

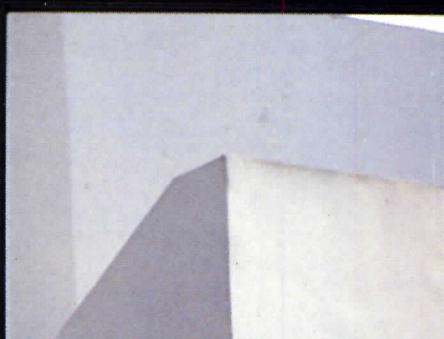
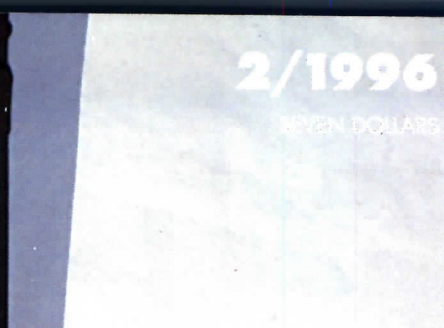
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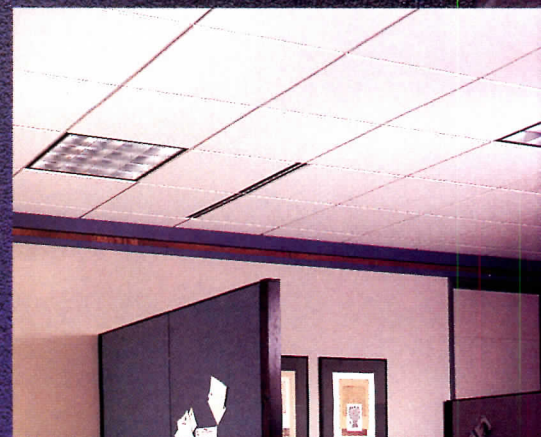


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It was once said of a certain politician that he was a modest man, and that he had a lot to be modest about. Quite the opposite is true of what must be one of the great unfulfilled challenges on today's American architectural scene, namely, the cavalier attitude toward the modest-sized building.

A plea for modesty may seem odd in a culture that worships size, especially because size is often a condition of economic viability. It is, moreover, exported in great volume around the globe, where it is often oblivious to the sensitive fabric of local life styles.

Architects cannot ignore the multi-pronged potential of the modest commission—the medical office building on a suburban street, a branch bank, a small housing group, a neighborhood fire-station. Despite the attention lavished on huge new transportation nodes, gargantuan shopping centers, and enormous mixed-use office/hotel/convention complexes, no less than 45 percent of the nation's non-residential building and apartment construction falls in the \$3 million or under category, according to F. W. Dodge. The sum total of these modest-sized buildings continues to dominate the character of all but the highly built-up districts of our towns and cities.

The picture is often not a pretty one. Far more care must be given to the way such buildings are grouped and sited, to context and scale, to materials and detail. The buzz word used to be "background" architecture. What Boston's Louisburg Square, the old squares of London's West End, the rows of houses climbing up and down hill in San Francisco and Baltimore, the shopping streets of the old Hudson River towns such as Cold Spring, the warehouse and loft districts in Los Angeles and New York City's Tribeca, the simple dorms and classroom structures in Harvard Yard, the streets of Galena, Illinois, have in common is the quality of unassuming power, of welcoming the resident and visitor without reaching for the grand gesture, of sharing a sense of place rather than offering up a crazy mix of structures where each component competes loudly for attention.

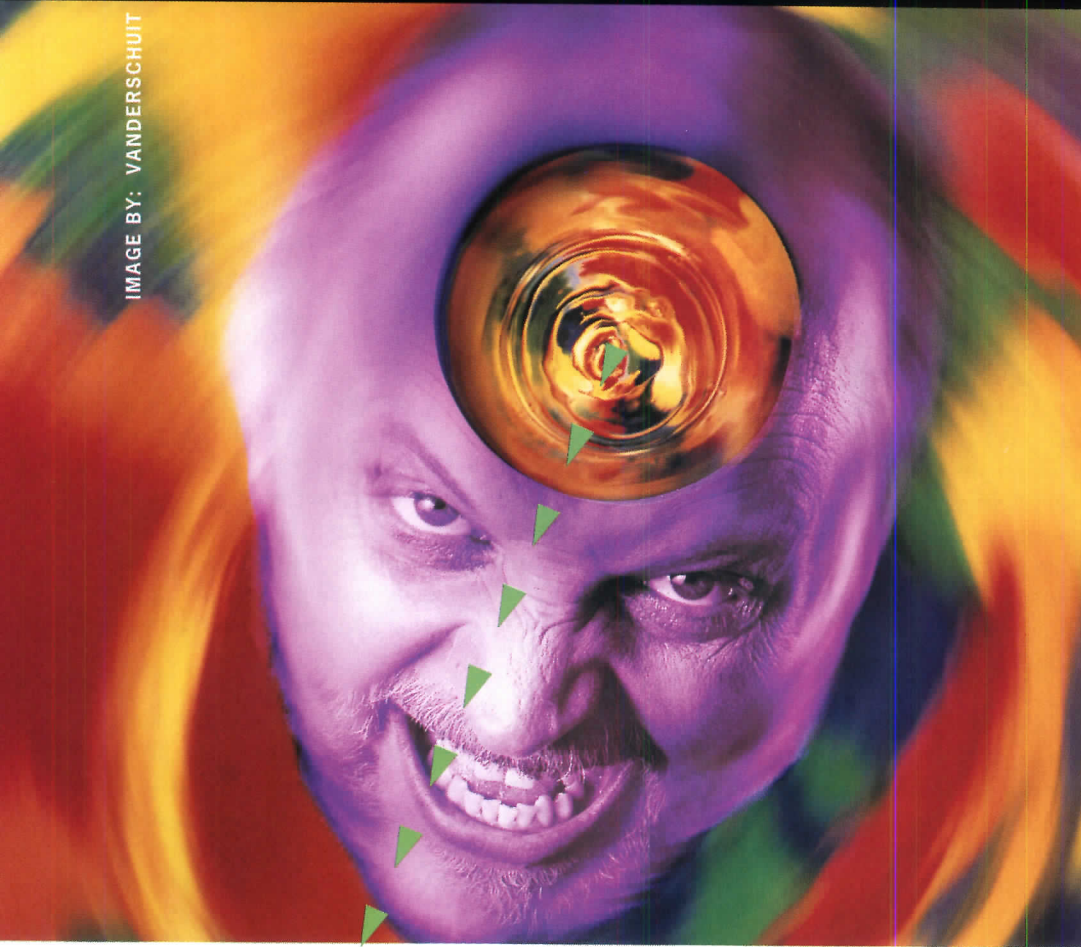
The potential for doing good at a small scale is extended by the thriving state of preservation activity in our economy and culture. Anyone following the statistics in recent years won't be surprised by the fact that preservation work in most architectural firms' workload has become routine. According to the American Institute of Architects, such work now makes up over 37 percent of member firms' workload, and while figures on non-member firms are less easy to come by, it's reasonable to assume that the phenomenon extends to them too.

Much preservation work is modest—a small Civil War monument converted into a museum (see page 98), an auto body shop made over into an alluring arts center for children (page 78), an undistinguished one-story, 1960s bank updated to a fresh, welcoming facility for the 1990s (page 72). What's more, recycling these older buildings is environmentally very sound, because they typically sit over an existing infrastructure, require no new land, and help to jump-start what was, and could again be, a beloved background setting for living and work.

But giving new life to existing buildings and neighborhoods through renovation isn't enough. It is just as important, and a lot tougher, to tackle the challenges of new construction. That's where the architect, especially the practitioner plying his/her profession in smaller towns, or in the neighborhoods and communities of our larger cities, needs to look for opportunities for small scale, modest size, and the chance to enhance the image of the profession. *Stephen A. Kliment*

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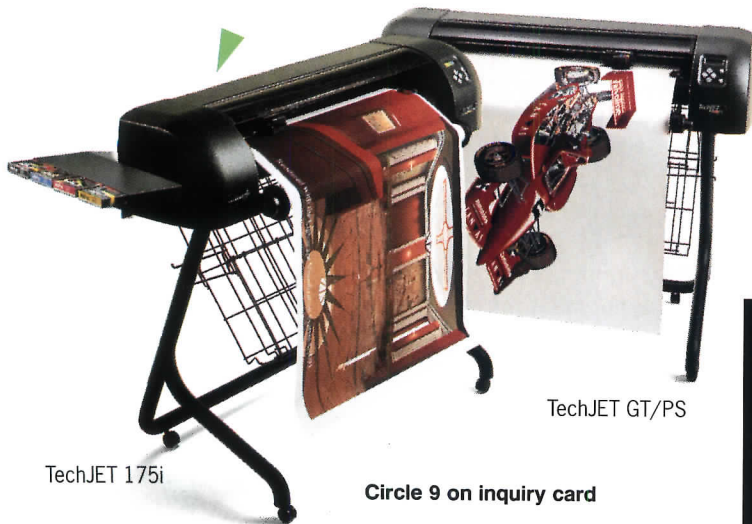
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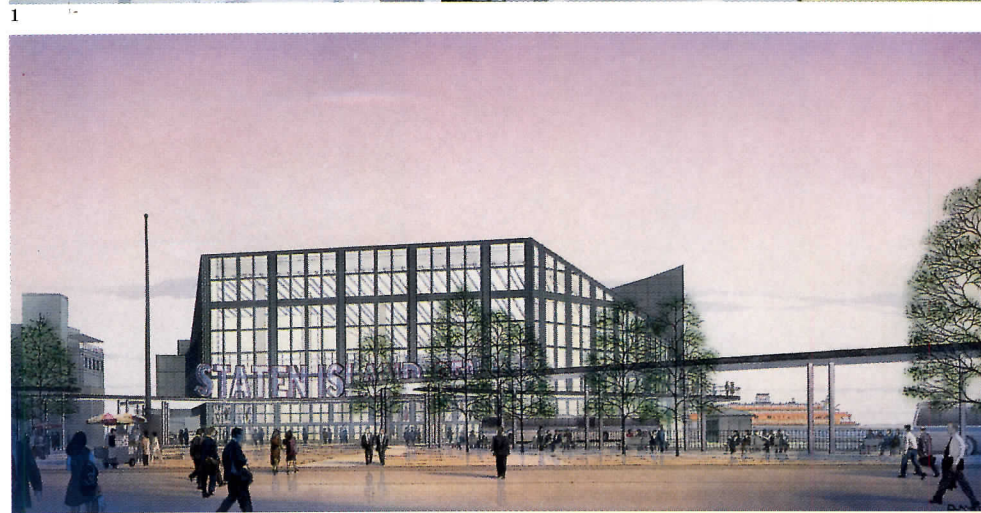
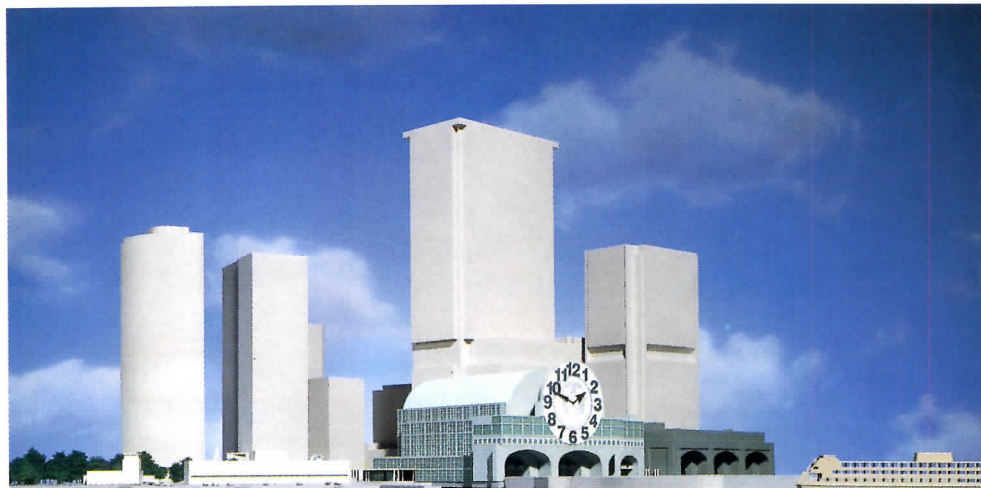
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A Less-Decorated Shed for Staten Island Ferry

Venturi, Scott Brown and Associates' (VSB) winning design for the Whitehall Ferry Terminal (with Anderson Schwartz), a replacement for a structure damaged by a 1991 fire, embedded itself in international architectural memory for its gigantic clock scaled to the towering skyline behind it—a beacon to travelers from Staten Island (1). Funding from the federal, state, and local level has fallen short of the original \$120-million budget. So the architects have proposed a new scheme *sans* clock and a vaulted waiting hall, which was to display a huge LED interior sign. Officials predict they will soon have in hand the necessary \$73 million for the current design (city-facing side, 2).

Project sponsor, The Economic Development Corporation, once saw a prominent work of architecture as invigorating a somewhat neglected part of the city, but has received little support from the current administration. Indeed, Guy Molinari, president of the borough of Staten Island and an ally of the mayor, has made the scheme a personal cause. When the architects proposed replacing the clock with an LED zipper sign, Molinari called it, "Las Vegas on the Manhattan waterfront," a comment VSB might have welcomed in another context. On the other hand, the city is struggling to revive lower Manhattan, largely abandoned by Wall Street firms, and the ferry terminal could become a palpable signal of renewal. *J.S.R.*



News

Briefs

Fire damages building, kills animals

The Philadelphia Zoo's World of Primates by Venturi, Rauch and Scott Brown [RECORD, February 1987, pages 120-125] was damaged by fire in late December. Blamed on faulty wiring, the fire did not do severe structural

damage, but smoke killed the animals, which were endangered species. The Zoo is reviewing procedures that permitted the fire to burn for hours before an alarm was turned in. Repairs await fundraising.

Torre out at Cranbrook

Susanna Torre is no longer director of Cranbrook's Academy of Art. After over a year on the job, Torre has been dismissed and is filing suit against the institution. Neither party can comment until legal issues are resolved.

Sports wins out over opera

Britain's Millennium Commission has turned down a request to help fund the radically elegant Zaha Hadid-designed Cardiff Opera House in Wales. The Commission, which has already allotted nearly \$2 billion for arts-related projects, found the project too risky. Speculation is that the money needed by the Opera House has been slotted for a rugby stadium instead. "People are used to mediocrity," says Hadid. "It's sad." ■



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Drawing a Ring Around Boston: Civic Activists Are on the Move

In the past few years a group of Boston area urban designers and architects has devoted much time and unpaid effort to proposing and energetically championing a large-scale metropolitan plan called the Urban Ring.

Introduced in 1992 at a public charrette at Northeastern University, the Ring has been strongly supported by the Boston Society of Architects, which that same year began sponsoring monthly meetings to discuss and develop the idea.

In its most literal definition, the Ring is a proposal for a transit loop around central Boston—a system of new dedicated-lane bus lines and existing subway and surface routes that would link a series of new and existing transit stations. Such an intermodal system would, supporters of the plan argue, dramatically shorten the public-transit distances between many sections of the city, and thus help reduce car traffic and improve air quality.

But proponents of the idea emphasize that transportation is simply the sensible, necessary means to a more ambitious and important end: specifically, the redevelopment of large sections of metropolitan Boston, particularly the de-populated, de-industrialized zone (found in most of the nation's older cities) between the city's thriving center and its affluent suburbs.

"The Ring is really about galvanizing Boston's older neighborhoods, about channeling private and public development to key places throughout the region," says urban designer David Lee, of local architecture and urban-design firm, Stull and Lee Associates, an early backer of the proposal. "In this sense it's not really a ring, but a development corridor."

Architect George Thrush, director of the architecture program at Northeastern University, concurs, pointing out that the Ring seeks to reverse the decades-old trend toward decentralization. "The Urban Ring is not simply about improving public transportation," he says, "but about creating a new layer of truly civic space."

For several years, the idea was of interest mainly to academics and design professionals, and, in fact, little tangible progress is apparent: to date its implementation consists of three new bus lines. Recent events, however, suggest that the concept has gained notable momentum in the region's political, institutional, and business worlds.

This fall, the Massachusetts Bay Transit Authority (MBTA), the region's transit agency, has been authorized to use \$5.1 million in federal and state funds for a "major investment study" of the project. Also this fall, the mayors of Boston and six surround-

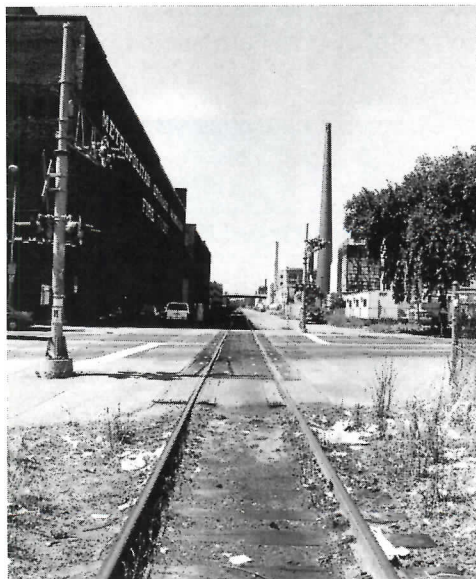
ing cities signed a "Circumferential Ring Planning Compact," pledging cooperation with the MBTA study and general support of the project's goals. Marisa Lago, director of the Boston Redevelopment Authority, stresses that the idea offers multiple benefits to metropolitan Boston. "The idea works on various levels," she says. "It works on the level of public transportation and of environmentalism, it works on the level of institutional and commercial viability, and it works on the level of regional cooperation."

In the past year, the Circumferential Transit Employers Coalition—a group formed two years ago to lobby for the Urban Ring, and whose members include such important institutions and businesses as Northeastern, MIT, the Massachusetts General Hospital, and Polaroid—has seen its membership of organizations almost double to 70.

As Sarah Hamilton, director of area planning and development for the Medical, Academic and Scientific Community Organization, a non-profit consortium of area hospitals, notes, "Boston's current transit system is simply inadequate for our medical and academic community, and for many of the institutions outside the center of the city. So we are very enthusiastic about the Urban Ring—it's an important solution to a pressing problem."
Nancy Levinson



A drawing of metropolitan Boston shows a potential route of the Urban Ring (above). Existing transportation infrastructure would be incorporated into the plan (photos right)



© Courtesy George Thrush Design

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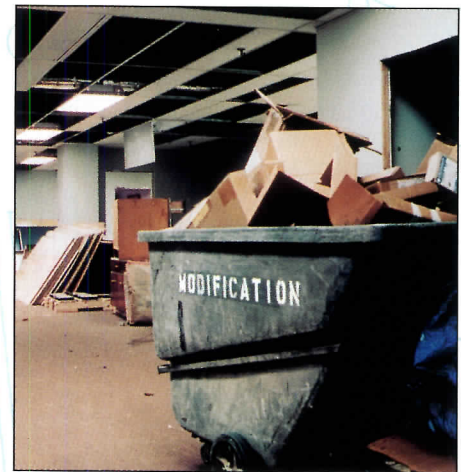
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Competitor Buys, Closes P/A

Subscribers to *Progressive Architecture* did not receive the January awards issue last month. Instead, they were sent its competitor, *Architecture*, which bought *P/A* from parent Penton Publishing and closed it, dismissing all staff and deciding not to print the January issue.

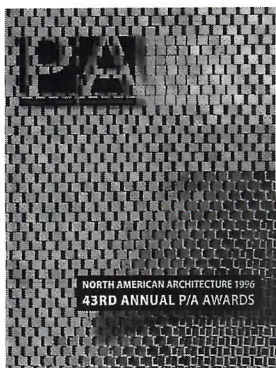
Architecture, in the view of industry observers, acquired *P/A* in part to offset major anticipated circulation losses due to the impending expiration of its publishing agreement with the AIA, in part to eliminate a competitor.

P/A, which was initially called *Pencil Points*, had just completed its 75th year. Under editor John Morris Dixon, the magazine had won a number of prizes, including a National Magazine Award in 1979. Hard hit like other publications during the last recession, it responded in 1994 with a much-debated new format emphasizing issue-based articles and investigative pieces.

The closing reportedly has disturbed some of the participants in this year's *P/A* awards. One winner said: "One of my life goals was to win a *P/A* award. Finally I've done it, but it's like the tree falling in the forest: does it make a sound if nobody hears it?"

The move leaves ARCHITECTURAL RECORD as the only other national professional magazine published primarily for architects. Last October, The McGraw-Hill Companies and the AIA announced they would pursue a long-term alliance under which, among other provisions, RECORD was designated the AIA members' magazine, replacing *Architecture* as of January 1997. RECORD will continue to serve its substantial non-AIA readership.

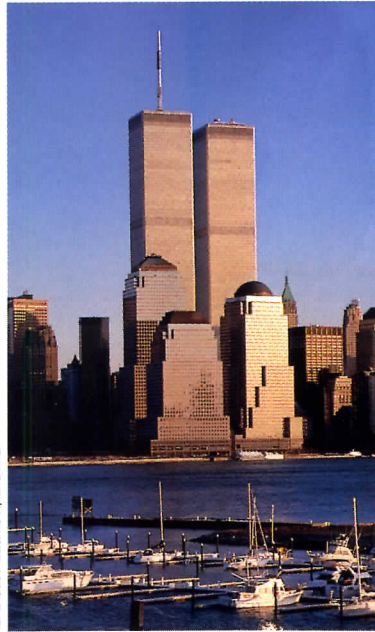
David Cohn



A facsimile of the proposed January 1996 P/A cover: detail drawing of a Caracas house by Monica Ponce de Leon and Nader Tehrani.

The Issue That Never Was

Architectural Icons For Sale

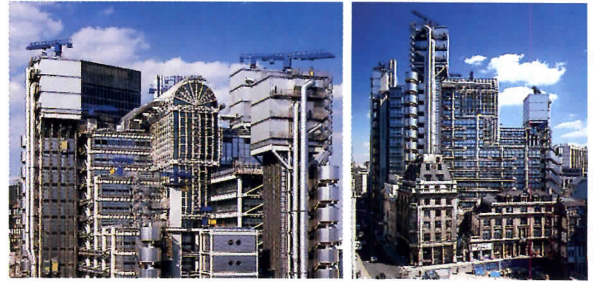


Trade towers, Asking price: ?

Looking for your own architectural monument? High-tech, high-security, boldly sculptural? London, New York City, Paris? A startling selection of modern masterpieces may soon be available in several world capitals—for the right price.

In London, Lloyd's hopes to sell Richard Rogers's high-tech, \$180-million extravaganza [RECORD, November 1986, pages 104-117]. Once condemned as a blight on the cityscape by the Prince of Wales camp, the gleaming network of ducts and service towers already seemed a nostalgic ode to the wonders of the machine when it was opened by Queen Elizabeth in 1986. Controversial architecture, however, is not the motive for the sale: funds are needed for a vast restructuring plan. But the company is unwilling to completely abandon its headquarters; in fact, Lloyd's doesn't plan to move out. Instead, the financially beleaguered company hopes to lease back several floors in the building if it is able to complete the sale. Maintenance was performed on the building last year, including removal of corrosion on exterior piping, raising the asking price to a rumored \$200 million.

In New York City, a commission within the Port Authority of New York and New Jersey



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The American Center cost some \$40 million in 1994.

(owners of the World Trade Center's twin towers) recently hired a consultant to, according to sources, "maximize the buildings' assets." The commission is said to be studying how best to privatize the towers. One option being explored is the sale of both buildings. With 10 million square feet of leasable space, the aluminum-clad structures (once dubbed Nelson and David after the Rockefeller brothers who sponsored them) cost \$800 million when they were dedicated in 1973. Since then they have been upgraded against potential terrorist attack. Current value: unknown.

In Paris, the American Center is considering selling its headquarters—a Frank Gehry gem [RECORD, May 1994, pages 86-93]—to bolster faltering finances and a meager endowment (a final decision is due shortly). While creative money-management allowed the \$40-million building to be built in the first place (the Center sold its prominent right bank site to pay for the new project on the left bank), a lack of programming funds has left the ambitious mission of the Center largely unrealized. Located in a rehabilitated neighborhood once home to the city's wine warehouses, cultural institutions need only apply since zoning has designated the building a cultural landmark. *Nicolai Ouroussoff*



Tim Barrall

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Brave New World

City Of Bits: Space, Place, and the Infobahn, by William Mitchell. Cambridge: MIT Press, 1995; 216 pages; \$20.

Reviewed by Hanna Liebman

Be careful what you wish for; it might come true. William Mitchell's *City Of Bits* heralds a new kind of soft universe, replete with gadgets, gizmos, and electronic widgets galore. Aptly described as a "windshield survey along the Infobahn," this book delivers next year's model in a clear, crisp style.

Mitchell, who is Dean of the School of Architecture and Planning at the Massachusetts Institute of Technology, is at his best when he describes his own experiences, giving a human face to the technological. For instance, he recounts an incident when teaching a class in Singapore via videoconferencing. Adjusting his tie in a camera lens, he remembers he is "telepresent" and what he is doing is being projected to the students. Later, in a charming and evocative essay that ties the whole book together, Mitchell lets us in on his formative impressions of cities, describing his exodus from a rural Australian childhood to Melbourne in 1956 for the Olympics.

But if you've kept up with the newspapers in the last few years, skip the printed text and go right to the book's Internet site to surf the impressive array of links. Or just comb the footnotes to cull a reading list that goes deeper than Mitchell's broadly aimed work.

The new world, Mitchell explains, will be composed of "mutant architectural forms that emerge from the telecommunications-induced fragmentation and recombination of traditional architectural types, and of new, soft cities that parallel, complement, and sometimes compete with our existing urban concentrations of brick, concrete, and steel."

The current industrial complex will be displaced by close-knit local communities, where workers won't have to commute, thereby gaining the luxury of connecting with neighbors and family. In turn, these communities

Hanna Liebman was an editor at CD-ROM World and has written about new media for MediaWeek and Marketing Computers.

will be jacked into the outside world through electronic networks, delivered everywhere and anywhere. Computers will be portable and wearable; you'll "have software in your underwear," he prophesies. Buildings themselves will be intelligent.

Mitchell outlines how structures have "evolved" from simple skeletons with skins to physiologically complex beings. When computers are finally seamlessly integrated into buildings, creating the nervous system to activate the brainless scarecrows of today, God presumably can rest, in Mitchell's model.

As Mitchell sees it, in a few scant years we will all be jiggling with even more technology than we are now. In fact, it will be hard to escape technology's reach. Even at museums, we will start off looking at electronic renditions of the artwork, after which a machine will spit out an itinerary showing us where the pieces we wish to see are kept.

As if that isn't bad enough, we won't get to glimpse Joan Rivers or Alec Baldwin in Bloomingdale's anymore, since they will be arranging online personal shopping appointments instead of showing up in the flesh.

I am as digital as the next person, but Mitchell's gee-whizardry with respect to new technology is hard to take. Mitchell's prose pricks up at the slightest mention of a futuristic device. A weakness of his analysis is that he hasn't addressed how far along we are in this technological journey. At times, his vignettes of impending "killer" applications come across as extended AT&T ads. And when he talks about the future of shopping, he sounds like a copywriter for a public-relations agency.

With respect to the loss of traditional building forms, Mitchell is less sanguine, even sentimental. He lovingly builds pictures of Old-World emblems, from the Alte Pinakothek to Milan's La Scala Teatro to the New York Stock Exchange. New architecture will be increasingly "recombinant," melding the concept of real presence with the need for presence in the virtual world.

He bemoans the loss of these age-old institutions, concluding that in the coming world,

Artist Krzysztof Wodiczko's "alien staff" connects the physically homeless to cyberspace and the public realm (below).



there will be "nothing left to put a grand facade on." In the new order, rather, "uses of built space are no longer permanently assigned and depend from minute to minute on software and the fleeting flow of bits."

It's a shame, though, after all his hand-wringing about how the old-form structures are going the way of the flying buttress, that Mitchell doesn't explain how changes in engineering, materials, and technology are making the old buildings obsolete, nor how he'd like to see them recast.

Oddly enough, the most disturbing thing about Mitchell's tale is that, even as he assures the reader that the new won't entirely supplant the old, as television hasn't rendered live theater entirely obsolete, his book is alternatively an anti-book and a lovely book. The design of the book itself, with reverse-type bands for chapter demarcations, uncluttered architectural drawings, and generous white space, is so clean and sophisticated that it makes you appreciate the beauty of books. But the fact that the notes and links are deeper than the main text is a reminder of what else is out there and an invitation to break out of the book and into the realm of cyberspace. ■



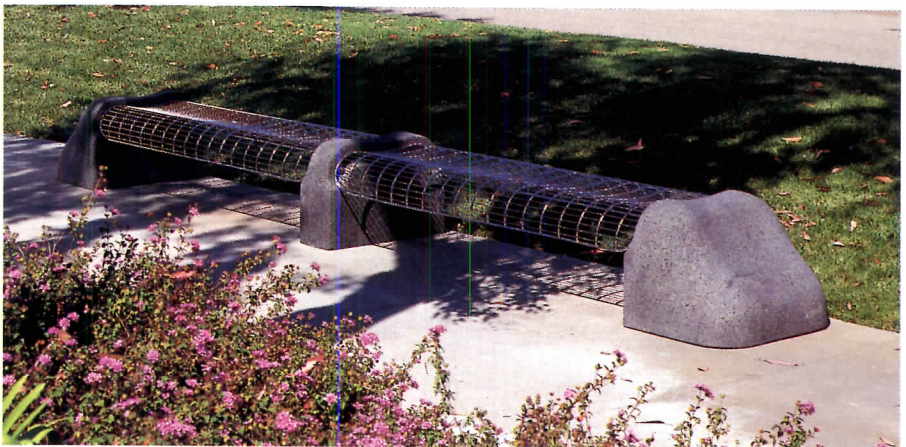
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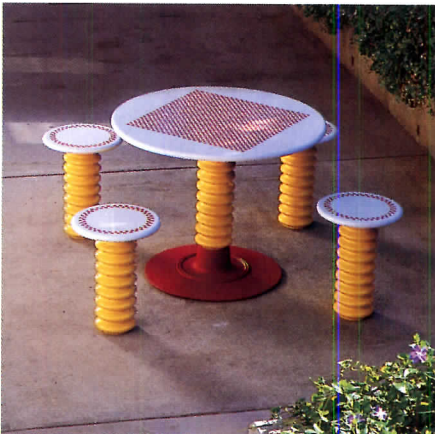
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Collaborators in Life and Art

Charles and Ray Eames: Designers of the Twentieth Century, by Pat Kirkham.

Cambridge: MIT Press, 1995, 400 pages, \$55

Reviewed by Katherine Kai-sun Chia

In the last few years, the resurgence in popularity of Eames furniture and Eames architecture has brought renewed attention to the two designers themselves.

Almost everyone who grew up in the 1950s and 60s experienced an Eames design at one point or another. Eames furniture was everywhere—in schools, airports, and offices across the country. Yet what were once taken for granted as simple and affordable stackable plywood and (later) plastic chairs are now being coveted as cult objects of classic Modern design. The innovative LCW (Lounge Chair Wood), which retailed for \$17.85 in 1947, now fetches a hefty \$1,000 in trendy furniture boutiques.

Charles and Ray Eames considered themselves Modernists who used new materials and industrial processes to create everyday goods at affordable prices. They were prolific, completing and cross-breeding projects in architecture, furniture, exhibit design, and filmmaking. Yet little of their process has been recorded, since they usually developed the work orally with few drawings or notes. Charles was particularly adamant about not publishing a “tombstone” monograph while either partner was alive, because he feared it would imply their work was “done.”

The few books on their work currently in print focus primarily on the modular house they built for themselves in 1949 in Pacific Palisades, Calif., as part of the Case Study House program sponsored by *Arts & Architecture* magazine. An important exception, *Eames Design*, by John and Marilyn Neuhart and Ray Eames (Abrams, 1989), catalogs every project attempted or completed by the Eames Office, yet it devotes little attention to the lives and methods of the two designers.

Pat Kirkham's new book is a perfect complement to the Abrams tome, and the two

Katherine Kai-sun Chia is an architect and principal of Desai/Chia Studio in New York.

volumes together form the “must-have” compendium for every Eames aficionado. Kirkham's book bridges the gap between process and persona—analyzing the Eameses' relationship as designers and partners in life. She discusses their varied projects by category and then weaves in the historical context in which they worked and the cultural communities (from Cranbrook to the National Institute of Design in Ahmedabad, India) that shaped their thinking.

Using interviews with Ray Eames, clients, and associates, plus previously unpublished materials from the Eames archive, Kirkham details the evolution of projects often overlooked by historians, especially in the area of film, multi-media, and toy design. This isn't a coffee table monograph but a rich piece of academic research; 200 black-and-white images (only 10 in color) dovetail with the text, many showing Charles and Ray at work or posed with their designs.

Charles and Ray Eames were both accomplished in their own professions prior to meeting at Cranbrook in 1940. From 1933 to 1938, Charles promoted the “Colonial Williamsburg” and British Domestic Revival styles. Hints of Scandinavian Modernism influenced the facades of his residential commissions late in this period. But only with the start of his one-year fellowship with Eliel Saarinen at Cranbrook, his friendship with Eliel's son Eero, and his life-long collaboration with Ray, did his thinking about architecture and design change dramatically.

Ray Eames, born Bernice Alexandra Kaiser, studied as a painter with avant-garde German émigré Hans Hofmann at the Art Students League in New York City in the early 1930s. Hofmann's “push and pull” abstract expressionist teachings later influenced Ray's numerous cover designs for *Arts & Architecture* and her plywood-furniture designs. When Ray entered Cranbrook she was more avant-garde than Charles, a fact “overlooked by most writers,” says Kirkham.

Kirkham argues that Charles relied heavily on Ray's strengths—her sense of structure, color, form, and her “remarkable ability to arrange groups of objects and ‘decorate’ interiors, be they domestic or exhibition spaces.”

While Charles kept himself in the public eye, showing up, for example, in publicity shots of the Eameses' furniture (below), Ray's contribution behind the scenes was critical to the success of their designs (bottom).



These were seen by many as lesser abilities than Charles's technical and practical skills. Yet these qualities were central to their work, providing the balance between the rational and the intuitive that has made Eames design so appealing to this day.

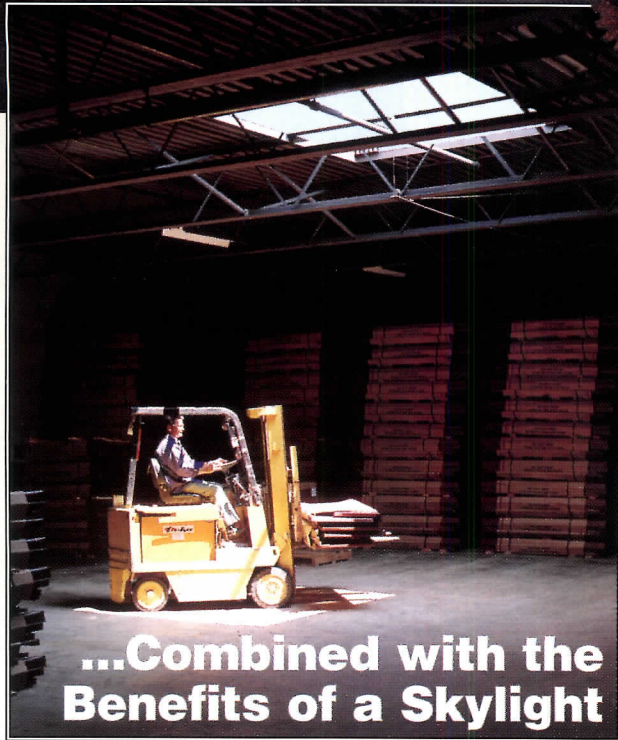
Kirkham confronts the gender bias in histories of this period, which commonly slight women who worked in partnerships with men. This was particularly true in the case of the Eameses; indeed, Ray's contribution was not recognized publicly until the exhibition “Connections: The work of Charles and Ray Eames” opened in 1976. Throughout the book, Kirkham re-evaluates and repositions Ray within the context of the collaboration, providing substantial evidence that Ray's contributions equaled those of Charles.

By reassessing Ray's involvement in the work, this book moves to the forefront of research on the Eameses. In addition, Kirkham's thorough discussion of the Eameses' lesser known contributions to design and film and the personal working dynamic between the two partners provides a well-rounded perspective of one of the great design partnerships of the 20th century. ■

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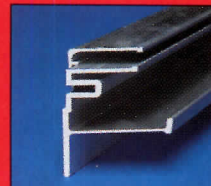
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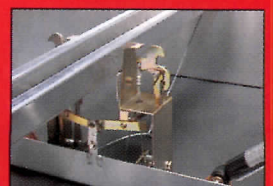
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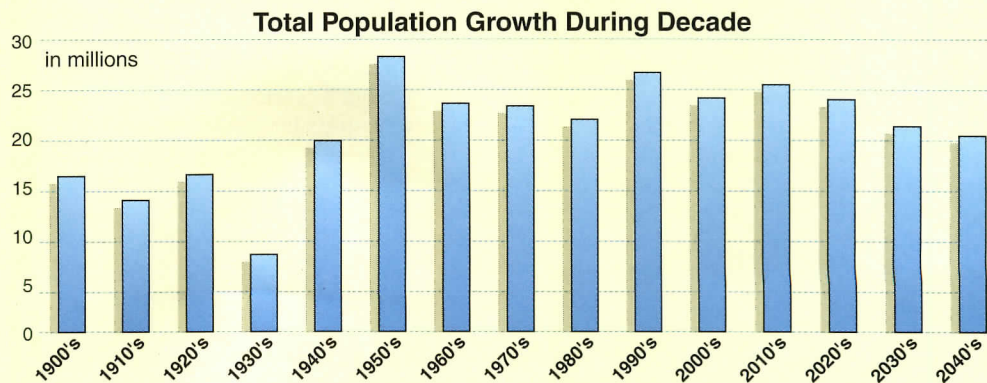
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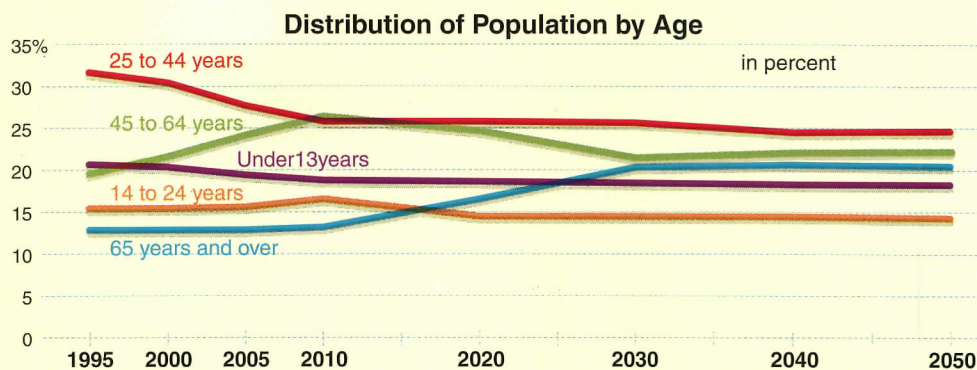
Population boomlet near its end

Broad demographic trends often manifest themselves in surprisingly short cycles. The consistent strength in school building and single-family housing over the last few years, for example, may wane once the millennium turns as baby-boomers move beyond child-bearing years. The census bureau predicts that total population growth will gradually slide, and the percent change in population will shrink considerably. Its middle series (the basis for these figures) shows 392 million Americans in 2050. ■



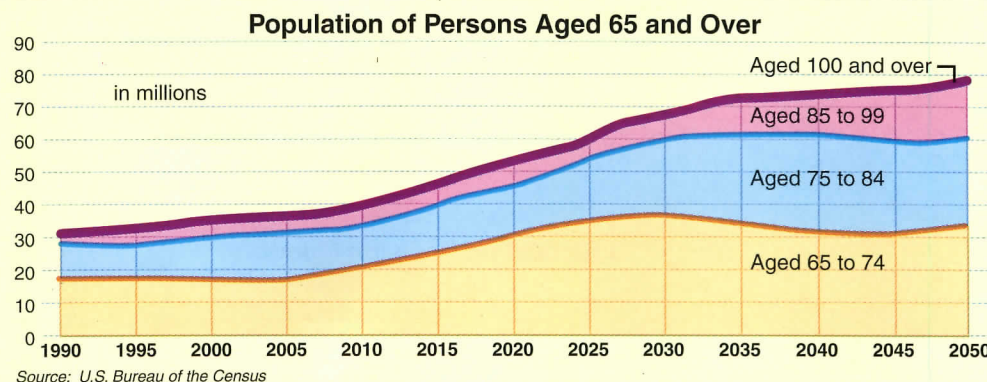
Getting older

Some have predicted that the population's steady aging will create a huge burden on younger workers. The Census does predict that median age will peak at 39.1 in 2035 (from 32.8 in 1990). And the dependency ratio (which includes children below 17 and adults older than 65) per 100 working-age people will go from 62 (1990) to 78.9 in 2040. But the ratio was actually higher in the 60's when boomers were infants. The relative wealth of those working will determine whether there will be funds to build what's needed. ■



The growth of the very old

In percentage terms, those more than 85 years old will quadruple by 2050. In real terms, the very old will still be less than five percent of the population. There should be steadily increasing work for this population, not just in health-care and residential facilities, but in adapting non-specialized public accommodations to the needs of those who will be more active than their counterparts of the same age today. The 100-plus-year club will grow from tiny numbers to 0.3 percent of population. ■



The Profession This Month

- Non-Traditional Services 32**
- Indoor Air Quality 36**
- Roofing 42**
- Software Reviews 49**
- New Products 52**

Short Takes

- **Business supports the arts:** According to the Business Committee for the Arts, a non-profit organization, arts organizations received an estimated \$875 million in company contributions in 1994, up from the \$518 million recorded in a 1991 survey. Spending shifted to arts education and performing-arts centers over museums and conventional theaters.
- **Building serviceability rating:** The ASTM has published 17 standards on func-

tionality and building performance, ranging from Support for Office Work to Amenities to Attract and Retain Staff and Special Facilities and Technologies. ASTM, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959, 610/832-9500, 610/832-9635 (fax).

- **Case studies in sustainability:** Victoria Schomer, who has published the *Interior Concerns* newsletter, has begun the *Green Buildings Case Studies Review*, showcasing built projects. Interior Concerns Environmental Resources, P.O. Box 2386, Mill Valley, CA 94942, 415/389-8049, 415/388-8322 (fax). ■

Charts by Leannor Glynn

Redesigning the Architect

By Robert Spencer Barnett

"Business! What a dilemma! If you try to please people, you become corrupt and sell yourself; if you do what you feel you must do, you cause displeasure and create a void around yourself." This lament, attributed to Le Corbusier, may still elicit sympathy from many architects today. If anything, business imperatives are driving architects more than ever, causing firm leaders to confront the fundamental values they share. Architects, whatever their reasons for originally entering the field, see themselves driven to redefine their practices if for no other reason than to move income above the subsistence level. Sadly, many see fee levels for traditional service-delivery models as inadequate both to properly serve clients and to build personal net worth.

Most architects enter the field as a "way of life"—a *practice*-centered business, as Weld Coxe, founder of the management-consulting firm the Coxe Group, puts it. Since, as Coxe admonishes architects, "your clients care only about your practice, not your business," the trick today is to define a profit-making means of practice that recognizes the age-old values of architecture while serving clients'

Robert Spencer Barnett is assistant director of the office of physical planning at Princeton University. He was formerly director of design technology at The Hillier Group.

evolving needs. In so doing, architects are redefining what the field is. But stretching the definition of architecture requires a rethinking of its core values. A look at recent history suggests how far architects have already come.

August Kommandant, the structural engineer who collaborated most closely with Louis I. Kahn, observed that Kahn "advised students that an architect's first task after receiving a commission and the program accompanying it is to change the program, not to try to satisfy it, but to put it into the realm of architecture." Similarly, some architects still subscribe to the image of Ayn Rand's fictional architect Howard Roarke, who espoused the belief that "no great work is ever done collectively, by a majority decision. Every creative job is achieved under the guidance of a single individual thought."

The architect as problem-solver

While the architect with a singular artistic vision has hardly disappeared, the way the architect relates to the client has unquestionably changed since the days of Kahn and Roarke. Charles Gwathmey, for example, believes that architect and client are "mutually obligated to the intellectual pursuit of discovery" when undertaking a project. He observes that, for a client, lacking the assurances of a construction-industry *Consumer Reports*, hiring an architect is a "leap of

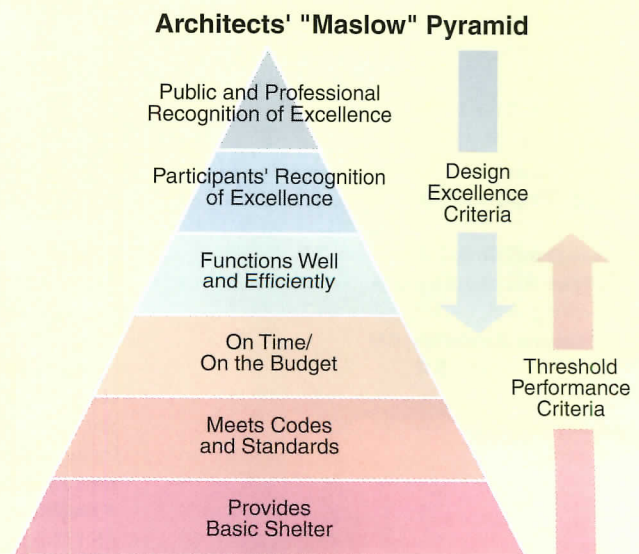
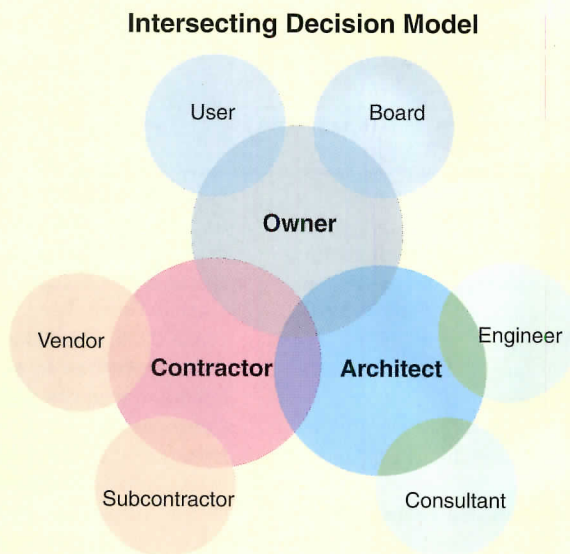
faith." Dana Cuff, associate professor at UCLA's Department of Architecture and Planning and a researcher on architectural practice, sees the architect-visionary as obsolete: "Architecture is not a venue for prima donnas." She characterizes the design team as a jazz ensemble as opposed to as an orchestra with a conductor.

Indeed, architects today often see themselves as problem-solvers, having unique skills in synthesizing complex requirements in three dimensional form. Daniel Casey, who was a long-time associate in Edward Larrabee Barnes' office, observes that architects "share a culture that goes back to day one in architectural school." Architecture's common knowledge and language makes it "the only profession that considers all aspects of the relationship between humankind and the built environment." He describes the design process as the "choreography of the physical, social, economic and artistic" aspects of this relationship. While he acknowledges the contribution of related professions to this process, at some point the designer must "go to the mountain" and emerge with a concept.

The client as "customer"

As American business in the 1970s and 1980s became more influenced by the customer orientation theorized by statistician and business consultant W. Edwards Deming and others, architecture has had to change to

The composition of the design-construct team is moving from the traditional hierarchical to an intersecting model (near right). James Franklin, former resident fellow of the AIA, adapted the Maslow pyramid (a diagram of self-actualization) to recognize the professional's conflicting agendas (right).



Numerous experts—even the AIA—see much of architecture’s future as outside the boundaries of traditional practice. But stretching these boundaries calls for a rethinking of architecture’s core skills.

keep pace. The Total Quality Management movement focused efforts to deliver products and services more efficiently with fewer errors. From that came business best-sellers like Richard C. Whitely’s *The Customer Driven Company*. As clients have embraced TQM and gotten used to a strong client-service orientation, surveys show they perceive architects as making too little effort to understand their needs. They appear arrogant, uninterested in client aspirations, or unskilled at the essential art of listening.

Strategic thinker; process manager

Speakers at AIA’s Summit on Expanding Architectural Services, held last September in Nashville, saw market forces challenging the current model of the architect as synthesizer and problem-solver. These include:

- The encroachment of related professions such as interior design, landscape architecture, and program management.
- The increasing number of architects choosing “alternative” careers in fields such as facilities management, construction management, and community advocacy.
- The chipping away of architects’ traditional turf, not just by allied professionals, but by consultants lacking architectural training and licensing, such as real-estate professionals, accountants, and management consultants.

What’s driving these changes? First, the demand for traditional services relative to

the number of architects keeps shrinking [RECORD, October 1995 pages 42-45]. Also, some clients, seeing the value, cost, and efficiency potentials in their real-estate holdings, are managing them much more aggressively—and using architects to do it. Graduate and licensed architects working outside traditional private practice now account for approximately 24 percent of the profession, up from 16 percent in 1960. Richard Hobbs, vice president for professional practice at AIA, predicts that within 10 years the percentage will increase to 50 percent.

In such an environment, yet another concept of practice is evolving, the strategically focused or process-oriented architect. Such an architect looks beyond the conventional definition of architects’ services to capture those services clients desire and that the architect is qualified—or can become qualified—to provide. They include such predesign services as strategic business planning (a prelude to strategic *facilities* planning—see RECORD, September 1995, pages 32-35, 62-63) and program management, ongoing services including construction management, and such post-construction services as building-systems commissioning and facilities management.

The AIA’s Practice and Prosperity program under Richard Hobbs and George Chong, California Council AIA’s president elect, is

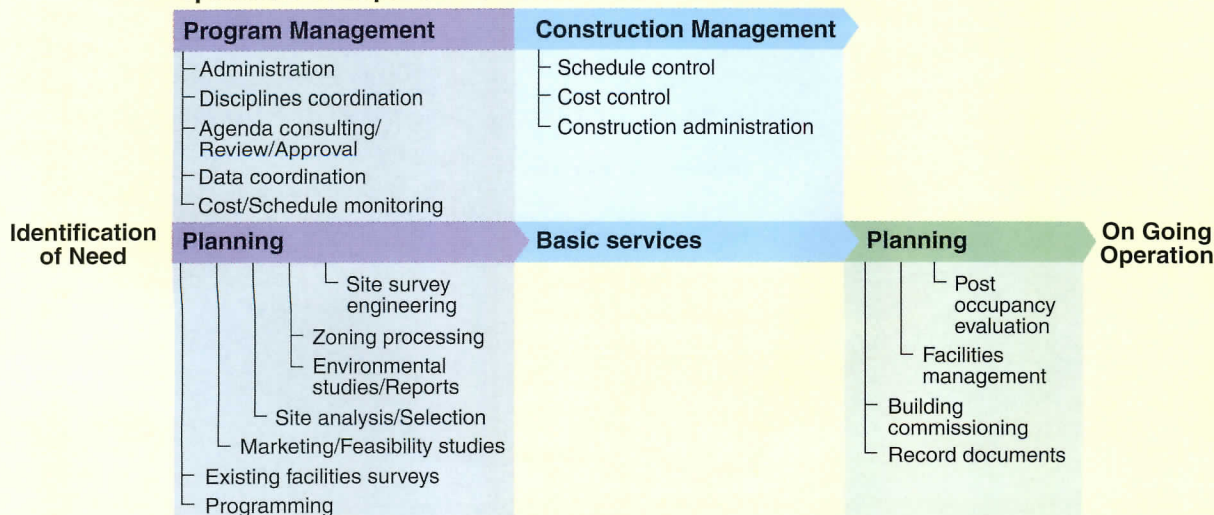
developing the tools and support to enable architects to provide these non-traditional services. Hobbs believes that typical basic services will soon account for only 33 percent of the profession’s work while predesign and post-construction services (see diagram below) will account for an additional 33 percent each. According to Louis Marines, the president of the Advanced Management Institute (AMI) and a former AIA executive, the profession is currently “underleveraged.” He believes that architects can build on skills they have to deliver non-traditional services and that other skills can be acquired through alliances, continuing education, and even degree programs.

Redesigning the architect

If architects want to offer non-traditional services or restructure their businesses to capture these new markets, however, they must be able to assure their clients that they have the skills needed. Architects already possess analytical and organizational skills that are well suited to the needs of today’s “corporate developers,” according to Peter Miscovich, president of Interior Space International (ISI), and a leader in the expansion of architects’ traditional role.

Like other firms that formerly offered primarily corporate interior-design services, his firm has already made up its mind about how it will serve clients: ISI “seeks to support the

Spectrum of Expanded Services



AIA’s Richard Hobbs and California Council’s George Chong see services outside the range of basic services as increasingly important (left). To capture this work, architects no longer have to operate within traditional firms, but can realize clients’ goals through strategic management of increasingly valuable real-estate assets.

long-term business interests of their clients, not just do hot design." If ISI had stayed within a traditional design-firm mold, Miscovich says it wouldn't be chosen by today's clients—who are increasingly corporate real-estate asset managers who advocate alternative-office strategies. Facilities for such clients don't come out of a program, but are best designed, according to Miscovich, pursuant to the client's broad and fundamental vision of work process—a vision ISI helps clients develop. Architectural firms with the expertise to support the restructuring of work—not just the physical form of the work space—will surely find a receptive audience among such clients and their asset managers, Miscovich says.

However, he believes that architects must overcome a general lack of understanding of business strategy if they hope to gain the full confidence of corporate clients. Citing his own evolution from graduate civil engineer to architectural project manager to workplace strategist, he stresses the need for individual retraining and continuing education. Fortunately, many such opportunities exist for those motivated to expand their skills. The International Development Research Council (IDRC), the National Association of Corporate Real Estate Executives (NACOR), and the International Facilities Managers Association (IFMA) all offer courses and conferences.

Design/build and partnering represent a form of team-member interaction that requires members to surrender some traditional authority for the good of the project (near right). The focus of the diagram is the decision to be made, not the singular "master builder."

Beyond the master-builder model

Likewise, architects can learn to be construction managers. After all, CM was first promoted over 25 years ago by an architect, Charles Thomsen, then a partner at Caudill Rowlett Scott. Contractors soon claimed that service and today it is no coincidence that partnering is being promoted by construction managers. Nevertheless, the proliferation of project-delivery methods has eroded the boundaries of traditional practice [RECORD, March 1995 pages 28-33]. The AIA California Council has identified seven alternatives to the standard design-bid-build method. The Council will soon publish its "Handbook on Project Delivery" to assist owners in "choosing the right method for the right reason," according to president-elect Chong.

While redefining the architect's traditional relationship with the owner and contractor, these alternatives also create new opportunities for architects. Following such pioneers as CRS and Heery & Heery, many architectural firms are venturing into construction management and design/build, and others into real-estate development.

Although many architects regret the passing of the architect as "master builder," the master-builder idea itself is becoming obsolete when alternative-delivery scenarios are used. The architect can maintain an authoritative voice for design by understanding the

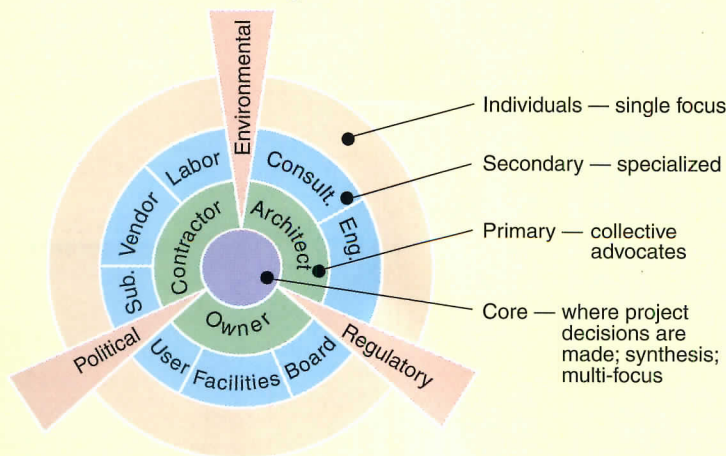
fundamentally different relationships that apply among team members in such projects.

• *Hierarchical model:* In the traditional design-bid-build model, the owner retains authority to direct the architect and the contractor. The architect and contractor direct their subcontractors and consultants and maintain an arms-length distance from each other. Perhaps the most controversial element of this arrangement is the architect as agent for the owner in the interpretation of documents that the architect prepared. Contractors frequently argue that there is an inherent conflict here (the architect has the ability to absolve himself of errors), and they argue that architects simply don't have the skill and training to monitor today's ever-more-complex construction projects.

• *Intersecting model:* A construction-management project moves the major participants into closer proximity to one another and recognizes overlapping areas of expertise and authority (see diagram, page 014a). The zones where only two participants intersect—owner and architect for example—perpetuate the separate responsibilities of the hierarchical model. However, the model does create a zone where all three interests can resolve conflicts.

• *Convergent model:* Delivery methods like design/build or partnering are more team-ori-

Convergent Decision Model



Identity and Values

As firms evolve to serve clients in new ways, the fundamental identity of the architect changes, and new kinds of values and skills are needed.

ented, and the convergent model suggests the way participants interact (opposite). The outermost ring comprises individuals with strong vested interests and a narrow focus—a labor union's business agent, the owner's plant supervisor, or the architect's code consultant. While the spheres of authority and expertise of owner, architect, and contractor are recognized, the project architect, for example, is beholden to the team and the outcome of the project more than to the narrowly focused and vested interests of people she reports to. Every participating entity gives up some of its traditional authority to realize the best interests of the project.

When MBAs practice architecture

It's not only the traditional boundaries of architectural services that are shifting. A similar redefinition process is at work in allied professions. This cross-pollination creates opportunities for architects: they have joined *Fortune* 500 companies. But the reverse is happening, too. A CEO of a large architectural firm recruiting staff told Robert Gutman (whose *Architectural Practice: A Critical View* is now a classic), "... we're hiring MBAs, not architectural graduates. We are servicing our corporate clients' needs for strategic consulting."

And non-design professionals are beginning to annex some architectural services to their turf. Accounting firms see a natural evolution

from accounting to management consulting to asset management to facilities planning. One "big six" firm, KPMG Peat Marwick, provides physical-planning services to Denver International Airport. For commercial clients, the firm usually does market surveys, which are analogous to programming. According to Jerry W. Turner, Jr., Peat Marwick's director of Real Estate Services, the firm's goal is to "optimize return to the investor," which often requires adjusting both the architect's and the developer's aspirations to the reality of the marketplace.

From this, it's not a big jump to a form of professional-service entity that combines traditional architectural and planning services with management-consulting and accounting services.

Gap between education and practice

There are many who argue, however, that architects' education simply does not provide either the management skills nor the communications and synthesizing skills needed by today's working methods. A study of the gap between architectural education and practice by the Carnegie Foundation for the Advancement of Teaching, led by the late Ernest Boyer, is nearing completion. We don't yet know what it will mean for architecture; a similar Boyer study revolutionized the medical profession a generation ago. In 1991, Fred Stitt founded the San Francisco Insti-

tute of Architecture, which offers a three-year Master of Architecture degree (NAAB accreditation is pending). He observes that "the most influential educators at the most influential schools have attempted to diminish if not exclude construction technology and business management from their curricula."

Louis Marines's Advanced Management Institute, founded in 1989, "provides working architects and engineers with post-graduate education in management, leadership, and business skills," says Marines. The Institute offers core courses in practice management, project management, marketing, financial management, and leadership development as well, as more specialized electives and "intensives." These courses are offered on weekends, much like business-school programs for mid-career professionals. The institute also offers in-firm education.

Peter Piven, president of the Coxe Group, sees professional schools, licensing authorities, and professional societies, as a "three-legged stool" which supports the platform from which architecture operates. He believes the ACSA, the NCARB and the AIA must adapt to changing roles, relationships, and services in the profession.

The architect's fundamental identity

Since most people choose the field of archi
Continued on page 110

Traditional

- *Identity:* Architecture as creation of the singular artist.
- *Values:* Individual vision and creativity; oriented to transformation of needs into a physical form in service to culture, community, and society.
- *Skill set:* Artistic vision and means (drawing, modelmaking) to communicate it. Knowledge of construction detailing and technology necessary for realization. Ability to transform program needs into architectural language.

Service-Oriented

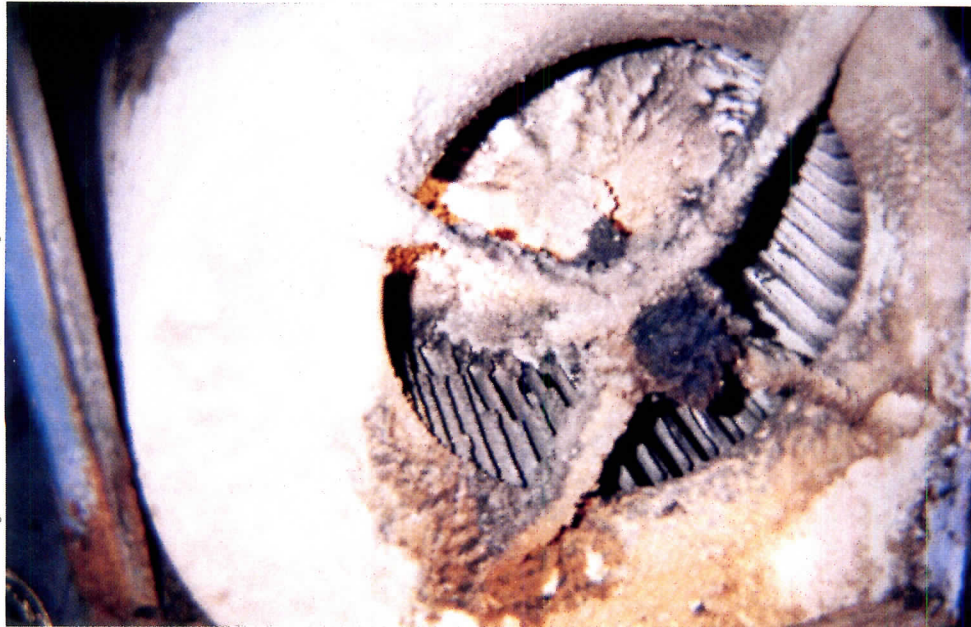
- *Identity:* Create unifying concepts that respond to diverse, complex criteria and abstract or unarticulated needs.
- *Values:* Client-driven; humanistic, problem-solving orientation.
- *Skill set:* Communication and reasoning skills to articulate and synthesize needs; design skills oriented to problem response; good management skills for handling complexities of a programming, design, and construction process that involves many players.

Strategic/Process Oriented

- *Identity:* Services molded to strategically respond to customers' broad goals; an umpire, a coach, a diplomat.
- *Values:* Offer those services customers seek; not afraid to stretch boundaries in terms of services offered; big-picture and long-term view just as important as immediate project, program, or process.
- *Skill set:* Ability to conceptualize and design with a business-oriented, strategic approach. Powerful management and people skills; ability to conceptually shift gears to take on diverse tasks ranging from broad business strategy and conventional design and documentation to project management, commissioning, and facilities management.

INDOOR AIR QUALITY

Some Old and Some New Sick-Building Culprits



© Courtesy Ductbusters, Inc. May Home Inspections

If this doesn't scare you: Dust on a fan motor is a perfect growth medium for IAQ-causing microbes. The evident rust indicates the fan has been wet.

By Nadav Malin

Sick-Building Syndrome (SBS) has become perhaps the most dreaded "hot-button" issue facing architects, mechanical-systems engineers, and commercial-building owners. One reason for the dread is the mystery that often surrounds indoor air-quality (IAQ) problems. Increasing attention since the late 1980s has gradually uncovered a better understanding of the many factors that can contribute to the health problems of building occupants, but there's still no sure cure, no magic bullet, nor even consistent culprits. Still, researchers and forensic experts are increasingly coming to consensus on some of the knottiest IAQ issues, and are tentatively resolving some of the mysteries.

Since the first cases of building-related health symptoms were investigated in the late 1970s, researchers have attempted to correlate occupant complaints with measurable levels of known toxins or irritants. Indeed, the presence of volatile organic compounds (VOCs), such as those in solvent-based paints; other toxins off-gassed

Nadav Malin is managing editor of Brattleboro, Vt.-based Environmental Building News.

by building products; poorly designed ventilation; and lack of fresh air continue to figure in Sick-Building Syndrome.

In many cases, though, efforts to identify sources of indoor-air problems have come up short. Recent research suggests that different pollutant sources may be at work, including previously underemphasized microbial contamination, uncontrolled movement of air (and contaminants) within and through the building envelope, and newly documented chemical interactions among contaminants.

What's living in the ductwork

Microbial contamination, which many kinds of chemical screening fail to pick up, is now seen to play a significant role in many sick-building cases, according to architect and IAQ consultant Hal Levin of Santa Cruz, Calif. Thus, control of biologicals is gaining increasing attention in the design of mechanical systems (and whole buildings), and in the treatment of IAQ problems. Microbial contamination is especially prevalent in humid climates, where condensation within an hvac system can nurture microbial growth. Another factor is unintended air movement within and through the building envelope. This air movement can both undermine venti-

lation effectiveness and introduce a wide range of added contaminants to the building.

"Pressure relationships in the interstitial areas of building assemblies are the most underrated source of IAQ problems," says building scientist Joseph Lstiburek, of Chestnut Hill, Mass. Stack-effect pressures are frequently overlooked, according to Lstiburek. (The stack effect is particularly pronounced in tall buildings, where differentials in prevailing winds and temperature can create significant volumes of usually upward air movements.) He says this may cause the ventilation system to redistribute toxins within a building rather than introducing fresh air. (The deviation of actual conditions from those designed can be profound, as Lstiburek found in a project he analyzed, shown on the following pages.)

Lstiburek cites another area in which poorly understood air-pressure relationships can cause problems: air drawn from roof assemblies (which, during the day can reach 200F) into negatively pressured dropped-ceiling air plenums. A range of toxins emitted by the heated roofing membranes and insulation can infiltrate the occupied space. The widespread use of dropped-ceiling air plenums is itself a questionable practice, according to Lstiburek, because any contaminants in the ceiling space—or in any area connected to that space—will be recirculated to building occupants. Poor air-sealing around the plenum's perimeter is common and problematic.

A "chemical soup" of irritants

Researchers are also beginning to identify the interactions among contaminants in the indoor environment as increasingly important. Referring to what he calls the "chemical soup" of VOCs common in buildings today, Lstiburek says, "People have suspected interactions for a long time." They may cause symptoms that cannot be attributed to each chemical individually. New research by Charles Weschler of Bellcore Communications, in Redbank, N. J. (which funds IAQ research related to electronic components), has shown that 4-PC, a chemical released from carpets backed with styrene butadiene (SB) latex, can react with ozone to create potentially irritating aldehydes. SB latex-backed carpets are ubiquitous in office

The sources of some buildings' indoor air-quality problems continue to baffle analysts. Other maladies are increasingly well understood, especially the growing concern over mold in mechanical systems.

environments, and 4-PC has long been studied as a potential irritant because it has a detectable odor even in minute concentrations. Health studies of 4-PC have not shown it to be particularly toxic or irritating at measured levels, however.

The new findings may explain why office workers often experience health problems after the installation of new carpet. Also at risk are hotel-room occupants and maintenance staff. In the lodging industry, carpets are replaced frequently (each time releasing more 4-PC) and ozone-generating devices are sometimes used to mask the smell of mold. "In the coming years we are going to discover that this type of interaction is a very important process that has confounded much of the past research on office environments," says Levin.

"It's a dumb number," Lstiburek says of the 20 cfm/p in the new ASHRAE standard, adding that providing 20 cfm/p in hot, humid climates is a recipe for disaster.

Bad versus benign VOCs

Another development in the analysis of sick buildings concerns the separation of VOCs into categories based on their likely source. It is common knowledge that not all VOCs are equally hazardous—some are known to be highly toxic, while others, including many naturally occurring chemicals, are benign. Yet, because total VOC levels are much easier to measure than individual compounds, many studies have attempted to use total-VOC measurements to identify problems. They have had little success.

Dr. Joan Daisey and others in the Indoor Environment Program at Lawrence Berkeley Laboratory (LBL) analyzed past data to identify "clusters" of VOCs that are commonly generated from a single source, such as motor-vehicle emissions or water-based paints. Then, rather than trying to measure each of the VOCs in every case, they used certain indicator compounds to determine the

presence of a given cluster. The researchers then mapped occupant health symptoms from a questionnaire against the presence of these indicator compounds, and came up with "a big breakthrough," according to Daisey. "We were able to link emissions from water-based paints and solvents to specific symptoms, including dermal and eye irritation." If it continues to prove successful, this methodology will be very useful in identifying sources of SBS.

Is ventilation the problem?

Discussions of IAQ are often closely tied to the issue of ventilation, and for good reason. Prior to the energy crisis of the 1970s, copious amounts of fresh air (heated or dehumidified as necessary) were introduced via hvac systems, effectively diluting most contaminants. In a 1981 standard, ASHRAE

reduced the recommended fresh-air ventilation levels to five cu ft per minute per person (cfm/p) for offices. By reducing outside air intake, energy-conservation measures may have concentrated pollutants that previously had gone unnoticed. The 1981 ASHRAE standard was upgraded in 1989 to 20 cfm/p for most office environments. Buildings that effectively meet the new standard are much less likely to cause health problems, according to recent large-scale analyses of IAQ studies in the U.S. and Europe. "That doesn't mean that increased ventilation can solve the problem in a given building," Levin cautions.

Inadequate ventilation remains common, even in buildings that were ostensibly designed to the new ASHRAE standard. For a host of reasons, hvac systems frequently fail to consistently deliver their design levels of outdoor air, and reliably measuring the actual ventilation rate can be tricky. Mechanical engineer David Bearg, of Life Energy Asso-

ciates, which does hvac-related IAQ research, has frequently seen instances of incorrect components or improper installations leading to significant reductions in the outdoor air provided to occupants. Even where overall outdoor air supply is adequate, good distribution of fresh air to building occupants continues to be a challenge.

Of concern to many experts is the increasing use of carbon dioxide (CO₂) levels to gauge ventilation rates. Although CO₂ is not itself an indoor pollutant of concern, it is often used as an indicator because indoor levels are always higher than outdoor levels, and it can be measured relatively easily (and inexpensively). "It's useful as a screening tool," Levin says, "because if you get a very high reading you know you've got a problem."

But estimating ventilation rates from the difference between indoor and outdoor CO₂ levels is highly problematic because a given measurement assumes that the gas has reached a steady state, which is rarely the case. In addition, Bearg points out that inexpensive CO₂ meters are hard to read accurately, and an untimely breath from the operator can throw off the reading. Bearg does, however, advocate sophisticated, long-term CO₂ measurements as part of an ongoing hvac monitoring system, and the American Society for Testing and Materials (ASTM) Committee D-2205 on IAQ is drafting a provisional standard on the use of CO₂ as an evaluation mechanism.

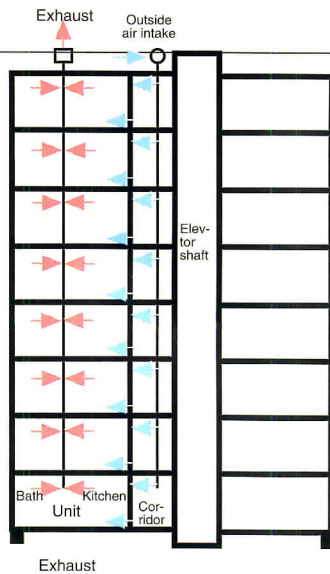
Hvac system design and maintenance

While it is clear that not enough ventilation can contribute to IAQ problems, researchers are also learning more about how poorly designed and maintained systems can actually cause SBS symptoms. Location of air intakes is a potential problem that was recognized early on, as fumes from loading docks or taxi stands engulfed office workers. Less well-recognized is the fact that the mechanical room itself, if situated near outdoor air-pollution sources, can provide a pathway for contaminants into the ventilation system.

In laying out a building, Bearg observes, architects often consider both loading docks and mechanical rooms as "building-support services," and unwittingly place them near

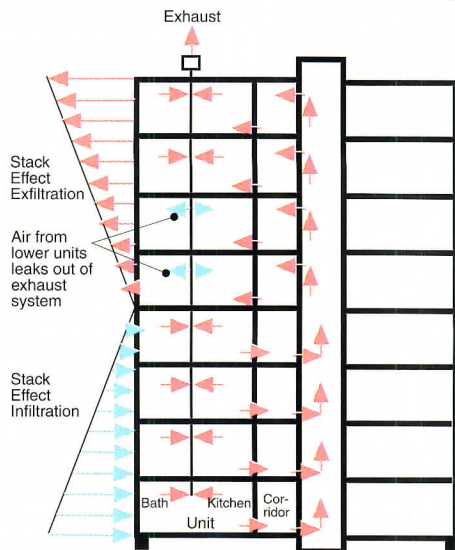
System As Designed

- Outside air is supplied via a rooftop unit, which is ducted to corridors.
- Corridor doors are undercut to allow fresh air to be supplied to individual apartments.
- Rooftop fans are intended to draw exhaust air from kitchens and baths.



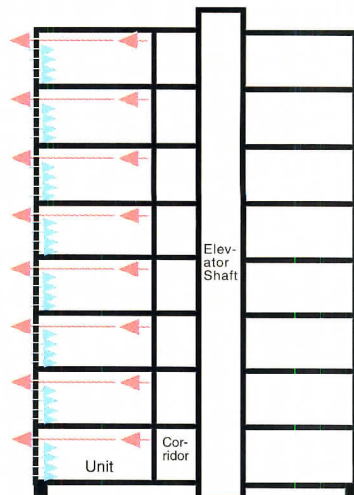
System As Found

- The rooftop fan that supplied outside air was not operating.
- Air flows due to the stack effect dominated those designed.
- The rooftop system actively exhausted only the uppermost units.
- Some lower-units' exhaust was due to a passive stack effect.
- Exhaust air from the lower units was leaking into mid-level apartments.
- Stale air from lower units migrated into upper units through elevator shafts and corridors.



System As Proposed

- Individual ventilation of units will be provided through the exterior wall.
- The units will be compartmentalized, isolated from corridors and shafts [which most codes would require anyway—ed.]
- Corridors and stairwells will be pressurized via a smoke-control system tied to fire-alarm controls.



each other. Much of the increasing attention to microbial contamination mentioned above is focusing on the growth of microbials within the hvac system. Microbial growth is common wherever dampness persists. The introduction of humid outdoor air into a cooler building causes condensation which, if not drained effectively, can spur such growth. "The critical areas that need to be kept clean are the condensate pans and the interior of the ductwork," Bearg says, adding that regular cleaning and maintenance is critical to the prevention of microbial growth. (The images opposite graphically convey the state of too many hvac systems.) Design decisions about the location and accessibility of hvac components may well dictate whether or not such maintenance is carried out.

To further confuse matters, providing the recommended levels of ventilation can itself be a problem. "It's a dumb number," building-scientist Lstiburek says of the 20 cfm/p in the new ASHRAE standard, adding that providing 20 cfm/p in hot, humid climates is a recipe for disaster. Having investigated dozens of buildings with air-quality problems from New England to Florida, he is convinced that adequately dehumidifying that much fresh air within energy-code constraints is very tricky, and rarely accomplished. The result of this failure is inevitable microbial growth, with the associated health and odor complaints.

Cleaners can dirty the air

While the potential for off-gassing of pollutants from building products has received a great deal of attention, there is also growing concern for repeated exposures from regular maintenance. This shift reflects, in part, the fact that many of the worst offenders among new materials, such as solvent-based paints and products that off-gas high levels of formaldehyde, are being replaced with safer alternatives. Architects must still know enough to specify low-emitting products, according to Levin, but such products are now commonly available.

To address the ongoing releases of solvents and other VOCs from cleaning and resurfacing products, IAQ-expert Levin advocates increased attention during the design phase to the ongoing maintenance requirements of finish materials, based on manufacturer-rec-

ommended procedures. With carpets, for example, concerns about initial off-gassing can be managed through careful selection of the carpet and installation system and through increased ventilation during and immediately after installation. But carpets tend to trap contaminants from the air and, if they get wet, harbor mold and mildew. These ongoing concerns can only be addressed with effective, consistent maintenance. Long-term maintenance contracts with the carpet manufacturer are an increasingly popular route to safer carpets. Or the architect can select easier-to-clean, less absorptive surfaces.

Working towards solutions

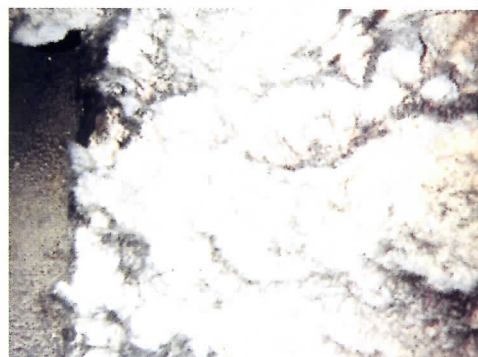
Norman Kurtz, principal with Flack and Kurtz Mechanical Engineers of New York City, feels that the enormous attention IAQ problems have been getting is making a difference. "People are taking more care, and listening better to the mechanical engineer," he says. Whereas formerly the hvac system was a frequent candidate for cost-cutting measures because it was hidden away, that is much less common today. "Air quality is now a question that comes up early in the project," Kurtz says, "and good proposals don't get much of an argument anymore."

From the building occupant's perspective, personal control of air flow and thermal comfort can go a long way toward addressing concerns about air quality. Personal environmental-control systems, which provide separate fresh air and temperature control at every station, are an expensive but effective solution [RECORD, May 1994, pages 34-35, 45]. Operable windows, once inconceivable in commercial buildings, are also increasingly considered. "Occupants of buildings clearly have a desire for operable windows," IAQ analyst Bearg says. Lstiburek agrees: "I think operable windows are a great approach, but they require a fundamental rethinking of the way we design building envelopes." In medium- and high-rise buildings, open windows will change internal pressures, drawing pollutants into occupied areas that would otherwise be exhausted, according to both engineers.

Additional research on microbial contamination and on VOCs in buildings is helping architects and others get a better under-

standing of SBS. Great strides have already been made by changes in products to reduce off-gassing in occupied spaces; improved air-distribution methods are now much better understood. Certainly these improvements will prevent some cases of SBS in new buildings. To solve many of the worst cases, however, more fundamental alterations may be necessary—ones that address the interplay between a building's envelope and its mechanical systems. These will require close integration of the design process, with mechanical engineers working alongside architects even during schematic design. Poor IAQ in buildings is an interdisciplinary problem, requiring interdisciplinary solutions. ■

The mold growing on dust in poorly maintained ducts is increasingly seen as a source of indoor-air contamination (right). The performance of systems can also vary hugely from that intended, as building scientist Joseph Lstiburek found in an apartment building (opposite).



© Courtesy Ductbusters, J. May Home Inspections

IAQ Checklist for Architects

Fresh Air

- *Stick to the fresh-air levels* recommended in ASHRAE standard 62-1989. In humid climates, ensure that the humidity loads of this fresh air are handled appropriately.

- *Allow individual user control* of fresh air and temperature as much as possible.

- *Locate air intakes* and primary air-handling components away from loading docks, taxi stands, or other potential sources of air pollution. Avoid infiltration of pollutants at mechanical rooms.

- *Specify continuous mechanical ventilation* in houses. It can be provided using dedicated systems that balance supply and exhaust, or with exhaust-only fans—quiet, high-quality bathroom fans will do—and dedicated air-inlet ports. In very cold climates, consider balanced systems with heat-recovery devices.

Air Leakage Control

- *Seal off any spaces undergoing renovation.* Ensure isolated areas are separated from the air-distribution system.

- *Minimize unintended air leakage.* If the hvac system is fully ducted, make sure that ducts are well sealed. If a dropped ceiling or other cavity is used, seal it effectively.

- *Prevent air from leaking* into elevator shafts, stairwells, or other vertical spaces. This keeps stack-effect pressures from undermining the air-distribution system.

Materials and Maintenance

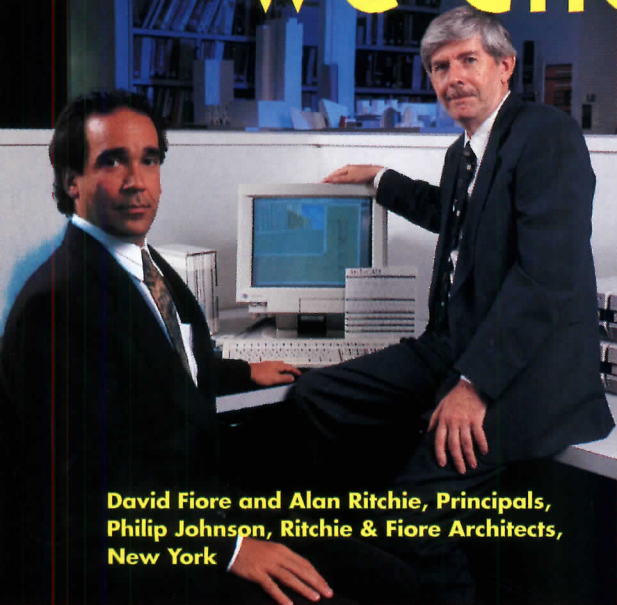
- *Demand VOC off-gassing test* results for interior materials. Avoid materials with unreliable data or poor test results.

- *Avoid materials* for which recommended maintenance requires repeated VOC exposure. Or consider manufacturer-recommended maintenance contracts.

- *Check the hvac system design* for ease of maintenance and accessibility of components. Assure accurate as-built drawings.

- *Insist on a comprehensive building-commissioning program* to ensure that all systems are operating as designed. ■

"We Chose ArchiCAD."



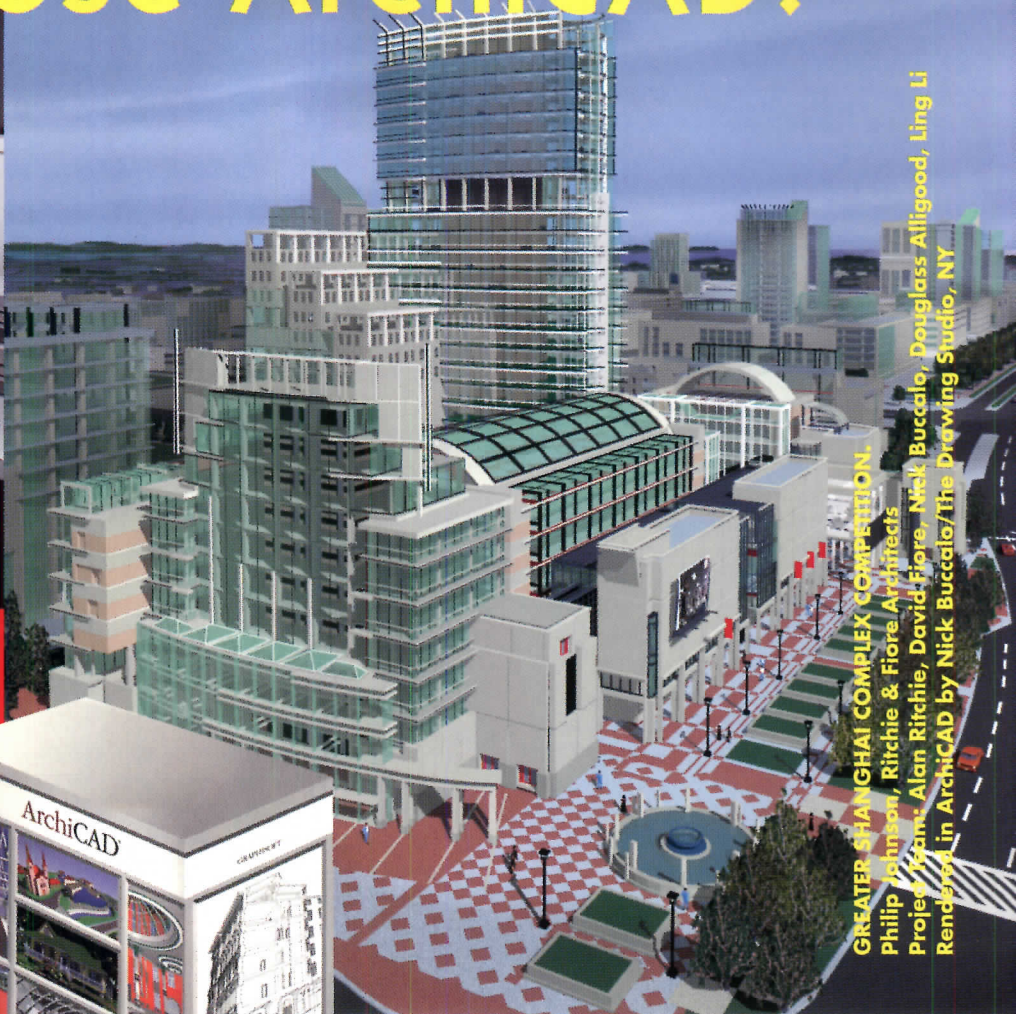
David Fiore and Alan Ritchie, Principals,
Philip Johnson, Ritchie & Fiore Architects,
New York

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

With hand drafting or other software, presentation, schematics and design development documents typically are not usable when the next phase begins. By contrast, using ArchiCAD, senior staff can begin the work on the computer by quickly generating sketches, square footage allotments, programming, cost estimates, etc. for a variety of schemes. These same drawings can be used throughout subsequent phases of the project.

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

*David Fiore, Principal
Philip Johnson, Ritchie & Fiore Architects,
New York*



GREATER SHANGHAI COMPLEX COMPETITION.
Philip Johnson, Ritchie & Fiore Architects
Project Team: Alan Ritchie, David Fiore, Nick Buccalo, Douglass Alligood, Ling Li
Rendered in ArchiCAD by Nick Buccalo/The Drawing Studio, NY



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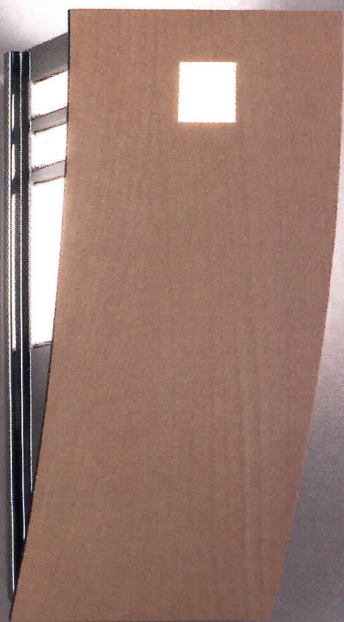
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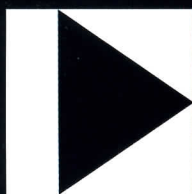
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Arena Trades In Cables For Trusses

The competition to give unique form to big-city arenas has heated up. Tight-as-a-drum budgets mean that most of the massive new venues for basketball, hockey, and high-tech concerts can be little more than ovoid blobs decorated with sentimental neo-trad touches, Modernist tics, or DeCon twitches. Not so in Seattle, where a technically demanding reconstruction has given new life to a uniquely graceful building—one that didn't even start life as an arena.

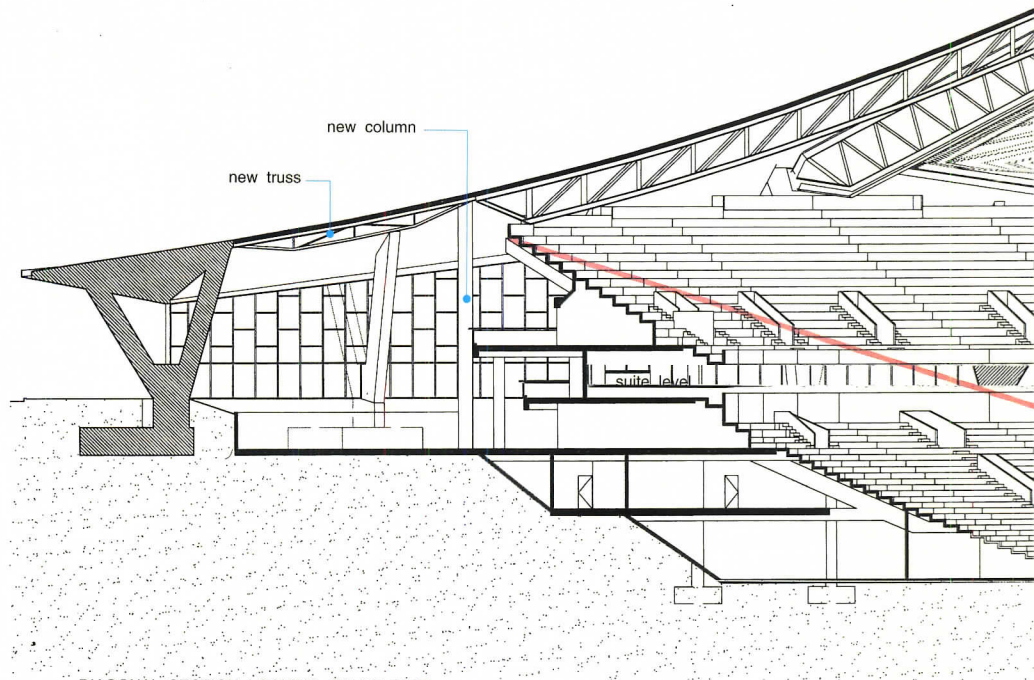
Though numerous cities have planned or built new large-scale arenas, the National Basketball Association says 19 venues from the 1960s and 1970s remain functionally obsolete. These days, though, citizens balk at ponying up the \$130- to \$500-million it takes to build major new sports facilities. (Local voters recently turned down a baseball-stadium bond issue.) Seattle's experience may cause more cities to look at re-use.

Project officials in Seattle estimate that the Key Arena's project costs, at \$74 million, came in at more than \$40 million below a comparable new structure. Also, the proposed site of a new facility had sparked controversy, and environmental reviews and permitting were expected to take two years alone. By reworking the existing Seattle Coliseum, the city avoided all that and retained a building that was well-loved.

But the feasibility of rebuilding the Coliseum was hardly obvious: architect NBBJ had to find a way to add about 3,000 seats (to the existing total of 14,400 in basketball configuration), 58 luxury suites, and a club area with 550 seats. Just as important, it had to figure out how to fix a roof that was daring in its original conception but had leaked almost since the building opened.

Roof "fluttered like a clothesline"

The building's tentlike form came about because it originally housed the State of Washington's exhibit during Seattle's 1962 worlds fair. It was only converted to an arena after the fair closed. Paul Thiry, perhaps Seattle's most distinguished post-war architect, master-planned the fair site, and sculpted the Coliseum as a 400-ft-square horizontal counterpoint to the 600-ft-tall Space Needle. For the structure's roof, Thiry sus-

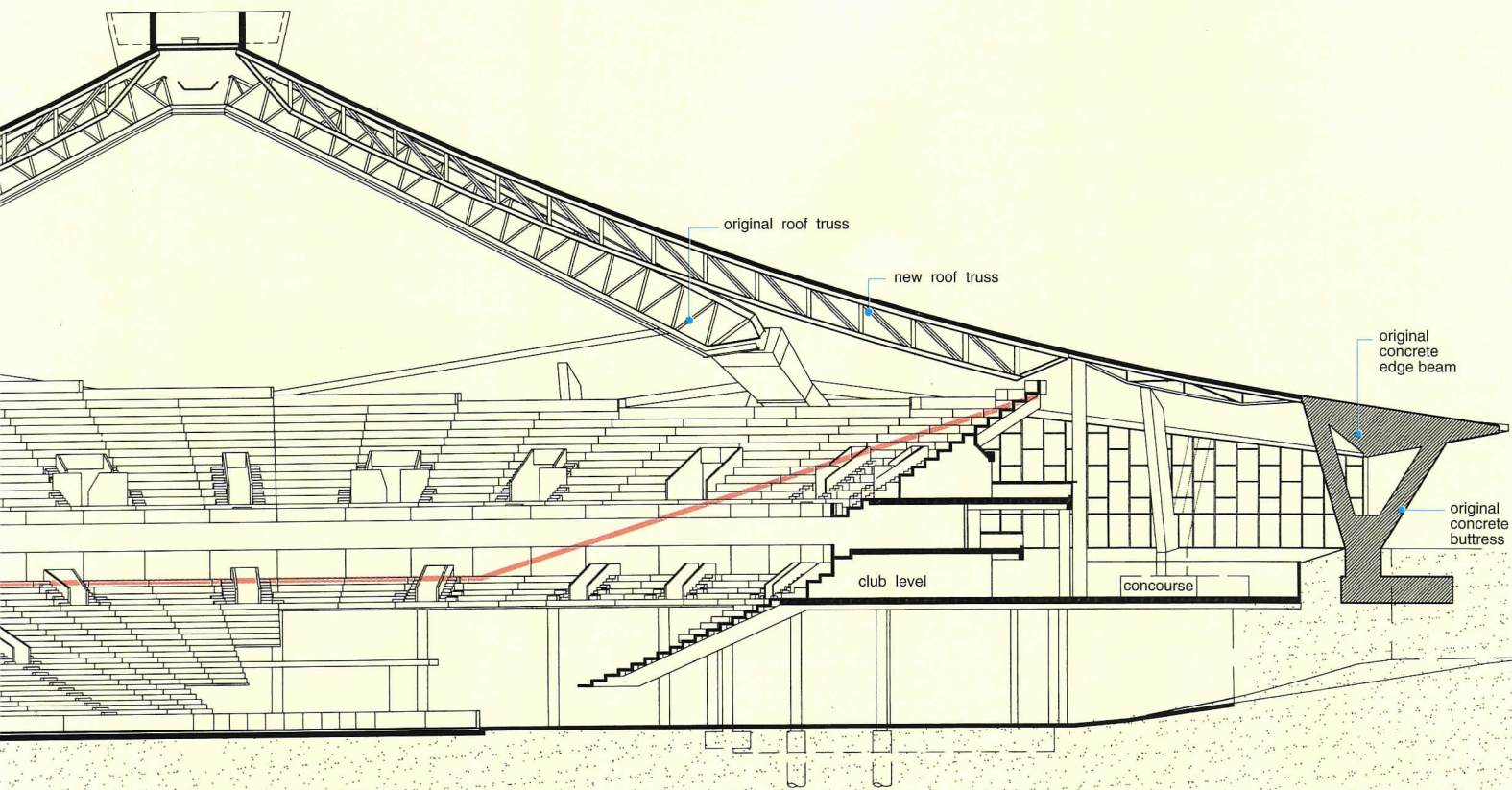


DIAGONAL SECTION LOOKING SOUTH EAST

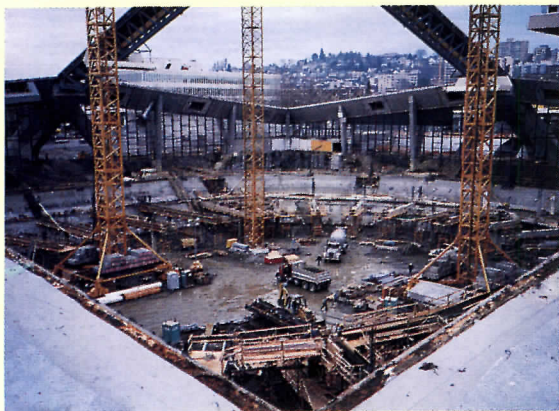
Having devised a square plan, original architect Paul Thiry framed the roof not from the corners in a conventional hip, but with four giant steel-framed ridge trusses that spring from the middle of 30-ft-wide, 15-ft-deep sculpted-concrete edge beams (2). Gravity loads are carried to ground by huge external buttresses (3). Because it is highly visible from surrounding hills (4), NBBJ made sure the new aluminum standing-seam roof (1) differs little in appearance from the original. New trusses (section) follow the original roof shape.



© Construction photos courtesy NBBJ



Original Arena Configuration



© Steve Keating

pended a network of cables on which was mounted 4- by 8-ft aluminum sandwich panels (original details opposite). The roof depended for water tightness on an elastomeric membrane bridging panel gaps and held in place by battens; channels in supporting extrusions were supposed to carry away any leakage.

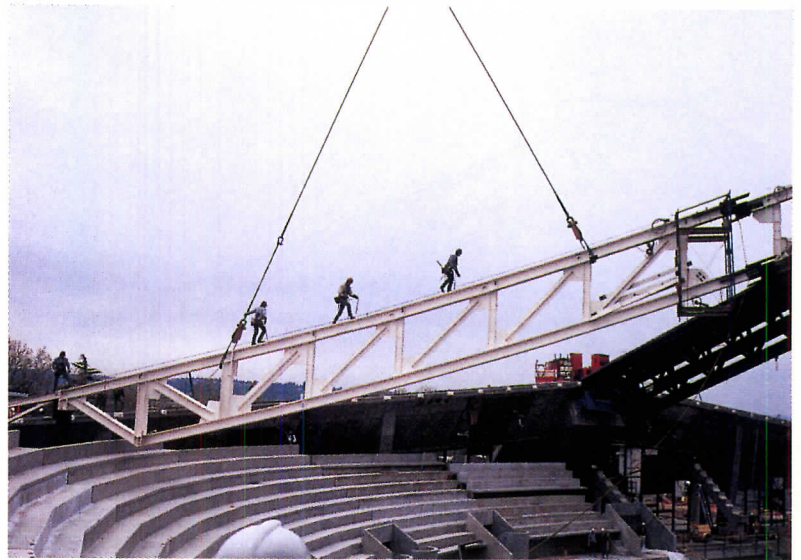
Though the resulting draped configuration of the roof was elegant, "The roof would move as much as two ft up and down in the wind," comments Dennis Forsyth, NBBJ's project manager, "so leakage was guaranteed." Others compared it to a clothesline fluttering in the wind. Numerous fixes over the years had failed.

With sentiment strong to retain the roof appearance and configuration, NBBJ considered such options as coating the entire surface with a single-ply membrane, draping a new membrane below the older roof, even replacing the roof with a new fabric one. Options were ranked for cost, impact on appearance, and expected reliability. The city chose a new roof and rigid-support system.

Engineers Skilling Ward Magnusson Barkshire (SWMB) added new "ridge" trusses at the corners maintaining the roof's hyperbolic-paraboloid shape (section, previous pages). These bear on new columns at the edge of the bowl. "This ended up being the most economical solution," says Brian McIntyre, a vice president at SWMB and the firm's project manager for the arena, "and allowed us to put a good portion of the additional load into the new columns. We didn't have to increase the capacity of existing trusses to take the load of the new, heavier roof."

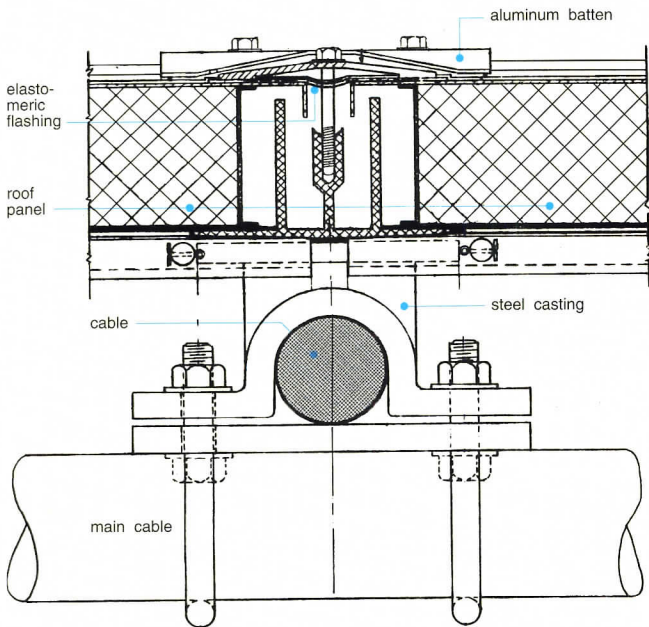
While not as esthetically elegant as the original design, the scheme minimized the depth of framing members at the low point of the ceiling, allowing more seats to be squeezed in under the roof. The original roof routed extremely large forces through the ridge trusses and buttresses, much larger than forces anticipated even by today's more strict seismic codes. The existing enclosure, therefore, required no seismic upgrading.

The new roof system is conventional: Atop metal decking and gypsum sheathing, rigid

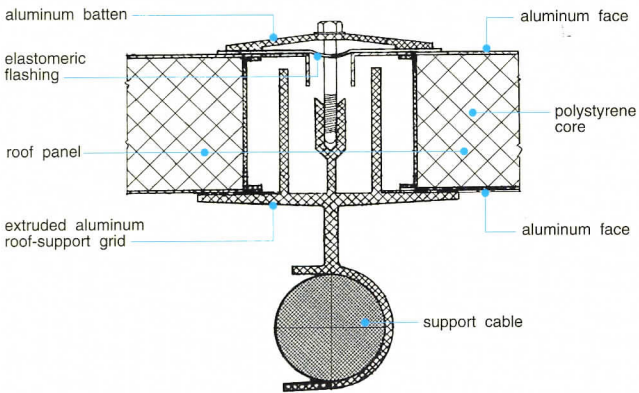


New trusses springing from the corners are curved to maintain the original roof shape (in foreground, 5). Smaller trusses frame between new and existing main trusses perpendicular to the fall line of the roof on its upper half. On the lower half, trusses frame parallel to the fall line from an intermediate truss to the concrete edge beam (6). The framing layout meant that none but the main new truss needed to be curved.

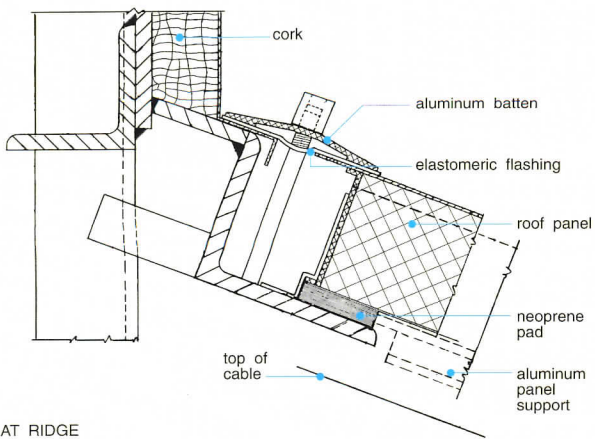
Original Details



SECTION AT CABLES

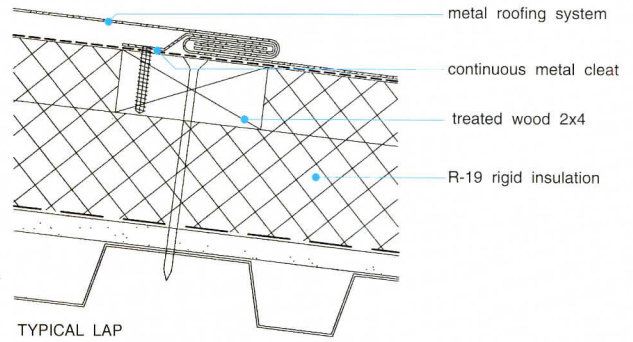


ROOF PANEL AND CABLE SUPPORT

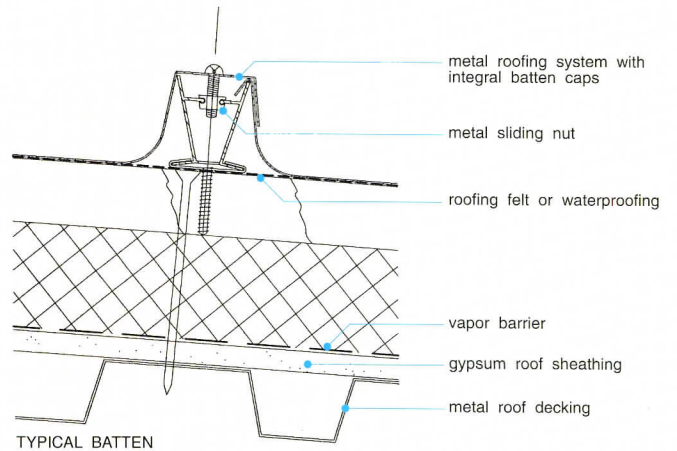


ROOF AT RIDGE

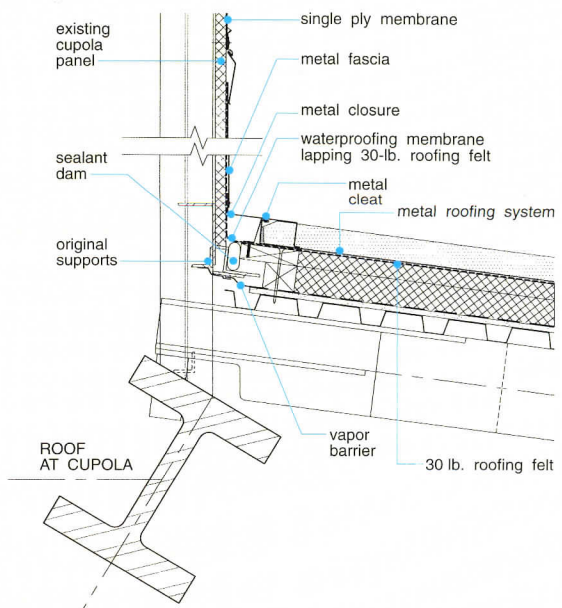
New Details



TYPICAL LAP



TYPICAL BATTEN



ROOF AT CUPOLA

insulation with integral nailers supports a standing-seam mill-finished aluminum roof (new details, previous pages).

Construction challenges

With removal of the existing roof-cable supports, "We worried about both stress and movement," explains McIntyre. The cables carried roof loads to the edge beams, which had been prestressed to resist the loads. Once the cable-roof loads that had counter-vented the prestressing were lifted, "the edge beam becomes unbalanced and wants to spring outward." To avoid resultant cracking, the engineers specified that new steel prestressing strands be added as the cable net was removed—a procedure that took only a weekend.

The Coliseum has one unique feature that eased remodeling: its seating bowl, built after the fair, was structurally independent. Contractor PCL Construction Services completely removed the old bowl and dug out the interior to drop the floor 35 ft. With the added seats, the rake of the new bowl is much steeper than the original, giving spectators shorter sightlines than other arenas of similar capacity. Entrances were lowered one level; NBBJ was able to extend the original curtainwall downward. Aside from needlessly crude signage advertising a local bank under a "title sponsorship" agreement, the exterior of the Coliseum is little changed.

James S. Russell

Credits

Key Arena

Seattle, Washington

Owner: *City of Seattle*

Architect: *NBBJ—Ralph Belton, project architect; Dennis Forsyth, project manager; Rick Zieve, project designer; Reema Abu Gheida, Bill Auld, Steve Bettege, Kerry Hegedus, Cathy Kraus, Halliday Miesberger, Doug Sabatke, Cris St. Aubyn, Slava Simonov, Ed Storey; Rysia Suchecka, project team*

Engineers: *Skilling Ward Magnusson*

Barkshire (structural, civil);

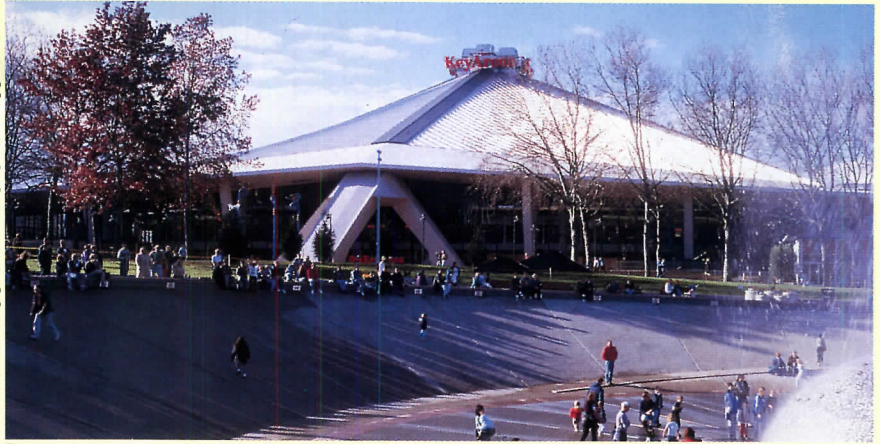
Beroma/Langebartel (mechanical); Elcon

Associates (electrical)

Consultants: *Horton-Lees (lighting); JD-21 (event lighting); Michael Yantis (acoustical)*

Contractor: *PCL Construction Services*

© Steve Keating photos this page and opposite



The Key Arena's exterior is little changed (7, opposite). NBBJ lowered the entrances a full story, adding new external stairs (9). The new bowl requires five access levels instead of the former two, so circulation is much more complex—esthetically and functionally—

and the concourses less spacious. In the interior (10), the existing main roof trusses are dark, the new ones light. A 120,000 lb.-capacity rigging grid for large-scale arena concerts hangs from the new structure. Acoustical panels are refurbished originals.

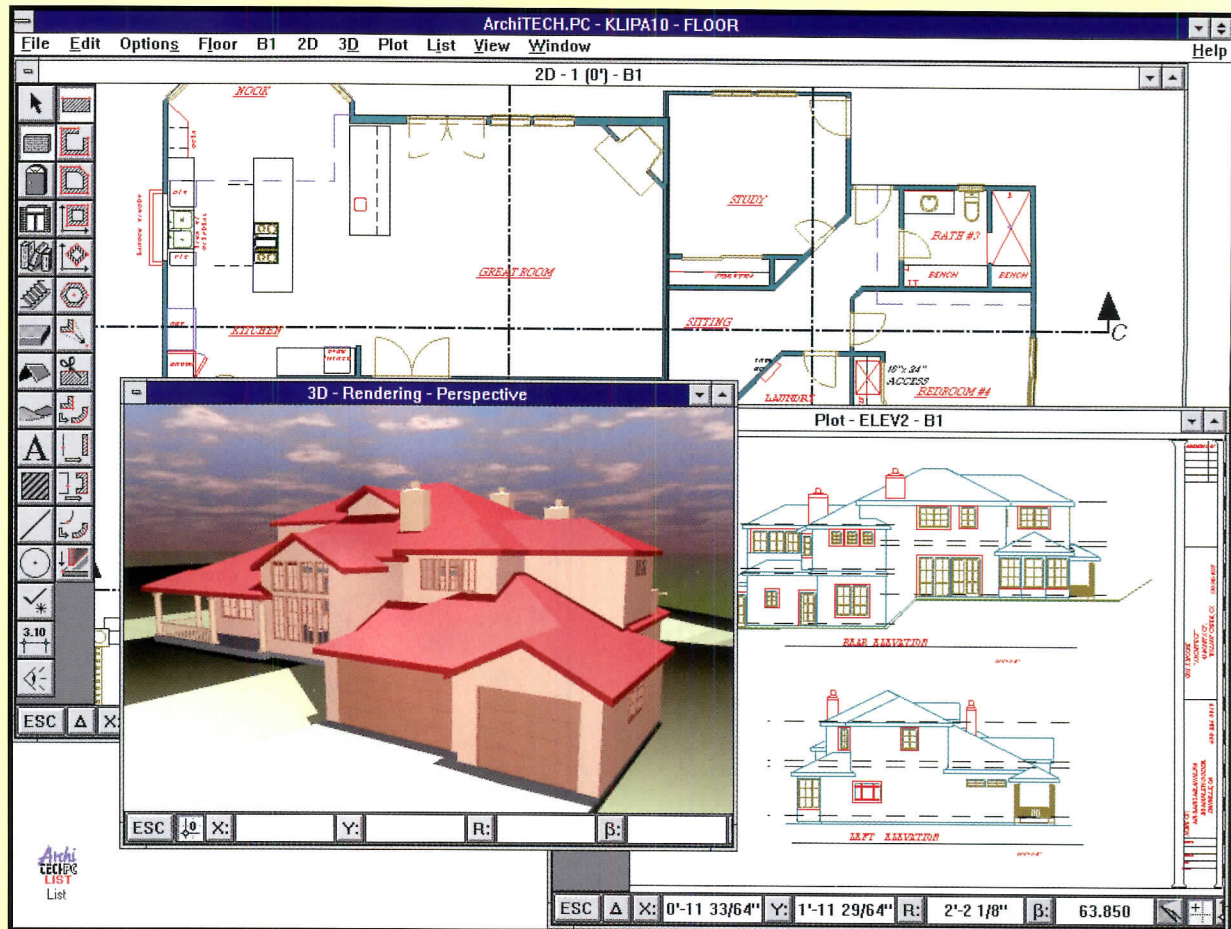


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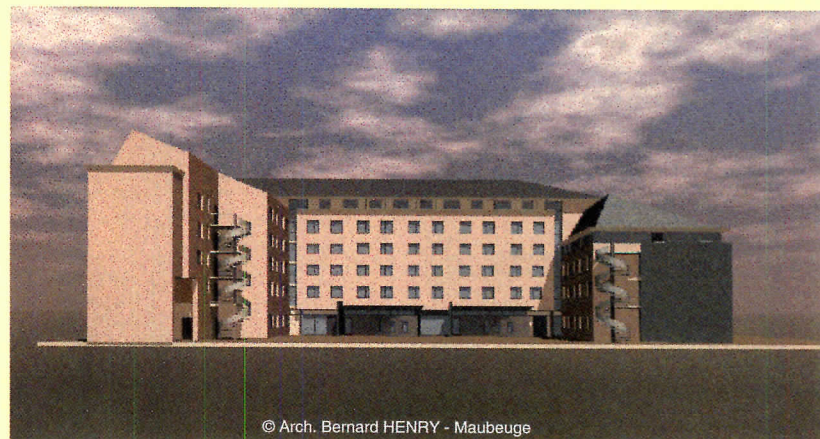
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A Facelift for MicroStation V5

By Steven S. Ross

Just when you were ready to do Windows . . .

The architectural world has been at a crossroads for the past few years when it comes to computer systems. Most CAD seats sit in front of Intel-CPU computers running MS-DOS. Most new CAD software takes advantage of Windows. Architects don't want to switch from DOS to Windows, mainly because DOS systems are faster.

So far, Autodesk and Bentley have continued to offer DOS versions of their flagship products, AutoCAD and MicroStation. But they also keep improving their Windows versions, hoping to pull more customers away from DOS. Windows is easier for software vendors to service.

Windows also offers much more flexibility; there are better facilities for moving drawing content and underlying databases from one program to another. Vendors of peripherals such as printers and plotters also like the idea of writing one driver—for Windows—rather than one for each CAD package.

All of that is nice, but it doesn't help the office with older, slower computers. This opens a niche for developers of faster Windows CAD programs—not as powerful or as flexible as MicroStation or AutoCAD, but more powerful than any CAD packages of five or six years ago. Dealers also have forced speed improvements and interface improvements in AutoCAD and MicroStation too. Vendors have also been selling their CAD "engines" for use in specialized products—essentially "add-ons," for example ones for landscaping or kitchen-design that run without needing to be "added on" to Auto-CAD or other CAD packages.

We tested AutoCAD 13's "WHIP/c3" upgrade a few months back, and reviewed some add-on packages [record, April 1995, pages 34-35]. This month, we look at MicroStation's upgrade. It can run in DOS or older versions of Windows—and it runs well. But we especially liked it with Windows 95, the fastest version of Windows available.

Offices with older, slower computers are getting better choices—CAD programs that run in Windows, too. This month we look at one of them, MicroStation 95.

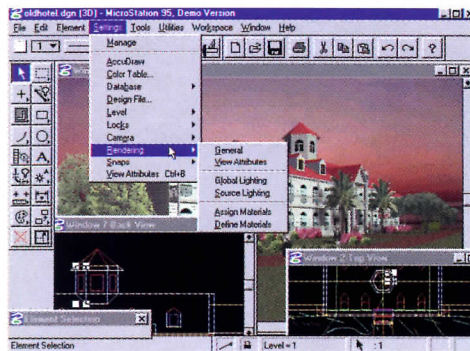
MicroStation 95

Vendor: Bentley Systems, 690 Pennsylvania Dr., Exton PA 19341, 610/458-5000, fax 610/458-1060, 800/BENTLEY, jen.mcwilliams@bentley.com, <http://www.bentley.com>.

Equipment required: Roughly the same as MicroStation 5.0; versions are available for DOS, Windows, Windows 95, Windows NT (Intel and DEC Alpha CPUs), OS/2 Warp, Power Macintosh, Sun SPARC, Silicon Graphics, HP RISC, IBM RS/6000, Intergraph Clipper.

Cost: \$3,950; free upgrade from Version 5.0 for MicroStationCSP subscribers and those who purchased Version 5.0 after January 1, 1995 (and into 1996); upgrades from other versions are \$475 to \$750.

MicroStation 95 is basically MicroStation V5 with a jazzier interface and better data exchange. In fact, the resulting drawing files are identical in format and the basic CAD engine is just about the same. Much of the new interface was developed with MDL, the (MicroStation Development Language)—just as a large office or third-party developer would create add-ons. With MicroStation 95, changes can be made in one module without affecting others. This makes it fairly easy to offer it on a wide variety of platforms. (We've seen the interface before, on Bentley's stripped down, half-price PowerDraft [RECORD, May 1995, pages 44-45]).



Microstation 95: Several views on screen; note the rendered view in the large window. Rendering will disappear without warning if you zoom on the image, but you can save the rendered view, of course.

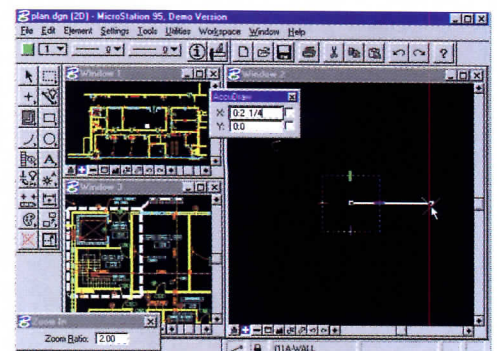
We reviewed MicroStation 95 on a 75MHz Pentium with 16MB of random-access memory—about the least-powerful machine people are considering for CAD seats these days—and it ran acceptably. If your drawings are truly huge, with thousands of entities, go for a faster machine and more memory.

You get a lot with the basic package—rendering, 3D walkthroughs, excellent database hooks, and so forth. There are plenty of third-party add-ons available as well.

The AccuDraw function allows MicroStation to anticipate each input from your last one. In a way, it works like a T-square and triangle—to specify the beginning and end points of the line you want to draw, you move your cursor along the X axis, for instance, then up the Y. The entity you specify (straight line, arc, or otherwise) appears between the proper starting and ending points. You can also use a polar coordinate system when that's more convenient; for instance, when you work on arcs or domes.

It takes some getting used to, but an hour or two of intense training should pay off in much faster (and more accurate) line placement. That, in turn, pays big dividends if you expect to render your drawing later; small inconsistencies can make a mess of a rendered image.

The key issue we looked at was whether or not to upgrade. If you have an earlier version of MicroStation and are using Pentium com-



AccuDraw window: With AccuDraw in use, you key on the starting point for your new element, move in the direction you intend to go, and it locks in one coordinate.

puters, we suggest that you switch to Windows95 or MicroStation95. But delay the conversion if you are in the middle of a project. The benefits come mainly with Windows 95, and fiddling with yours is time-consuming. (The old and new interfaces are on the same CD-ROM, but why spend the money if you aren't going to switch?)

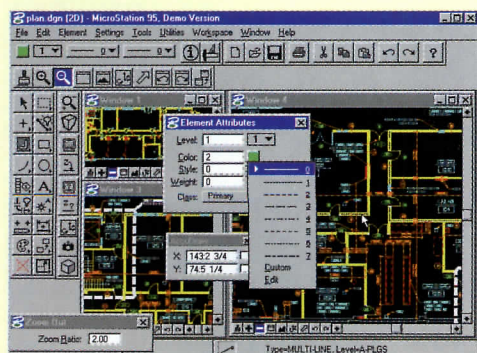
Is this a tool for practices working on smaller projects? Probably not. But there are exceptions—high-powered packages like MicroStation have great add-on software available, for energy conservation, details, cost data, and so forth. They may be of use even on small projects under the right circumstances.

MicroStation is also the most full-featured drafting tool you can get for the Power Macintosh.

Manuals: Separate paperbacks for setup, upgrading, command reference, system administration, MicroStation BASIC programming, tutorial.

Ease of use: Excellent, with a few oddities that take getting used to. Zoom control, for instance, is buried deeply in the menu system, but easily available on window-edge icon bars and floating tool boxes. You can have up to eight drawing windows open at once, but the menu bar that activates them simply adjusts the views by “number”; you can't tell from the menu whether a viewport (window) actually has a view inside.

Error-trapping: Excellent. Most of the prob-



Selecting an element: With MicroStation 95, after selecting an element, you can then look at its attributes.

lems are in networked installations. As with all big packages, MicroStation allows you to spread your drawings across a network and reference them to each other.

120 on Reader Service Card

DataViz Conversions Plus 3.5

Vendor: DataViz, 55 Corporate Drive, Trumbull, CT 06611, 203/268-0030, fax 203/268-4345, 800/733-0030, <http://www.dataviz.com>, AppleLink D0248.

Equipment required: Computer capable of running Windows 3.1 or higher, with at least one 3.5-in. high-density floppy disk drive.

Cost: \$149 (upgrades from earlier versions are \$39.95); MacOpener, without file translation, is \$75.

There are two barriers that must be overcome if you plan to move files between DOS/Windows computers and Macintoshes that are not networked. First, one computer must be able to read the other's disk. Second, you may have to convert the file structure or coding of the file itself.

Reading the disk is the main problem. Macs can read 720K and 1.44MB DOS/Windows floppy disks; the capability comes with System 7 and higher. But few architectural files will fit on a floppy these days.

This latest version of Conversions Plus allows a PC to handle 1.44MB floppies, CD-ROMs, SyQuest disk cartridges, and Iomega Bernoulli and Zip cartridges formatted for the Mac—so long as they are installed with Windows-compatible ASPI SCSI drivers (SyQuest and Iomega Zip drives always are; other devices may not be). To read DOS/Windows SyQuest and Iomega disks in a Macintosh, you'll need an upgrade to System 7.5. The upgrade may cost more and require more machine-tinkering than simply doing everything at the DOS/Windows computer.

You can also use Conversions Plus to convert file formats—from Windows BMP to Macintosh PICT, for example. But in most cases, the CAD software itself will do the conversions you need. If that is the case, you can get

by with MacOpener—it reads Mac disks in a PC, but doesn't do conversions.

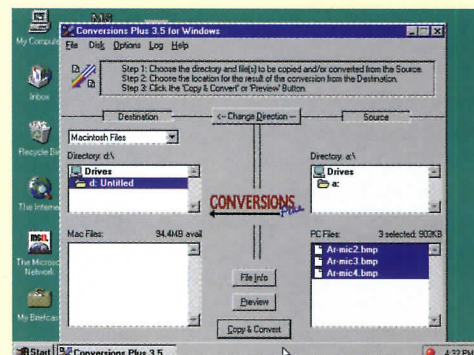
If you are still using DOS without Windows, Mac-in-DOS Plus by Pacific Micro will read Mac floppies and SCSI disks (SyQuest and Iomega) but not CDs. It won't translate files. If you need that, try Word for Word by MasterSoft.

Manual: A straightforward 71-page spiral-bound.

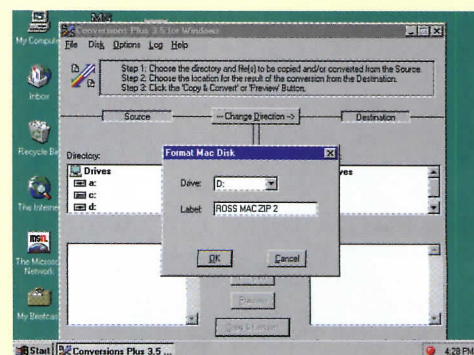
Ease-of-use: Good.

Error-trapping: You can't unformat a DOS/Windows disk you turn into a Mac disk; that's a limitation of the operating systems, not Conversions Plus.

121 on Reader Service Card



DataViz Conversions Plus 3.5: Formatting a 100MB in an Iomega Zip drive as a Macintosh disk, in drive D on Windows 95 computer.



Copying files: You copy from drive A (a DOS floppy) to Drive D (the Mac-formatted Zip drive).

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¹ An independent test performed by Robert Martin of Value Engineering Associates comparing PowerArchitect and AutoCAD Release 13 to generate the same typical commercial architectural drawing. The same method of construction was used for both, as if the operator were at the same level of proficiency in both packages.

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Windows NT™, Windows 95
and other platforms.

NEW PRODUCTS

Elevator-Code Changes Make Access Easier

Revisions in local and national elevator codes are affecting both mechanical design and permitted uses, tending to make handicapped-access modifications more flexible and less expensive for many existing structures. For example, New York City has amended ANSI A117.1, the national code, to permit the installation of some types of residential elevators in other than private buildings, where necessary to make an existing structure accessible to physically disabled persons. Also, new Limited Use Limited Access (LULA) provisions will permit installation of large-capacity (about 1,400 lbs) residential-type lifts to meet ADA access requirements in many public buildings.

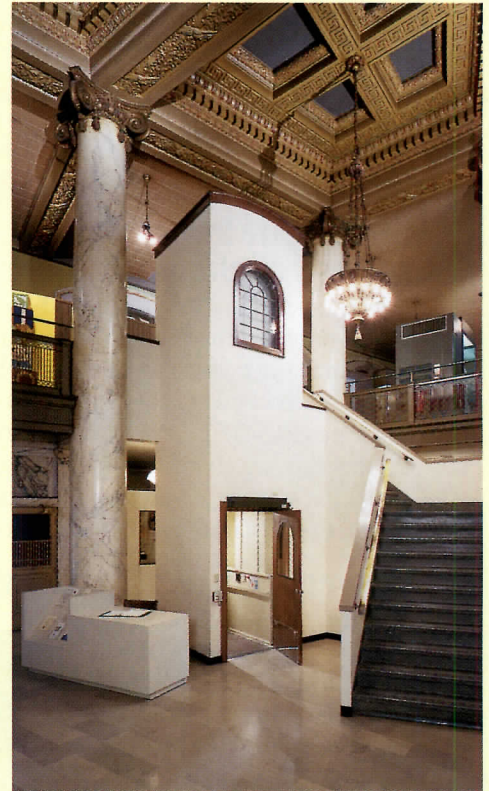
Under current codes, vertical platform lifts, available in models with up to 12 feet of travel, can solve access problems less expensively than an elevator, and much less obtrusively than a ramp. Architects should consult equipment manufacturers for options and lift features that help the equipment work with, not against, their surroundings. For example:

(1). An enclosure of painted steel and acrylic panels ties a floor-to-floor lift into its contemporary setting; this framework may be specified in any of 180 colors. For a more traditional environment (2), the hoistway was finished in painted drywall and given a wood-trimmed window. In a Fifth Avenue office building in New York City (3), lobby and elevator renovation involved the installation of a wheelchair lift that coordinates with the new finishes. Placing the motor inside the wall shrunk the footprint, and let the lift fit close to the wall. Equipment was specified painted black, and the control panel was faced with the same black stone used for the lobby floor. Custom stainless-steel railings backed with Plexiglass panels match the new elevator trim, and meet code requirements for a complete enclosure of the lift.

For many exterior applications, self-contained wheelchair lifts can be much less costly than a ramp. And long ramps can intimidate many disabled users: this entrance (4) would have required a ramp 36 feet long to handle the 31-in. rise. Customizing options include placing the call button flush into the planter, and matching the style and color of the landing gates with the existing porch rail. *J.F.B.* ■



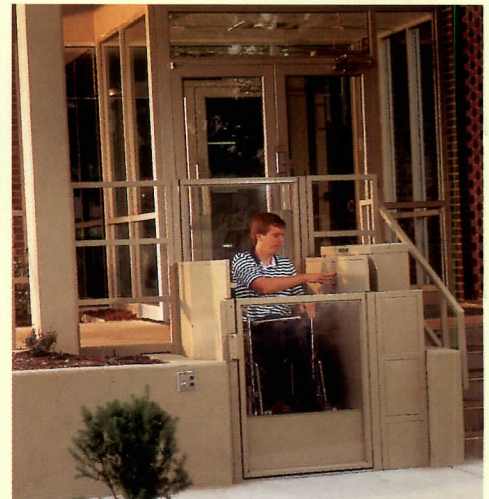
1



2



3



4

1, 2, & 4—Access Industries, Inc., Grandview, Mo.
800/925-3100
Circle 122

3—Mobility Elevator & Lift Co., East Hanover, N.J.
201/887-7500.
Circle 123

Four for the Wall: Interior Renovation

124. Multicolored paint technique.

Aquaflake gives a three-dimensional effect to interior walls, with pigment particles of different sizes adding texture and non-directional pattern over a solid-color base coat. An acrylic/latex formulation said to be the only multicolor that meets the most stringent VOC regulations, Aquaflake is virtually odorless, and can be applied in occupied premises, including hospitals. The cured film is vapor permeable, and will not support the growth of mildew. 800/225-1141. California Products Corp., Cambridge, Mass.

125. Embossed metal wall system.

A very distinctive (and not inexpensive) wall treatment, Architectural Metal is available as a complete prefabricated system of panels, outside corners, and base components, as well as in sheets. Parts can be combined to accommodate site-specific dimensions without custom detailing. About 40 standard embossed patterns are offered on a choice of seven finishes on three substrates: galvanized or stainless steel, and Muntz metal. Installation pictured illustrates stepped-edge-style panels and a square base treatment in satin-finish stainless. 800/451-0410. Forms+Surfaces, Santa Barbara, Calif.

126. Coverup. Made specifically for commercial remodeling, Guard's Renovations wallcoverings have a woven back and non-matching edge pattern designed to work on uneven or damaged surfaces. Offered in 54-in.-widths and 15- and 20-oz weights, options include 96 colorways and three borders (shown); color values have been selected to coordinate with popular interior finishes such as Wilsonart and Nevamar laminates. All materials are rated Class A, and are strippable and scrubbable. Samples: 800/521-5250. Columbus Coated Fabrics, Borden Decorative Products Group, Columbus, Ohio.

127. Wall textiles. New Xorel Two fabric expands the range of color, texture, yarn dener, and pattern options in this very abrasion-resistant fiber. Inherently flame retardant—passes NFPA 701—Xorel won't support the growth of bacteria. Surfaces are acoustically transparent and light reflective; self-healing, the fibers rebound to close tack and nail holes. Price: \$24 per yd. 800/727-6770. Carnegie, Rockville Centre, N.Y. ■



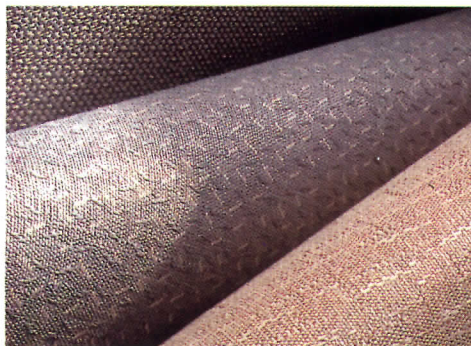
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127



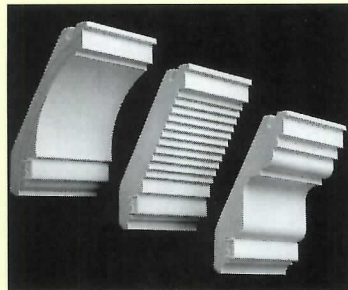
128. Unobtrusive bicycle stand

Made of steel tubing and plate, the Little Parker provides four-point bike support despite its small footprint; a swing-up locking-arm option increases security in public, theft-prone sites. Units may be wall- or surface-mounted, individually or linked in any shape with a bar and socket connector; can also be configured as a tree guard. 802/457-3275. Bike Track, Inc., Woodstock, Vt.



129. Architect's own

Architect Jim Evanson designs and manufactures seating, lounge furniture, and casegoods for a market that is half residential, half commercial (Sony and Brooks Brothers are recent clients). His Pierre Cabinet (pictured), with an Art Deco feel in African cherry and bronze details, is representative of new pieces in the collection. 212/777-6943. Evanson Studios, New York City.



130. Finishing touch

Originally designed to trim this maker's Metaphors lay-in coffered ceiling system, new perimeter moldings work with other suspended ceilings as well as drywall. The 4 1/2-in.-high poplar moldings have an offset edge at both top and bottom that creates a reveal at ceiling and wall, hiding gaps. 717/397-0611. Armstrong World Industries, Inc., Lancaster, Pa.



131. Computer desk for kids

Sturdy enough for school use, the Kin-der-Link white-birch table has a work surface that can be adjusted from 14-in. high, right for four-year-olds, up to 28 in., suitable for adults. Big enough to let two students work together, the unit easily fits through doorways, and comes complete with cut-outs for wire management and a surge protector. 800/545-4474. Skools, Inc., New York City.



132. CAD automation how-to

Bridging the Gap: AutoCAD to 3D Animation is a 60-minute-plus training video said to teach a simple, architect-developed process for creating high-quality presentation animations from AutoCAD files. Demonstrates how to bring a model into 3D Studio, apply materials and lighting, and do post production. \$89. 505/831-1138. Corporate Image Video, Albuquerque, N.M.



133. Storm-proof cedar shingles

Exposed to winds of 120 mph during the ASTM E-330 uniform uplift test, this exterior sidewall panel system meets BOCA's wind-suction code (ASCE 7-93), and, correctly installed, is approved for use in jurisdictions now requiring high-wind resistance, including Florida and South Carolina. Design and specification packet: 800/521-9523. Cedar Valley Shingle Systems, Hollister, Calif.



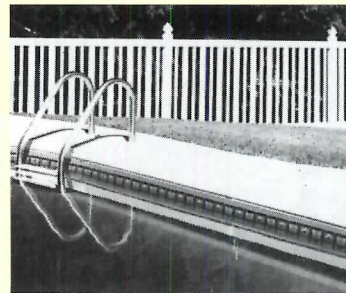
134. Commercial wood flooring

A new line, WearMaster wood flooring has an acrylic surface said to survive 25 years of traffic even in retail and institutional spaces such as hospitals. Floor comes in 11 color options and oak, maple, and hickory woods (maize-color stain is shown here on maple); is Class B rated; and meets ADA slip-resistance guidelines for level surfaces. 214/931-3100. Bruce Hardwood Floors, Dallas.



135. Retractable insect screens

European-style retractable screens self-store in permanent, decorative housings less than 2-in. deep, and are easily rolled out and latched in place when needed to form a tight-fitting barrier against insects. Screens come in door and window sizes for interior or exterior mounting, including large units for French-style doors and patio enclosures. 800/782-7009. Roller Star, Fort Lauderdale, Fla.



136. Vinyl pool fencing

Made of low maintenance vinyl, Bufftech fencing has been redesigned to meet all the rail spacing, picket placement, and gate and latch requirements of the most recent BOCA pool-enclosure code. Available in over 25 styles suitable for pool safety, fences also meet SBCCI and CABO codes. 800/333-0569. Bufftech, Buffalo, N.Y.



137. Carpet-specification aid

Described as the first carpet-design software written just for architects and designers, LeesSpec supplies appearance, construction, maintenance, carpet backing, and installation information on all Lee carpets. A point-and-click program running under Windows, it lets users narrow a search feature by feature. No charge. 800/545-9765. Lees Commercial Carpets, Greensboro, N.C. ■

Building Types Study 734/Adaptive Reuse

This renovation and adaptive reuse Building Types Study is the fourth that RECORD has published in the past three years, and for one very simple reason: This kind of work is becoming a staple in architects' offices.

The evidence is not anecdotal. F.W. Dodge statistics show that as of October 1, this category of construction activity accounted for 25 percent of all work worth over \$1 million on all types of non-residential buildings—a whopping \$27.6 billion. U.S. Department of Commerce statistics, which include projects under \$1 million, show the dollar volume of renovation and new-construction activity running virtually neck-and-neck.

The areas of renovation charted as most active by Dodge were: office (\$6.2 billion), educational (\$4.1 billion), stores (\$3.5 billion), health care (\$2.6 billion), manufacturing (\$1.6 billion), amusement (\$1.4 billion), and governmental facilities (\$1.2 billion).

This Building Types Study covers a broad range of buildings, from the institutional such as the Brearley School (page 76) to office and commercial buildings, which include Salick Health Care offices (page 62), the National Minority AIDS Council Headquarters (page 96), a multi-tenant complex, the Showers Center (page 92), as well as the remodeled Gilmore Bank (page 72) and Hewlett-Packard Company's Building 15 (page 84).

Three buildings renovated for entertainment and educational purposes also figure highly in this issue: the New Victory Theater (page 66), the Wolfsonian Museum (page 86), and the Mark Taper Center/Inner City Arts complex (page 78).

*Manufacturers' Sources
listed on page 105*

On the Mend



*Morphosis updates an early 1960s
office building.*

*Salick Health Care
Los Angeles
Morphosis, Architect*



Repeat clients are not only valuable to an architectural practice monetarily; they are also a sign of its success in satisfying program requirements. While many architects in the Los Angeles area envy the ongoing patronage of Eric Moss by Culver City developer Frederick Norton Smith [RECORD, July 1994, pages 62-69], Thom Mayne has found *himself* a patron of sorts in Dr. Bernard Salick, owner of a chain of cancer-care and dialysis centers, who has now hired Mayne's firm, Morphosis, for the third time. With government cutbacks on health-care financing continuing, Salick and Mayne prove that, in the private sector at least, measured doses of creativity can resuscitate the ailing image of health-care providers.

After working with his client on an out-patient treatment facility at Los Angeles' Cedars Sinai Medical Center, Morphosis was commissioned to remake a bland office building on nearby Beverly Boulevard into Salick's headquarters [RECORD, January 1992, pages 130-135]. This time, the company has expanded across the street to include a more modest structure now cloaked in another Morphosis-designed wrapper. The first office building stood out on the major east-west thoroughfare even before its makeover because of its towering 72-foot height in an area of zoning rollback that prohibits new structures over 45 feet; but this second building, completed in the early 1960s and painted pink and blue, at first had even less to offer.

At three stories with 22,000 square feet of office space and 5,800 square feet of parking, it now embodies the role of annex with a new curtain wall around an otherwise unremarkable steel and concrete-block structure. A canted granite wall at the corner marks the street-front entrance and echoes the entry sequence of the other Salick building diagonally across the street. Overlapping grids of glass, steel, and granite, and layers of opaque and transparent surfaces give a new, bold presence. Glass on the west and south facades (not shown) was silkscreened to reduce glare, and the clear glass on the east and north sides (previous pages) has a UV-coating that complies with California's stringent energy-conservation codes.

Mayne says modest-budget office-building renovations provide limited opportunity for creative expression (this project was done for \$1.5 million), but all that may change as he increasingly relies on computer-aided design, which allows him to more fully engage in three-dimensional studies of complex overlapping geometries—his "architectural operations." Project architect Kim Groves reports that this building is the last one in the office to be "drawn by hand," and so it marks the dawn of a new era for the firm—whether of increasing complexity or simplicity only time will tell. *Karen D. Stein*

Drawings show the overlapping grids of the entry corner and the plan of the lobby (top right). Morphosis designed the cherry-wood reception desk (bottom right).

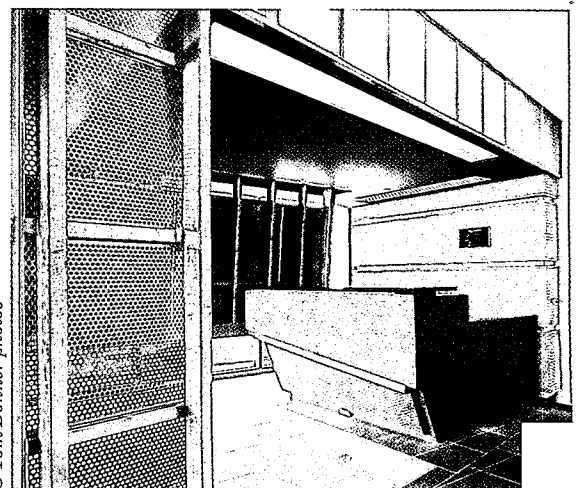
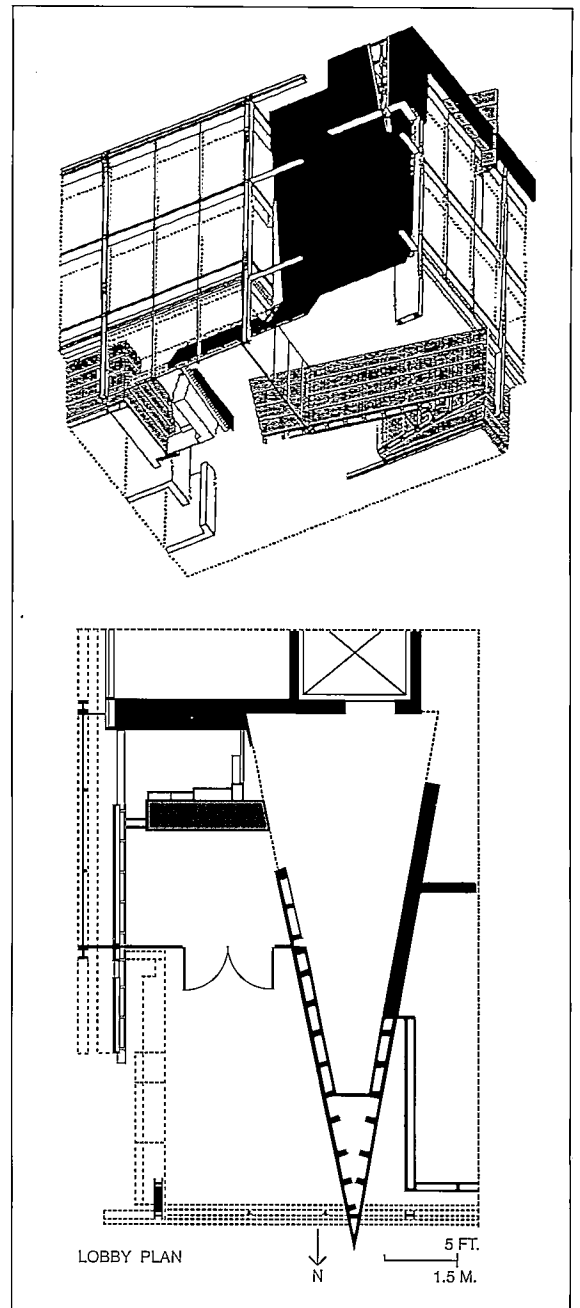
Credits

*Salick Health Care
Los Angeles*

Architect: *Morphosis—Thom Mayne, principal; Kim Groves, project manager; Stephanie*

Reich, project designer; John Enright, Frank Brodbeck, Patrick Tighe, Mark Sich, Lars Bleher; Andreas Schaller; Kaspar Baumeister; Ming Lee, and Kinga Racon, project team
Engineers: *Joseph Perazzelli (structural); Mel Bilou, Dave Lowe (mechanical)*

General Contractor: *Timothy Siuta with Construction Management and Supervision*



© Tom Bonner photos



NEW VICTORY



THE NEW VICTORY THEATER



Times Square Victory

*The New Victory Theater
New York City
Hardy Holzman Pfeiffer Associates,
Architect*

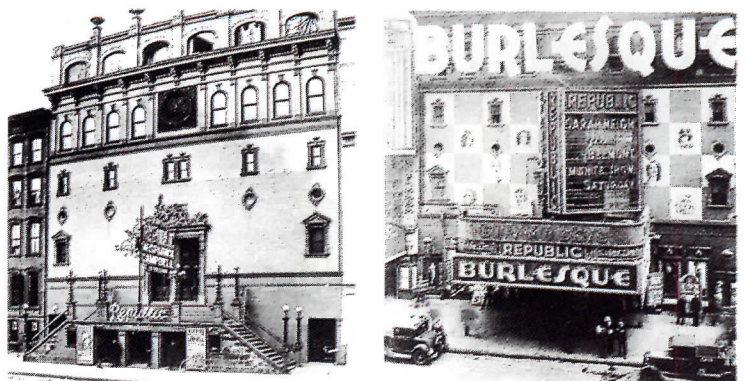
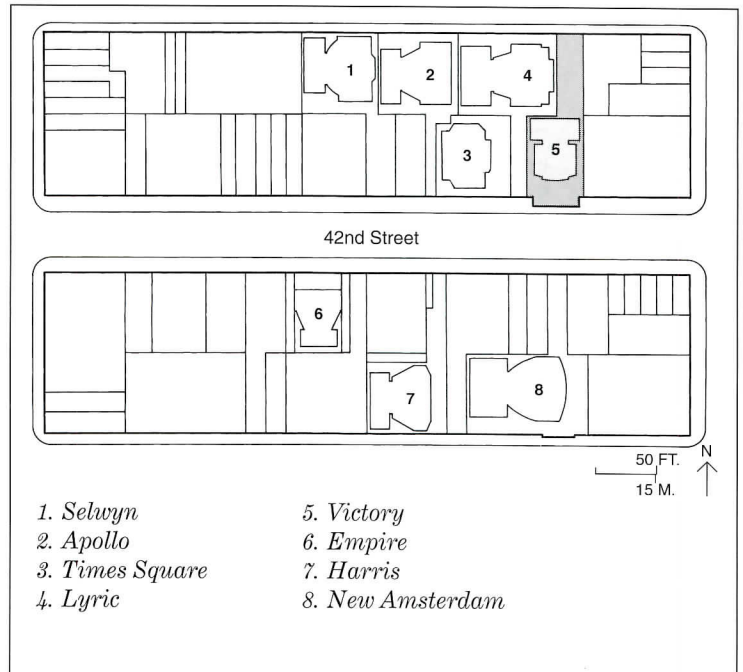
From its opening as Oscar Hammerstein's initial showcase in 1900, when it was called The Republic, The New Victory Theater has seen many firsts. It is the first performing-arts space built in New York City to survive for active use today and the first built in the city's current theater district around Times Square. Its \$11.4-million renovation for a very different theatrical crowd, as well as modern codes, required far more than simple restoration, however.

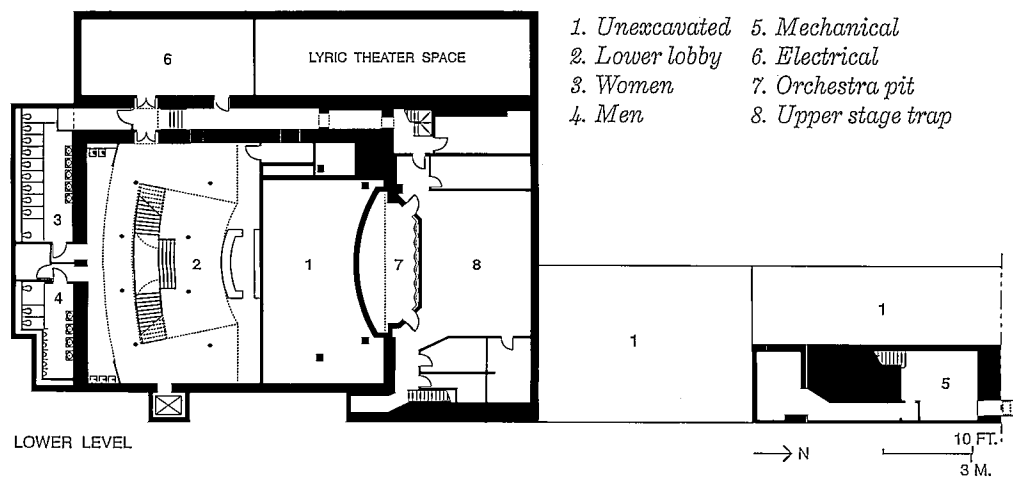
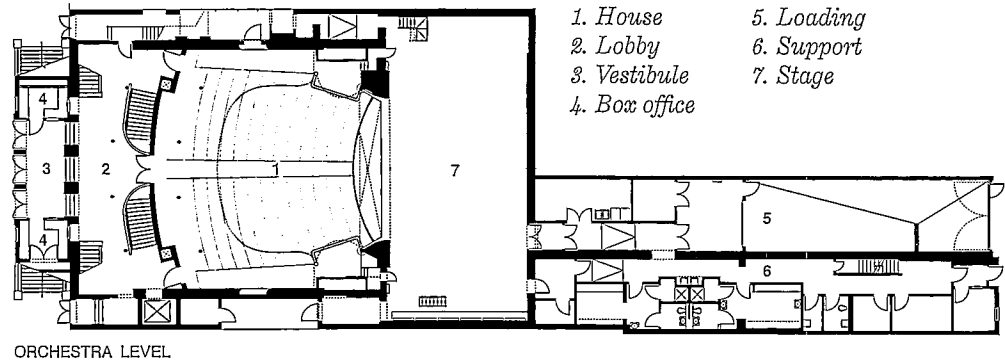
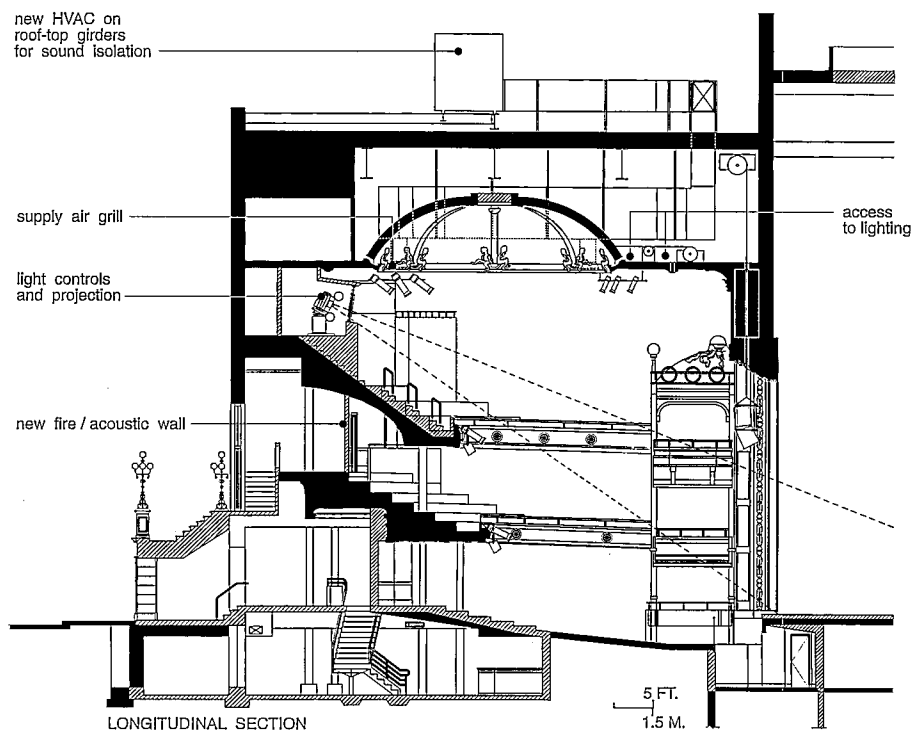
As part of a recent effort to upgrade the long run-down Times Square district, The New Victory Theater two months ago became the first legitimate stage to reopen in a nine-theater revival spearheaded by nonprofit New 42nd Street, Inc. This organization operates on a combination of public and private monies, including \$14 million contributed by a private developer back in the headier 1980s, when office towers were included in the renewal plan. But where white-tie audiences once arrived by limousine, the new audiences are school children arriving in buses. In its latest incarnation, the Victory is New York's first theater devoted exclusively to young audiences. It opened with a Canadian circus and currently features a Metropolitan Opera Guild production based on the experiences of a football player.

When Hardy Holzman Pfeiffer's partner-in-charge Hugh Hardy arrived on the scene, he found an archeological and functional puzzle. As home to both Hammerstein and David Belasco's initial productions, historic importance clearly called for restoration. But to which impresario's vision? Lengthy probing found much of the earlier detail still existed under layers of latter-day alterations for, among other uses, Minsky's Follies and a porno cinema. After preparing an exhaustive existing-conditions report, Hardy, in concert with his clients, decided on Belasco's interior and Hammerstein's facade. The original grand stair projecting onto the sidewalk was long gone and required a variance to replace it on city property. Because the auditorium-style building had never had a lobby, a new one was partially carved out of the house on two levels as unobtrusively as possible (overleaf) and partially drilled from the solid rock underneath, while carefully shoring ancient foundations. Digging to replace the stair produced not only a passageway to remove all excavation rubble, but space for previously lacking rest rooms. The Victory also lacked a rear stage door (the building was locked in by others). Nor was there any backstage. Removing the rear buildings and replacing them with a new wing solved both problems (see overleaf). *Charles K. Hoyt*

Leading 42nd Street's ups and downs, The New Victory originally mimicked an elegant small European opera house inside (overleaf) and out (right). As times changed, so did its appearance (far right). As restored (top and opposite), it is the first one completed of many nearby theaters being renewed (site plan), including the New Amsterdam, also by Hardy Holzman Pfeiffer, for Disney.

© Elliott Kaufman photos

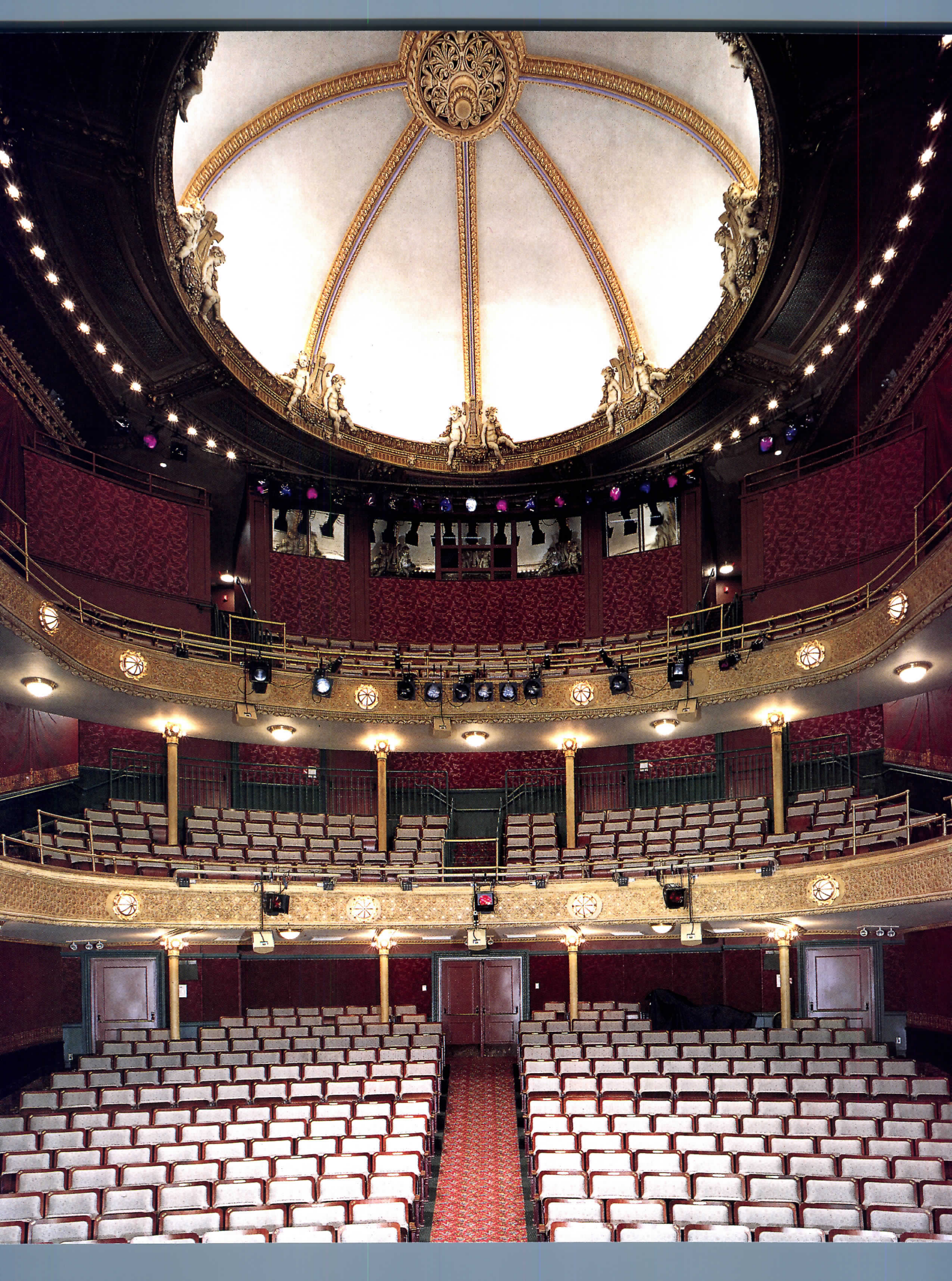


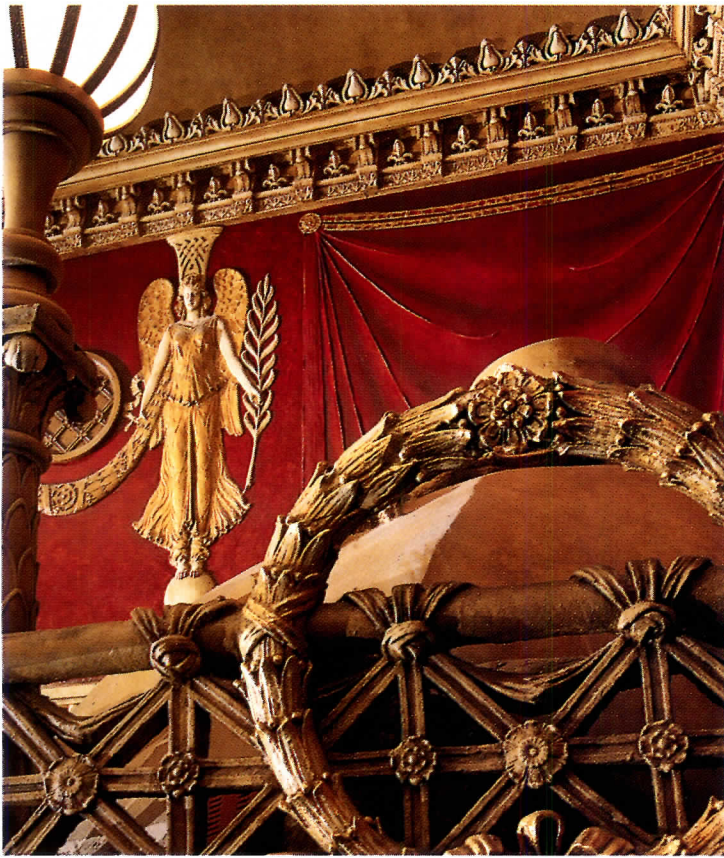


Among The Victory Theater's problems for modern use were lack of a lobby; insufficient number of rest rooms; and lack of handicapped facilities, sound and lighting control, and adequate hvac. To provide a lobby, as well as control street noise through the entry, the architects built a sound-proof wall into the original house (shaded in section) while maintaining as much of the historic character as possible. New stairs lead down to a much larger lower lobby.

A new elevator gives handicapped access to seating on the sides of the sound- and lighting-control booth on the top balcony. From the booth, an operator lowers and raises lighting and speakers mounted on suspended bars. Subtracting space for the booth and lobby reduced seating capacity from 700 to 500.

Reproduction seats were made by the manufacturers of the originals using end panels from the old molds. Upholstery is embossed with the Belasco "B." New air-handling units were mounted on the roof. A grid of independent girders gives them vibration insulation. New vents and air intake were incorporated into the original decoration in the dome (section). The new wing to the north (plan) contains dressing rooms, prop and scenery workshops, storage, a truck pull-in, and loading dock.





Hardy Holzman Pfeiffer's restoration of the house is meticulous down to the last detail of its 1902 appearance—except for the new wall, which cuts across the entrance side to create a lobby, and a light- and sound-control booth. Here, the architects have made a straightforward modern addition. Stairs from the lower lobby (bottom left) illustrate the point.

Credits

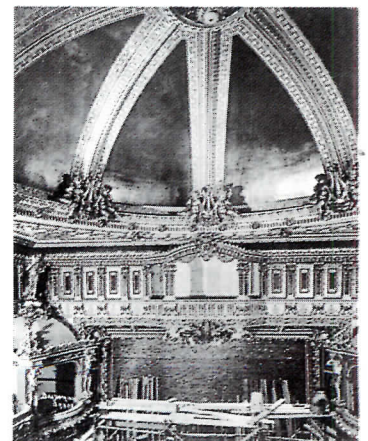
*The New Victory Theater
New York City*

Architect: Hardy Holzman Pfeiffer Associates—Hugh Hardy, partner-in-charge; Stewart Jones, project manager; Raoul Lowenberg, construction architect; Douglas Stebbins, project architect; Kristina Walker, interiors; Massoud Ghassem, David West, Daniel Barrenchia, design team

Engineers: Robert Silman (structural); H. C. Yu & Associates (hvac, plumbing, electrical); AKF (mechanical, electrical); Jaffe Holden Scarbrough (acoustics); Fisher-Marantz (architectural lighting).

Consultants: Jules Fisher (theater); Building Conservation Associates (historic preservation); Boyce Nemeck (security)

General Contractor: F. J. Sciamie Construction Company





Bank Job

*Gilmore Bank
Los Angeles
Koning Eizenberg Architecture
Architect*



We never pretended to be doing *historic* renovation,” says Julie Eizenberg of her firm’s careful, and, at times, seemingly invisible remodel of a 40-year-old Los Angeles bank. Opened in December 1955, Gilmore Commercial & Savings Bank dedicated itself to “serving the community with ‘home town’ friendliness and ‘big city’ stature,” according to its mission statement. Over the years, the one-branch bank withstood the pressures of financial-institution mergers and acquisitions, staying independent and self-sufficient. While its core values remained unblemished over time, the building’s general demeanor had gradually grown shabby with use. Enter Santa Monica-based Koning Eizenberg Architecture.

Architects Hank Koning and Julie Eizenberg have built a reputation for their own brand of Modernism, which draws on local vernacular styles ranging from Irving Gill to the more anonymous clapboard bungalows of Southern California [RECORD, April 1995, pages 88-91]. Their’s is an architectural modesty well suited to the low-key setting of the bank, which is adjacent to another Gilmore family development: the Farmer’s Market, a casual sprawl of utilitarian shed structures. A sense of renewal pervades, but distinct signs remain elusive, and the architects like it that way. “We were hired because we’re in sync with the vision of the place,” explains Eizenberg of the firm’s on-going association with the A.F. Gilmore Company. (Previously, the architects designed a new gate and 200-square-foot security office for the market—jobs many architects might pass on.)

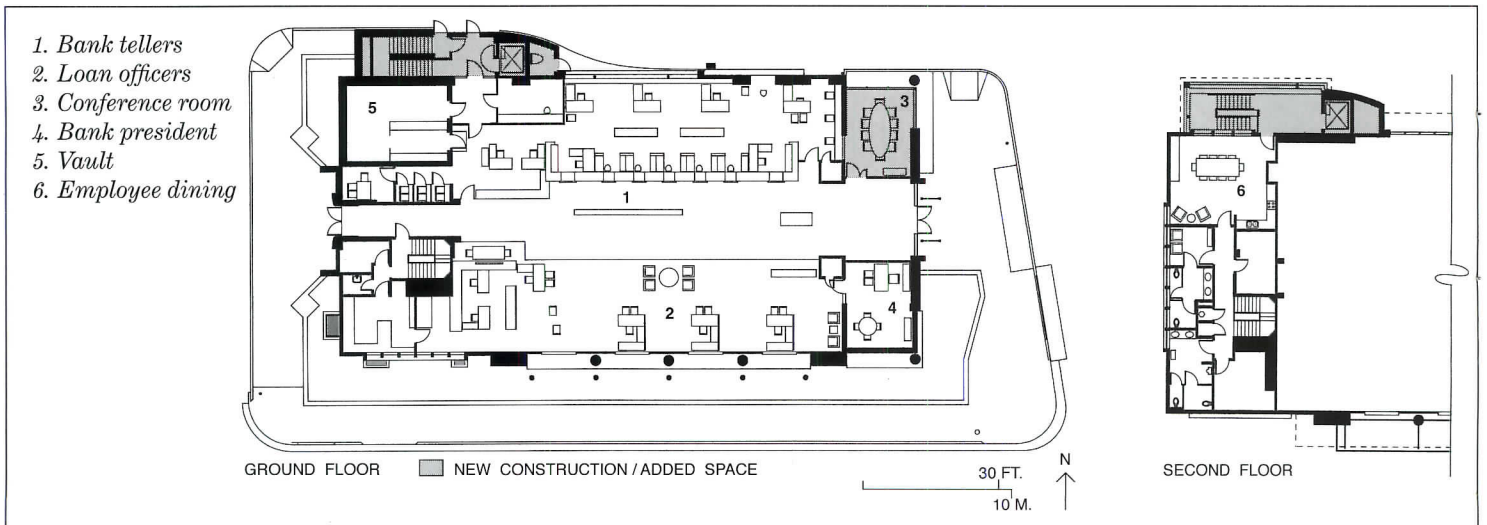
While the bank was eager to maintain its identity, it was equally critical to the project, and to the architects’ scheme, that it provide tradition-conscious customers with uninterrupted service. Tellers and loan officers swapped sides of a once-narrow central corridor and a new wall of maple veneer and marble teller stations—its design based on original details—was prefabricated in sections and installed at night and over the weekend (following pages). The wall is modified in its new incarnation, so tellers now face clients across a lower and broader “window,” more in keeping with the accessible image of the bank. Loan officers, released from the confines behind a matching dividing wall, are now spread out along the south side of the building to occupy an open office area interspersed with living room-like furniture groupings.

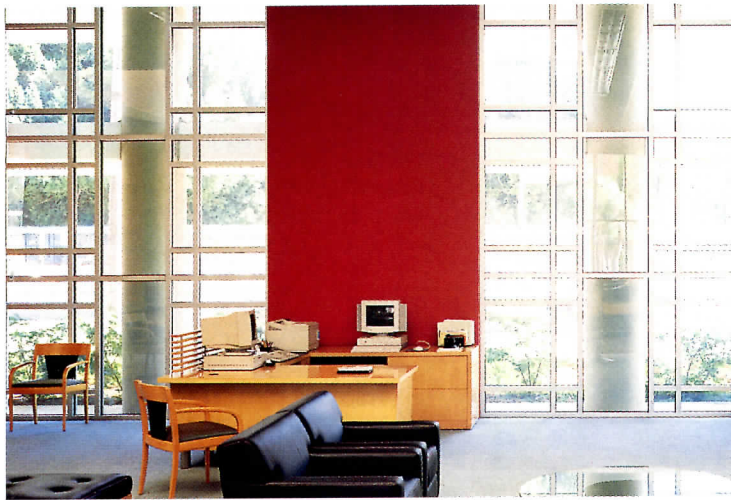
The architects captured additional space in the corners of the building to accommodate an elevator that complies with current code requirements, and created a conference room. Sun-faded wood panels framing the west entry were replaced by terrazzo and an entry was added on the east side, where there is additional parking. The most significant change, however, is visible only on the inside: five new reinforced fiberglass skylights were cut into the existing coffered ceiling. According to the architects, the addition of skylights and exterior white-painted light shelves on the east (bottom right) and south (opposite bottom) facades, which bounce light inside and reduce the need for supplemental lighting, and the replacement of existing glass with insulated low-E glass, contribute to an energy saving of about 50 percent. The notion of savings even went as far as exterior signage: the building is now, more simply, Gilmore Bank. *Karen D. Stein*

© Grant Mudford photos



Distinguishing old from new is not easy—the architects’ goal. A new sandstone wall connects the existing structure (left in photo top) with a sliver addition—an elevator and hall linking back-of-bank functions with a second-floor employee cafeteria that meet ADA criteria (right in photo top). New entry grilles echo original details (bottom).





New exterior window walls match the original design, but contain more energy-efficient insulated glass panes (opposite and left). Skylights cut into the shed roof filter daylight through wood rafters. Yellow-stained maple cabinetry, based on original detailing, enhances the sense of a sunny interior space. Terrazzo flooring and marble teller counters and baseboards were selected for their durability.

Credits

*Gilmore Bank
Los Angeles*

Architect: *Koning Eizenberg Architecture—Hank Koning, Julie Eizenberg, partners; Tim Andreas, project architect; Marc Schoepflein, project manager*

Engineers: *Parker Resnick (structural); Nikolakopoulos + Associates (electrical); Ralo Engineering (methane mitigation)*

Consultants: *Tim Thomas (lighting); Robert M. Fletcher (landscape)*

General Contractor: *Herman Construction*

Over the Top



During its 17-year relationship with Brearley, a private K-12 school in Manhattan, Platt Byard Dovell has employed structural ingenuity and tight coordination to complete multiple construction phases within 10-week summer recesses. Today, the 1928 building stands rejuvenated, complete with new mechanical and electronic-communications systems. Virtually every space use was relocated according to a master plan carefully worked out with the clients. Work has included a new library structure suspended above the renovated auditorium from deep roof girders to allow alignment of new and existing floors.

No previous work, however, tested the architect's mettle more than a recently completed two-story penthouse that keeps enrollments high by providing inviting accommodations with spectacular views of the East River for the four upper-grade classes, as well as a new alumni meeting room and administrative offices. (The top-floor plan, below, is similar to that of the lower floor.) Existing-conditions research, design, and construction were completed within 15 months despite intricate contract documents and lengthy contractor discussions needed to meet the 10-week installation deadline. Connections of existing steel on all ten floors below had to be reinforced for lateral strength; H-section beams and columns of the old top-floor gym became tubes by adding plates for greater compressive strength; all finishes were replaced and existing elevator penthouses and water tank raised. Where original architect Benjamin Morris divided the building into a vertical river-front tower and stepped-back rear section, Platt Byard Dovell has given the tower emphasis by adding a story of matching-brick cladding (top right and opposite, far left), against a background of gleaming aluminum and operable glass curtain wall that clearly speaks of its time. Traditional classrooms within reflect the client's belief in time-tested educational methods.
Charles K. Hoyt

Credits

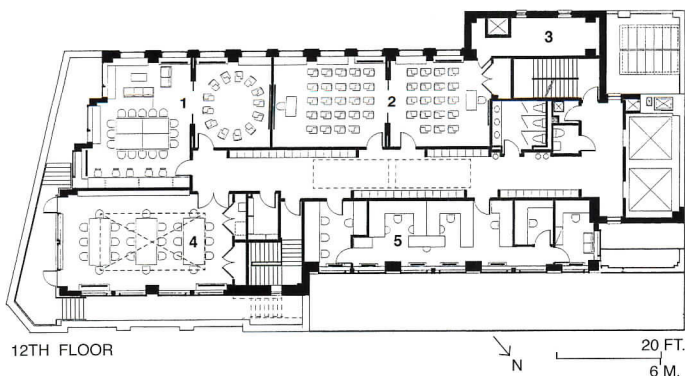
*The Brearley School
New York City*

Architect: Platt Byard Dovell Architects—Charles A. Platt, Paul S. Byard, Ray H. Dovell, principals; Arthur Blee, associate; William Rockwell

Engineers: Robert Silman Associates (structural); Goldman Copeland Associates (plumbing, mechanical, electrical); John A. van Deusen & Associates (elevators)

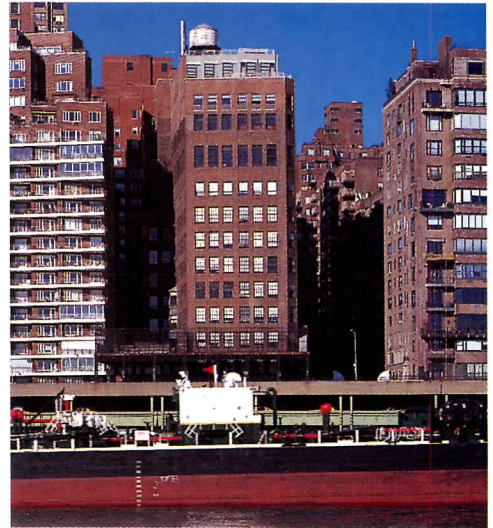
Consultant: NOVATION (codes, building-department approvals)

Construction Manager: Lehrer McGovern Bovis, Inc.

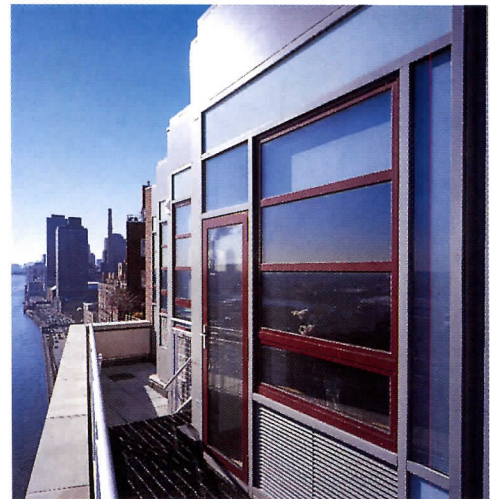


1. Homeroom, grade 12
2. Homerooms, grade 11
3. Mechanical
4. Alumni meeting room
5. Enrollment development and publications

*The Brearley School
New York City
Platt Byard Dovell Architects*



© Addison Thompson photo



© Addison Thompson photo



© Dan Cornish photos except as noted

Arts Oasis

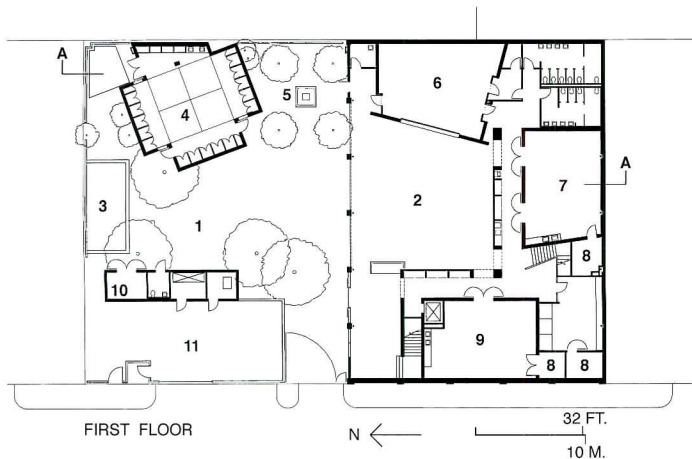
EX



*A body shop in Los Angeles' run-down
warehouse district is transformed into a
thriving arts center for children.*

*Mark Taper Center/Inner-City Arts
Los Angeles, California
Michael Maltzan Architecture
Marmol & Radziner Architecture
Architects*





1. Courtyard
2. Gathering space
3. Amphitheater
4. Ceramics studio
5. Fountain
6. Performance classroom

7. Music classroom
8. Storage
9. Media classroom
10. Shop
11. Parking

Credits

Mark Taper Center/Inner-City Arts
Los Angeles

Client: Inner-City Arts

Architects: Michael Maltzan Architecture—Michael Maltzan, project design architect

Marmol & Radziner
Architecture—Leonardo Marmol, project manager; Ron Radziner, project architect;

Megan Dayton, Chris Shanley, Jared Levy, project assistants

Engineers: Decoma Industries—Mehrads Givechi

(structural); Levine-Seegal Associates—Mark Seegal, Gary Dunn, Anil Shinde (mechanical/electrical)

Consultants: Nancy Goslee Power and Associates (landscape); Lam Partners—Paul Zaferiou, (courtyard

lighting); Ph.D.—Michael Hodgson (signage/graphics)

Contractors: Decoma Industries (main building and courtyard); Pacific Southwest Development (ceramics building)

Named for its largest contributor, the Mark Taper Center enrolls schoolchildren from six Los Angeles inner-city elementary schools. By exposing them to a pleasant environment, encouraging them to create objects of their own, and instilling a sense of accomplishment, it seeks to direct them away from the lures of drugs, gangs, crime, and violence. Many are homeless, or live in overcrowded apartments.

The center, in operation since 1994, is a huge success, and sponsors, teachers, and students alike attribute much of this to the architecture, which took an 8,000-square-foot auto-body shop in a rundown warehouse district, added an empty adjacent lot of equal size, and transformed all into a well-scaled space full of light and air.

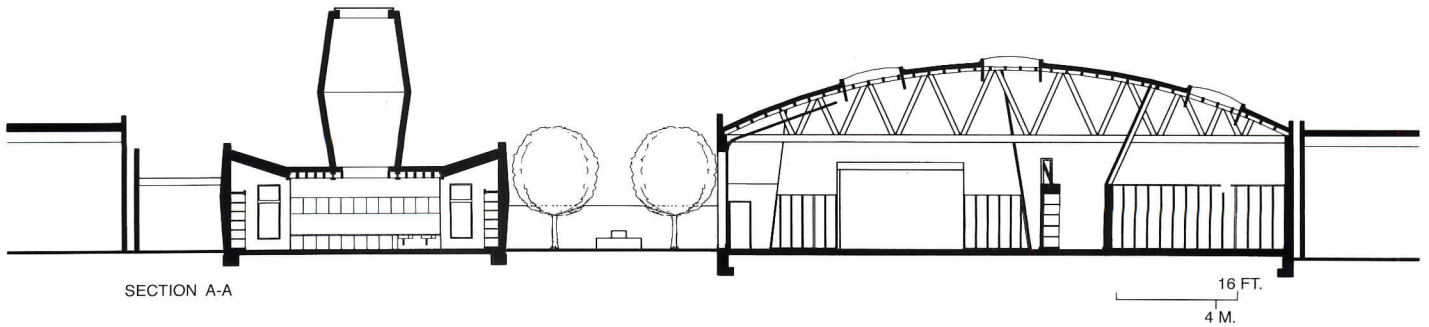
At first the owner was going to demolish the shop, but this would have cost \$400,000 and destroyed a unique structure of wood bow-string trusses over 2-inch by 8-inch wood studs. Instead, for little more than twice what it would have cost to wreck it, architects Michael Maltzan and Marmol & Radziner (working pro bono) saved the vigorous, unifying components that bridge the great interior (only 20 percent of the structure is new), adding a series of new skylights to bring daylight into the space (opposite page).

The complex is a model of sophisticated planning. You enter the courtyard through a transparent gate set in a high buffer wall, and come into a pleasingly scaled court, with a freestanding ceramics studio (above left) and small outdoor amphitheater to the left, and the main gathering space (overleaf) to the right. This room, the heart of the center, is connected to the court through a set of three industrial-type sectional overhead doors with glass vision panels (previous overleaf). Even when closed, as shown on the preceding pages, they connect the room with the outside. When raised, they create a splendid “town courtyard.” (A mezzanine over part of the enclosed area houses offices and offers a view over the entire facility.) An ingenious arcade system wraps around the gathering space, allowing children to reach classrooms without disturbing other functions.

For continuity between the old and the new, exposed lumber is used throughout. At first, plaster board was going to cover the studs from floor to ceiling but, to maintain appropriate scale, the plaster stops at the seven-foot line, a level kids can identify with.

An unforeseen but important by-product of the center has been the children’s curiosity about the design and construction of the building. And they are able to see from one space to another, a rare experience for kids accustomed to run-down, boxed-in classrooms.

Nice small touches add to the experience. A cool little outdoor communal fountain is for the children to clean off their brushes; a real lemon tree shows the passing of the seasons; etched-glass donor plaques are sunk into the floor outside the spaces being commemorated. *Stephen A. Kliment*



SECTION A-A



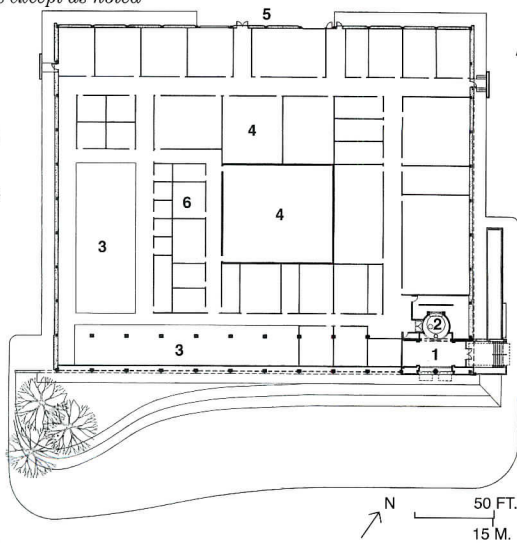


Maintaining Face



© Abby Sadin photos except as noted

1. Lobby
2. Rotunda with skylight
3. Existing open office
4. Existing studios
5. Existing service
6. Studio support



© Steve Weindel photo



A common problem for many contemporary building owners is what to do with the 30- to 40-year old structure that has taken on a tired, shoddy face, while its role on the corporate campus has been upgraded along with its public profile. As often as not it calls for a face-lift rather than out-and-out renovation.

That was the challenge handed to the architects by Hewlett-Packard in the shape of Building 15. This lackluster structure was completed in 1965 on HP's main Palo Alto campus—a windowless (on three sides) “black box” built to make and distribute computer hardware (photo below). The original components were modest but durable, consisting of a simple steel post-and-beam structure with tilt-up, exposed-aggregate precast panels.

The program changed in the early 1990s, when the building was converted to a training and worldwide teleconferencing center. HP requested an image more in line with the building's new public role. The occasion also suggested taking a new look at its K-brace seismic treatment; revamping egress so as to dump an unsightly mid-facade exit stair; and creating a strong entrance.

Most pressing was the dingy image projected by the south or street facade. The architect handled this by replacing the facade with a great metal screen wall (above). This screen is intended to be seen as an independent “plate” that appears to slide free of the stucco-clad

*Building 15
Hewlett-Packard Company
Palo Alto, California
Skidmore, Owings & Merrill, Architect*



building box behind it. In fact, the old facade infill was not removed, to keep the building operating during construction (the training and teleconferencing center had already been “poured” into the old box some years previously). SOM partner Craig Hartman went on to design into the plane of the metal wall an infill veil of patterned ceramic-frit coated glass, placed four feet in front of the existing curtain wall. The frit glass serves as a solar screen for office space, while providing views. The veil is set in a light metal frame that seismically braces the perimeter columns, and replaces the old K-bracing.

The next step was critical. “The original building,” says Hartman, “made no attempt to announce its entry. Finding the front door is much more critical with Building 15’s new public role.” The result is an accented entrance consisting of a green stucco wall plane and glass canopy. The new entrance lobby (right) is topped by a shallow vault formed out of gypsum board, with a circular skylit transition to the interior (partly seen at left in photo). To further mark the entrance, the metal “plate” on the street facade was punctured by an elegantly detailed paired window topped by a *brise soleil* (above, to left of canopy). The fire stair was removed, and the egress requirements met by a landscaped berm. *Stephen A. Kliment*



Credits

Building 15

Palo Alto, California

Client: *Hewlett-Packard Company*

Architect: *Skidmore, Owings & Merrill—Craig Hartman, partner in charge of design; Steve Weindel, associate partner; project architect; John Mader, Wally McMillan, project team*

Engineers: *Skidmore, Owings & Merrill—Navin Amin, associate partner; Peter Lee, project engineer (structural); minor mechanical and electrical work by general contractor*

Consultant: *Jill Pilaroscia (architectural color)*

General Contractor: *Rudolph & Sletten, Inc.*



© Steven Brooke photos

Propaganda Pieces

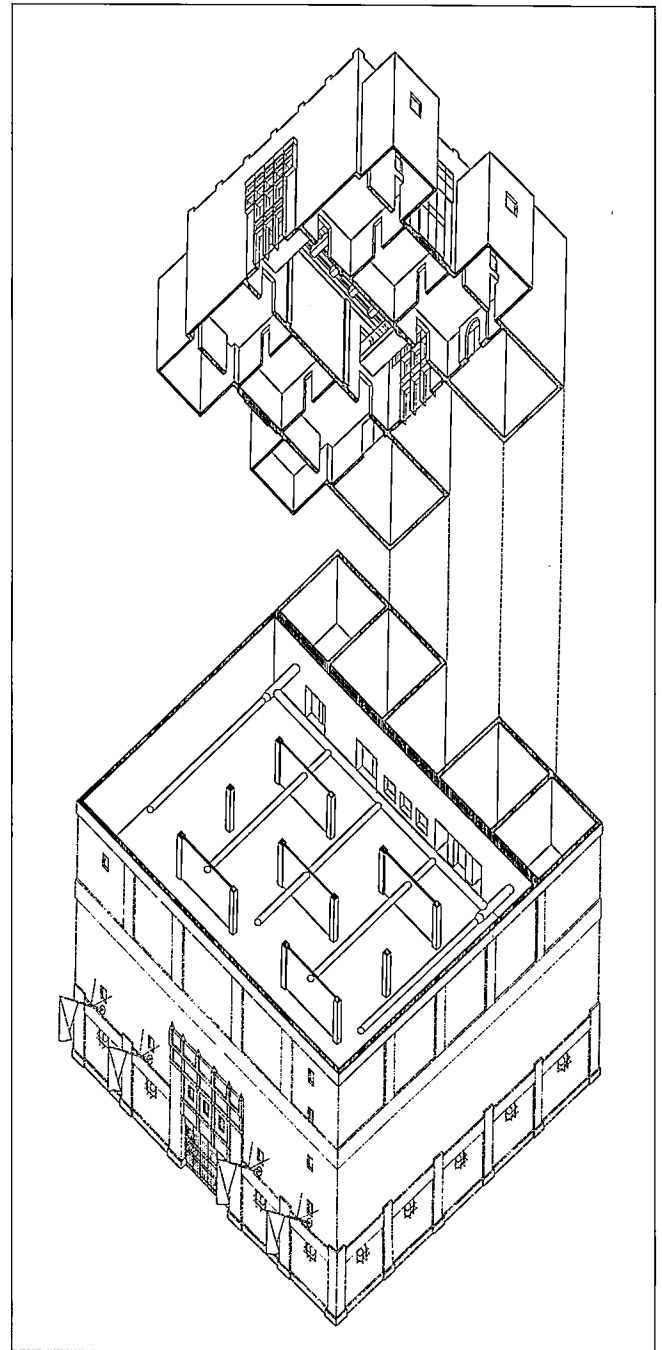
The Wolfsonian
Miami Beach, Florida
Mark Hampton, Architect
William S. Kearns, Associate Architect

The Wolfsonian is a happy match of unusual building and client. Arts patron Mitchell Wolfson, Jr., a native of Miami, grew up observing Hollywood make-believe's influence on popular culture, and became an inveterate collector of decorative-art objects designed between 1885 and 1945 to project propaganda into the era's thinking—eventually amassing over 70,000 objects, including Soviet, American, and Fascist political posters and stadium banners, not to mention whole building facades and numerous household objects that convey various governments' messages and fantasies.

Anticipating his storage (not to mention display) problem, Wolfson, together with architect Mark Hampton and associate William Kearns, eyed an initially unlikely solution—an underutilized five-story warehouse on Miami's then seedy South Beach, just two blocks from the Atlantic's treacherous waves, and so close to sea level that even a severe rain washes into the central arcade, where its entrance opens to the sidewalk and streets have no place to drain. But the building had stood through the worst of storms since 1927—as *the* repository of winter residents' valuables, including their cars, left behind when they boarded trains north for the summer. Earlier users' confidence was inspired by the building's fortress-like character, including massive poured-concrete framing and floors, two-foot-thick walls, and sparse gunport-like windows. Wolfson, Hampton, and Kearns were inspired by more: over 50,000 square feet of flexible open floors interrupted only by a 20- by 18-foot column grid and, on the second floor, the walls of several huge vaults. The exterior character suits its new purpose as well. In typical 1920s Floridian fancifulness, the elaborate cast-stone decoration was copied straight from a 1500s Spanish church.

Renovation has been a catalyst for the neighborhood's renewal. However, the whole transition from storing household valuables to storing, displaying, and caring for valuable art was not that easy. First, 1920s concrete technology was less than ideal at its best. Where structure had spalled, concrete was removed, steel reinforcing cleaned or replaced, and new concrete poured. While client and architects were eager to keep the interior's utilitarian appearance, it too presented problems. Concrete floors send up caustic dust through abrasion and do not block dampness penetration between floors. The solution was a terrazzo-like finish with a large component of sand, which approximates the original floors, poured over a waterproof membrane.

Modern climate control, computers, lighting, and security all require extensive cabling and ducts that normally raise visual havoc when left exposed. The architects organized these elements around the order in the structural framing—thick beams running in one direction and much thinner, closely spaced beams in the other, forming coffer (overleaf). Warm-white bulbs in tubular fixtures bounce ultraviolet-free light from the ceiling and raise its visual height. Rectangular wire molds pass along the bottom vertical edges of the thick beams to clear the slightly higher thin ones and provide cabling access at any point in the building. Polished aluminum air ducts are centered on columns to accentuate the intended design discipline. Total costs for renovation and additions were \$8.5 million. *Charles K. Hoyt*



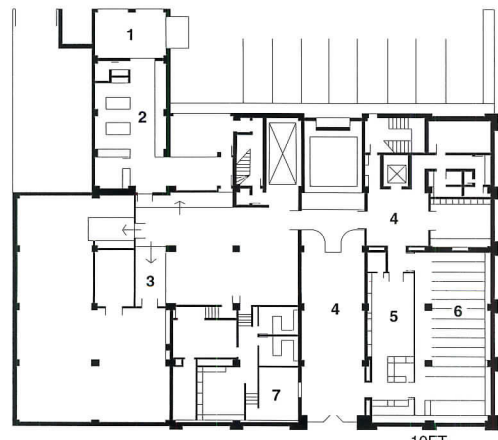
Additions include future gallery space in a two-story penthouse over the main public exhibit area on the old top floor; and two new towers on the rear to hold a fire stair; redundant mechanical rooms, and a passenger elevator.







- 1. Mechanical
- 2. Receiving
- 3. Exhibit preparation and storage
- 4. Entry arcade and elevator lobby
- 5. Gifts
- 6. Auditorium
- 7. Tickets and information
- 8. Files
- 9. Toilets
- 10. Reception
- 11. Curatorial offices
- 12. Conference



FIRST FLOOR



SECOND FLOOR

Second-floor administrative spaces (previous two pages, top) include the reception area (left) containing 1930s first-class waiting room furniture from the Milan train station. Most of the building is devoted to curatorial study and storage (bottom). Rooms in the current exhibit (this page, right) include objects from the industrial-era backlash.

Items on permanent display include a streamlined Arts and Crafts stairway (bottom) and the terra-cotta facade of a Pennsylvania movie palace (opposite). To accommodate the facade, the architects extended the back of the building with a two-story, skylit addition, which guides visitors along the central entry arcade to a new passenger elevator (plans). First-floor spaces are raised above possible flooding and connected by a bridge across the sidewalk-level arcade, which is open to the street through iron gates.

Credits

*The Wolfsonian
Miami Beach, Florida*

Architect: Mark Hampton—
Moshe Goren, project supervisor

Associated Architect:
William S. Kearns

Engineers: Donnell & Duquesne
(structural); Louis J. Aguirre &
Associates (mechanical);
Howard Brandston & Gordon
Anson (lighting); E. B. Brown &
Associates (security); James
Swope (materials conservator)

General Contractor: E. W.
Charles Construction Company



Factory Finish



*Bloomington's downtown revival
is galvanized by the reincarnation
of a former furniture giant.*

*Showers Center
Bloomington, Indiana
The Odle McGuire & Shook Corporation,
Architect*



The Showers Center isn't a simple story about an old building that was given new life. Rather, it's a prime lesson on how an ancient—by American standards—building, with deep roots in the Bloomington community, has motivated three totally diverse clients to get their financial, program, and architectural acts together, and extend this respected element of the city's civic fabric into the next century.

In 1854, Charles Showers, a Pennsylvania cabinetmaker, founded a factory on the site to make solid-oak bedroom suites covered in rotary veneer. In 1910 he added the first of four huge plant- and office-expansion buildings, of which the one pictured on these pages was the first, a more than 200,000-square-foot giant built around the original core in a record six months. During the 1920s, Showers ran the world's largest furniture factory, and produced 60 percent of America's furniture. By 1955 the Showers fortunes had waned, and in 1959 Indiana University began to buy up the plant, using it as a warehouse.

Enter the Bloomington Advancement Corporation (BAC). Employing an array of local and federal tax incentives, BAC assembled three key operating owners, remarkable for the great diversity of their activities—the City of Bloomington, CFC, Inc., a large property-management company, and Indiana University (IU). Each owner agreed to develop about one-third of the huge building. The city of Bloomington was looking for ceremonial space for its council meetings, plus offices for key departments. CFC wanted a headquarters with dignity and style. IU was establishing a research park to draw high-tech jobs to the area, and renting most of the space to small research companies.

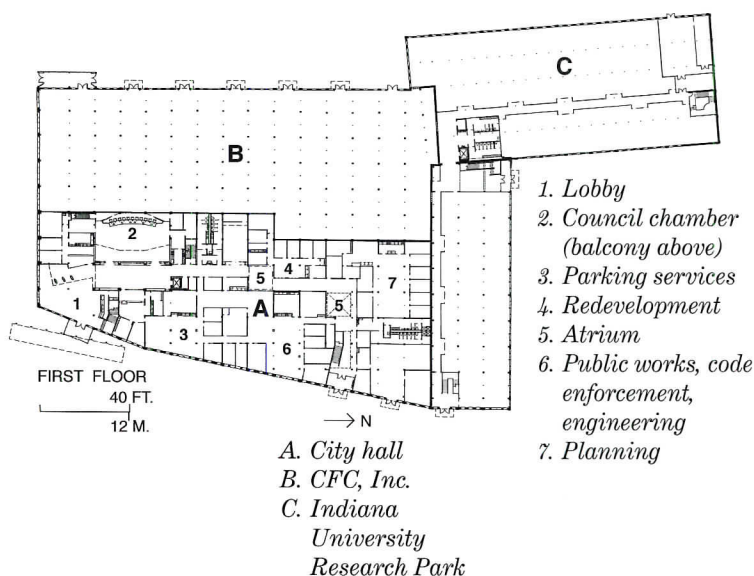
Throughout the programming and design process, one of the architect Odle McGuire & Shook's prime challenges was to find common ground among the various owner groups, yet meet their individual concerns as to design, funding, scheduling, and project coordination. The chief vehicle was an informal partnering process—a series of monthly meetings, over a span of four years, of the owners' representatives, with the architects as coordinators.

Each owner has a unique, identifiable entry. IU's echoes the original steel-sash and glass curtain wall at the north end. CFC has a metal-and-glass atrium (right). The city-hall entrance has a cantilevered railroad-platform canopy at the southeast end (top, opposite page). Small entrance canopies occur along the facades, recalling the original cable-hung tin loading-dock canopies.

The entire complex was brought to code. The heavy-timber frame was repaired with epoxy injection and/or wood, and steel columns were inserted between first-floor wood columns in the east-west direction. Wood joists were added in the floor in areas expecting heavy loads, and new rafters were inserted between the original rafters. Ties were added at all trusses and all around the perimeter for seismic reasons. Fully-adhered EPDM sheet replaced the old tin roof. A heat trace system prevents snow buildup in the sawtooth roof valleys. To meet energy codes, the entire building was furred out and insulated, except in lobbies, where the original brick was left exposed. A low-E coating was applied to exterior glass. ADA requirements were not only met, but integrated into the design so no parts stood out as "for the handicapped." The architects researched and specified materials with low or no VOCs, and installed a recycling system throughout the building.

The Showers Center, with its triad of government, industry, and educational clients, has emerged as a significant model of sound planning, good design, ingenuity, and perseverance. *Stephen A. Kliment*

© Timothy Hursley photos



The rigid grid of columns, combined with the jagged slopes of the sawtooth roof, shaped the interior-design vocabulary (opposite page, left), including the double-height Council Chamber (opposite page, right).

Credits

Showers Center, Bloomington, Indiana
Clients: Bloomington Advancement Corporation on behalf of Indiana University; City of Bloomington; CFC, Inc.
Architect: The Odle McGuire & Shook Corp.—John Padgett, principal-in-charge; Christine Matheu, project manager
Engineers: Fink Roberts & Petrie, Inc. (structural); Moore Engineers, P.C. (mechanical, electrical); Smith Neubecker & Associates, Inc. (civil)
Consultants: Yerger Acoustics (acoustics); ATEC Associates, Inc. (soils/geotechnical); Weddle Bros. Construction Co., Inc. (cost estimating)
General Contractors: F. A. Wilhelm Construction Co., Inc. (Showers Center site and building shell); Superior Lumber & Building Co., (city hall interior)



Reconcilable Differences

*National Minority AIDS Council
Headquarters
Washington, D.C.
CORE, architects*



For an organization like the National Minority AIDS Council (NMAC), contradictions come with the territory. Dedicated to helping people live with a deadly virus, the group wanted offices that express the reality of AIDS but also show hope for a better future. Unconventional by nature, Paul Akio Kawata, the organization's executive director, encouraged the architects from CORE to take stylistic risks in renovating two turn-of-the-century townhouses into NMAC's headquarters. The result is a building that retains a traditional street facade to underline the council's roots in its inner-city neighborhood and its sense of continuity, while inserting bold new colors, modern materials, and open interiors that express its faith in the future.

Given the derelict state of the townhouses, CORE partners Dale Stewart and Peter Hapstak salvaged the front facade (opposite), parts of the two side walls, and most of the party wall originally separating the structures. On the back, they built a new metal-and-glass wall and wrapped it around parts of the side elevations (right bottom). To fit 44 employees into the 7,500-square-foot building, the architects pushed zoning and building codes to their limits—extending the building to its rear setback, adding an exterior stair on the lower floors as a secondary egress, and inserting a handicap lift on the side of the building rather than the front. Inside, an efficient plan locates services to the sides, private offices to the front and rear, and shared “bullpen” offices in the middle. Limited to a \$700,000 construction budget (including interiors), CORE used inexpensive materials such as plywood and steel scaffolding in the reception area (right middle) and throughout the facility. A barrel-vaulted roof is left exposed to add height to top-floor offices (right top). *Clifford A. Pearson*

Credits

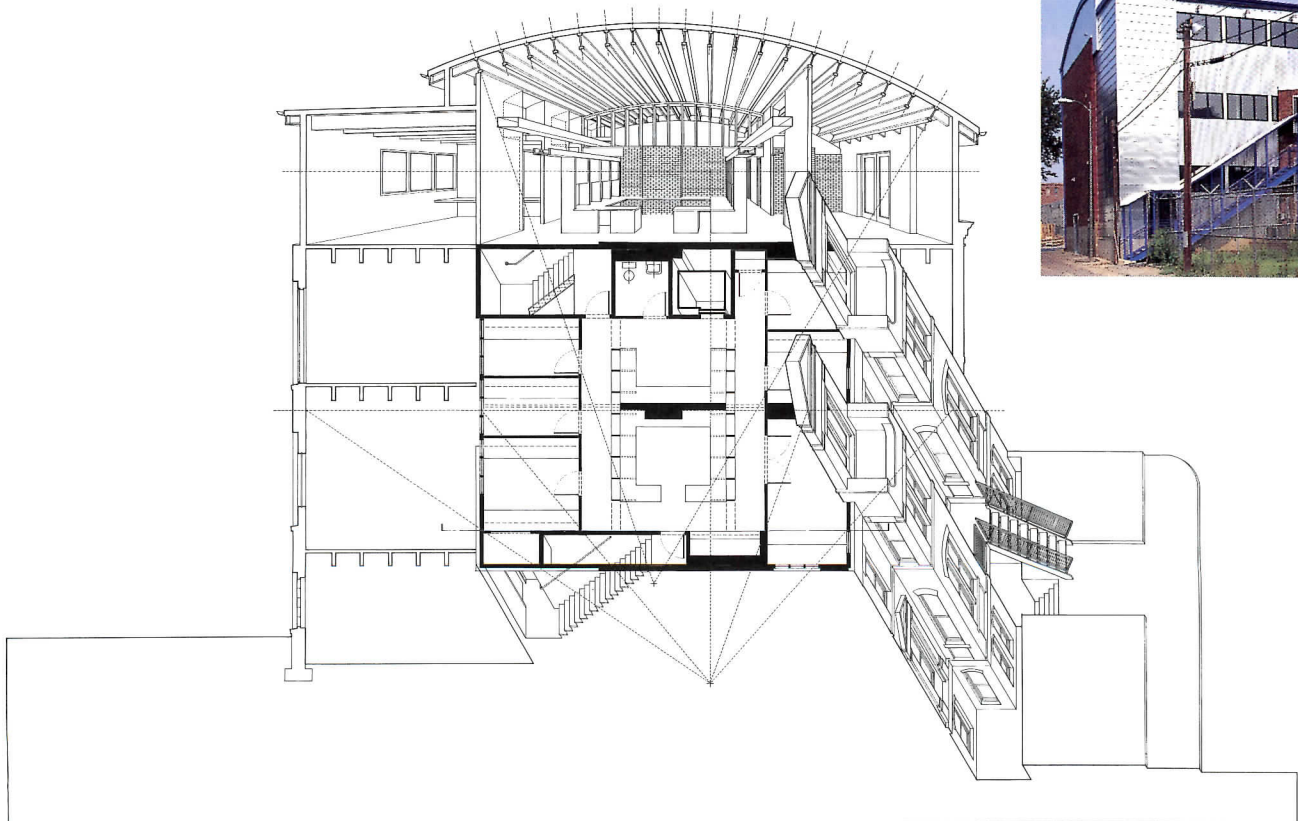
Owner: National Minority AIDS Council

Architect: CORE—Dale Stewart, managing principal; Peter Hapstak, design principal; Vyt Gureckas, project architect; Sean Wayne, architect.

Engineers: FACE Associates (M/E/P); Rathgeber/Goss Associates (structural)

Developer: The Jenco Group
General Contractor: Malin Construction

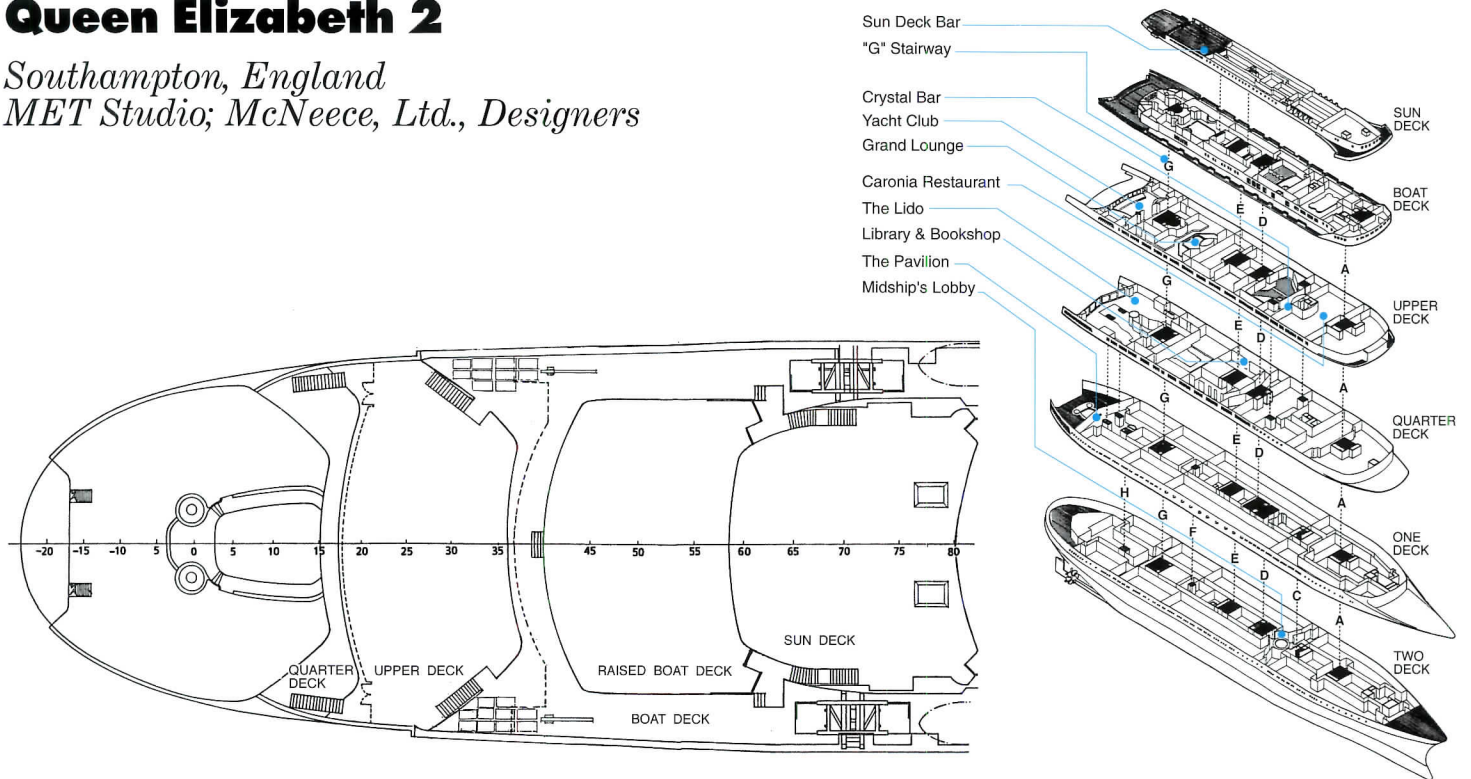
©Michael Moran photos



Focus on: From Ship to Shore

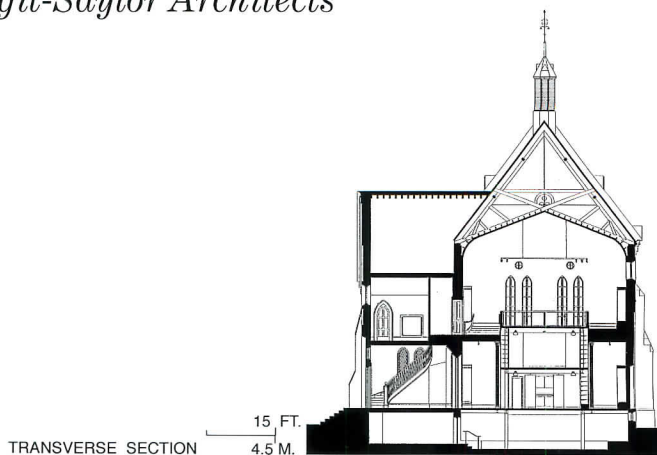
Queen Elizabeth 2

Southampton, England
MET Studio; McNeece, Ltd., Designers



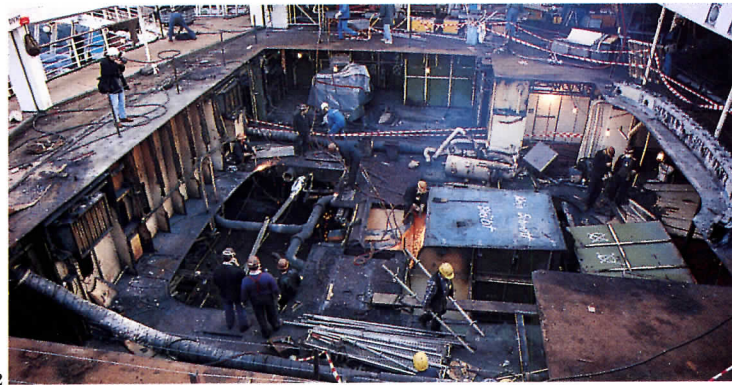
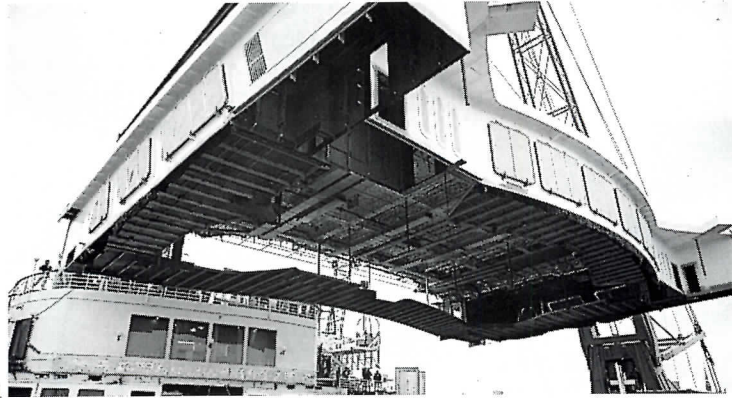
Logan Anthropology Museum

Beloit College, Beloit, Wisconsin
Dagit-Saylor Architects



© Steve Hall/Hedrick Blessing photos

These examples illustrate the diverse range of renewal projects architects encounter in the expanding market for bringing aging structures in line with current demands. Constant upgrading of a great ship keeps it afloat, while a new use for a Civil War monument continues its viability. C.K.H.



The Queen gets a re-fit.

Structurally renovating a luxury liner is a bit like working in a fourth dimension—the “building” must sail on in the teeth of Force 8 winds. When Cunard Lines put the QE2 in drydock in Hamburg, Germany, in November 1994, it faced a daunting schedule. The ship’s structural renovations and interior refurbishments had to be finished in 30 days to meet a December 17 sailing date from Southampton to New York.

MET Studio, Ltd., London, an architectural and design firm, and McNiece Ltd., also of London, a specialist in cruise-ship interiors, collaborated on the project. According to MET Studio’s QE2 project manager, Chris Cawte, “Within the marine industry, the scale and complexity of the structural changes carried out in the time scale are considered something of a landmark as far as refits are concerned.” Among MET’s responsibilities: the design of a newly expanded Yacht Club on the Upper Deck (the prefabricated module is hoisted into place in photo 1). An indoor plunge pool on the Quarter Deck was removed (photo 2) and a McNiece-designed buffet-style dining room seating 500, the Lido Club, was shoehorned into place. Other significant structural changes: the Grand Lounge on the Upper Deck (see axonometric opposite) got a greatly enlarged stage when twin staircases on either side were removed; and the G stairway was extended through to the Boat Deck from the Upper Deck.

The refitting of the QE2 was done to improve passenger circulation and allow passengers to intermingle more freely. And all early ’80s interiors were updated for the ’90s. *Carolyn De Witt Koenig*



Anthropology revives a monument.

To convert a gem-like, 4,200-square-foot Civil War monument built in 1869 to an anthropology museum for Beloit College, Dagit-Saylor Architects started with basics. One exterior stone bearing wall bulged 18 inches because the deteriorated timber and cast-iron structure inside was inadequate for current loads—much less two additional floors the architects intended to insert to meet program needs. Dagit-Saylor removed and rebuilt the bulging wall and interior structure, replacing it with a new steel one. To do this, they removed interior finishes to the stone, applied a vapor barrier for future climate and humidity-control, and reproduced the 1869 interior finishes, including woodwork and paint colors. They also did extensive reproduction of original exterior features, such as the slate roof and leaded-glass windows, which had been removed over the years. The old front doors, found in a basement, were reinstalled. Internal additions to meet the new use include two-story-high display cases (left) that enclose two floors of curatorial workrooms (far left). The corridor around the cases fits under the original mezzanine (section) while the second-floor workroom gives a hint of the old central space’s lofty character through openings in the floor of the third-story exhibition gallery. *C. K. H.*

Letters *continued*

the Bay Area has shown real benefit beyond the institutional type of diversity, law or affirmative action.

I think it is extremely important for people of influence to provide visibility for such architects so that the public and the nation's decision-makers become more aware that many talented architects are African-Americans. I believe this to be the spirit of the quote which made reference to Spike Lee opening doors for talented African-Americans, rather than the implication that architecture today is still a star profession, which is really a misnomer. Architects, stars

and non-stars alike, have worked hard to convey the fact that architecture is collaborative in its nature and process.

I want to paraphrase a point of view expressed by Cornell West in his book *Race Matters*, which I think will give a perspective or background to my responses. Mr. West has said that recent discussions of the plight of African-Americans tend to divide into two groups. On the one hand are those who highlight the structural constraints on the life chance of black people. Adherents of this viewpoint emphasize the historical analysis of slavery, Jim Crowism, jobs and housing dis-

crimination, skewed unemployment rates and poor education. On the other hand, there are those who stress the behavioral impediments to black upward mobility. They focus on the waning of the Protestant Ethic—individual hard work, deferred pleasure, frugality and responsibility—in much of Black America.

First we must acknowledge that structures and behavior are inseparable, that institutions and values go hand in hand. How people act and live is shaped largely by the circumstances they find themselves in. How the Supreme Court ruled in its recent 5 to 4 decision on affirmative action is a reflection of this struggle between liberal and conservative positions, institutions and values. What the court really said is that after reviewing its prior decisions on affirmative action, it found that the issues, context, and circumstances are still valid today. So it maintained its support of affirmative-action practices, but tightened up its ability to curtail abuses. More simply put, affirmative-actions laws were intended to open doors, not to solve all problems of African-American architects.

Responsible government has made contract opportunities available to qualified African-American architects with the hope that these architects would begin to develop new working relationships with the larger white business community. Likewise, it was expected that the larger white businesses, once aware that qualified African-American architecture firms existed, would begin to recognize the importance of diversity and, as responsible leaders in society, award contracts and do business with these firms voluntarily. The arguments about self initiative, looking for hand-outs and stigmas are generally expressed either by a few individuals who have needed only their individual drive to achieve upward mobility or are an expression of blind egoistic vanity.

For the majority in society, African-Americans and African-American architects, an extended helping hand from concerned citizens has been and remains essential to achieve success. To use a phrase from Senator Bill Bradley, there is a loss of connectedness. To make further progress, business leaders and the heads of private institutions must use their influence at the highest level to extend opportunities, lend support, and do business with minorities in order to make the American system/dream work for us all in this house called America.

*Emanuel Kelly
Principal, Kelly/Maiello, Inc.
Philadelphia*



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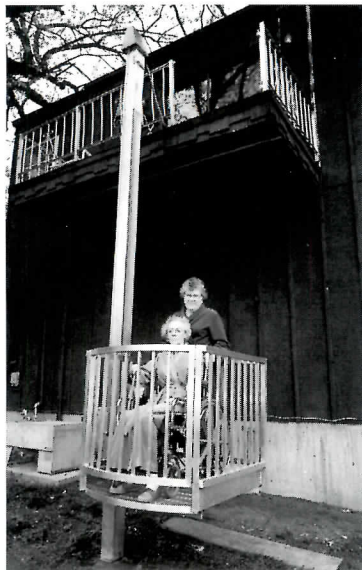
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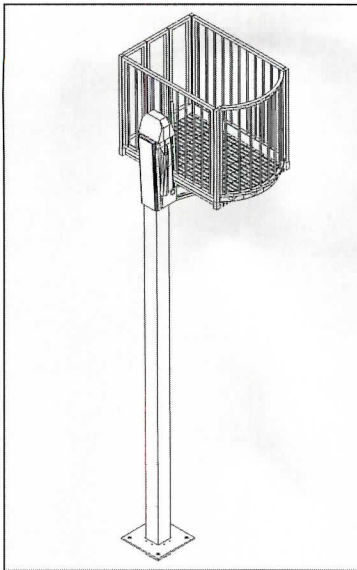
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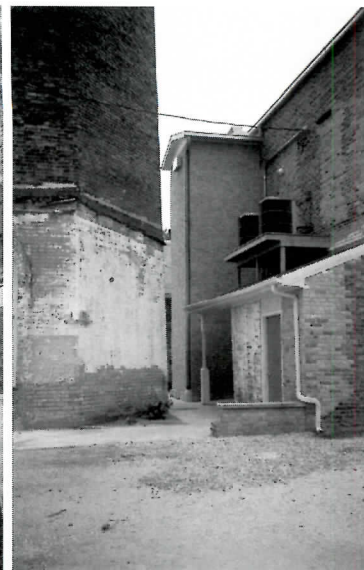
138. Emergency second-floor egress. A fire escape for those unable to use climb-down methods such as chain ladders has been developed by Cal Hansen and the Engineering Department at Kansas State University. The free-standing unit consists of a structural aluminum column, set in a concrete footing, and a gated plat-form. Users board the platform at an upper floor (device can



extend to three stories), release the braking lever, and are carried to ground level by gravity working on hydraulics in-side the post. When empty, the platform returns to its starting position. Totally weather-proof, the Grate Escape needs no electricity. Currently in production, the unit will sell for about \$3,000. 800/900-1430. Escape Systems, Inc., Manhattan, Kan.



139. Pre-fab exterior elevator. The AC3000 modular elevator is described as an easy-to-install, economical way to meet access requirements in existing buildings. A 2500-lb-capacity elevator comes pre-assembled within a 2-hr.-labeled hoistway, and set over the 4-ft-deep pit required. The motor and other equipment can be placed within the building itself, or in a separate ma-



chine room supplied by the manufacturer. Once in place (left, above) door openings are cut in the building wall, wiring connections are made, and the hoistway/building gap is flashed. The structure is roofed and finished as desired (right) to match the facade. Meets ANSI A17.1; for up to 28 ft travel. 800/656-2314. Infinite Access Corp., Mt. Vernon, Ill.
Continued on page 112

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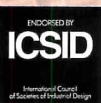
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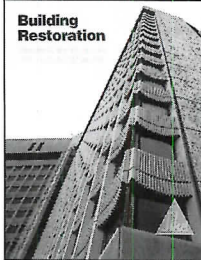
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The closing date of the competition is **July 31, 1996**.
 Further Information: Finland Wood Innovation Project.
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 Tel: +358-0-132 4600, fax: +358-0-132 4599.
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Product Literature/Renovation



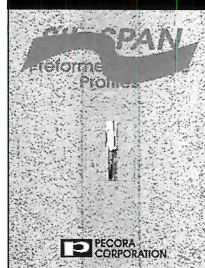
140. Concrete repair

Building Restoration, a 16-page booklet, covers the basics of concrete technology, providing a step-by-step process for successful repair and protection. Sections identify the root cause of many concrete problems and reinforcement corrosion, and explain how to review structures for both visible and latent damage. 800/933-SIKA. Sika Corp., Lyndhurst, N.J.



141. Architectural metalwork

Color catalogs illustrate recent metal installations, including wrought-iron grillwork and entrance gates, and stair rails of polished brass and stainless steel. Based in France but with workshops in New Jersey, Montreal, and California, this firm specializes in complex restoration projects as well as custom fabrication. 201/279-3573. LMC Corp., Paterson, N.J.



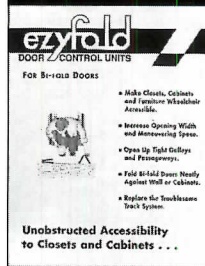
142. Silicone joint repair

Sil-Span extruded silicone profiles are described as particularly useful for repairing failed joints on EIFS exteriors. The replacement is applied with sealant directly over failed joints without cutting out the original material; comes in colors and textures to match most substrates, including metal panels and precast. 800/523-6688. Pecora Corp., Harleysville, Pa.



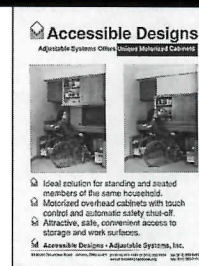
143. Stucco renovation

The *Stucco Repair, Remodel and Restoration* brochure includes cut-away color illustrations and provides basic how-to information on repairing both cementitious and synthetic stucco exteriors. Proprietary techniques can provide a completely new surface over existing walls, or patch cracks in an "invisible" repair. 800/USG-4YOU. United States Gypsum Co., Chicago.



144. Hardware for accessibility

Ezyfold control devices for bi-fold doors are said to make closets, cabinets, and furniture wheelchair accessible, increasing opening width and maneuvering space without overhead tracks. Closet doors open fully without narrowing hallways. Recommended by the Center for Accessible Housing. 413/625-9506. Kiwi Connection, Shelburne, Mass.



145. Variable-height cabinetry

A data sheet shows how kitchen components—sinks, storage cabinets, cooktops—can use an economical motorized lifting system to make them accessible to all in a household, from wheelchair users to tall basketball players. 614/593-5240. Accessible Designs/Adjustable Systems, Inc., Athens, Ohio.

Continued on page 114

For more information, circle item numbers on Reader Service Card.

Manufacturers' Sources

For your convenience in locating building materials and other products shown in this month's feature articles, record has asked the architects to identify the products specified.

Pages 42-47

Key Arena at Seattle Center
NBBJ, Architect
Metal roofing: Overly Mfg. Co. Ice guard: W.R. Grace & Co. Pole luminaires: Poulsen Lighting.

Pages 66-71

The New Victory Theater
Hardy Holzman Pfeiffer Associates, Architects
Replica wood windows: Architectural Building Components. Steel doors: Overly Mfg. Co. Plaster restoration: Evergreen. Exterior lighting: Historical Arts & Castings, Inc. Platform lift: Dover. Interior fixtures: St. Louis Antique Lighting Co.

Pages 72-75

Gilmore Bank
Koning Eizenberg Architecture, Architect
Exterior luminaire: Kim Lighting. Glazed walls: Kawneer Co. Linear downlights: Zumtobel. Recessed downlights: Edison-Price. Wallwash fixtures: Elliptipar. Entrances: Trident Doors. Pulls: Blumcraft. Skylight: Kalwall Corp. Acoustic ceiling: Armstrong. Paints: Dunn-Edwards. Flooring: Forbo. Carpet: Lee's. Maple furniture: custom by architects. Tables: Vecta. Elevator: Dover.

Pages 76-77

The Brearley School
Platt Byard Dovell Architects
Curtain wall and operable windows: EFCO. Roofing: U.S. Intec.

Pages 78-83

Mark Taper Center/Inner City Arts
Michael Maltzan Architecture
Marmol & Radziner Architecture, Architects
Interior windows: Western Integrated Metals. Aluminum storefronts: Kawneer Co., Inc. Resilient flooring: Forbo. Sound-control doors: Industrial Acoustics. Roofing: Schuller International.

Pages 86-91

The Wolfsonian
Mark Hampton, Architect
Penthouse cladding: Dryvit Systems. Indirect lighting: Lightolier. Power-data distribution: The Wiremold Co.

Pages 92-95

Showers Center
The Odle McGuire & Shook Corporation, Architects
Exterior restoration: ProSoCo. Replica metal siding; standing-seam roofing: MM Systems. Foundation coating: Thoro System Products. EPDM roofing: Carlisle. Replica exterior doors: Dahlgrens. Interior doors: Weyerhaeuser Co. Skylights: Lin-El. Entrances: Kawneer Co. Canopy glazing: Viracon. Paints: Sherwin-Williams. Acoustic ceilings: USG Interiors. Acoustic wall panels: Conwed. Exterior lighting: Bega.

Pages 96-97

National Minority AIDS Council
CORE, Architects
Wood windows: Huttig. Desk chairs: Herman Miller. Panel fabric: Knoll. Ceiling and wall fixtures: Artemide, Inc. Track lighting: Lightolier, Inc. Elevator: Otis. Vertical platform lift: National Wheel-O-Vator Co. ■

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Calendar continued

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Through April 14

"A Recent View of Architecture: Photographs by Paul Warchol" exhibition; National Building Museum, Washington, D.C. Call 202/272-2448; fax 272-2564 for more information.

Through April 19

"Six Bridges: The Making of the New York Megalopolis" at the PaineWebber Art Gallery, 1285 Avenue of the Americas (51st Street), New York City. An exhibition of the six bridges designed by Othmar H. Ammann. Call 212/713-2885 for information..

May 3-11

New York Interior Design Week includes a week of programs at various museums and cultural institutions. An interior-design showcase at The Ansonia will involve a team of designers recruited to solve common interior problems in apartments at the Upper West Side landmark. Call American Society of Interior Designers/Metro New York Chapter, 800/338-4411, for further information.

May 10-13

AIA National Convention & Exposition, Minneapolis Convention Center, Minneapolis-St. Paul. This year's theme is "the value architects and allied professionals provide the building industry." Over 100 seminars workshops and consultations are scheduled. Call 617/859-4475 for more information.

May 14-16

Lightfair International, Moscone Center, San Francisco. Call 404/220-2217; fax 220-2442 for details.

Competitions

- Entries to the Ecology Design Awards competition (ECO Awards) are due March 1. Sponsored by Wilkhahn, Inc., the competition seeks to recognize contract and residential interiors projects that are ecologically sound, visually appealing, and comfortable. Call 212/486-4333; fax 486-4334 for details.
- Entries to the Benedictus Award competition for architectural projects using laminated glass are due March 1. Call 202/393-5247 for information.
- Hong Kong international competition for a monument commemorating its return to Chinese sovereignty in 1997. Entry deadline: May 1. Write The Oval Partnership Ltd., 6/F, Wing On Cheong Building, 5 Wing Lok St., Central, Hong Kong, Attn.: Ms. C. Wong. ■

Correction

A model shot on page 26 of the January 1996 RECORD should have been credited to Tom Bonner.

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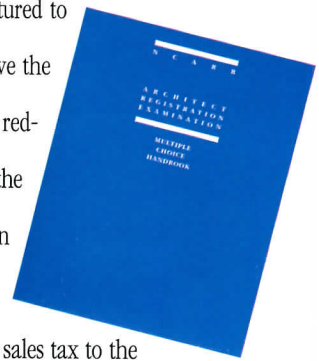
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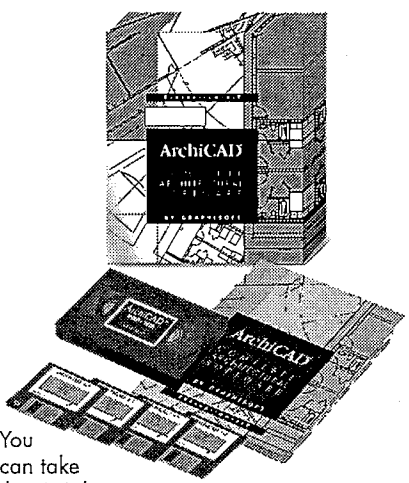
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Redesigning the Architect from page 85
ecture because they want to design and build buildings, such a profound redefinition of the field raises disturbing questions. Yes, it's easy to say that if you can design a building, you can "design" a business or a project-delivery process. But the increasing desire on the part of clients for non-traditional services also suggests that they value less what design can offer and value more the management skills of the CM, the design/builder, and the coordinating, envisioning, and strategic outlook of the management consultant. For any architect contemplating the restructuring of his or her career or firm, some fundamental issues must be addressed.

• *Responsibility and accountability:* Is the architect's documentation and site-observation role regarded as less important these days because architects don't have the skills to do the job properly or because they've ceded these tasks to others? It is no coincidence that AIA's Documents committee and the Risk Management committee are key players on the AIA's Practice and Prosperity task force.

As Weld Coxe, Richard Hobbs, and others have observed, clients want responsibility and accountability from their design and construction teams. Over the past two decades, liability-insurance providers succeeded in intimidating architects with premium increases and exclusions of services deemed uninsurable. When architects declined to provide high-risk services, such as the discovery and remediation of hazardous materials, others seized the opportunity. But insurers have now recognized that architects who limit their services due to liability fears are also limiting their competitiveness. "Insurance shouldn't shape practice," declared Ava Abramowitz, vice president of Victor O. Schinnerer & Co., at the recent AIA summit on expanding architectural services. "You figure out how to do projects and assertively pursue practice, and we will figure out how to insure it."

• *The place of building design:* Is it a coincidence that firms that have pioneered non-traditional services don't typically win major design awards or public acclaim? Indeed, there's no long-term evidence that "client-driven" buildings are any better than those designed according to traditional means. Both building types and building technologies are becoming more demanding than ever, and it could be argued that the firm that offers too many services stretches itself too thin. There is ample evidence that

clients still desire beauty, a transformative design approach, and a unique artistic vision as long as the project is built well, on time, and on-budget. Otherwise, such traditionally service-oriented firms as Ellerbe Becket, Perkins & Will, and The Hillier Group would not feel driven to hire major design talent or develop it from within.

• *Generalized versus specialized:* Will the practitioner intent on remaining a generalist go the way of the family doctor who makes house calls? As large firms become more diversified and comprehensive, small firms and specialized firms are repositioning themselves to take advantage of new markets. Some architects have chosen the specialist role to capture demanding market niches such as research labs, accessibility design, or indoor-air quality design. At the same time, the role of generalist coordinator becomes increasingly valuable. The burden on the generalist is to enhance her management skills while keeping up on developments in the specialties.

A number of architects are exploring ways of maintaining a traditional atelier-type design firm while addressing today's clients' broader needs. A more formalized version of increasingly popular joint ventures and associations is Louis Marines' Strategic Team of Allied Resources (S|T|A|R), in which firms of diverse skills and geographic coverage market their services jointly and exploit local networking efforts to benefit member firms.

With a dearth of big jobs, smaller, younger, high-design firms increasingly find themselves competing with much larger, more established firms. In California, Robert Mangurian, Mark Mack, Stanley Saitowitz, Roger Sherman, Burrish & Guthrie, and Daley & Genik have formed a loose joint-marketing alliance to reduce each firm's cost and compete with the resources of larger firms.

There's no risk-free path into the world of non-traditional services. Those who simply surf the waves of market forces may wipe out when the tide shifts. The experience of those architects who deeply question traditional methods suggests that architects can succeed without jettisoning the values that motivated them to enter the field. ■

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**Network versions are available.
A DOS version will be released soon!**

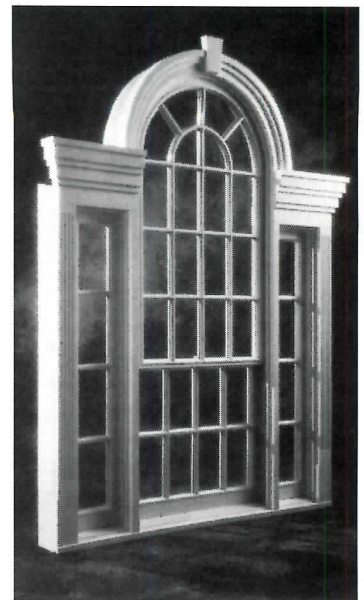


146. Coiling fire doors
Labeled fire doors from Cornell offer new configuration and installation options, including a rolling counter fire door with a fire-resistant laminate sill. Pictured undergoing the hose-stream part of the UL 1 1/2-hr. test procedure, these doors can be mounted to drywall, wood studs, or metal frames, as well as concrete block or poured concrete. A restyled

roller guide, smaller and more compact, presents a less-obtrusive profile; the bottom bar can incorporate a concealed locking device. Also new are horizontal doors that close floor openings of all kinds, such as escalators, and are capable of supporting a person's weight. Literature lists sizes, finish options, and detail drawings. 800/233-8366. Cornell Iron Work, Inc., Mountaintop, Pa.



147. Redwood siding guide
Redwood siding and paneling comes in a variety of grades, patterns, and textures to meet specific design and budget needs, and is decay- and insect-resistant without treatment. Lumber grade rules and appearance criteria are included in a new manual offered free by the trade association for redwood mills. 415/382-0662. California Redwood Assn., Novato, Calif.



148. Historically correct. The framing and paning details of this maker's Ashford windows and patio doors have been refined for a more traditional profile without compromising the thermal performance of the unit's insulating glass. Narrower, 7/8-in. wide muntins now align with inside-the-glass spacers for a realistic, true-divided-light appearance. 800/VETTER2. Vetter, Wausau, Wis.

CALL FOR SUBMISSIONS

PACIFIC RIM 1996

The editors of **ARCHITECTURAL RECORD** are looking for projects both completed and on-the-boards to be shown in the fourth annual Pacific Rim section. Projects must be in the Asia/Pacific Rim region and can not have been previously published in any other U.S. design magazine.

Deadline: April 15, 1996

Submissions should be mailed to:

Clifford A. Pearson
Pacific Rim Section
ARCHITECTURAL RECORD
1221 Avenue of the Americas
New York, NY 10020-1095

We are particularly interested in projects that exhibit innovative solutions to important design challenges, such as:

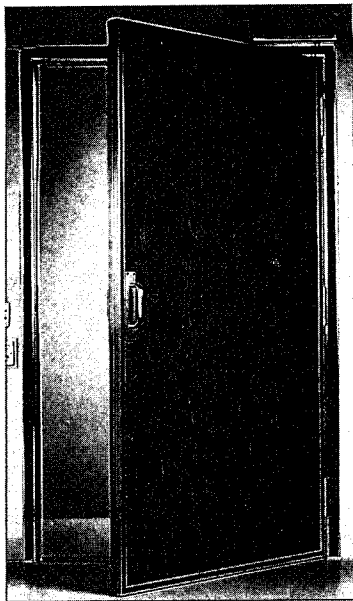
- Responding to environmental concerns,
- Finding appropriate expression for modern buildings in traditional settings,
- Dealing with issues of scale and massing,
- Reinforcing the urban fabric and local context, and
- Utilizing new architectural technologies.

If you would like your submission returned, please include a self-addressed envelope with appropriate postage.

Submissions should include:

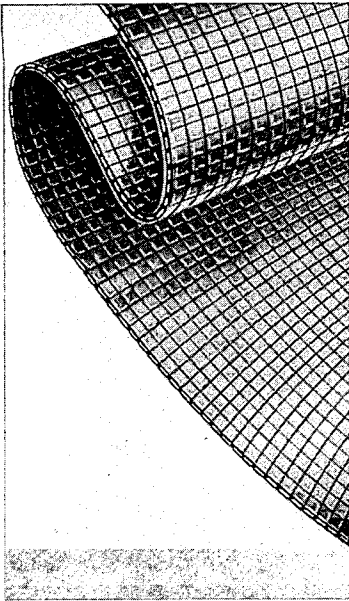
- 1** Good photography (color transparencies or slides).
- 2** Floor plans, site plan, and any other drawings that help explain the project.
- 3** A short project description.

All architectural firms involved in the project must be given proper credit. Projects should have been completed no more than 2 years ago.



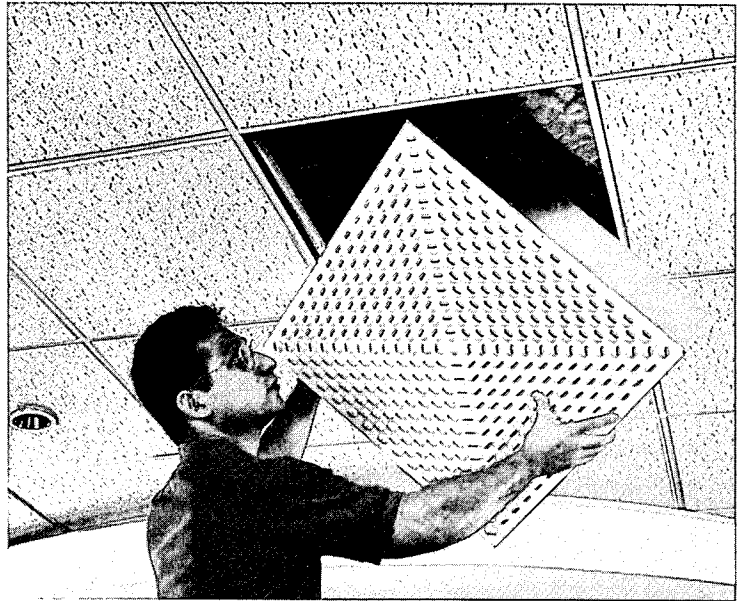
149. RF-proof door system.

For MRI doors, a new Auto-Seal replaces gaskets and contact finger devices with a concealed, pneumatically operated expansion strip. The RF seal is activated only when the door is closed, minimizing the chance of damage to the door edge and maintaining the integrity of the RF shield. Can be retrofit. Lindgren RF Enclosures, Inc., Glendale Heights, Ill.



150. Anti-uplift EPDM.

Furnished in 100-ft-long rolls either 7.5- or 10-ft wide, GenFlex FRM is made with a polyester-fabric reinforcement for superior tensile strength to resist strong wind-uplift conditions. Installation is either a disc-in-seam or fully adhered method; available in black, membrane is 45- or 60-mils thick. 800/443-4272. GenFlex Roofing Systems, Maumee, Ohio.



151. Dimpled air diffusers.

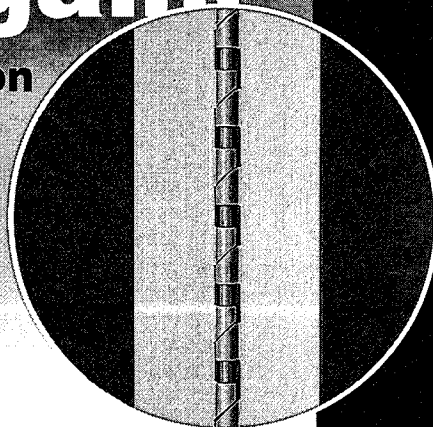
Cited as the solution to common indoor-air quality problems, the Valid Air diffuser has an unusual dimple-jet design said to achieve air distribution superior to conventional ceiling units. These "jets" direct high-velocity air flow in a multi-directional pattern parallel to the ceiling, without cold-air downdrafts, and eliminate stagnant air pockets where poor-quality,

contaminated air can accumulate. Air flows down the wall and up through the center of the room, increasing the effective draft temperature: occupants feel cooler even at higher thermostat settings. Each diffuser can be fitted with optional built-in filters to clean system air before it enters a space. 305/556-6933. Warren Technology, Hialeah, Fla. ■

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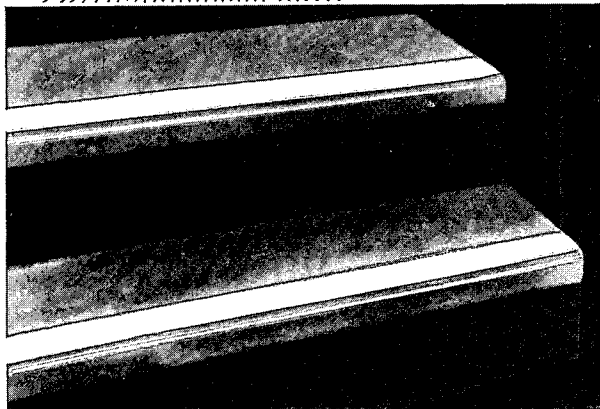
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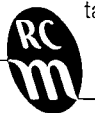
Metpar Corp., 95 State Street, Westbury, NY 11590 Tel(516)333-2600 Fax(516)333-2618

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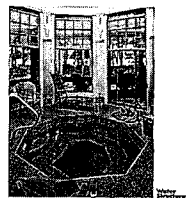
Circle 45 on inquiry card

Architecture +
 Engineering
 The Model PK Spot Diffuser

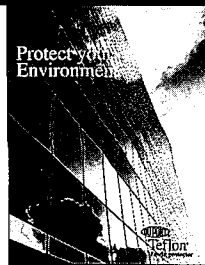
SEIHO INTERNATIONAL, INC.
 P. O. Box 5338, Pasadena, CA 91117
 (800)248-0030 (818)345-7244 Fax (818)345-7240

Circle 46 on inquiry card

Product Literature/Renovation



Water Structures

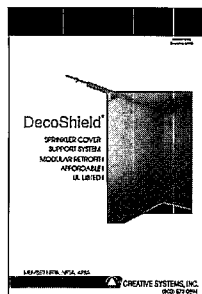


152. Spas and fountains

A four-page color brochure illustrates custom therapeutic and recreational pools for resort, home, and healthcare use. Installations can be specified with tile surrounds, waterfalls, resistance-swim equipment, and built-in seating. Units are shipped fully prefabricated and finished in tile or natural stone. 800/747-0168. Water Structures, Hamilton, Mass.

153. Fabric protection

Literature describes Teflon as a water-based finish that forms a molecular shield around fabrics used in upholstery, draperies, and wallcoverings. Said not to effect the hand, color, or breathability of the fabric, Teflon treatment helps furnishings retain an as-new appearance even under high-traffic conditions. 302/774-3440. DuPont Co., Wilmington, Del.



154. Fire-sprinkler retrofit

Conforming to NFPA 13 and UL, the DecoShield system is a modular cover/support assembly said to permit easy post-occupancy installation of metal- or plastic-pipe sprinkler systems. Resembling a decorative crown molding, covers can carry other services such as cables or medical-gas pipe. 800/873-0894. Creative Systems, Inc., Janesville, Wis.



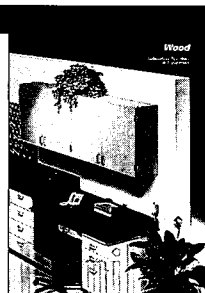
155. Laminated-glass guide

A free binder includes descriptive and technical data for laminated safety glass; Slopelite laminated skylights; Superguard institutional glazing; Riotguard burglar-resistant glass; Vistaguard bullet-resistant glass; and Superguard Plus glass-clad polycarbonate. Fax letterhead requests to 215/721-0402. Laminated Glass Corp., Telford, Pa.



156. Diffused-light skylights

Pre-engineered with a box-beam aluminum support structure, glare-free Clearspan lightweight skyroofs can be designed in configurations such as pyramids, segmented domes, and squares, glazed with Kalwall reinforced-fiberglass sandwich panels in a range of U- and light-transmission values. 800/225-3895. Structures Unlimited, Inc., Manchester, N.H.



157. Laboratory casework

Catalogs show casework for school, industrial, and healthcare environments in either wood or metal constructions to suit budget and design requirements. Line drawings and exploded views demonstrate how system components work together. 414/793-1121. Fisher Hamilton Scientific, Inc., Two Rivers, Wis.
Continued on page 127

For more information, circle item numbers on Reader Service Card.

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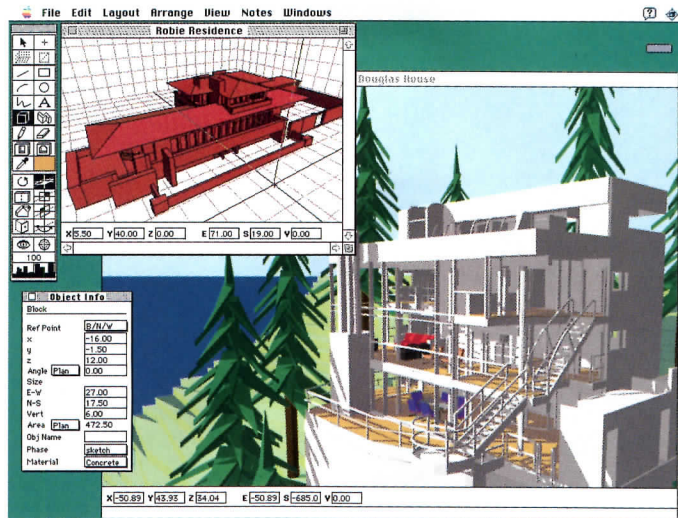
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Call 800-203-8324, fax 541-345-7438

Artifice, Inc.

Circle 47 on inquiry card

Important Information About Schuller Phenolic Foam Roof Insulation and Possible Steel Deck Corrosion

From January 1989 to February 1992, we produced UltraGard® Premier, a glass mat faced phenolic foam roof insulation, which is no longer manufactured by us.

Recent observations suggest that phenolic foam roof insulation contributes to the corrosion of steel roof decks. In extreme conditions, where insulation is wet or damaged, the corrosion reaction could progress to a point which could weaken or penetrate an area in the metal deck.

Therefore, where evidence of wet or damaged phenolic insulation exists, or severe deck corrosion is observed, care should be taken in operating equipment, moving heavy loads and walking across the roof.

*Schuller phenolic foam insulation was formerly manufactured and marketed by Manville® Roofing Systems.

If you have Schuller* Phenolic Foam Insulation on your roof, please call us at 1-800-345-9602

SCHULLER

Roofing Systems Division
Schuller International, Inc.
P.O. Box 5108, Denver, CO 80217

1-800-345-9602

Monday through Friday
9:00 a.m. to 3:00 p.m. (Mountain Time)

Circle 48 on inquiry card

Manufacturers' Spotlight

New Fireplace Tested as a Wall Furnace

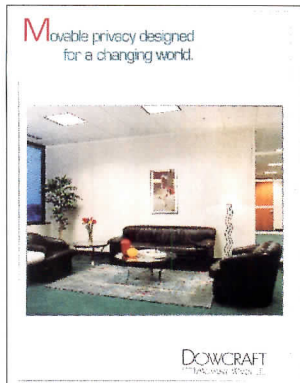


Heat-N-Glo Fireplace Products has taken its direct-vent technology and incorporated it into a new high performance fireplace. Model 6000 Supreme is a high efficiency fireplace (thermal efficiency up to 74%) and has a AFUE (Annual Fuel Utilization Efficiency) rating of 63%. Also, the 6000 Supreme is standard with a variable regulator to adjust the flame and BTU input with the turn of a dial. Heat-N-Glo, 6665 West Hwy 13, Savage, MN 55378, 1-800-669-HEAT.

Heat-N-Glo

Circle 75 on Inquiry card

Movable Walls



Flexible and very affordable Dowcraft Movable Walls are presented in a colorful 8-page brochure. The architect is offered new comparative cost-data and environmental factors -- versus the dust, debris and disposal problems of drywall. Dowcraft floor-to-ceiling steel walls are shipped prefinished, preassembled and ready to install over carpeting and under ceiling tile. Architects can specify any of 250 baked-on enamels -- or choose from over 3,000 Maharam vinyls, fabrics and wood veneers.

Dowcraft Corporation

Circle 76 on Inquiry card

Stone Panels



Ultra-Lite natural granites, marbles, limestones & slates. Offering natural stones with 80% less weight. Reinforced for high impact & flexural strength. Especially well suited for renovation & reclad. Saves on back-up framing & structure requirements. Reduce installing labor costs. Used on building exteriors throughout the world. Also elevator cab & lobby cladding, ceilings & locations requiring real stone but less weight.

Stone Panels, Inc.

Circle 77 on Inquiry card

Architectural Woodcarvings



Comprehensive selection of Architectural elements carved in solid woods. Color Product Catalog shows complete line of capitals, corbels, moldings, onlays, panels, mantel fascias and bases available in Maple and Oak. Design Portfolio illustrates applications. Catalog set-\$20 (refundable with order). Visa and MC welcome. Complimentary brochures. Manufacturing and Showroom: 16506 Avalon Blvd., Carson, CA 90746. Ph. (310) 532-1400, Fax (310) 532-2042.

Raymond Enkeboll Designs

Circle 78 on Inquiry card

TOTAL DOOR® SYSTEMS by OPENINGS®

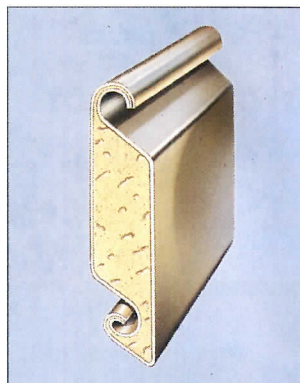


The TOTAL DOOR® SYSTEM is an architect-designed integrated door assembly. It includes prefinished door panels and all hardware. Fire rated pairs do not require coordinators, vertical rods, astragals, flush bolts or floor strikes. Will retrofit to any frame. Meets all codes and ADA. Wood and metal faces available to 3 hours. Lifetime limited warranty on locks and panics. OPENINGS, 40 West Howard, Pontiac, MI 48342, 1-800-852-6660.

OPENINGS.

Circle 79 on Inquiry card

Atlas Thermal Insulated Slats

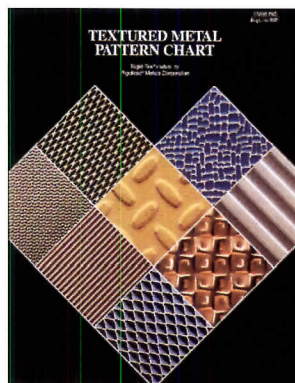


Atlas Door Corporation has set the standard by which all other thermal doors are measured. Unrivaled in quality and construction, Atlas thermal insulated slats are pressure injected with environmentally safe polyurethane foam that expands and cures to prevent gaps and voids. Superior materials and engineering combine to offer the best thermal slat available in the industry today. R=6.25. Call 800-959-9559.

Atlas Door Corporation

Circle 80 on Inquiry card

Textured Metals



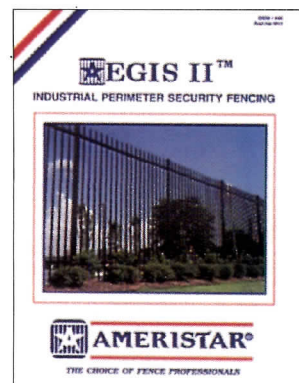
Rigid-Tex® metals combine beauty and durability in any interior or exterior applications. Dozens of patterns to choose from, including custom designs. For elevator doors and interiors, column covers, walls, ceilings, entrances, signage and trim. Available in a wide selection of metals, colors, finishes, gauges and sizes.

Rigidized® Metals Corp., 658 Ohio St., Buffalo, NY, USA 14203-3185, (800) 836-2580

Rigidized Metals Corp.

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EGIS II™

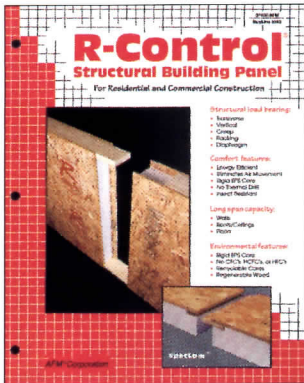


Aegis ornamental fence systems feature strong Forerunner™ rails, internal retaining rods, & specially designed panel brackets. Aegis II industrial ornamental fence offers the strongest security ornamental fence available in today's market. Aegis holds the distinction of having its fence systems specified by more architects & builders than any other in the market. Both industrial & residential brochures are available upon request & include data on structure, design, & options available. Panel design is a component system for easy shipping. For additional information & a free 8-page brochure, call (800) 321-8724, P.O. Box 581000, Tulsa, OK 74158-1000. Fax# (918) 835-0899



Circle 82 on Inquiry card

R-Control® Structural Building Panels

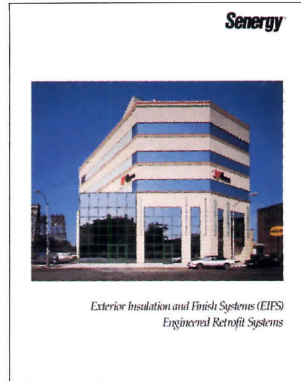


R-Control® Structural Building Panels provide superior insulation for walls and roofs in residential and commercial applications. EPS insulation is adhesively welded between stranded lumber facings, creating a panel that won't warp. R-Control has passed structural and fire tests as prescribed by national building code authorities. AFM's EPS contains no CFC's, HCFC's, or HFC's. R-Control; Panels are manufactured across the nation.

AFM Corp.

Circle 83 on Inquiry card

Retrofit with EIFS



The Engineered Retrofit Systems brochure features renovations in "before" & "after" photographs of buildings retrofitted with the company's exterior insulation & finish systems. The four-page, four-color brochure displays stucco, simulated granite, marble & other natural stone finishes. Design versatility is achieved with a wide choice of colors & textures, & with easily cut architectural shapes.

Senergy, Inc.

Circle 84 on Inquiry card

Shower Collection

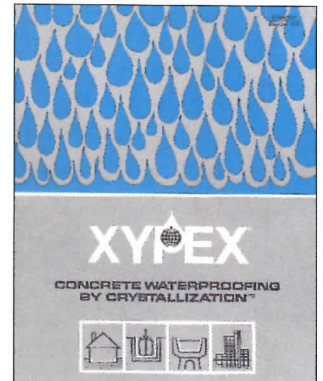


JACUZZI WHIRLPOOL BATH - presents The Jacuzzi® Shower Collection featuring the Custom Shower System and The J-Dream™ Family. This full-color brochure showcases the company's wide array of innovative shower designs and steam bath options. For more information please call 1-800-678-6889. Brochure free of charge.

Jacuzzi Whirlpool Bath

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Concrete Waterproofing by Crystallization



Applied as a slurry coating, Xypex is a chemical treatment that waterproofs by penetrating the concrete with a crystalline formation that 'plugs' the pores of the structure preventing water seepage. Xypex is ideal for use on the 'inside' of wet underground structures.

Xypex Chemical Co.

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Introducing the New Alpha Collection



With 24 patterns to choose from, ranging from the most basic vandal resistant **TEXTURES** (shown above), to innovative **STANDARDS** and our new **ULTRA Series**. All patterns come in standard sheet sizes with border to border decorations, using distinctive finishes on a variety of metal surfaces for elevator doors and interiors, wall panels, column covers, and trim. Call (800) 537-1127 / Fax: (305) 696-4064

Surface Design + Technology

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Door and Wall Protection Systems



IPC - Institutional Products Corporation is a manufacturer of high impact door, corner and wall protection systems. Our catalog illustrates a product line that includes Handrails, Corner Guards, Wall Guards, Kickplates and Wallcovering. Our durable vinyl products, offered in 50 designer colors, provide an attractive way to protect interior finishes from damage.

Institutional Prods. Corp.

Circle 88 on Inquiry card

Revolutionary Vent-Free Convection Heater

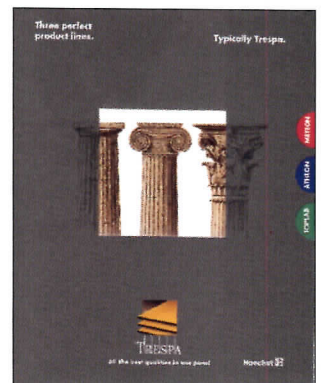


The Rinnai Silent Servant vent free convection heater is aesthetically designed to heat today's larger than normal living area's yet blend into any decor. The Silent Servant, a quiet fan forced heater, is feature rich with 7 levels of fan and capacity, 99.9% energy efficiency, soft touch keys which emit sound when pressed, LED to show room temperature, child safety lock feature, no open flame, clean filter indicator lamp and a 3 year full warranty covering 100% of parts, labor and shipping with no pro-rating. This quiet clean burning Natural or LP gas heater modulates the capacity from 5,000 to 20,000 BTU's with continuous operation to keep the temperature constant all day long. Rinnai American, 1662 Lukken Industrial Drive West, LaGrange, GA 30240, (800) 621-9419

Rinnai America

Circle 89 on Inquiry card

Trespa® Solid Composite Panels Three Product Lines



Toplab® chemically resistant laboratory grade panels for benchtops, work surfaces, shelves. Athlon® sanitary grades for toilet partitions, lockers, vanities. Meteon® UV colorfast grade for exterior cladding, soffits, fascias, balcony panels. All grades are durable, available in colors, and proven performers in these applications. 1-800-4-TRESPA.

Hoechst Celanese Corp.

Circle 90 on Inquiry card

Manufacturers' Spotlight

Chadsworth's 1.800.Columns



CHADSWORTH'S 1.800.COLUMNNS chosen #1 by *Professional Builder* readers. Wood, Fiberglass, Stone, Polyester, E.P.S., Marble. Interior, Exterior. All sizes. Round, square, octagonal with plain or fluted shafts. Job site delivery. Worldwide shipping. Competitive prices. Largest selection anywhere. All this and one easy number to remember... 1.800.COLUMNNS. 1.800.265.8667. Free brochure.

Chadsworth Columns

Circle 91 on Inquiry card

Tuflex Flooring Adds New Colors

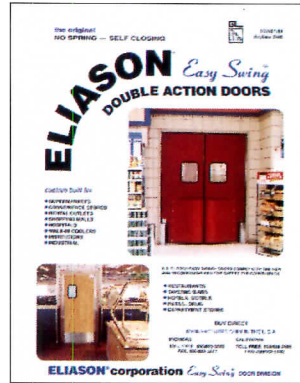


Tampa, FL, January 3, 1996 -- Tuflex Rubber Products flooring was originally designed to withstand golf shoe spikes, but because of its durability and versatility has evolved into an all-purpose floor that can be found in many hockey and skating arenas, locker rooms, and school gymnasiums. Tuflex is available in 25 colorful designs, and meets ADA requirements, public safety and reduction needs. Call 1(800) 543-0390 or fax (813) 875-2312 for a free creative flooring design brochure and product specifications booklet. Tuflex Rubber Flooring, 4521 W. Crest Ave., Tampa, FL 33614. Phone 1(800) 543-0390 Fax(813) 875-2312.

Tuflex Rubber

Circle 92 on Inquiry card

Double Action Doors



Eliason has released a new 1996 color illustrated Price/Spec catalog on Easy Swing doors. Complete specifications, Doors are gravity operated, open with a light nudge and close automatically. Many sizes, styles and decor options. Use in light, medium or high impact traffic doorways. Sold direct. Catalog is sent no charge.

Eliason Corporation, P.O. Box 2128, Kalamazoo, MI 49008

Eliason Corporation

Circle 93 on Inquiry card

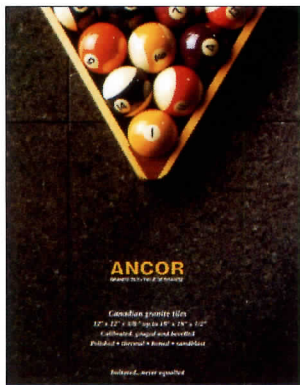
Classic Columns by Melton Classics



From the Clear All Heart Redwood Classic™ column to the DuraClassic™ Poly/Marble column to the FRP Classic™ Fiberglass column cover to a full line of stain-grade columns. Melton Classics offers a product for every architectural millwork need. Constructed in keeping with the Classic Orders of Architecture, the Melton Classics column line is second to none in quality, authenticity, availability and tradition - and yet is affordably priced. Call toll-free at (800) 963-3060 for a free catalog or quotation.

Melton Classics

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Ancor produces over fifty No. American and imported granites in a full range of colors and finishes for residential, commercial and institutional use. Standard format is 12 x 12 x 3/8"; other sizes up to 18 x 18 x 1/2" available. Honed finish tile is particularly suitable for high traffic commercial areas. 435 Port Royal West, Montreal, Quebec, H3L2C3, Canada Ph# (514) 385-9366. Fax# (514) 382-3533.

Ancor Granite

Circle 95 on Inquiry card

Duraflake FR fire-rated particleboard

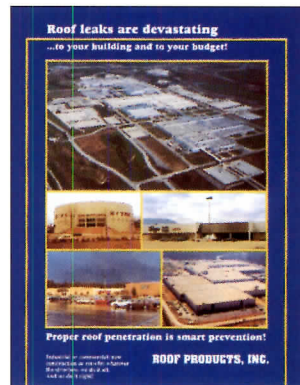


Duraflake FR provides Class A fire protection in wall systems, store fixtures, furniture and case goods. It has a UL flame spread rating of 20 and a smoke developed rating of 25. Its smoothness, machinability and uniformity make it an ideal substrate. It even resists warping and won't leach chemicals. Call (541) 928-3341.

Duraflake

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Roof Penetration for New & Retrofit



Before you purchase or specify rooftop equipment, contact Roof Products, Inc.. They have the knowledge, experience and the technical staff to analyze the project and determine the best applications for a leak-free, cost-efficient job. RPI will supply the solution and the curbs, adapters, and other accessories to change equipment without disturbing the roof or sub-structure. For brochure 800-262-6669.

Roof Products, Inc.

Circle 97 on Inquiry card

High Performance Drop Diffuser System



Exclusive Air Diverter design by Custom Curb, Inc. provides super-low resistance, quiet operation and excellent air distribution. It reduces installation costs and eliminates expensive duct runs. Offers maximum comfort and efficiency in ceilingless applications such as retail/outlet stores, manufacturing plants and other places where a distribution poses problems. Factory assembled. Various models offered including Low Profile. 1-800-251-3001.

Custom Curb, Inc.

Circle 98 on Inquiry card

Workshops

Self Study

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Profits

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The AIA Programs and Products Brochure

1996 Continuing Education

Welcome to the 1996 AIA Continuing Education Products Brochure! On the pages inside you'll find many old friends, such as our best-selling *Assessment Self-Study Diskettes* and *Workshops-in-a-Box Series*, which continue to provide solutions for the design professional's development needs across the country. We introduce some new self-study products, such as *The ADA Computerized Self-Study Assessment*, an educational tool that is also one of the most powerful ADA search tools on the market! For the marketing-oriented we offer two entries, *Lead-Finding Video Set* and *Mandeville: A Guide for the Marketing of Professional Services* by Professional Development Resources, Inc. And two powerful resources are here to help you in your self-designed learning projects: *Contracting For CADD Work: A Guide for Design Professionals* and possibly the ultimate reservoir of knowledge, *The Architect's Handbook of Professional Practice*.

Now into its second year, the AIA Continuing Education System (AIA/CES) is creating new learning opportunities almost daily. You're invited to access the AIAOnline database of continuing education (CE) providers for our complete inventory of A/E-oriented programs with descriptions and contacts. We've listed just some of our premier providers here in a short A/E Education Yellow Pages.

Along with our listing of the number of AIA learning units listed for each CE product, we've included the number of contact hours established for completing the program. This should help you in recording your work for Iowa, Alabama, and Florida state requirements. We're pleased to announce that our *Self-Study Special*, featuring all three self-study diskettes; the *Buildings at Risk Seismic Design Basics for Practicing Architects* program; and the project administration, construction contract administration, and financial management *Workshops-in-a-Box* programs are all approved for credit under the Florida State Board requirements.

Whether you are an experienced practitioner or new to the profession, we are confident that here you'll find time-tested, learner-centered tools and techniques that can help you prosper in your practice.

Warmest regards,



Mark Scher, Director of Continuing Education Programs and Products



The Practice Curriculum

At A Glance

Title	Format	Contact Hours/ Learning Units	Price	Order #
ADA Computerized Self-Study	c	10/30	\$142/99 AIA	W181
ADA Design Tools Workshop	b	7.5/22.5	Call for rates, 20 person minimum	Call (202) 626-7479
Better Practice Management Assessment	a	2/6	\$50/35 AIA	J203
Better Practice Management Workshop-in-a-Box Materials	b	7.5/22.5	\$65/\$45.50 Coord. \$22/15 Part.	J203-C J203-P
Buildings At Risk: Seismic Design	a,d	20/60	\$93/65 AIA	W113
Construction Contract Admin. Assessment	a	2/6	\$50/35 AIA	J199
Construction Contract Admin. Diskette	a,c	3/9	\$56/39.20 AIA	W163
Construction Contract Admin. Workshop-in-a-Box Materials	b	7.5/22.5	\$65/\$45.50 Coord. \$22/15 Part.	J199-C J199-P
Construction Contract Admin. Workshop	b	7.5/22.5	Call for rates, 20 person minimum	Call (202) 626-7479
Cost Estimating Assessment	a	2/6	\$50/35 AIA	J195
Cost Estimating Workshop	a	7.5-12/22.5-36	Call for rates, 20 person minimum	Call (202) 626-7479
Contract Documents Assessment	a	2/6	\$50/35 AIA	J196
Contracting For CADD Work: A Guide for Design Professionals	a	participant determined	\$22.75/17.50 AIA	W184
Financial Management Assessment	a	2/6	\$50/35 AIA	J198
Financial Management Diskette	a,c	3/9	\$56/39.20 AIA	W164
Financial Management Workshop-in-a-Box materials	b	7.5/22.5	\$65/\$45.50 Coord. \$22/15.40 Part.	J198-C J198-P
Financial Management Workshop	b	7.5/22.5	Call for rates, 20 person minimum	Call (202) 626-7479
Lead Finding Video Set	a,d	5.5/5.5	\$380/266 AIA	W182
Mandeville: A Guide for the Marketing of Professional Services	a	Participant determined	\$89/62.30 AIA	W183
Project Administration Assessment	a	2/6	\$50/35 AIA	J197
Project Administration Diskette	a,c	4/12	\$70/49 AIA	W160
Project Administration Workshop-in-a-Box materials	b	7.5/22.5	\$65/\$45.50 Coord. \$22/15.40 Part.	J197-C J197-P
Project Administration Workshop	b	7.5/22.5	Call for rates, 20 person minimum	Call (202) 626-7479
Project Companion	a,c	10/30	\$96/69 AIA	W161
Project Management 1-2-3 Templates	a,c	NA	\$50/35 AIA	J194
Programming Assessment	a	2/6	\$50/35 AIA	J200
Programming: Communicating With Clients Workshop-in-a-Box Materials	b	7.5/22.5	\$65/\$45.50 Coord. \$22/15.40 Part.	W165-C W165-P
Programming Workshop	b	7.5/22.5	Call for rates, 20 person minimum	Call (202) 626-7479
Seismic Windloads Book	a	15/15	\$50/35 AIA	R660-90
Firm Special: 3 for \$33 each (Diskettes)	a,c	10/30	\$142/99 AIA	W160, W163, W164
The Architect's Handbook of Professional Practice	a	Participant determined	\$200/140 AIA	M107-94
Winning Public Design Contracts Workshop	b	7.5-12/22.5-36	Call for rates, 20 person minimum	Call (202) 626-7479

Key

a. Self-Study

b. Instructor-Led

c. Computer-Based
Programs

d. Video-based

"This type of information is *zealously*
and *jealously guarded*
by Principals from their employees."

AIA Continuing Education Brochure

Computer Self-Study

The Assessment Self-Study Diskette Series combines to-the-point explanations, graphical results displays, and computer technology. You'll find explanations and resources, and save hundreds of dollars in time and travel. Learn at your convenience at home or work.

Self-Study Diskettes include:

- Stand-alone programs for DOS-compatible computers and MACs running PC emulation programs
- Confidential scoring of your answers
- A context for comparison showing how design firm experts and architects across the country responded to the same questions
- Feedback on all of the multiple-choice questions
- Easy-to-use directions and program documentation
- The knowledge and years of experience of leaders in the profession
- AIA/CES learning units and continuing education contact hours. (e.g., you'll receive 24 learning units/10 contact hours for the Firm Self-Study Special listed here.)

Financial Management: Make the Money and Keep It!

Whether you've managed a firm for years or dream of going out on your own, there are essential financial concepts you must know! This management tool helps you assess your knowledge on the key financial issues of managing your firm.

\$39.20 AIA / \$56 nonmembers; order# W164

Construction Administration: You Don't Want to Be A Lawyer. You're An Architect!

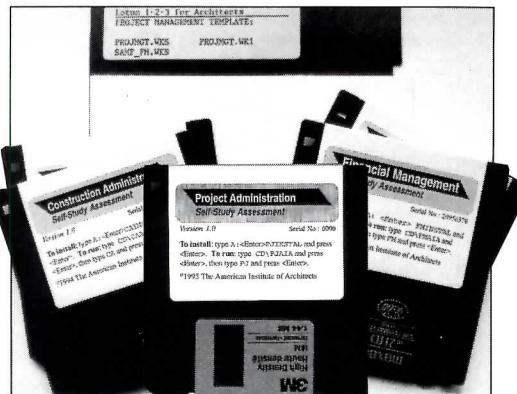
Improve your knowledge of this contentious area; examine contracts, change orders, liability considerations, and more.

\$39.20 AIA / \$56 nonmembers; order# W163

Project Administration Diskette: Are Your Projects On Time and On budget?

Even seasoned project management veterans will find essential project concepts you here. You'll earn 12 AIA learning units after completing this program and learning about:

- Financial indicators—for evaluating your projects' status and success
- The language of automated/network scheduling
- Software checklists—important questions to ask before you purchase project software



- Flow charts—track project activities from pre-contractual through post-construction services
- Management tips—good, solid, "tricks and traps" gleaned from practitioners across the country
- Downloadable references—build and add to your own word processor

\$49 AIA / \$70 nonmembers; order# W160

NEW! ADA Computerized Self-Study: Find It Fast Searchware!

(Includes the complete act and ADA Title 3 Guidelines at your fingertips with comprehensive index searching.)

Thoughtful but easy to use question-and-answer-assessment approach provides a strong overview of the Americans with Disabilities Act (ADA) and key implications the act has for design professionals. Self-scoring pre and post-study test helps you delve into the specifics of the ADA and focus on the areas of accessible design you need to study more thoroughly.

You'll gain quick access to the ADA information you need and greatly reduce your research time with this computerized version of the law, Federal Register commentary, and Title 3 guidelines. Computer disks provide search, cross-indexing, and clipboard functions for ease in finding key references for your research and project documentation. This package is a powerful DOS-format application software for IBM-compatible computers specially developed for the AIA. The program is worth 30 AIA/CES learning units over 10 contact hours.

Systems Requirements: DOS-compatible computers. (Mac users can run the software using soft PC or soft AT emulation programs.)

\$99 AIA / \$142 nonmembers; order# W181

Special Offers

Firm Self-Study Special

(3 for \$33 each for AIA members) Receive the new Project Administration diskette and our two best selling practice improvement diskettes Construction Administration and Financial Management. Earn 24 AIA CES Learning Units (10 contact hours). Everyone gets 20% off individual prices.

\$99 AIA / \$142 nonmembers; order# X212

Project Companion

(20% saving!) Project Administration Diskette and Project 123 Spreadsheet Templates. Save 20% over the individual pricing. The templates generate reports on *project and employee work summaries*, and total cost.

\$69 AIA / \$96 nonmembers; order# W161

"This is an absolute **eye** opener for me.

I am preparing to enter private practice after 15 years
of architectural employment . . . it is clear I am not ready!"

Project Management Templates

This popular template helps users develop a centralized project management database in one comprehensive spreadsheet using Lotus 1-2-3 software. The DOS-formatted template generates special reports for project summary, employee work summaries and total cost. A 36-page explanatory pamphlet is included.

\$35 AIA / \$50 nonmembers; order# J194

Video Self-Study

Consistency, and good quality content are the advantages of video courses. These materials are particularly suited for starting group and firm-wide discussions.

Buildings at Risk Seismic Design Basics for Practicing Architects

Learn how you can make well-informed decisions when planning and designing earthquake-resistant buildings with this self-study package.

This program was brought to you at a substantially reduced cost by a generous grant from The Federal Emergency Management Agency (FEMA). It is a culmination of over five years of seismic research and interactive workshops held nationwide.

Use this self-study package to:

- Understand the nature of ground motion and its impact on buildings
- Determine the potential impact of site conditions on seismic vulnerability
- Recognize the best and worst building configurations
- Know what is needed to work effectively with structural engineers
- Avoid nonstructural damage: the "hidden" risk in buildings
- Interpret seismic codes: the UBC, National Earthquake Hazards Reduction Program (NEHRP) Provisions, and Executive Order 12699
- Understand the growing field of remodeling/retrofitting existing structures.

60 learning units (LUs)/20 contact hours.

\$65.10 AIA / \$93 nonmembers; order #W113

Lead Finding Video Set

Finding early leads is a part of marketing in which everyone in your firm can contribute, but too many either don't think about it or don't know how. Produced by Professional Development Resources, Inc, this 5-hour, 4-video program helps everyone become more comfortable and effective at identifying new early leads and getting in the door with new clients.

You'll see strategic examples for uncovering early new project opportunities. Watch a mid-course feedback interview with a client on how and where you can build repeat and referral opportunities. Listen to candid conversations among professionals like yourself. Find out how others are already using each of nine key early lead-find sources. Hear the results they're experiencing.

\$275 AIA / \$358 nonmember order# W182

Education Books

Ideal references both for your practice and for use in your self-designed learning projects for AIA/CES credit!

NEW!

Mandeville: A Guide for the Marketing of Professional Services by Dr. Stuart W. Rose

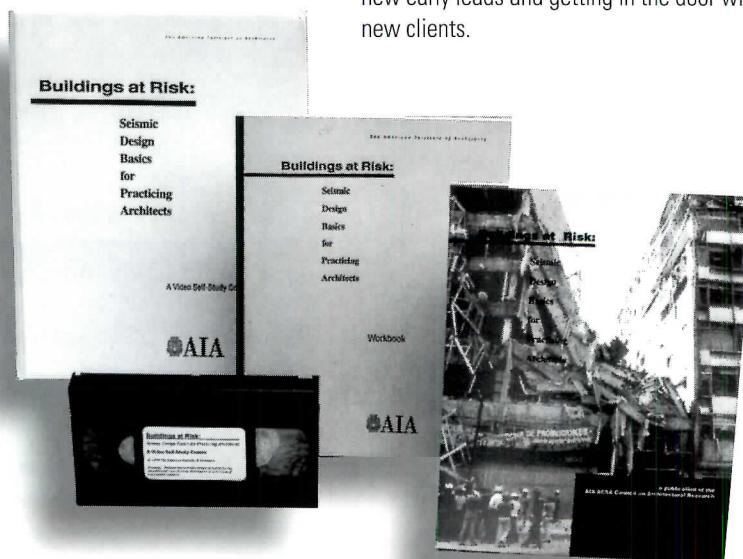
You'll learn the entire professional services marketing process, step by step. This book provides a complete conceptual framework that shows you what you need to do to secure the clients you'd like, in a manner that feels comfortable to you.

The process begins with how to identify the strongest market opportunities and client demands over the next three to five years and determine which are most appropriate for you. You'll examine how to structure a clear and effective program for attracting clients.

You'll explore alternative methods for coming into contact with prospective new clients, how to create name recognition using different promotional media, build professional trust, and keep those people coming back throughout your career.

This beautiful leather-bound book serves as a quality professional reference perfect for designing your marketing approach and self-study programs.

\$62.30 AIA / \$89. nonmember order# W183



"Well prepared.

Covers, in general most problems of
practice management."

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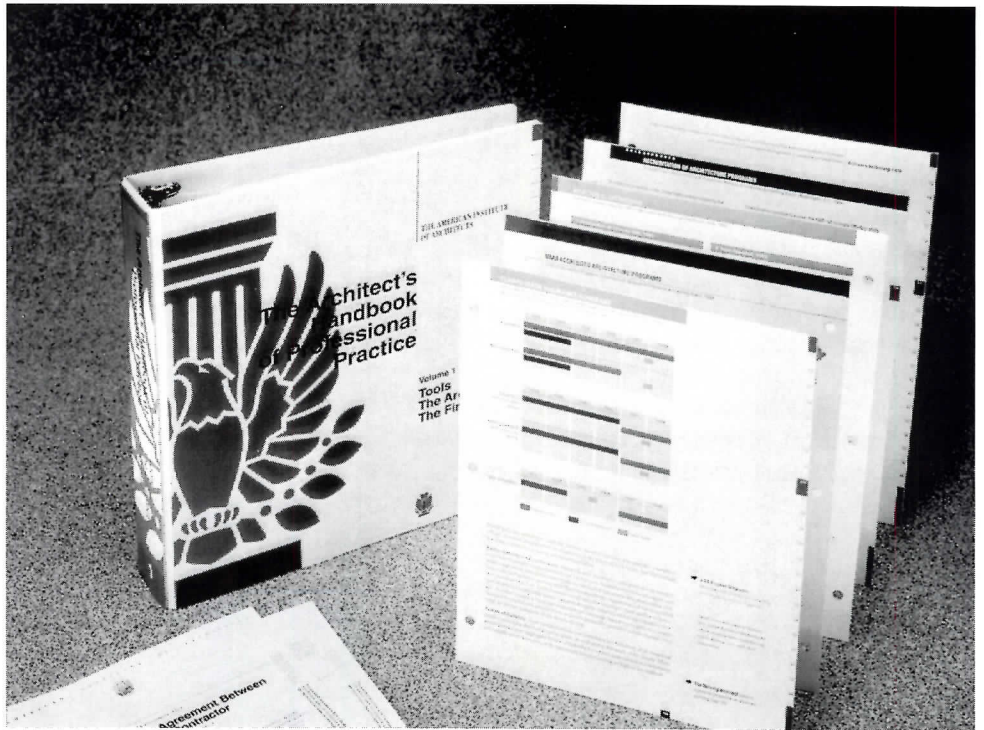
NEW!

Contracting For CADD Work: A Guide For Design Professionals

by Michael P. Ingardia, PE, and John F. Hill, AIA. Incorporate this book in your self-designed projects and explore the real issues in effectively applying a CADD system in your projects and responding to client requirements. There are many risk-management questions about the professional liability issues of delivering CADD files? You'll learn how to educate yourself, staff, clients, and other consultants about:

- Professional liability
- Compensation
- CADD contracting issues
- The CADD manager
- The real and often-hidden impact of CADD delivery requirements
- CADD-file transfer and dealing with compatibility problems
- Archiving and stability of the medium over time
- Contractual changes that are required.

\$17.50 AIA / \$22.75 nonmembers; order# W184



The Architect's Handbook of Professional Practice (12th Edition)

Earn LUs by Studying the Handbook. Maybe you want to know more about the expanding building delivery systems that clients are craving, setting the cost of your next project so you're sure to make a reasonable profit, or how to manage professional risk. *The Architect's Handbook of Professional Practice* is one of the fastest, easiest, most cost-efficient sources you can find.

Or maybe you're looking for a career change or contemplate retiring and want to pass along or close your firm. One two-hour session with a specialist consultant would easily cost more than the entire four-volume set of the Handbook

and give you only a minuscule fraction of the knowledge packed into this ready desk reference.

The recently released 12th edition of the AIA publication that has defined the profession since 1917 is the most comprehensive, user-friendly Handbook ever and a source of knowledge that will satisfy the AIA/CES membership requirement to boot. A marvel of interwoven, thoroughly considered, and easy-to-traverse pieces, the 12th edition is a work of love, experience, and direction from editor David Haviland (an Institute Honors recipient) with the

Rensselaer Polytechnic Institute, along with James Franklin, FAIA; Chris Clark, AIA; Ava Abramowitz, Hon. AIA; and many others.

How to do it

No matter whether your learning objective involves management of the firm, projects, finances, risk, or personnel; construction administration; firm transition; or career development, the Handbook contains the information to get you going.

\$140 AIA / \$200 nonmembers; order# M107-94

“Very Good idea! I know there are definite gaps in my knowledge and skill and wish the AIA et. al. would devote more time, i.e., seminars, etc. on this very important area (especially since most small firms go out of business because of lack of business skills, not design/technology skills!)”

Self-Assessments

Self-assessments are carefully developed questionnaires for architects and other design professionals. You use the self-assessments to examine key areas of practice. Self-assessments can help you focus, plan, and design both personal and firm-wide professional development activities.

The questions and options may ‘bring back’ information you have forgotten. You may discover there are alternative approaches you have not considered. You take control of your own professional development in terms of direction and pace.

Select a 60-minute self-assessment and find out your strengths and weaknesses in a critical practice area. Your completed self-assessment is mailed directly to an independent scoring agency which then returns an overall score, a comparative peer score, and a list of resources to help increase your knowledge where a need is indicated and improve your skills. Each self-assessment is worth 6 LUs.

\$35 AIA / \$50 nonmember

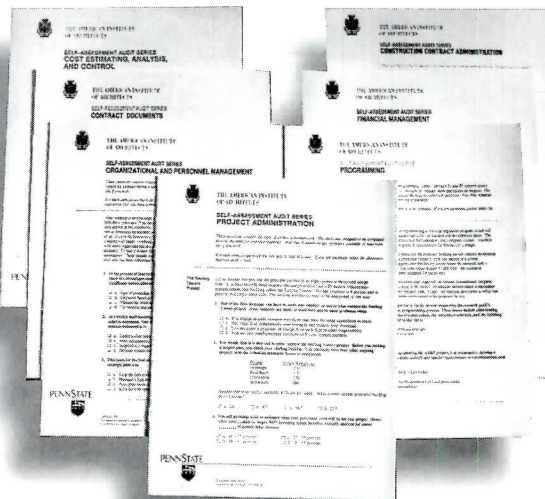
Financial Management Assessment

This tool is a must for principals and principals-to-be. Crucial questions are asked about what you need to know about the financial aspects of managing a firm. Topics range from focusing marketing plans and recognizing personal tax considerations to interpreting financial statements. Hardcopy (also available in computer format).

order# J198

Organizational Management Assessment

Whether you’re starting or expanding your firm, this tool helps you assess your knowledge of the key organizational and personnel issues in managing your firm. Topics include firm organization, strategic planning, legal issues



of employee record keeping, growth management, labor relations, and employee motivation. If you are now managing a firm or aspire to management, this confidential self-assessment will raise your awareness of concerns you need to know about.

order# J203

Construction Contract Administration Assessment

Examine your knowledge of contracts, change orders, liability considerations, and other related factors. Hardcopy (also available in computer format).

order# J199

Contract Document Assessment

Beginning with a short case study to provide context, this self-assessment covers key legal roles, AIA contract forms, planning drawing production, document checking techniques, and reference standards.

order# J196

Programming Assessment

Topics include clarifying initial project considerations, performing client needs analysis, determining data collection techniques, recognizing fundamental financial considerations, and programming across projects.

order# J200

Cost Estimating, Analysis & Control Assessment

More than half of the self-assessment users (57 percent) discovered weaknesses in developing accurate cost estimates. Topics include communicating cost estimates to clients, applying value engineering and life-cycle costing approaches, locating sources of cost data, and determining the best alternatives when cost estimates exceed the budget.

order# J195

Project Administration Assessment

This audit examines your knowledge about scheduling techniques, project accounting, staffing decisions, quality assurance, and resources. This is our most popular assessment. Hardcopy (also available in computer format).

order# J197

Workshops-in-a-Box

Everything your firm or component needs to organize your own workshop. Based on the self-assessments of the same names, these programs focus on the questions most frequently missed by architects and provide practical information and solutions that can be used immediately. (If you don’t have a local authority to lead a workshop, the AIA can do it for you as a national workshop.)

Coordinator kits include an instructor’s guide, overhead transparency masters, sample promotional materials, and evaluation forms. Participant guides include learning objectives,

"Got me thinking

about questions that will

arise when my firm begins to expand."

"Best assessment I've had in a while!"

AIA Continuing Education Brochure

assessment questions, exercises, activities, and a pre-test for self-scoring. These modular programs can be run for a full or half day or in a series of one or two hours at a time distributed over sessions. Seven-and-a-half hours in total, 22.5+ LUs.

Project Administration: The Critical Path to Profitability

Topics range from controlling overhead and project costs to evaluating financial performance, covering typical field problems and solutions, scheduling, tracking multiple projects, and personnel.

Coordinator kit \$45.50 AIA members / \$65 nonmembers; order# J197-C

Participant kits (each) \$15.40 AIA members / \$22 nonmembers (five guide minimum); order# J197-P

Construction Contract Administration: Better Approaches to Tasks and Issues

With an emphasis on optimum approaches to tasks and issues, this program offers guidance from some of the most experienced practitioners, lawyers, and risk management specialists in the field. It examines contract interpretation, liability, and the construction contract change process.

Coordinator kit \$45.50 AIA members / \$65 nonmembers; order# J199-C

Participant kits (each) \$15.40 AIA members / \$22 nonmembers (five guide minimum); order# J199-P

Financial Management: Making the Money and Keeping It

Zero in on the most crucial financial issues design firms confront and tackle balance sheets and analysis, optimizing your collections, leasing, corporations, and internal controls.

Coordinator kit \$45.50 AIA members / \$65 nonmembers; order# J198-C

Participant kits (each) \$15.40 AIA members / \$22 nonmembers (five guide minimum); order# J198-P

Better Practice Management: Organizational and Personnel Management

Gain a wealth of practical knowledge in running a firm, planning, avoiding problems, and determining sources of information.

Coordinator kit \$45.50 AIA members / \$65 nonmembers; order# J203-C

Participant kits (each) \$15.40 AIA members / \$22 nonmembers (five guide minimum); order# J203-P

Programming: Communicating With Clients

Also titled Giving Clients What They Need, participants explore client goals, interviewing tools, create a custom checklist and basic programming financial questions. Contact AIA Programs and Products to order (202) 626-7479.

Coordinator kit \$45.50 AIA members / \$65 nonmembers; order# J165-C

Participant kits (each) \$15.40 AIA members / \$22 nonmembers (five guide minimum); order# J165-P

National Workshops

Available to chapters, firms, and other groups on request through AIA National Instructors:

(See Workshops-in-a-Box descriptions)

Taught by top specialists in their field, these workshops are available to chapters, firms, and other groups of 20 or more on request.

Course fees depend on travel expenses. Call (202) 626-7479 for custom solutions.

The Future of ADA: Liabilities, Extended Services, New Opportunities
Cost Estimating: Clients Want It, How to Do It

Winning Public Design Projects

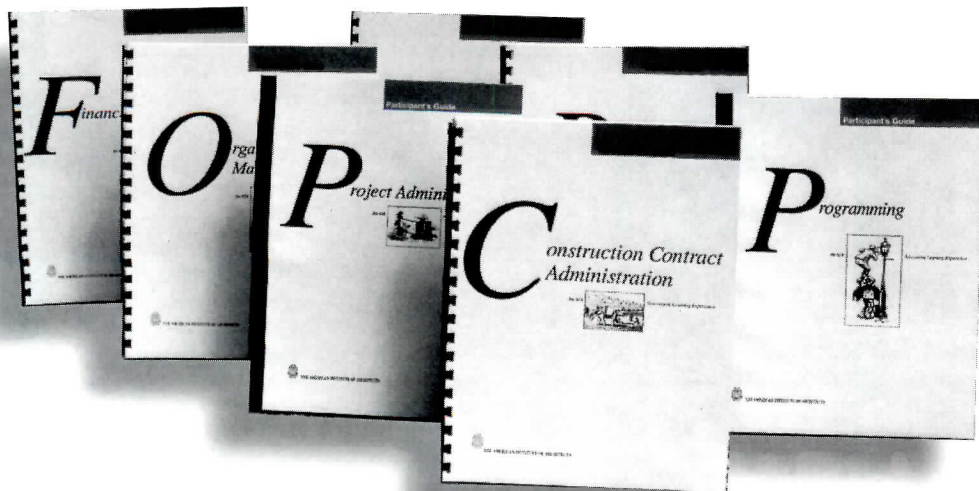
Project Administration: The Critical Path to Profitability

Construction Contract Administration:

Better Approaches to Tasks and Issues
Financial Management: Making the Money and Keeping It

Better Practice Management: Organizational and Personnel Management

Programming: Communicating With Clients



**A/E Education Yellow Pages
AIA/CES Premier Program Providers**

The AIA Continuing Education Systems honors our charter members who support us as premier providers (as of October 1, 1995). For the latest information in educational resources in the design industry, contact:

ACCI Business Systems, Inc./Parkhill & Co. (810) 649-1113
Project management and accounting software.

Apple Computer, Inc (310) 376-7054
Computer-aided practice seminars, program topics: Computing and CAD, documentation technology, design.

BEEDEE Corporation (206) 443-1010
Accounting computer software.

Blackridge, Ltd. (617) 239-1113
Practice and financial management, program topics: Management leadership issues, marketing, workplace issues, project management.

CSR Rinker Materials (407) 833-5555
Technical material specifications, program topics: Building codes and standards, design, seismic and extreme conditions, concrete cost savings, architectural education and research, urban and regional design, environmental and energy issues, housing.

DPIC Companies, Inc. 800-227-4284
Professional liability insurance education, program topics: Project management, practice and risk management, design/build, management, leadership programs.

Federal Publications (202) 828-0262
Construction contracting matters, program topics: Design, project management, construction management, international architecture, practice and risk management.

Freudenberg Building Systems, Inc. (508) 689-0530
Program topics: Design, architectural education and research, and building technology.

Graphisoft 800-334-3468
Architectural computer graphic training.

Group Communications, Inc. (GCI)(713) 530-3690
Program topics: TQM, project management, construction management, management leadership issues, marketing.

Kalwall Corporation 800-258-9777
Program topics: Design, educational, judicial, and health-care facilities.

Laticrete International, Inc. (203) 393-0010
Architectural products, program topics: Building codes and standards, design, building technology.

MAMECO International Inc. (216) 752-4400
Program topics: Design, documentation technology.

Milcare Inc. (616) 654-8056
Health-care environments, program topics: Design, health-care facilities, career, and workplace issues.

National Fire Sprinkler Association (317) 745-0536
Fire sprinkler systems programs, program topics: Building codes and standards, design, fire protection, project management.

R.S. Means Company, Inc. (617) 585-7880
Cost-estimate support services.

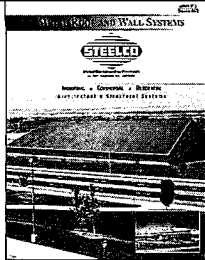
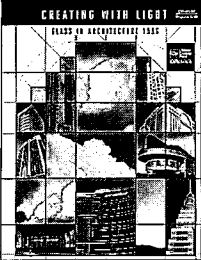
Trus Joist Macmillan (904) 278-9070
Program topics: design, housing, building technology, engineered lumber products.

Victor O. Schinnerer & Co., Inc. (301) 961-9800
Liability and risk management, program topics: Project management, career and workplace issues, practice and risk management.

It's time to take a leadership position! Call 1-800-365-2724 to order:

Qty	Product Name	Order #	Unit Cost	Total
ORDER FORM 30% DISCOUNT TO AIA MEMBERS To qualify for discount, please provide your member number when ordering. To order using VISA, MasterCard, call 800-365-2724, Fax 802-864-7626, Or send checks payable to:			Subtotal	
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The American Institute of Architects 2 Winter Sport Lane, P.O. Box 60, Williston, VT 05495-0060			** Sales tax DC, GA = 6% MD = 5% Vt. = 5%	
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Account Number		Expiration Date		
Signature		AIA Membership No.		
Name _____				
Address _____				
City		State	Zip	
Phone		Fax		
Please mention code X238 when ordering				

Product Literature/Renovation

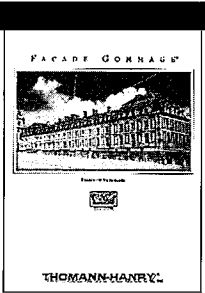


158. Glass in architecture

A 1996 catalog demonstrates the solar performance, loading, and esthetics of all types of architectural glass, including EverGreen tinted float glass, Energy Advantage Low-E and Eclipse reflective glass, and specialty products such as Pyrostop fire-rated glazing and Mirropane one-way glass. 419/247-4721. Libbey-Owens-Ford Co., Toledo, Ohio.

159. Metal roofs and walls

An eight-page catalog covers a line of architectural and structural metal roof and wall systems for commercial, industrial, agricultural, and residential markets. Illustrates three concealed-fastener techniques, and includes span tables, finish options, and other technical data on all products. 800/874-2404. Steelco, An Alta Industries Ltd. Co., Salt Lake City.

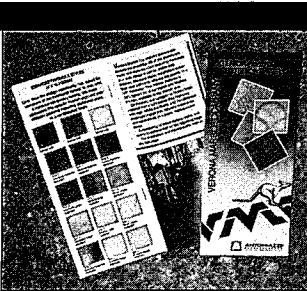


160. Lead-free coolers

This maker's 1996 catalog has 40 pages on water coolers and fountains for offices, institutions, factories, and homes. Products include the Design 2000 coolers with a filter that removes lead, odors, and other contaminants from supply water, and a universal housing said to fit easily into existing rough-in recesses. 708/574-8484. Elkay Mfg. Co., Oak Brook, Ill.

161. Facade restoration

A French process, used on the Louvre, gently cleans stone, brick, concrete, or marble without damage, using compressed air to blow a talc-like, dry powder and collecting the dirt-bearing residue in a mobile vacuum cabin. A 33-ft-wide wall section up to six stories high can be cleaned in a single day. 212/755-5550. Thomann-Henry, New York City.



162. Sprinkler/piping cover

The Soffi-Steel system snaps together to protect and streamline the fittings and housings of recessed, concealed, or institutional sprinklers, and also qualifies as a protective cover for listed CPVC sprinkler pipe where required by code. Soffits can be cut and punched using standard trade tools. 608/757-1335. Grice Engineering, Inc., Janesville, Wis.

163. Pavers for indoors and out

Now offered in a thinner, lighter-weight 3/4-in.-thickness, gauged pavers in granite and porfido stone come in 12- by 12- and 16- by 16-in. squares. A new catalog illustrates all available colors; pavers come in honed, rustic, and sandblasted finishes. Samples offered. 214/381-8405. Verona Marble Co., Dallas. ■

For more information, circle item numbers on Reader Service Card.

SIGNALS TRAVEL PRESENTS
DESERT VISIONS
 FRANK LLOYD WRIGHT'S TALIESIN WEST
 April 11-14, 1996

Taliesin West, the residence and architectural school Frank Lloyd Wright created on 600 acres of rugged desert above Phoenix, is one of the most stunning achievements of the master architect's career. Signals Travel is pleased to offer this unique opportunity to get an insider's view of Taliesin West and experience Wright's genius firsthand. You'll gain a personal understanding of Wright's inspiration and a deep appreciation for how he came to create a working community that, in his words, "belonged to the Arizona desert as though it had stood there during creation."

For details and complete itinerary, please call for our free tour packet:
1-800-755-0386

Desert Visions, Frank Lloyd Wright's Taliesin West: Four days/three nights, \$1,295 per person, double occupancy; single price \$1,595. Airfare not included. Excellent accommodations at the nearby Scottsdale Regal McCormick Ranch, one of the area's premier golf resorts. Call today, space is limited to 25 participants.

Circle 49 on inquiry card

FYPONCAD™
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FACULTY POSITIONS VACANT

UNIVERSITY OF M I A M I SCHOOL OF ARCHITECTURE

The School of Architecture of the University of Miami seeks applicants for two tenure track faculty appointments to offer undergraduate and graduate level instruction in architectural design plus courses in a specialty such as theory, sustainability, or technology. One of these positions is primarily in the area of technology. These full time positions include responsibilities for teaching, scholarship, administration and service. Candidates should have a terminal degree in their field, previous teaching experience, and creative work in design, scholarship, practice or a combination thereof which demonstrates promise of significant achievement. Candidates should send a letter of interest and curriculum vita to: Jorge Hernandez, Chair, Faculty search Committee, University of Miami, School of Architecture, P.O. Box 249178, Coral Gables, Florida 33124-5010. Review of the applications will begin on December 1st. *The University of Miami is an EO/AA employer.*

POSITIONS VACANT

Project Manager Santa Fe, NM firm seeks experienced Proj. Mgr. in education and commercial work, approx. 20 yrs. experience. Please submit resume, references and salary requirements to Yates Hogan Architects, 428 Sandoval, Santa Fe, NM 87501.

Senior Urban Designer Approx. mo. salary: \$4,414. Filing Deadline: March 1, 1996 @ 4:30 P.M. Implement public design process programs related to streets, street furniture, bridges, light standards, etc. Integrate public design standards and criteria with private projects to optimize urban design appearance. Analyze comprehensive information provided on a project proposal; prepare schematic diagrams based on analysis; draft conceptual design plans for project; draft final design plans; prepare presentation plans, diagrams, and graphics. Prepare and present products through an established process to elected officials, staff, citizens, and stakeholders, using PC-based AutoCad and other software systems a plus. Minimum qualifications: equivalent to a Bachelor's degree in urban design, Landscape Architecture or related field; three years of experience working on Urban design projects in medium or large-size cities, with at least two years of experience in urban design, some exposure to multi-modal circulation. Send resume and completed application by March 1, 1996, City

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN SCHOOL OF ARCHITECTURE

The School of Architecture is seeking applications for two tenure track positions at the Assistant Professor level. The positions are full time, nine month appointments to begin August 21, 1996. The salary for these positions will be determined by qualifications and experience. Candidates must be highly motivated and dedicated individuals who can take advantage of the unique resources of the University of Illinois for teaching, creative work, and research. Resources include the country's largest public university library system, computer-based studios, and access to associated research programs. Candidates should have a strong interest in teaching at all levels of the undergraduate curriculum, as well as the graduate curriculum. Other responsibilities will include scholarship/creativity/research, committee assignments, and public service.

DESIGN POSITION: Candidates should be innovative teachers who are capable of synthesizing theory (e.g. aesthetic, behavioral, cultural, literary) and pragmatics into design. Teaching responsibilities will include a studio, lecture/seminar course, and participation in design reviews. Candidates able to 1) integrate computers into design studio learning or 2) teach the building programming process will be given high priority. An area of research related to architectural design is also expected.

PRACTICE AND TECHNOLOGY POSITION: Candidates must have demonstrated teaching and research competency in two or more of the following areas 1) comprehensive building design with an emphasis on integration; 2) building systems and the underlying building science and technology; 3) building materials and construction technology; and 4) design and construction automation. The candidate should be qualified to teach lecture, seminar, and studio/lab courses.

QUALIFICATIONS: Candidates must have a professional degree in architecture or equivalent; professional experience; and teaching experience. Professional Registration or a Ph.D. is required. This does not preclude candidates with other exceptional qualifications.

REQUIRED SUBMISSIONS: Please send a full curriculum vitae, a brief statement of educational and research objectives, and the names of three references. In order to receive full consideration submissions must be received by **March 1, 1996**. The review of applications will begin on that date and continue until the positions are filled. Short-listed candidates will be asked for examples of work.

Hub White, Acting Director - School of Architecture

Temple Hoyne Buell Hall MC-612 - 611 Taft Drive, Champaign, IL 61820-6921

Tel: 217/333-1330 - Fax: 217/244-2900

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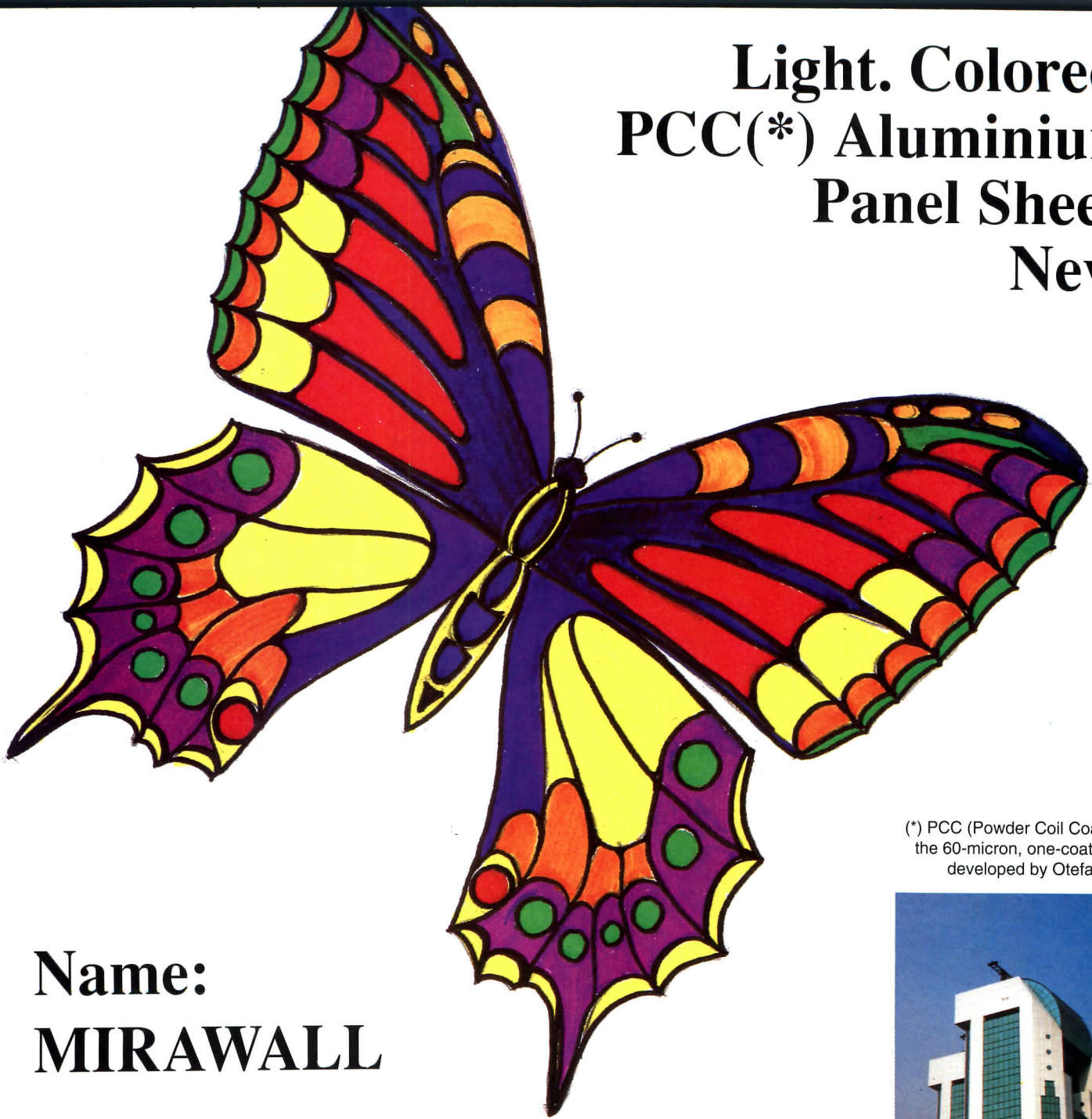
of Las Vegas, Department of Human Resources 418 N. 7th St., Las Vegas, Nevada 89101 Ph. (702) 229-6315.

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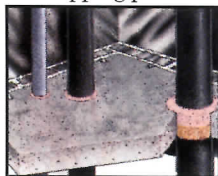
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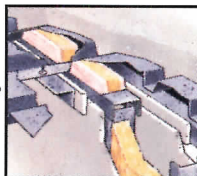


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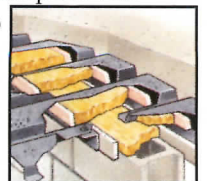


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