalog is available on the Internet at www.geigerbrickel.com. Browsers can review the company's history and compare contract office furniture designs. Bound and printed copies of the catalog are also available. 800/444-8812. Geiger Brickel, Atlanta.

CIRCLE 237

Window technology on CD-ROM

The Windsor Window Company has developed a CD-ROM that helps to increase architects' design efficiency and provides a wider range of window options. The Architectural Reference Disc has 600 pages of detailed specifications, performance data, cross-sections, and evaluation details for Windsor products, including more than 3,000 drawings. The CD-ROM also allows designers to import window elevations and specifications into CAD drawings. The company plans to update the CD-ROM every 12 to 18 months. 515/ 223-6660. West Des Moines. CIRCLE 238

Fittings and fixtures

TOTO USA, a single-source manufacturer of plumbing fittings and fixtures, has recently introduced a free 16-page catalog featuring its Reliance Commercial Line. 800/350-8686. Morrow, Ga. CIRCLE 239

Luxury bathrooms

Duschqueen, a fabricator and installer of frameless tub and shower enclosures, is expanding both its product offerings and its base of operations. Along with its 16-page, full-color catalog of frameless enclosures for 1998, the company provides information about a new line of solid brass-framed enclosures. 800/348-8080. Wyckoff, N.J. CIRCLE 240



For more information, circle item numbers on Reader Service Card

DATEEVENTS

(continued from page 54)

Finnish Modern Design: Utopian Ideals and Everyday Realities, 1930–1997

New York City

Through June 28

Featured in the exhibition are glass, ceramics, furniture, textiles, metalwork, and industrial design. Organized by the Bard Graduate Center for Studies in Decorative Arts and the Museum of Art and Design in Helsinki. Bard Graduate Center. 212/501-3000.

Breaking Through: The Creative Engineer

Washington, D.C.

Through November 8

An exhibition that examines the role and process of creativity in the field of engineering through a series of case studies. National Building Museum. 202/272-2448.

Environmental Design Research Association Conference

St. Louis

March 4–8

The theme of EDRA's annual conference is "People, Places, and Public Policy." Research and

design projects will be presented in papers, media presentations, and other formats. Design educators and professionals, planners, social scientists, and others interested in the relationship between people and places are invited. Contact EDRA, P.O. Box 7146, Edmond, Okla. 73083; 405/330-4863; or visit www.aecnet.com/EDRA.

Ten Young Dutch Architectural Practices

Los Angeles

March 9–April 5

A large-scale exhibition of experimental built projects by young Dutch architects, including Wiel Arets, Rianne Makkink, and Lars Spuybroek, who will also be participating in a lecture series. Southern California Institute of Architecture. 310/574-1123.

Preservation of Historic Bridges

Boston

March 10–11

This seminar, sponsored by the American Society of Civil Engineers, is intended to bring preservationists and bridge engineers together to teach them about each other's concerns and problems. Case studies will be presented. The seminar will also be held in Chicago, April 7–8. Contact ASCE Continuing Education, P.O. Box 830, Somerset,

N.J. 08875; tel. 800/548-2723; fax 703/295-6144; or E-mail conted@asce.org.

Peter Cardew: Ordinary Buildings

Toronto

March 10–April 19

Drawings, models, and a photographic analysis of projects by the Canadian architect. Design Exchange. 416/363-6121.

New Chicago Architecture

Chicago

March 10–May 31

The latest work by Chicago architects will be on display after having been exhibited at the São Paulo Bienale. Chicago Athenaeum. 312/251-0175.

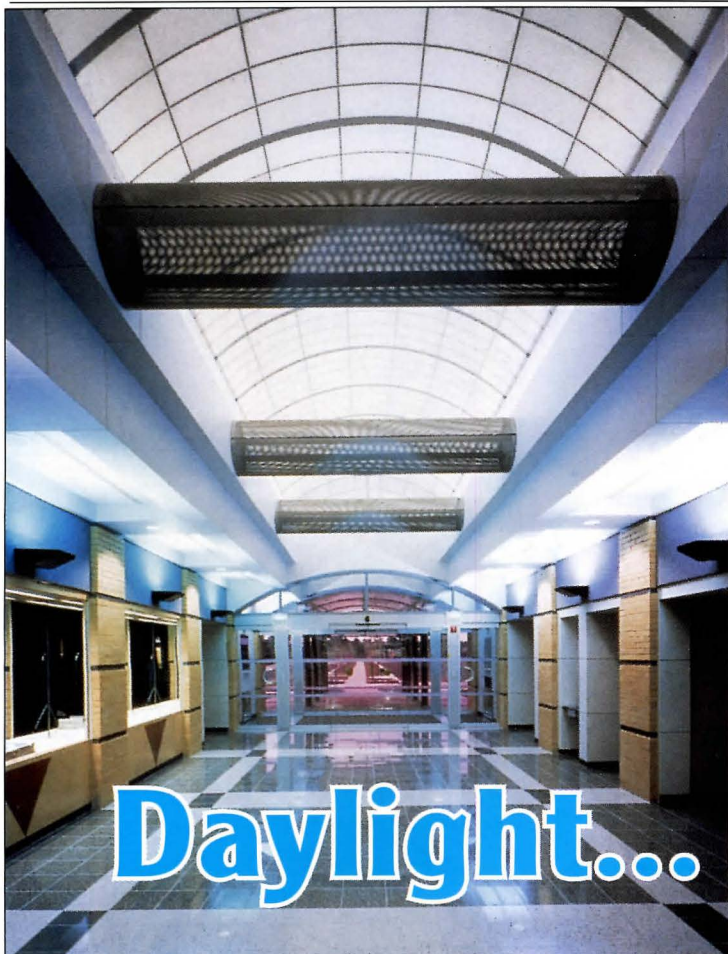
Archigram, 1961–1971

New York City

March 12–April 25

The conceptual work of the celebrated British architectural collaborative will be on view at the Storefront for Art and Architecture (212/431-5795). Speaking events at the Pratt Institute and the Thread Waxing Space complement the exhibition. Call 718/399-4304 for information.

(continued on page 178)



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East Columbia Library, Columbia, MD Architects: Grimm & Parker

DATESEVENTS

(continued from page 177)

Towards Transformation: Judith Turner Miami Beach

March 14–May 10

An exhibition of 72 photographs of important buildings in modern architecture. Florida International University. 305/348-3181.

WestWeek

West Hollywood

March 18–20

The theme of the 23rd annual architecture and interior design conference is "To Live and Design in L.A." The three-day event includes new product introductions, symposia on design issues, and guided design tours. Pacific Design Center. Visit www.p-d-c.com for information and registration.

NeoCon West

Los Angeles

March 19–20

NeoCon, the annual Chicago-based trade show, is adding a West Coast version, which it is positioning as a regional event. Products and services for all types of commercial interiors will be presented. Los Angeles Convention Center. Call 800/677-6278 or visit www.mmart.com.

International Tile and Stone Showcase

Los Angeles

March 19–20

The showcase will feature West Coast distributors, wholesalers, and importers of tile and stone. Los Angeles Convention Center. Contact ITSS, 900 E. Indianatown Road, Suite 207, Jupiter, Fla. 33477; tel. 800/881-9400; fax 800/883-9466.

Corrosion/98

San Diego

March 22–27

"Corrosion/98," the 53rd annual conference of NACE International, will focus on corrosion and corrosion control of reinforced-concrete structures. Call NACE International at 281/228-6223; or visit www.nace.org.

BOCA International Spring Meeting

Atlantic City, New Jersey

March 23–25

Building Officials and Code Administrators International will hold its 1998 Code Development Hearings during this three-day event. A full day of training seminars is also planned. Fax-on-demand, 708/799-2300 x500, for registration and hotel reservations. To obtain copies of the hearing documents, call 708/799-2300 x340.

The Making of South Asia

Pittsburgh

March 28–July 19

The work of four South Asian architects—Charles Correa, Achyut Kanvinde, Balkrishna Doshi, and Muzharul Islam—is included in this traveling exhibition. Heinz Architectural Center, Carnegie Museum of Art. 412/622-3131.

Landmarks of New York III

New York City

March 31–July 7

A photographic exhibition in celebration of the city's centennial, accompanied by a symposium, walking tours, and panel discussions with such participants as Herbert Muschamp, Denise Scott Brown, Richard Meier, and Charles Gwathmey. New-York Historical Society. 212/861-4641.

Atlantic Builders Convention

Atlantic City, New Jersey

April 1–3

This year's convention will be the biggest yet, with 500 exhibitors from all the mid-Atlantic states. Events, seminars, and networking and evening socials will be included. Atlantic City Convention Center. For information about tickets and exhibition space, call Joy Miccio at 609/587-5577.

CIBSE National Lighting Conference

Lancaster, England

April 5–8

The Chartered Institution of Building Services Engineers' biannual lighting conference will feature papers by British and non-British participants, giving it an "international dimension." University of Lancaster. Call 44/181/675-5211 for further information.

Art and Architecture Symposium

Marfa, Texas

April 25–26

A symposium on the integration of art and architecture, with participants Robert Irwin, Frank Gehry, Claes Oldenburg, Jacques Herzog and Pierre de Meuron, James Ackerman, and others. Chinati Foundation. 915/729-4362.

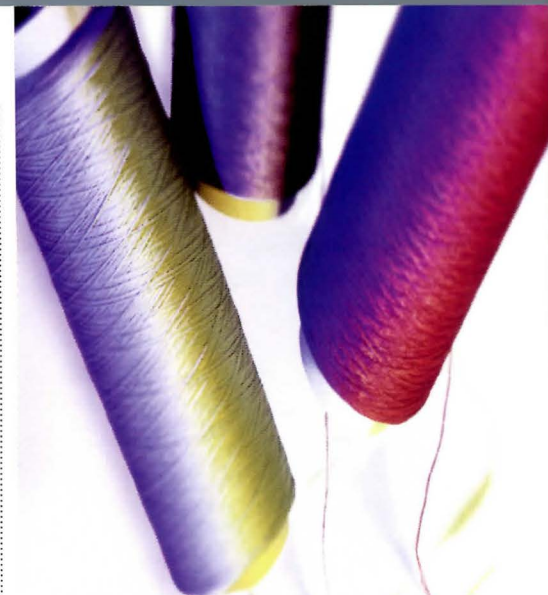
1998 AIA National Convention and Expo

San Francisco

May 14–17

Twelve thousand industry professionals are expected to attend this year's convention at the Moscone Convention Center. For information about exhibiting, call 617/859-4483. For other information, call the AIA at 202/626-7395 or check the convention Web site at www.aia98.org.

(continued on page 180)



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DATESEVENTS

(continued from page 178)

Competitions

Italian Ceramic Tile

Submission deadline: March 15

Assopiastrelle, the Association of Italian Ceramic Tile and Refractory Manufacturers, announces its 1998 design award competition. The \$5,000 prize recognizes designers or architects who have created innovative settings using Italian ceramic tiles. Projects must be completed by February 28. Write Abbate Communications, 222A Sixth Avenue, 2nd floor, Brooklyn, N.Y. 11215; or call 718/783-3160.

Van Alen Prize: The East River

Registration deadline: April 8

Submission deadline: May 20

The 1998 Van Alen Prize in Public Architecture calls for entries that investigate, envision, and promote the design of a better public realm for New York City's East River. Entrants may propose design ideas from the vast scale of the entire district to the minute scale, as long as the proposal is conceived as having an impact on the East River's identity in the city. Students, studios, fac-

ulty, and professionals from anywhere in the world may enter. Contact the Van Alen Institute, 30 West 22nd Street, New York, N.Y. 10010; fax 212/366-5836; or E-mail vanalen@vanalen.org.

Burnham Prize

Registration deadline: April 14

Portfolios due: April 28

The Chicago Architectural Club's biannual competition recognizes work by recent architecture school graduates under forty years of age or those who received their degrees after January 1, 1988. Open only to residents of Wisconsin, Minnesota, Iowa, Missouri, Michigan, Ohio, and Indiana. The winner of the prize will receive a three-month fellowship at the American Academy in Rome during the fall of 1998. Call Alan Armbrust at 847/381-2946 x236 for further information.

Development of the Al-Riyadh District

Submission deadline: April 22

Al-Dar Real Estate Investments has announced an international architecture and urban design competition, with professional and student categories, to develop residential accommodations for Muslim pilgrims in the Al-Riyadh District, Makkah, Saudi Arabia. The design for the 3,500-square-

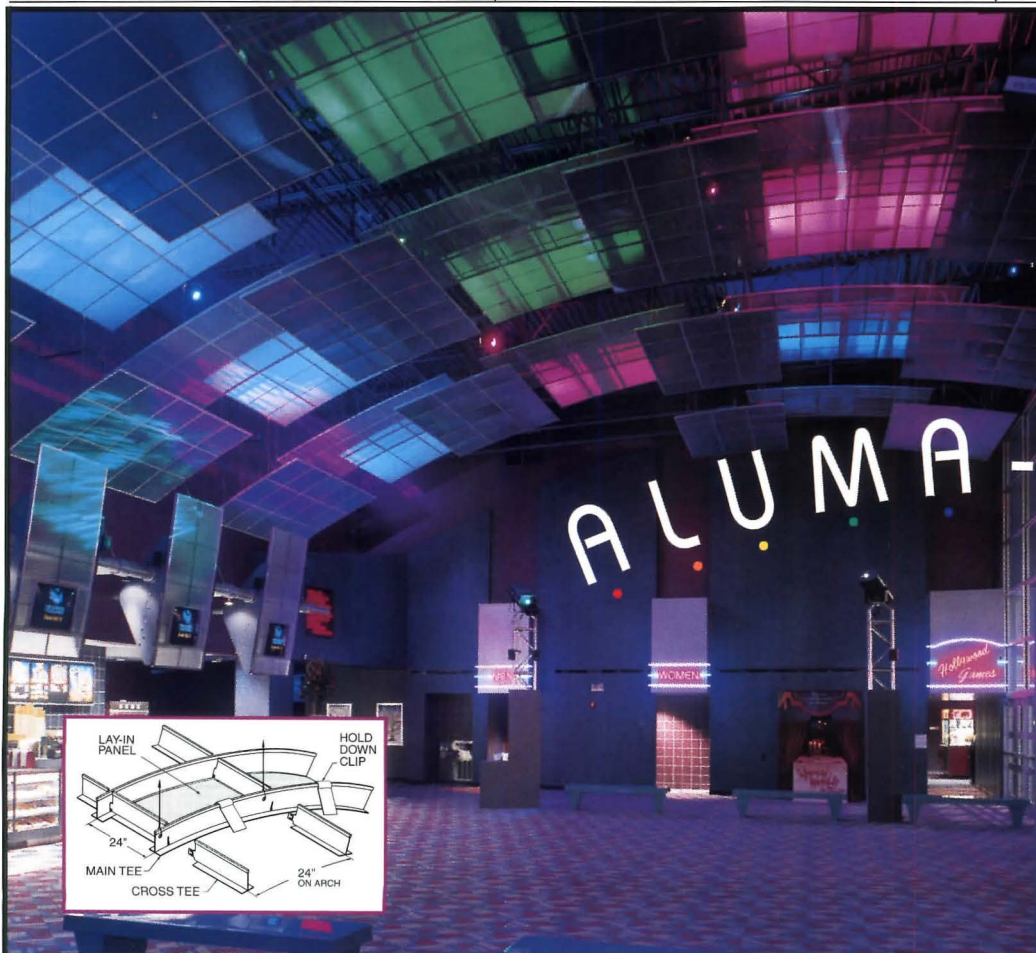
meter site should be sympathetic to natural and environmental factors, fulfill the requirements of the pilgrims, and recall the local architectural and urban fabric. First prize for professionals is \$50,000; for students \$4,000. Contact Salihiyya Center, Office 702, King Abdul Aziz Street, P.O. Box 17871, Jeddah 21494, Saudi Arabia; tel. 966/2/644-4690; or E-mail aldar@mail.gcc.com.bh.

Vital Signs Student Competition

Submission deadline: June 15

The Vital Signs Project, administered through the University of California, Berkeley, announces its 1998 Student Case Study Competition. Undergraduate and graduate students in ACSA member schools of architecture and ABET member schools of architectural engineering in the United States, Canada, and Puerto Rico are asked to investigate, measure, evaluate, and report on the performance of existing buildings. Contact Gail Brager, Vital Signs, UC Berkeley, Berkeley, Calif. 94720; E-mail vitalsigns@ced.berkeley.edu; or visit www.ced.berkeley.edu/cedr/vs/act/act_main.html.

Please submit information for exhibitions, conferences, and competitions at least six weeks prior to the magazine's publication date (i.e., April 15 for the June issue).



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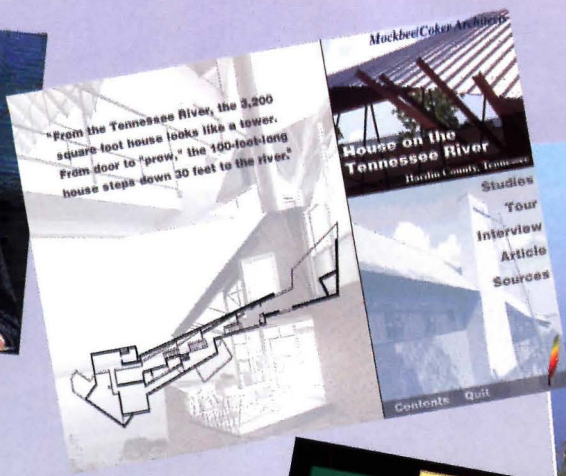
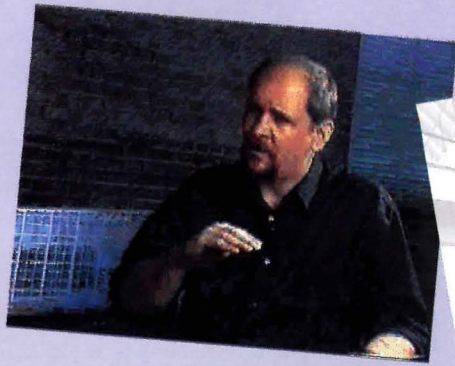
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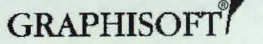
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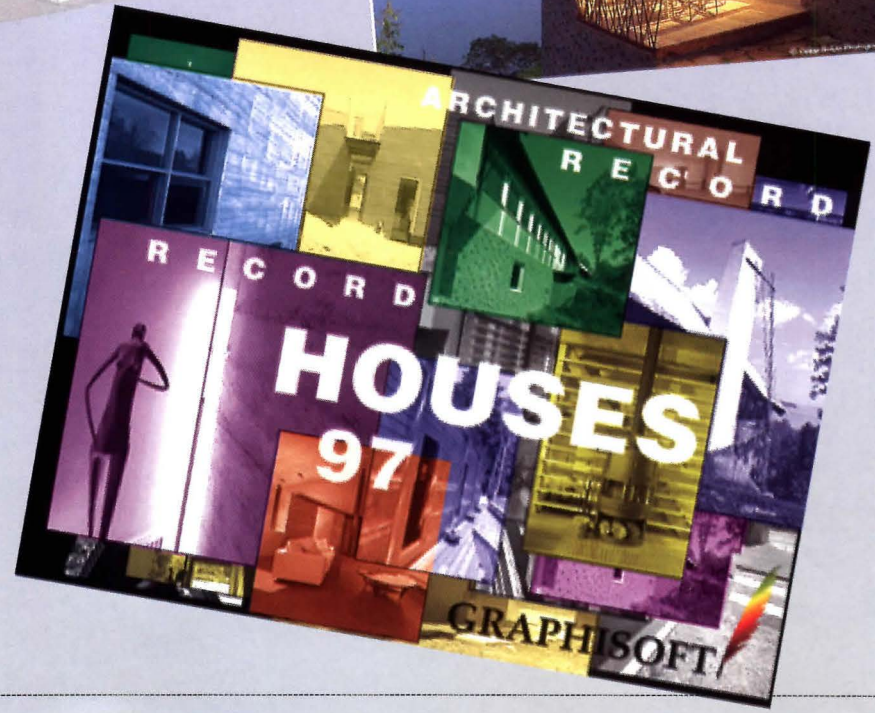
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
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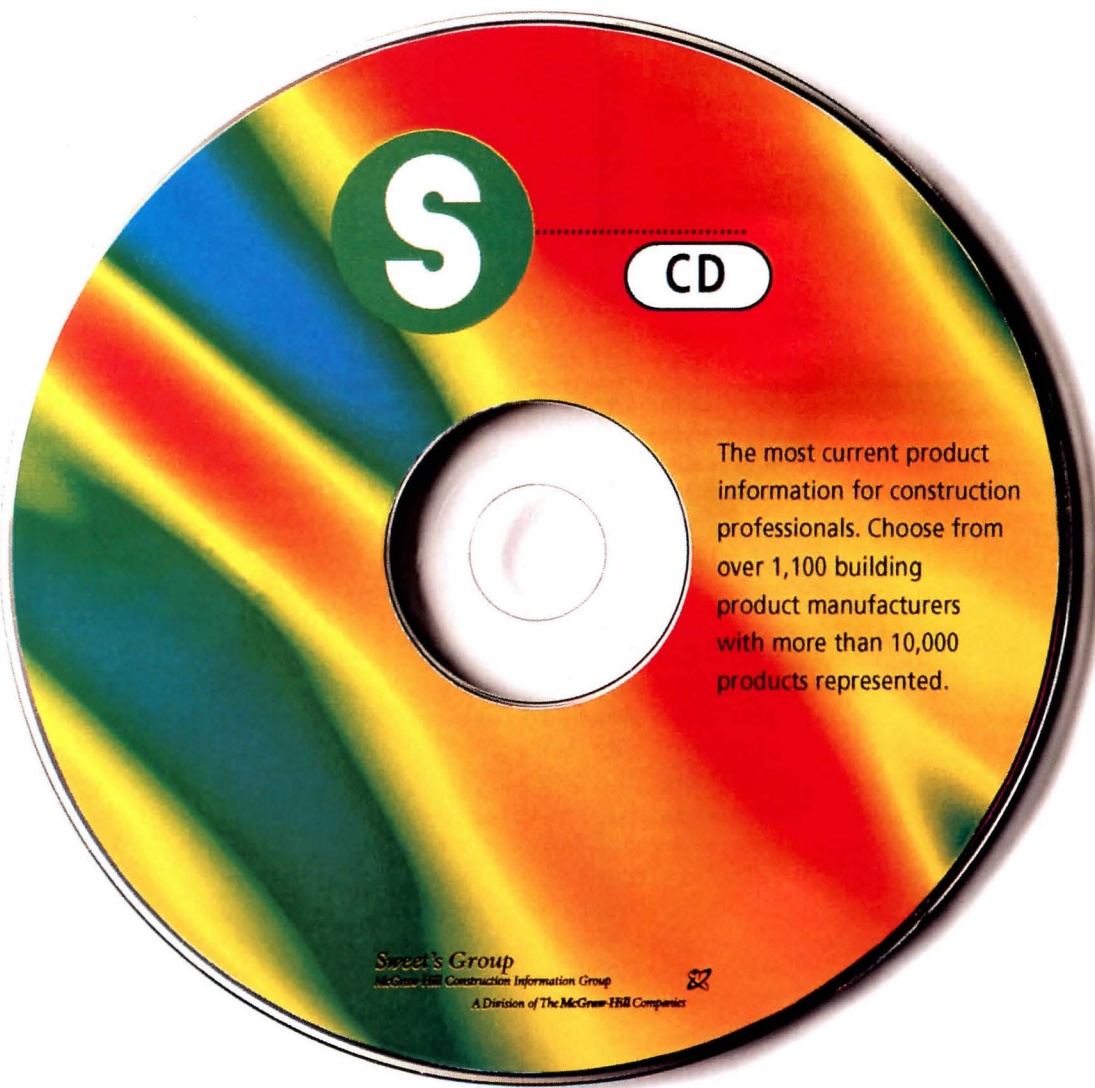
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STATE OF CRITICISM *continued from page 69*

judging the complex. While each defined coherence somewhat differently in his own assessment, it materialized in the visual and haptic responses of the critic walking through the center.

Martin Filler's much talked-about critique of the Getty, "The Big Rock Candy Mountain," published in the *New York Review of Books* (December 18, 1997), pointed to a lack of "internal coherence" in the complex, explaining that the "frenetically over-designed" buildings, with their "restless forms and mixture of stone, metal and glass," failed to offer any "vista of calm and repose," except for the view of the Pacific.

Lawrence Wechsler, a staff writer for *The New Yorker*, noted in an essay in the *Los Angeles Times Magazine* (December 7, 1997) that "The center was not succinctly defined, as a single entity.... For all the intellectually discernible coherence of its play of lines and arcs, there was no signature vantage, no singular impression of the place as a whole." In the November 1997 RECORD, Robert Campbell criticized the Getty by commenting, "No master narrative... governs your experience of the Getty. You're attracted this way and that without ever arriving at a place of centrality or rest." As Aaron Betsky put it in the December 1997 *Architecture*, "The result on the ground" has "little hierarchy or logic."

Clearly, coherence is perceived by experiencing the complex, whether it is defined in terms of viewpoints and vistas or a processional narrative that ends in a "place of centrality." Coherence may be strengthened by a "single great building" or a "Parthenon on the Acropolis," as Blair Kamin asserted in pointing out what was lacking from the Getty in the *Chicago Tribune* (December 7).

A view from above

None of the critics discussed whether or not the Getty was coherent from the aerial perspective (or the bird's eye-view), that is, the vantage point of the architect designing the site plan, looking down at the drafting board. This point of view is the one that Le Corbusier considered the modern perspective, actually supplementing and even supplanting the experience of architecture on foot. Because Le Corbusier drew attention to this new way of experiencing architecture from the air, he was instrumental in pointing to this split between the two perspectives, as Beatriz Colomina has noted. Yet not even Le Corbusier was about to give up the importance of the experience of architecture on foot, the *promenade architecturale* in which the body, the eye, and the mind are all at work.

In looking at the Getty we see that from the air (or the perspective of Meier working on the site plan), the overall ensemble forms a rather coherent assemblage with the topography of the site. Like Le Corbusier, Meier was drawn to this aerial perspective. On foot, however, the scale of the Getty complex defeats the subject's perceived sense of a whole, a unity. As Meier's critics imply, he gave short shrift to the most commonly shared experience—on foot.

This experiential form of criticism, needless to say, works particularly well for nonarchitectural readers of publications that use few photographs and no architectural drawings, such as the *New York Review of Books* or the *New York Times*. In his Getty Center essay, Filler, in smooth-as-butter prose laced with strichnine-tinged humor, brings the reader from the off-white reserved parking structure and tram to the off-white center on the top of the sunlit hill. He remarks, "The initial irony of this shrine to the visual arts is that after the exhausting act of getting there, you cannot see it without squinting."

Filler opted to use the experiential narrative as a device to get the reader to the galleries; however, kinesthetic qualities assume a lesser role as he begins to interweave background histories of the Getty and its

collections into the text. Further discussion of actual architectural issues gives way to behind-the-scenes dramas that preceded construction.

Filler views the kinesthetic experience as a trap that entices the critic into relying on sensual description. True, it can result in equivocation. In his piece on the Getty in the December 1, 1997, issue of the *Times*, Muschamp embeds perceptual details within memorable anecdotes. For example, he relates that "Meier invited a few people to join him at the Getty Center to watch the sunset." The sun "spills down on your body, into your eyes. It gets more and more golden and by twilight you're having a pure Apollo moment." Flower-eating deer join this party and, like the critic, their ecstasy doesn't rely on architecture. The reader, however, is still left wondering what Muschamp really thinks about the architecture.

In Wechsler's L.A. *Times* essay on the Getty, his prose is suffused with romanticism: "There's that same breathtaking panorama I so lovingly remember, but somehow even more sublime for being framed, momentarily withheld, and then divulged all over again, though from a freshened angle." To be sure, Wechsler—like Ouroussoff in an earlier L.A. *Times* piece—emphasizes the design of space in the architectural whole. As Ouroussoff observes, the spaces in between the buildings "allow the eye to wander, while still pulling the visitor along in an artistic reverie."

The gap again

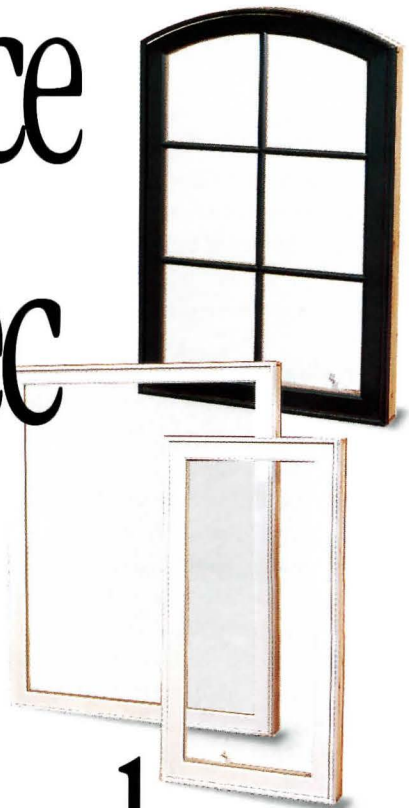
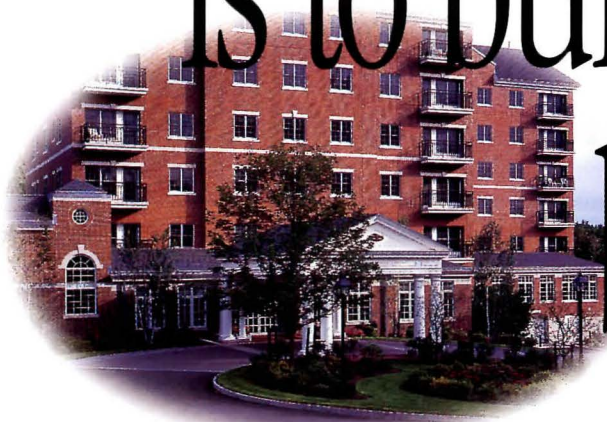
Theoretical critics, in addition to journalistic critics, have been investigating perception, experience, and architecture, dwelling on notions of the "body." Many such investigations have been strangely impersonal and abstract, but there are signs the situation is changing. ANY 21 devotes an entire issue to "How the Critic Sees: Seven Critics on Seven Buildings."

Two essays in particular, Sarah Whiting's critique of Jean Nouvel's Congress Center in Tours, and Cynthia Davidson's analysis of Rem Koolhaas's Kunsthall in Rotterdam, illustrate important attempts to develop an experiential form of criticism, with the critic as a moving, seeing, thinking subject. Instead of dwelling on the sensual, Davidson takes a cerebral approach: "I am reminded of Jean-Luc Godard's filmic jump cut, where time between frames vanishes, no longer providing a continuous narrative sequence and momentarily dislocating the viewer with new visual information." Whiting also uses cinematic references while adhering more closely to a visual and kinesthetic examination: "The interior is actually a realm where perception is perpetually teased through plays of reflection, luminosity, transparency, and a deliberate blurring of the typical distinctions that distinguish walls, floors, and ceilings."

Comparing these examples of theoretical criticism to the journalistic ones on the Getty is revealing. The first batch, written by men, veer into the squishy, amorphous, romanticized world of pleasure. The second group, all by women, still focus on sense perception but appear more precise, more rigorous, less self-indulgent. This comparison is intended to point out where further work could be undertaken in criticism on both practical and theoretical levels. Most emphatically, critics need to confront the ways in which they can communicate to their various publics.

The obvious issue that has not been discussed here is how architectural criticism should relate to the world at large—to larger cultural and political issues, as Mumford did. In examinations of criticism within the political and social sphere, the role of the person and his or her involvement in the environment often get lost. The inward-turning movement, already seen in the work of journalistic and theoretical critics, was a response to that situation. Perhaps the next step should be trying to place architecture and urbanism that is meaningful to the person back in the larger social and political picture. ■

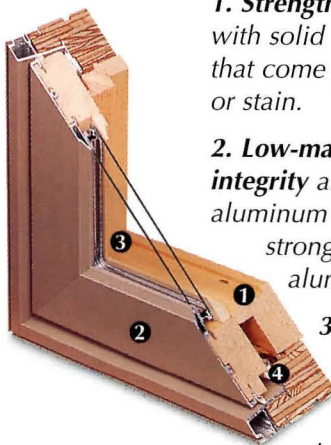
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CIRCLE 78 ON INQUIRY CARD

SECURITY DESIGN *continued from page 148*

3 percent or less for county projects. At the \$22 million Charlotte County Courthouse in Pensacola, Florida, approximately \$400,000 was spent on security measures.

"Judges want secure buildings, parking, and a secure path to their chambers. They don't want to be shot and killed on the way to work," Dwore observes. "When assessing property, street setbacks are important. Raising courthouse functions well above street level, use of wide stairs, ramps, hardened building elements, bollards, and landscaping can prevent vehicles from causing further damage to secure areas. Large-caliper trees on site can keep vehicles at a safe remove from the building."

Life-safety systems

Security planning is now integral to building and life-safety systems. Experts recommend that mechanical systems include gas detectors and the capability to keep biohazards out of fresh-air intakes, especially at research and lab buildings. These should be located where unauthorized access will be minimized as well.

Fire sprinklers should not branch off from the main water-supply line at a point where they would be vulnerable to failure if there were an accident. Similarly, water mains and pumps should be plumbed so that if a break occurs in the main, there is an alternate way to get water to the pumps. Building-utility areas must be secured by controlled access. Fire stairs and areas of refuge and escape should not empty into main lobbies or loading docks because these are areas of high potential risk for an explosion, and evacuating people through them could cause injuries and panic. Exit stairs are much more easily rerouted during the conceptual design phases than later on.

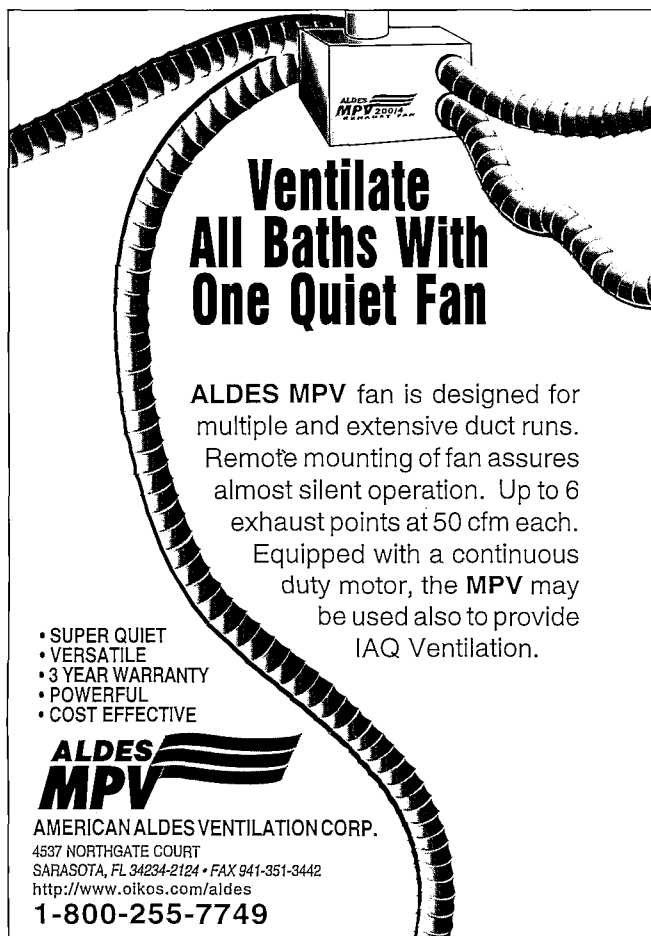
Security-system lines, telecommunications, and electrical power should be routed separately rather than run through a single duct. Main electrical feeds should not enter buildings at potentially vulnerable locations, such as loading docks, receiving areas, and main entrances. Redundant systems, if located remotely, also provide a level of protection. If one system malfunctions, the other can replace it.

Parking garages

The World Trade Center bombing in an underground public parking garage caused several floors to collapse, destroying the chiller plant and the backup emergency generator system. Primary and secondary systems were located side by side, not remotely. "Public underground parking should not be located near critical building systems, backup generators, or gas meters," observes William Daly, managing director of Kroll-O'Gara Company, a New York City security, investigative, and risk-management firm that was a consultant to the Port Authority of New York and New Jersey for the World Trade Center after the disaster. "Such areas require compartmentalization, and their walls should be strengthened with steel plates to deflect explosions. Locating emergency systems above grade is better to avoid flood damage, but if they should catch on fire on upper floors, extinguishing the flames is very difficult."

Since the bombing, underground parking has been limited to prescreened tenants. Deliveries must be preauthorized and may be received only at checkpoints from those with identification.

Several new automated-access controls in office buildings reflect new technology, says Daly. Biometrics electronically read the contours of hands for identification. Retina scanning, fingerprinting, and proximity-card access systems are user-friendly methods to screen pedestrian traffic.



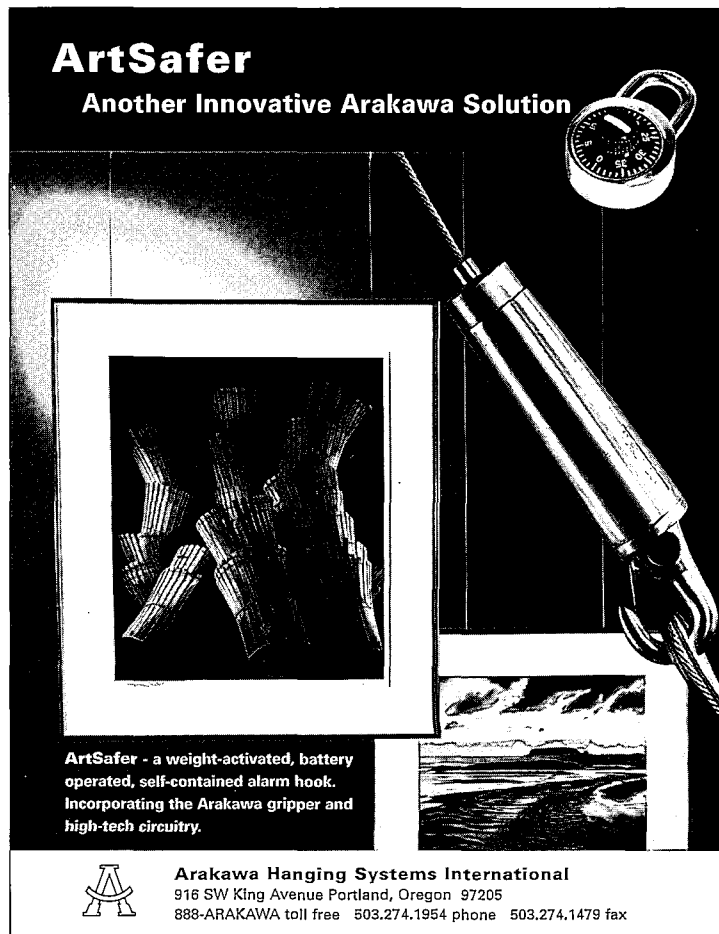
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CIRCLE 80 ON INQUIRY CARD

Blast-resistant design

Blast design is a relatively new area for commercial and civilian buildings, and there are several points of view on the subject. Some federal agencies want to enhance vulnerable portions of their building by localizing blast resistance, or hardening, says David Kossover, P.E., a New York City structural engineer and blast expert. In contrast, the British don't recommend hardening their civilian buildings but assume there will be a certain amount of damage. They concentrate on mitigating partial or total building collapse and on improving the blast resistance of the exterior glazing. Others claim that reinforced-concrete and steel buildings with well-detailed connections often withstand pressures and vibrations from explosions and do not sustain extensive permanent damage. They also admit it is not possible to design a bombproof building that will survive undamaged and guarantee few injuries. Instead, limiting damage and human injury is best achieved through good design, not necessarily through localized blast-design techniques. This debate will most likely continue in the years ahead.

Features that enhance buildings may also make them more vulnerable to attack. Windows and atria provide openness and daylight but also contradict blast-mitigation objectives, asserts engineer Tod Rittenhouse, blast expert and principal of Weidlinger Associates, a New York City consulting engineering firm. Blast-mitigation strategies permit significant localized damage while preventing catastrophic collapse. Casualties immediately near a blast may be unavoidable, but by preventing progressive collapse, further fatalities may be reduced.

Seismic design does not apply to blast resistance, because earthquakes and explosions affect buildings differently. Blasts usually affect a relatively small geographic area around a building's perimeter, while

earthquakes move the entire building. When a building is hit by a bomb, damage generally occurs to its skin, floors, and interior walls. These areas are not designed to transfer blast loads to a building's frame, so they may tear away, leaving the structural frame intact. Even though a structure may not be damaged by a seismic event, in a blast, permanent deformation of columns and girders (see sidebar, page 146) may occur in areas near an explosion.

What lies ahead?

The GSA's current enthusiasm for the design-build method of project delivery raises concerns that some aspects of security design will be diluted during budget reviews. "As government agencies move from traditional design-bid-build to alternatives like design-build, it will be interesting to see how security criteria will be value-engineered and applied," says John Sporidis, senior vice president of HDR Architecture, in Alexandria, Virginia. "When projects go the design-build-developer route, we must pay attention to ensure that the integrity of the design is not compromised and nothing is lost."

By all accounts, Americans haven't seen the last terrorist attack on public- or private-sector buildings. Clients—and the public—will continue to demand comprehensive yet unobtrusive security responses from the design and construction industries. It is also essential that research continue to find the most appropriate building materials that can withstand a host of attacks, accidents, and disasters. The challenge ahead is to seamlessly integrate life-safety and security measures with aesthetic building design. Security need not be incompatible with good design—and the use of prudent precautionary measures may save countless lives and millions upon millions of dollars in damages. ■



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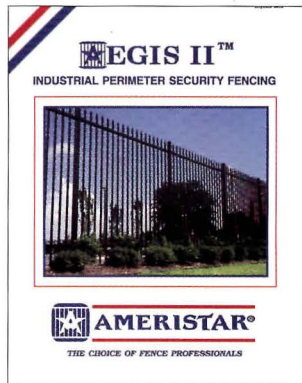


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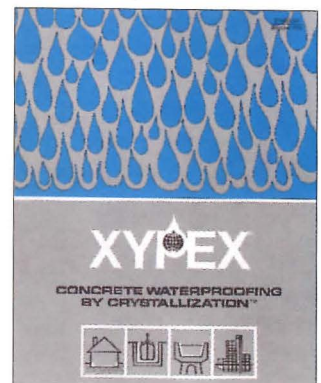


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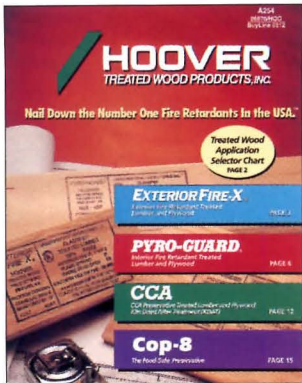


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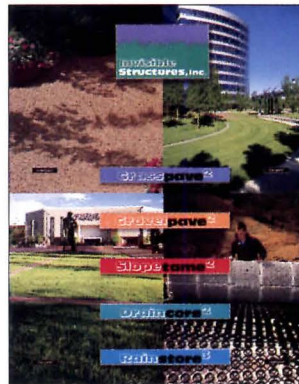


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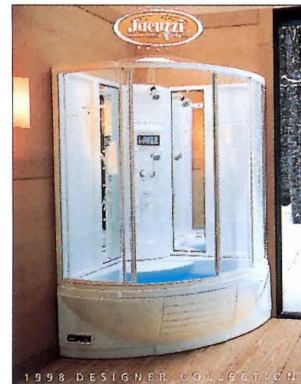


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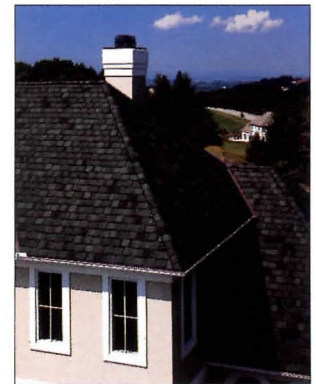


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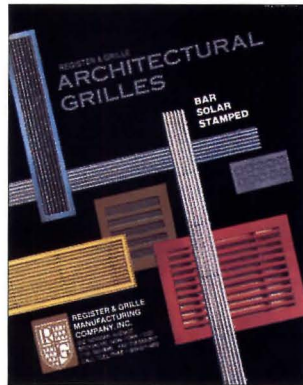


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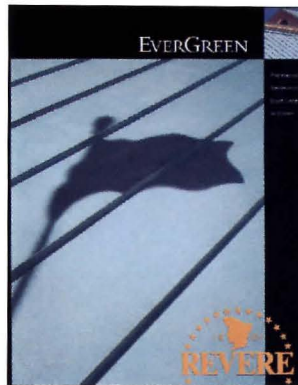


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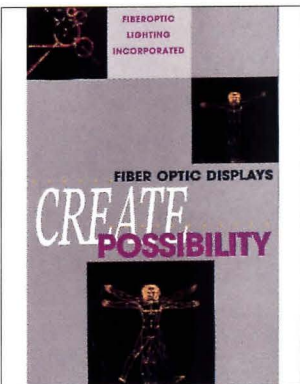


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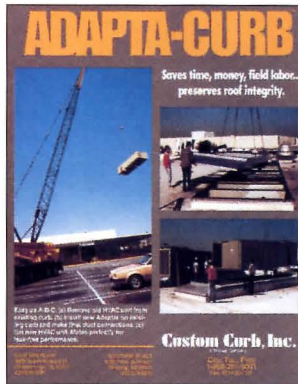


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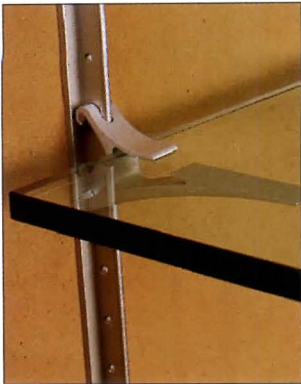


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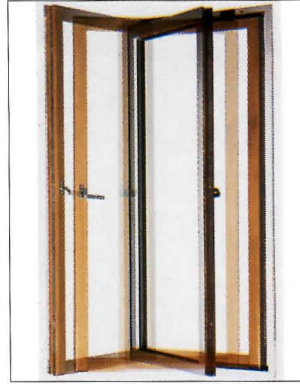


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H-Window

CIRCLE 176 ON INQUIRY CARD

**Senergy's New
Aurora Stone Finish**



The Senergy Division of Harris Specialty Chemicals, Inc. introduces Aurora Stone Finish for EIFS, stucco and masonry. Aurora Stone Finish replicates the appearance of granite or marble, and is available in twelve standard colors. Acrylic-based Aurora Stone Finish is spray-applied, and is also suitable for interior applications.

Senergy

CIRCLE 177 ON INQUIRY CARD

**For labs & clean-rooms
New Dowcraft Twin Wall**

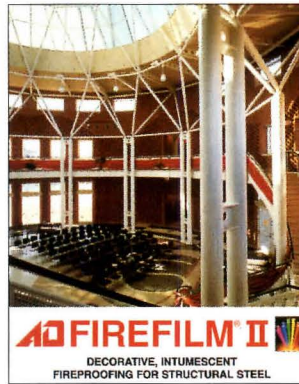


Twin Wall is custom-designed for scientific research and hi-tech manufacturing facilities. Clean lines, durable finishes, optional filler cores permit Twin Wall to perform in categories to Class 10. Acoustical rating: STC 41 up. Self-supporting steel walls shipped ready to install. Heights up to 16 ft. Send for new brochure. Dowcraft Corporation.

Dowcraft Corporation

CIRCLE 178 ON INQUIRY CARD

**Decorative, Thin-Film
Intumescent Fireproofing**



Improved spray characteristics and ratings up to 3 hours! A/D FIREFILM@II permits designers to use the appearance of exposed steel with the steel protected from fire. The product is applied as a thin-film coating 0.4 to 3.3 mm (16 to 130 mils) thick. When exposed to fire it expands to form a meringue-like insulating layer up to 4 in. thick. A/D COLORCOAT topcoat is available in a wide range of colours. Call 1-800-263-4087 or 416-263-4087. Internet: www.adfire.com

A/D Fire Protection

CIRCLE 179 ON INQUIRY CARD

**Teamboard
The Interactive Whiteboard**



Teamboard Inc., a new company by Egan Visual, has developed the industry's most powerful computer interactive whiteboard. Teamboard runs with Microsoft NetMeeting software allowing remote users to collaborate with the simplicity of a whiteboard. Share documents, print whiteboard notes in color & more. Project any computer application on the Teamboard surface & create a large area touch screen permitting you to control the projected application by touching the whiteboard. For more information 1-800-263-2387 or visit www.teamboard.com.

Egan Visual Inc.

CIRCLE 180 ON INQUIRY CARD

**Hadrian Lockers for
Nagano Olympics**



Hadrian's open face hockey lockers, illustrated, were supplied to the Nagano Olympics. Hadrian's complete locker line includes durable hybrid epoxy powder coated standard locker systems and Athletic Lockers, all of unsurpassed quality. Both have in common single point latching, double pan box doors hung on sturdy full length continuous hinges.

Hadrian, Inc.

CIRCLE 181 ON INQUIRY CARD

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T: (800) 544-7929 F: (212) 512-2074

Pan-Tech

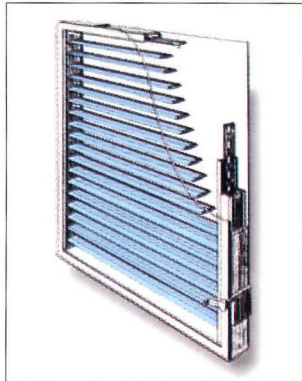


manufactures composite building panels in a variety of different face materials and finishes. Aluminum: two, three and four coat Kymar finishes, anodized, colour & brushed. Stainless Steel: 304, 316 grades, #4, #8 finish, coloured stainless and patterned. Zinc: Rheinzink pre-weathered. Porcelain: for Spandrel applications. Copper: pre-patinated.

Pan-Tech, Inc.

CIRCLE 182 ON INQUIRY CARD

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No Strings Attached!

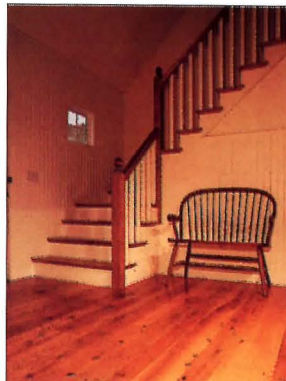


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Unicel

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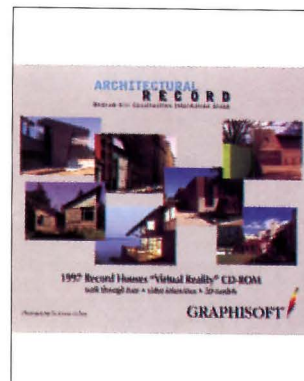


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Vintage Lumber

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Record Houses

CIRCLE 185 ON INQUIRY CARD



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Qualifications: Successful experience in the leadership and management of capital programs and the development of master plans in a large and complex institution. Direct experience with communication and negotiation at the highest levels, strategic planning, and fiscal management. A proven record of managing organizational and process change, and interacting effectively with many and diverse constituencies. Understanding of the academic environment and the goals of a major research university. Knowledge of state and federal agencies and resources for capital programs. Knowledge of construction, planning, architecture, or structural engineering desirable.

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