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Special feature examines dramatic changes in the make up and functioning of the architect's client. Articles take up trends in architect selection, fees, project management, design/build, and the role of the client's architect.

**Building Types Study 711
Community Facilities**

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Also in November:

Buildings by Kallmann, McKinnell and Wood, Tod Williams Billie Tsien & Associates, Juha Leiviskä, Cannon/PTN

Construction Forecast 1994*Pacific Aerial Surveys*

For sale or lease: military base, Alameda, Calif., 1,522 acres, spectacular views of S. F. Bay. Great potential for civilian uses. Extensive renovation and toxic cleanup necessary. Patience with government bureaucracy helpful. (Building Types Study: Military Base Conversions. Page 96.)

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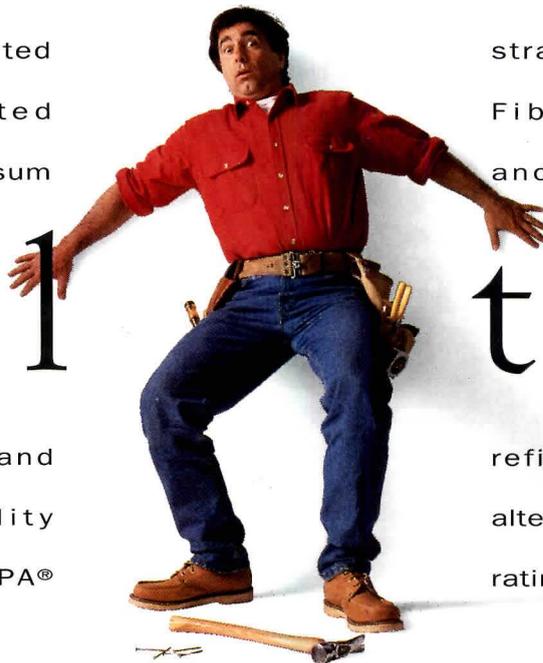
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AIA Gold Medal

Your editorial on the AIA Gold Medal has moved me to respond concerning one of my favorite subjects. [RECORD, August 1993, page 9]. I have now participated in five Gold Medal elections since joining the national AIA Board in 1987—an experience which has given me an almost religious fascination about that enigma known as the AIA Gold Medal for Architecture.

To understand the AIA Gold Medal, one needs to recognize that the making of architecture is unavoidably a collaborative effort. No Gold Medal winner has ever been a truly solo act: Not Pei, not Jefferson—not even Wright. Clients, craftsmen, draftsmen—even lawyers (curse the thought...) contribute to one extent or another to the end product.

At the soul of this collaborative effort, however, is the indispensable contribution of the spirit of the individual, and it is this special spirit that the Gold Medal celebrates. It is not an award for the architecture the Medal winner helped produce, nor the collaborative team she or he has assembled, but rather it focuses exclusively on the special spirit the Gold Medal winner has brought to architecture, and that is why the awarding of the Gold Medal to a team or collaboration would be so completely inappropriate. While I may disagree with you on the criteria for the Gold Medal, I fully concur with you that the AIA Firm award, which honors collaboration in architecture, deserves every bit as much recognition as the Gold Medal. *L. William Chapin, II*
Architect
Rochester, N.Y.

Your observations on the AIA Gold Medal deserve serious con-

sideration by the AIA Board.

There is, however, an equally important issue which was not mentioned in your article worth careful consideration by the Board if the stature of the Gold Medal is to be restored. AIA's Gold Medal has become an American award. It fails to capture worldwide respect and recognition due to a nominating process whereby distinguished foreign architects rarely even surface as candidates.

Without diminishing the credentials of recent Gold Medalists, consider the contributions of such architects as Maki, Stirling, Piano, Hollein, Rogers, Legoretta and Foster, to name just a few.

The debate to which you refer in your editorial over whether Venturi and Scott Brown should jointly be awarded the Gold Medal seems of little consequence by comparison to the consideration of the lack of world-class candidates for this award.

Until the AIA addresses this most fundamental issue and corrects it, the Gold Medal will never enjoy the global stature intended. *Donald J. Hackl, Architect*
Loebl Schlossman and Hackl
Chicago, Ill.

Salk Addition Opposed

“Delay Tactic?” “Obscure Clause?” “Addition replaces a eucalyptus grove?” [RECORD, August 1993, page 6]. The author of this unfortunate piece has been fooled by a wolf in sheep's clothing. To set the record straight: Hundreds of millions of our tax dollars have been given to an institution that is carelessly ruining one of our country's greatest 20th century masterpieces. The National Historic Preservation Act Section 106
Continued on page 6

October 4-October 31

“The Art of Architecture: Works by Laureates of the Pritzker Architectural Prize,” Museum of Art, Washington State University, Pullman, Wash. Call 509/335-1910.

October 4-December 3

AIA/LA Design Awards, Pacific Design Center, Los Angeles, Calif. Call 310/657-0800.

October 6-7

Design New York '93 show for interior designers, D&D Building, 979 Third Ave., New York City. Call 212/751-5110.

October 14-17

“Lighting for the Broadway Theatre” seminar, John Jay College auditorium, 809 Tenth Ave., New York City. Call 212/645-4977 for details.

October 18-20

1993 Virtual Reality and Teleoperation Conference and Exhibition, Macklowe Hotel and Convention Center, New York City. Call 718/875-5100.

October 20-22

InterGlassMetal/Fenestration World '93, Georgia World Congress Center, Atlanta, Ga. Call 800/843-3263 or 617/482-3596.

October 23

“A New Design Ethic: Rethinking Urban Habitats for a Sustainable Society,” Fashion Institute of Technology, New York City. Call 914/424-3549.

October 25-27

“Future/Build '93,” Intelligent Buildings Institute Foundation, Chicago, Ill. Call 202/457-1988.

October 27-28

“Integrated Officing '93” program at IDCNY, Long Island City, N.Y. sponsored by IFMA and IDCNY. Call 718/937-7474 or 212/593-3450 for details.

November 18-21

Sixth Symposium on Healthcare Design, Chicago Marriott, Chicago. Contact National Symposium on Healthcare Design,
Continued on page 6



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Continued from page 4
 review was written to protect our architectural heritage and to help insure that sensitivity and good sense are used when projects like the Salk addition are planned. This is not a delay tactic—it is an effort to stop the addition project.

Lastly, the addition is not replacing a eucalyptus grove—it is destroying an integral part of the Salk Institute design, and is therefore seriously degrading the architectural integrity of one of Kahn's greatest works. Salk Institute officials have been led to believe that they will be preserving the Salk as long as they do not physically touch the Kahn buildings. This perception is terribly misguided. Our profession must wake up and start to help preservation organizations protect not just our important older buildings, but our important Modern buildings as well.
Stuart Emmons, Architect
Louis I. Kahn
Preservation Group
Los Angeles, Calif.

Flights of Fancy

Being an environmental planner rather than an architect, I tend to view architects and their work with some detachment and as the user rather than the designer. I recall the frequent comment heard in Britain, especially during the '60s and '70s, that architects designed mass housing which they themselves would never contemplate living in. I got somewhat the same feeling when I studied the new airport buildings [RECORD, August 1993, page 26] and the follow-up comment in the "yellow pages" section of the August issue headed "Architects Design Airports That Capture the Meaning of Flight."

The architect is always tempted

to make "grand statements" in any field; in the specific case of airport design, a further important influence is, that the overall concept is created in the relative calm of the architects' air-conditioned offices by people who have come in fresh from a good night's sleep, a shower, and a glass of fruit juice. Not so, unfortunately, the traveler for whom they design the facility. In the architect's relaxed environment the "romance of flight" may seem an appropriate theme; in the real world a conscious attempt to minimize hassle and to reduce fatigue and tension would more accurately reflect the needs of actual travelers. Architects should try jotting down some notes and sketches on the back of an envelope while sitting in some anonymous hub airport lounge after a ten-hour flight from Europe, waiting two hours for a delayed connecting flight in crumpled, slept-in clothing, the ears regularly assailed by repetitive announcements.

Perhaps the mind might stray nostalgically to the "old days" when airports were small and friendly. Why not re-create such conditions? Build a small airport unit, just the right size for comfort. Arrivals on the first floor; departures on the second. A serious attempt should be made by everyone concerned, from check-in to airlines to baggage return, to minimize airport waiting time; but for those who must wait, often for several hours, the third floor lounge should make it a pleasant and relaxing experience.

On the top floor: hotel rooms—neat compact rooms with bed, table, chair, hanging space, a phone, and an easy-to-setup alarm. These small, self-contained individual airport units

can then be replicated in a continuing line to provide as much capacity as required for the total airport complex.

Michael Meacock
Victoria, B.C., Canada

Linking Fees and Liability

"Architect's Fees: Arresting the Downward Spiral" [RECORD, July 1993, page 28] was an excellent summation of the inequities facing today's architect. Of particular interest was the repeated mention by surveyed architects of the huge liability architects must assume for a low fee.

Mentioning limitation of liability (LoL) as a potential solution to this problem was right on target. If clients insist on limiting architectural fees, often by excluding construction observation services from an architect's scope of services, then the architect should demand that his or her liability be contractually limited as well. It is simply unfair that an architect be required to assume full responsibility for design errors and omissions when he or she receives only a fraction of the project's reward and has no control over how those designs are carried out.

Peter B. Hawes
Monterey, Calif.

Making Design Pay

I read your July editorial [page 9] with great pleasure. If architects cannot design in such a way that their service contributes to what the owner wants to accomplish with an enterprise, then it is no wonder that the public does not have a more advanced appreciation of design, and so much of our environment is created by "non-design professionals."

Wayne Ruga, Architect
National Symposium on
Healthcare Design
Martinez, Calif.

Continued from page 4
 4550 Alhambra Way, Martinez, Calif. 94553-4406; 510/370-0345.

December 6-8

Restoration '93, an international exhibition of products and services on building restoration. Hynes Convention Center, Boston. Call Ellen Glew, 617/933-9699; fax, 617/933-8744.

Competitions

- 1993 Society of American Registered Architects Student Design Competition. Deadline: October 1. Call 312/763-5767.
- The University of Maryland at College Park is accepting statements of qualifications to design the Maryland Center for the Performing Arts. Deadline: Early October. Call 301/405-4621.
- National Lighting Awards Program. Deadline for entries: October 15. Contact National Lighting Bureau at 202/457-8437 for entry form and rules.
- The Construction Specifications Institute 1994 Specifications Competition for firms preparing project manuals for construction. Submit application and project manuals by November 2. Call CSI at 703/684-0300.
- Designers and Planners for Social Responsibility, Virginia Chapter, in conjunction with Habitat for Humanity of Greater Richmond, is accepting entries to construct a model home with material costs not to exceed \$35,000. Deadline: November 9. Call 804/780-0070.
- American Academy in Rome competition for the 1994/95 Rome Prize fellowships in the fields of architecture, interior design, urban design, urban planning, and landscape architecture. Deadline for entries: November 15. Applications available by writing Fellowships Coordinator, 667 Madison Avenue, Fifth Floor, New York City 10021, or calling 212/751-7200. ■

Don't Send Horses Down the Information Superhighway

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Architects should look kindly on the proposed \$400-billion fiber-optic network, better known as the Electronic Data Superhighway. Designed to replace the current system with fiber-optic wiring yielding transmission at 1,000 times today's speed and offering virtually limitless capacity, the network is intended to link the nation's workplaces, schools, and homes to a huge variety of information services that are impractical on today's digital system. Building codes and zoning ordinances in any jurisdiction in the world; seismic, structural, mechanical, acoustic, lighting, energy-conserving and other data; product-selection information in expert-system formats; encyclopedic information on past projects—all could be accessed. "Virtual" architectural offices with branches 5,000 miles apart could function efficiently. Architecture schools on five continents could hold simultaneous sketch problems and conduct concurrent crits and judgments on electronic "pinup" displays.

It's easy in the euphoria of such electronic marvels to lose sight of some basic issues, however. Who, for instance, is going to gather, screen, edit, format, package, price, store, review, update and "sunset" this cornucopia? Who will identify the architect's real needs? In what formats are text, drawings, and other images to be presented? How accessible or user-friendly will the information be?

These are some of the dangers in letting the quality of the information lag behind the technology. These dangers are already a flaw in many existing dissemination channels. The frustrations will be a thousand times greater with the enormous capacity of the new superhighway.

As the profession learns more about the physical potential of the proposed superhighways, practitioners, whether in private practice, on corporate or government staffs, or teachers, must begin to identify precisely their own information needs and objectives, and find ways to make them known to the sources they currently look to for their information.

If not, the profession will face, not for the first time, the phenomenon of a technology in search of a use. The information that begins to zip down the electronic highways must be at the same high level as its medium. Let's not use the superhighway to send horses.

Military Makeovers

One of my most agreeable tasks in years has been to look over the shoulder of RECORD associate editor Cliff Pearson as he shepherded this month's special feature on the pending closing of some 150 military bases, pointing out the solid opportunities this offers to architects to become engaged in the planning, rehabilitation, new construction, and environmental and other services that these closings entail. Not only are the closings one physical expression of the end of the Cold War; they are also a challenge to architects to make over the land and the buildings into a true expression of America in the 1990s—its values, hopes, and dreams.

In challenging four architects to replan the site and buildings at Oakland's Alameda Naval Air Station (see pages 96 to 107), RECORD has sought to highlight some of these opportunities. Others will emerge as more and more bases switch roles from preparation for war to exploiting the peace. *Stephen A. Kliment*



AND THE WINNERS ARE:

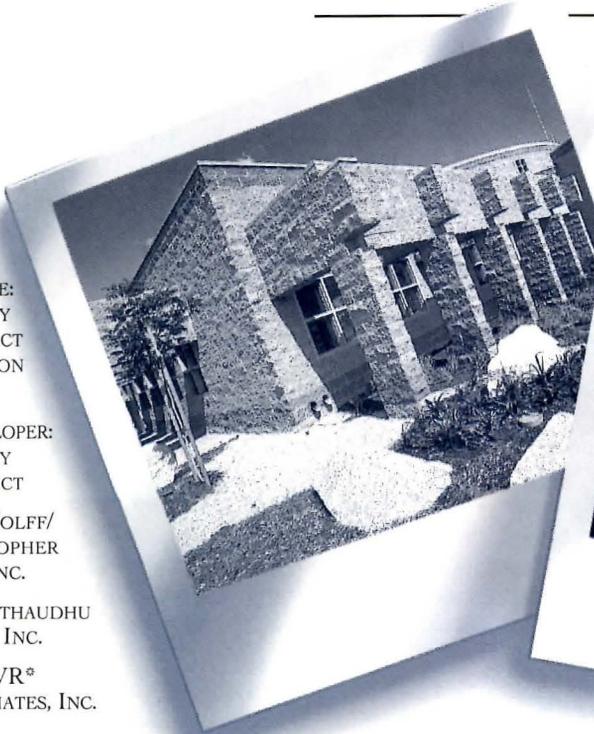
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OWNER/DEVELOPER:
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WATER DISTRICT

ARCHITECT: WOLFF/
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ENGINEER: RWR*
PASCOE ASSOCIATES, INC.



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AT CALIFORNIA
STATE POLYTECHNIC
UNIVERSITY, POMONA

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CALIFORNIA STATE
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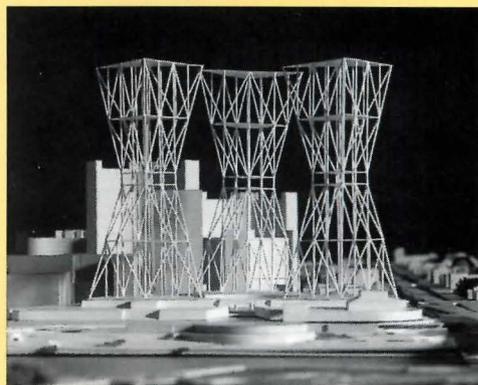
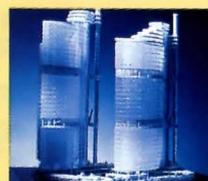
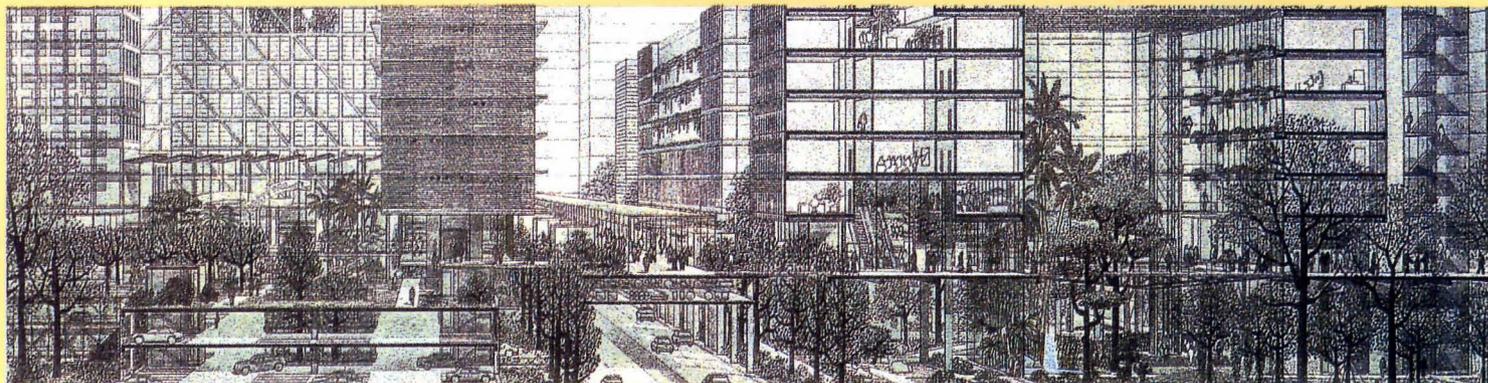
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Vienna

Second City Center to Blossom from Garbage Pit On Left Bank of Danube



Back in the roaring '80s, Vienna planned an EXPO 95 as the symbolic first act in the long-term urban development of the Danube's left bank. In 1991, however, the voters rejected the extravaganza, and WED (Vienna Development Company for the Danube Area) launched directly into plans for the 4.6-million-sq-ft residential and commercial Donau City.

A masterplan by Adolf Krischanitz and Heinz Neumann incorporates a four-story pit created by the excavation of rubbish and

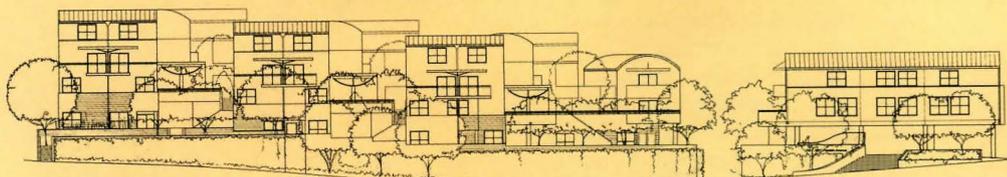
debris. Below-grade levels will combine roadways, parks, and landscaped areas in such a way that the buildings will appear to float on a transparent foundation of stilts and greenery (1). The level that connects with the surrounding terrain will be reserved for elevated pedestrian walkways and interconnected plazas. Directly beneath this street plane is a collector level containing infrastructure for the buildings, which can be plugged into the system to suit individual investors and an array of future needs.

For a twin-tower landmark, WED invited proposals from Vittorio Gregotti (6), Arata Isozaki (2), Kohn Pedersen Fox (4), Richard Meier, Jean Nouvel, Gustav Peichl (3), and Richard Rogers (5). Meier and Nouvel dropped out. A review board, meeting in May at the Vienna Secession, requested modified plans from Isozaki and Peichl.

Most residential work and the first office buildings should be finished by early 1997. The entire project is expected to be completed by 2005. ■

major component of the client program is a variety of unit types and building designs. Terraced carparks and medium-rise housing sited in three neighborhood clusters frame the high-rise condominium towers, private terraced gardens, and formal arrival courts. Each neighborhood is organized around a central park where formal-garden design elements combine with tropical informality. The 50-person-per-acre community includes schools, shops, and serpentine access roads. Construction on the \$160-million project begins next June. ■

large houses set in gardens and shielded from traffic noise by a landscaped retaining wall. "MOCA's involvement now extends from exhibition programming to real-world issues," comments MOCA director Richard Koshalek. Carde-Ten is architect of record. ■



Balkan Palace Inspires Milanese Rossi's Japanese Shopping Center



Briefs

Saving Savior Hospital

"The Russians have the highest maternal and infant mortality/morbidity rate in the industrialized world," says Richard L. Heaton, of Burt Hill Kosar Rittelman. The Pittsburgh firm has volunteered design services on

ARCHITECTURAL RECORD Practice News

Getting Together

Collaborations on the Rise—And the Need for Careful Agreements

Collaborations between architecture firms are steadily increasing. Typically, one firm brings design and planning expertise for the specific project type (and sometimes a high-profile national reputation) while the other brings a local office near the project site and does the construction documents and administration. (Collaborations also allow small firms to compete for big projects with the production muscle of a larger partner.)

"Simplest is best," says Herbert McLaughlin, referring to contractual arrangements between two firms. (His firm, Kaplan/McLaughlin/Diaz, has already had over 100 collaborations on projects ranging from hospitals to shopping centers.) The construction-document and administration firm is often the architect of record and the design firm a consultant. It may, however, be desirable to get the client to sign separate contracts with each firm. Points to address in a collaboration agreement:

- *The firm that signs the construction documents.* Both firms should do it.
- *The firm responsible for code compliance.* It should be the CD/CA firm. If however the design firm provides drawings that do not comply, it should fix them on its own time.
- *The firm to take the primary burden in a lawsuit brought by the contractor or client.* It may be most efficient to have the CD/CA firm do so. If there is a dispute between the two architects on responsibility, they should arbitrate and resolve it quickly, along with an allocation of defense costs.

On lines of communication between firms, there are basic rules:

- Both firms must let the other know about all communications with the client.
- The CD/CM firm should not challenge the other on design in front of the client. This should be worked out in private.
- Keep roles clear. The design firm should have design control, but designing a complex modern building involves being open to input by many parties *including* the partner

architect firm. While McLaughlin has seen collaborations of two design firms work on programming and master planning, "full collaborative design between two firms on one building is difficult." Still, if there are more than one building in a complex, a collaborative design effort might work if each firm designs its own building within agreed-upon guidelines.

- *Decide which partner should seek new clients.* Frequently, the design firm may be more experienced at competitive interviews. In any case, it is reasonable to share marketing expenses in a ratio with the percentage of total fee each partner receives.

"Both parties have failed if they have to struggle with value engineering late in a project," McLaughlin observes. "They need a detailed cost model early—preferably in the programming phase—and they need to follow it." Fiscal responsibility, however, should be borne by the architect of record. Another tool the two parties will need is a detailed list of drawings each party is to supply. It should include examples of drawings from other projects so each party can see what the other expects.

Give credit where credit is due. "That doesn't mean a faint asterisk in one firm's brochure referring to the other firm's name printed in light grey type on the back of the last page," says McLaughlin. It does mean full credits in all text released by either office. Design collaborators should face the fact that local associates are going to learn from their design counterparts on the job and become potential competitors. At least, try to get collaborators to agree to continue their association in future work for the same client. *C. K. H.*

New Approaches

Practice with CMs, MBAs, and CAD

"Why does controlling money mean doing a better job?" asked Tom Beeby, Hammond Beeby & Babka Architects, during a discussion of construction management's inroads into architecture on the occasion of RECORD's breakfast at the AIA convention in Chicago this summer. "My firm [Lord Aeck & Sargent Architects] wants to keep control and counter the CMs," said Larry Lord, viewing it as a means for architects to hold onto design quality *and* their share of the shrinking construction pie. He has an MBA and is sending other staff for that degree.

"There are advantages in joining forces with people who manage," countered Beeby. "Architects think they will make more money by taking over construction, but they give other services away such as interior design and graphics, which are not taught in the schools," he concluded. "Construction management is a fact of life in Chicago," added Phillip C. Johnson of Johnson & Lee. Design-oriented firms are most likely to be affected, observed William Rawn of William Rawn Associates who sees CMs growing in Boston: "There's a big split between the effect on small firms and the big ones."

Here are other changes the group saw in the profession. "The [growing] effort that goes into getting work and [the changing nature of] whom you're working for," said James Goettsch of Lohan Associates, which is designing a Federal Reserve Processing plant in the U. S. and a small office building in Berlin, and has recently entered an affiliation with several Japanese firms. Kristine Fallon, an independent architect and computer consultant, mentioned smaller firms jointly going after work and, of course, the importance of computers. "Electronic sources of information will overtake us before we know it," she said. The degree of computerization varied widely among participants—from Lord's "totally computerized" to Johnson's "not CAD oriented." *C. K. H.*

Briefs

A/E/C Systems goes North

The sponsors of the largest U. S. computer trade show for the construction industry are taking their exhibition to Toronto, Canada, on December 1-3. Joint sponsor is *ENR*. Contact Sharon Price, A/E/C Systems Canada, POB 310318, Newington, Connecticut 06131-0318 U. S. A. (800/451-1196).

Houses top new business in Chicago

In a survey by the AIA Chicago Chapter, almost 70 percent of respondents are finding the majority of new business in the design of new houses and remodelings, which constitute 25 percent of all offices' work. The second highest category of new business? Commercial and office design—especially the rehabilitation of existing space for owners competing to find new tenants.

Looking inside Los Angeles houses

Architects in this city have been sponsoring tours of their residential work. The last tour will be on November 14 in the Silverlake/Los Feliz areas and includes houses by Frank Fitzgibbons and Frank Israel. Contact Nicci Solomons (203/380-4595).

Increasing security through design

A three-day conference in Washington, D. C., December 9-11, explores how building design can prevent crime. Contact The AIA/ACSA Council on Architectural Research, 1735 New York Avenue, N. W., Washington, D. C. 20006 (202/785-5912).

Crossing boundaries in practice

A three-day symposium in Cincinnati "will overcome barriers of time, place, culture, and profession" by examining solutions to specific challenges (i.e., the rebuilding of Los Angeles after the riots) and general challenges (e.g., Britain's intention to abolish its requirements for architectural licensing and registration by the end of the year). Contact the University of Cincinnati (513/556-3001).

Traveling green

Baltimore architects Ziger Hoopes & Snead have been encouraging employees to travel to work in fuel-efficient ways. The results: 30 percent use bicycles and 23 percent still drive their own cars. *C. K. H.*

GSA Establishes Peer Review For Major Public Projects

Frequently maligned as an unwieldy government bureaucracy, the U. S. General Services Administration is working to change its reputation. The GSA has established "peer review" for the design of selected major federal buildings in order to enhance their architectural excellence. Launched earlier this year, the program provided critiques by an individual independent design professional on one project and by a panel of design professionals on another. The critics were recommended by the National Endowment for the Arts.

The pilot projects were a \$214.2-million courthouse and federal office building on Long Island, New York, by Richard Meier & Partners, and a \$117.6-million federal complex (photo) in Kansas City, Missouri, designed by Ellerbe Becket and Abend Singleton Architects. As models for a new program, the two design reviews were structured differently to evaluate different critiquing processes. GSA's chief architect Edward Feiner administered the program.

Meier's Long Island project, a 450,000-square-foot complex, to be located in East Islip, was the subject of a two-stage review by a panel of three practitioners—Charles Gwathmey, Hugh Hardy, and John Goody. The first critique was held at the preliminary-schematic stage of design. As required for major GSA projects, Meier developed three approaches to solve the program.

Rather than relying on government architects to analyze the proposals, the peer-review process allowed GSA to use the expertise of recognized private-sector professionals in reviewing the three designs. "Each panelist was encouraged to give his or her input—whether to pursue further one approach, to do a hybrid of the schemes, or to develop a new direction," explained Feiner. Two months later the panel reconvened to critique Meier's new scheme based on their recommendations.

For the Kansas City project, a 351,000-square-foot federal courthouse and office building, GSA invited University of Minnesota architecture-department head Garth Rockcastle (of the Minneapolis firm of Meyer Scherer and Rockcastle) to review schemes proposed by Ellerbe Becket and Abend Singleton. "Although both review processes were productive," Feiner maintained, "we found that the dynamic debate in a group proved to be the most effective forum for design critique." For future peer reviews, the GSA will also conduct the critiques during preliminary schematics to encourage as much input as possible before the design architect locks in on a any one direction. The GSA is currently identifying public projects to be reviewed next year. *Lynn Nesmith*

Lynn Nesmith is a freelance writer based in Alexandria, Virginia.



The GSA chose this 351,000-square-foot federal courthouse and office building in Kansas City, Missouri, designed by Ellerbe Becket and Abend Singleton, for one of its test critiques. Garth Rockcastle, the head of the architecture department at the University of Minnesota, was the sole critic. A panel peer-review system will be used for future projects.

Architectural Metals



300a

300. Solid-metal skin/self-lock seam

A fabricator of architectural-metal building products offers cassette-type panels (300b) and a no-clip raised-seam roof system (300c) made of solid copper. The roof, UniClad System IV, comes in widths from 10- to 30-in. in steel and aluminum as well as 16-oz architectural-grade copper. Installed by fastening one edge to either substrate or purlin and interlocking the opposite edge securely to the next panel, the roof can accommodate compound angles (300a). In copper, the system qualifies for a UL-90 uplift rating when speci-

fied in 12- to 14-in. pan widths over a plywood substrate, as the UniClad tempering process is said to give the metal a "memory" that restores the seam configuration after loading. As with all roofs, transitions deserve special attention; a design/specification binder, complete with SMACNA details, is offered to architects. For exterior walls, 1/8-in. thick Series 3000 panels are hefty plates in flat, curved, bent, and compound shapes. Radiused returns are exceptionally smooth; open-joint panels are mounted with staggered clip angles. Copper Sales, Inc., Minneapolis. ■



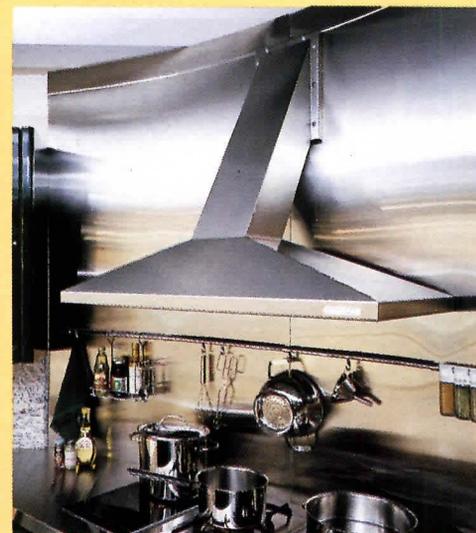
300b



300c

301. Emphatic ventilation hoods

A source of Scandinavian kitchen equipment has expanded the capacity of its Danish metalworking facility to offer custom hoods for exhaust fans up to 1,800 CFM, with incandescent, fluorescent, or halogen lighting. Said to be available on 12-week lead times, hoods are made of seamlessly welded metal in round, radiused, arched, and faceted forms. Metal options include copper, brass, stainless steel, and bronze, in finishes such as antiqued bronze, satin brass, oxidized aluminum, faux-finish verdigris, and custom-match paint. Design documentation can be as simple as a thumbnail sketch; a what-if brochure outlines functional parameters. Right: an arched curve of stainless steel lit by halogen spots; an angled flue supports a "floating" canopy. Abbaka, San Francisco. ■



Savvy fabrication and customizing technologies prompt new uses for metal.

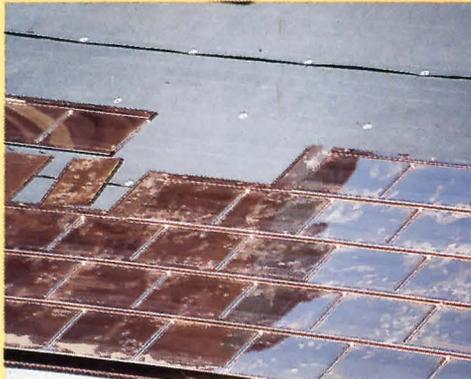
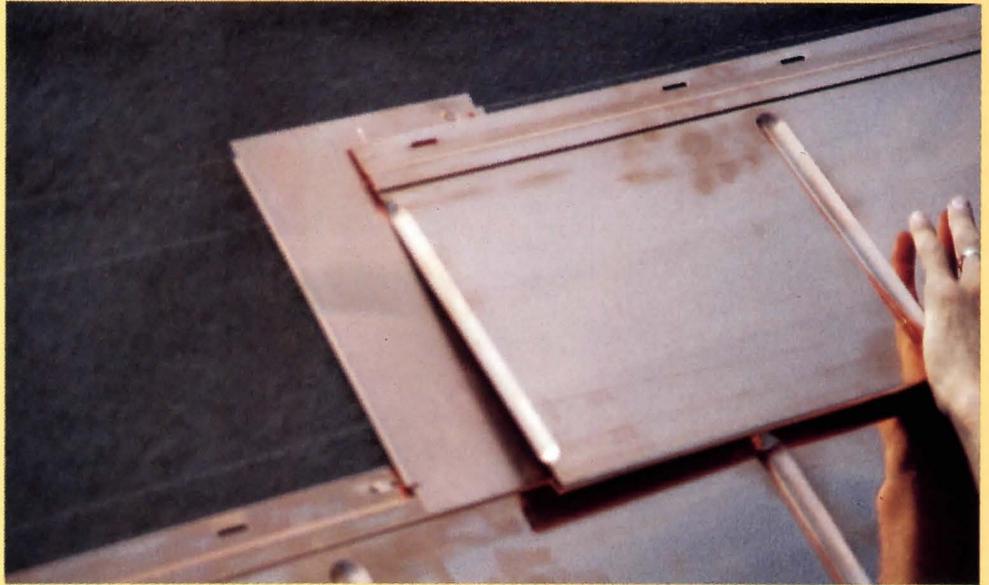
For more information, circle item numbers on Reader Service Cards.

302. Copper roofing shingle

Closing the loop—specifying building products with a high proportion of recycled materials—is easy with architectural copper, as it incorporates well over 90 percent recycled metal from OEM sources such as wire mills and stampers as well as from scrap.

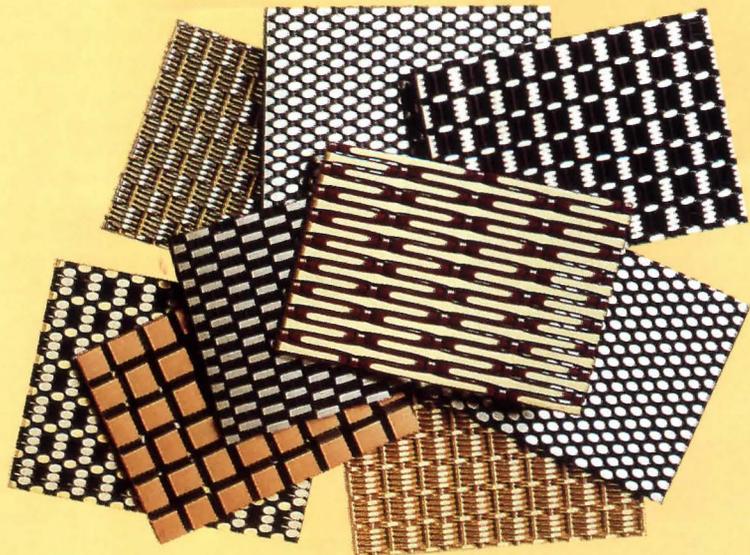
Revere's new panel-and-pan system was designed to make installing copper roofing as easy as nailing asphalt shingles. Particularly suitable for homes and other low-height structures where their horizontal butt line would be effective, the shingles are supplied in 4-ft panels of 0.019-in.-thick copper stamped as four "tabs" with a 9-in. exposure; preformed concealed joint pans replace side locks. For installation on slopes of at least 3:12 over exterior-grade plywood or seasoned lumber, shingling starts with a copper edge strip placed at any location along eaves and proceeds upward. An installed roof weighs about 140 lb per square, and is strong enough to withstand foot traffic; scuffs and scratches weather and disappear over time.

Marketed at about \$350 per roofing square, which includes shingles, joint pans, and copper nails, the roof's price is intended to absorb and stabilize the impact of copper-supply fluctuations. Revere Copper Products, Inc., Rome, N. Y. ■



303. High-contact decor

A durable and decorative material designed for finger-smudge and dent-prone interior applications such as elevator cabs, escalator walls, and ticket counters, solid-metal architectural mesh can also be used as a free-standing partition, where light can filter through the interstices of warp and woof. Made in a true weaving process out of solid-metal wire—stainless steel and brass are the most popular—mesh offers dozens of customizing options, including background colors, different wire dimensions and textures (wire is crimped before weaving), and patterns such as basketweave. Polishing the completed mesh adds another design element, creating light-reflecting oval, diamond, and square facets. Cambridge Wire Cloth Co., Cambridge, Md. ■



Adding Data to CAD Anaheim-AutoCAD Data Extension

By Steven S. Ross

For years, we've been predicting that sooner or later architects will begin using CAD drawings for other than, well, drawing. It's not that software suppliers, particularly suppliers of AutoCAD add-ons, haven't been trying. Softdesk, Timberline, Kativ and many, many others offer plenty of ways to link data with drawings.

Now, thanks to faster, cheaper computers and to software advances, linking lots of information to lots of drawings is about to become more routine. The growth of automated product catalogs has accelerated the process. And the economic climate of the past few years has pushed CAD users into such "data-heavy" fields as facilities management and land-use planning.

But different vendors—even when they all attach to a common CAD "engine" such as AutoCAD—have not always been compatible with one another. Until recently, AutoCAD vendor Autodesk has been unwilling to open its file structure to all comers, for instance. And different vendors have been using the "extended entity data" section of AutoCAD DWG files in different ways.

This month, we look closely at Autodesk's "Anaheim" database link, and discuss what you might expect by linking to data supplied by building-materials firms. Next month, we look at IBM's workstation-based CAD software. We'll also be looking soon at Intergraph's Microstation 5 for Windows NT and at a new round of Windows and Macintosh System 7 software in the months ahead. All offer ways to combine data and drawings, in a single computer and over networks.

Anaheim—its official name is the AutoCAD Data Extension, or ADE for short—is being released this month by Autodesk as an add-on for the Windows, DOS, and Sun SPARC versions of its flagship AutoCAD Release 12. With Anaheim, you can search huge databases (even on a network) select specific pieces of information, edit them, and drag them into your AutoCAD drawings or export them to new files—even other database files.

The core of Anaheim was licensed from IntelliCADD, Mentor and others. But it has been improved, and benefits from Autodesk's resources and its better understanding of its own file structure.

Autodesk had been thinking of the technology mainly to handle giant GIS (geographical information system) databases. But manufacturers of building products such as windows, lighting, and modular furniture, are standing in line to exploit it, too. Anaheim should also make it easier to do cost estimating, facilities management, building-code checks, and other data-intensive tasks—in effect, making the drawing only one manifestation of the professionals' description of a design.

To do that, Anaheim has some "intelligence." It can detect faulty joins—things that look all right on the screen or in a plot, but are not a true description of the entity being represented. It can match joins across adjacent drawings and stretch or compress different drawings to match them up. It also makes AutoCAD much more network-friendly. For instance, it allows you to search dozens of files and extract relevant data from them. But it only locks the files as it is accessing them. Afterwards, it only locks the sections you've extracted (along with any linked data).

Finally, Autodesk has allowed third-parties (or savvy offices) to write ADS or AutoLISP add-ons to the add-on. The early announcements have been GIS applications from Cadlynx (713/647-9321) and LandCADD (303/688-8160). Anaheim includes an SQL (structured query language) engine. You can write "almost plain English" SQL queries to access data (or point to elements of queries and let Anaheim write them), and save the queries in a menu that others can click on,

from inside AutoCAD itself. The software understands dBase, Paradox, Oracle, Informix database software and ODBC (Microsoft's generalized standard for databases, particularly Windows databases).

In short, Anaheim expands upon its origins to bring much mainframe/workstation functionality to the PC world, just as competing workstations are priced nearly at PC levels.

We tested a "beta" version on a 33 MHz, 80486-equipped computer with 16 MB of random-access memory and test files on CD-ROM. That's about twice as much RAM as a typical CAD seat these days, but the extra memory (in the form of two 4 MB SIMM modules) would cost about \$400, well worth it—when we cut MB out, we slowed down considerably. *Circle number 304*

Anaheim-AutoCAD Data Extension Summary

Equipment required: Any equipment powerful enough to run AutoCAD Release 12. For DOS or Windows, an 80386 CPU or better, 8 MB of random-access memory. For Sun Solaris, 8 MB is listed as a minimum, but 12 or 16 MB would be more comfortable. **Vendor:** Autodesk, Inc., 2320 Marinship Way, Sausalito, Calif. 94965, 415/332-2344; 800/964-6432. \$595.

Manuals: We looked only at pre-release material. But it contained an excellent tutorial suite (concentrating on architecture and GIS) and a good command reference.

Ease-of-use: It does complicated tasks in a less-than-complicated way, but you'll still have to understand something about the information you are trying to access. Anaheim creates a new pull-down menu inside AutoCAD; you access files to search from there, and not from the standard Files menu. When a file is first opened, Anaheim indexes it; that takes time. But the index files stay on disk; reopening a file that's already been indexed takes no extra time at all.

Error-trapping: Good on-screen checking for filenames, command syntax, and so forth. We did not have time to check file locking on a full network. It is possible to put data into a drawing by mistake, especially if you close the session by using the End command instead of Quit. ■

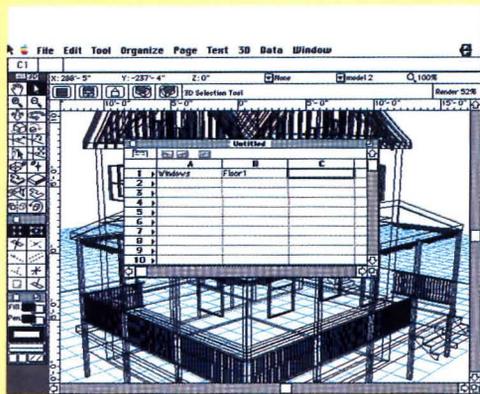
MiniCad+ 4

This 3-D CAD package for the Macintosh is an excellent upgrade from earlier versions. It is also a good upgrade path for Claris CAD users, now that Claris has announced it will not be upgrading its product; a good Claris-to-MiniCad converter is included. DXF imports and exports are also possible. MiniCad+ also exports directly to Strata Vision and RenderMan for 3-D rendering. The Pascal-like macro language is straightforward for easy tasks, but (as with all advanced macro languages) requires plenty of practice for complex chores. The macro language has about 300 functions!

Users of any 2-D Macintosh CAD software who now want to upgrade to 3-D should be reasonably at home with MiniCad+. It has all the standard "high-end" CAD features—customizable line widths and patterns, fills, and a complete set of drawing tools. Unlike some Mac software, MiniCad+ is especially architect-friendly, with a parallel-line tool (for on-the-fly double-line creation) and ways to create new objects parallel to old ones.

You can do walkthroughs, flyovers, and complex 3-D rooflines with unusual slopes. Be prepared for slow screen redraws except on the simplest drawings and fastest Macs.

The 2-D and 3-D modules are tightly integrated, in that you can easily move from one to the other and easily turn a 2-D object into
Continued on page 122



MiniCad+ internal database is in spreadsheet format. All popular spreadsheet packages such as Lotus 1-2-3, Quattro Pro, and Excel can also be imported.

MiniCad+ 4 Summary

Equipment required: Macintosh with at least System 6.05. (Anything from Classic to Quadra works. Older Macintoshes such as the SE and II were comfortable, even for projects the size of small office buildings or apartment houses, for straight CAD without fancy rendering.) Fixed disk is mandatory; the program files total 1.7 MB and optional files bring the total to 3 MB. You need 2.5 MB of random access memory after the System and Finder are loaded. That means about 4 MB minimum for System 7. Supports most digitizing tablets. You will need a separate plotter driver; we used MacPlot Professional but Plottergeist and others should work fine.

Vendor: Diehl Graphsoft Inc., 10270 Suite 100, Old Columbia Rd., Columbia, Md. 21046, 410/290-5114; fax 410/290-8050, \$795. Includes free technical support; you pay for the call or fax; support is also on Apple Link; there's a user group on America Online; one on CompuServe was being considered at press time.

Manuals: Excellent spiral-bound reference, tutorial, and MiniPascal (macro language) manuals are supplemented by a good VHS videotape overview.

Ease-of-use: A fine CAD implementation of the Macintosh interface. The menu structure does, however, differ from previous versions (the last one was 3.1). Thus, older macros that call menu items may need editing. Some of the key-command shortcuts require only a single key (not a key combination) to invoke.

Error-trapping: Excellent. The program is extremely stable—we could not crash it. Those who are upgrading may want to keep a copy of 3.1 on the fixed disk to avoid converting old macros. If you do, launch the application then use File Open to bring up the file; clicking on the file in normal Macintosh fashion will, of course, launch MiniCad+ 4, and automatically convert the old file to that format. MiniCad+ is network-friendly, but it is possible under some circumstances to overwrite files on one machine from another. We suggest System 7 (which has better network management features) if your network does more than link a bunch of Macs to a printer or plotter. ■

Automated Catalogs And Specifying Aids

What can you expect from automated product catalogs these days? And how might they be evolving? To find out, we looked closely at a few of them. We focused on the window and door business, because it was perhaps the first to distribute automated catalogs.

Pella distributes two on-disk versions of its catalogs for windows, doors, sunrooms and skylights. One (DESIGNER) works within AutoCAD; it is particularly tied to ASG Architectural 6.0 (or ASG Core), but will run without the ASG products. The other, Selector, has DXF files for elevations and cross sections of the standard Pella line. It is available on Macintosh or DOS disks for use with almost any CAD software. One disk contains specification files. The catalog has been evolving on disk since the first version was released in 1986.

Andersen distributes CADD-I. There are three modules. One does 3-D plan/elevation symbols or 2-D elevations inside AutoCAD, another does 2-D DXF (separate symbols for plan and elevation, and cross-sectional
Continued on page 122

Automated Catalog Summary

Some vendors will send catalogs (disks and manuals) free to qualified professionals.

Andersen Windows, Commercial Group, 100 Fourth Avenue North, Bayport, Minn. 55003-9989, 612/439-5150. **Circle number 306**

Electronic Product Information Corp., 545 Mainstream Dr., Suite 430, Nashville, Tenn. 37228, 615/734-1500; fax 615/734-1514. **Circle number 307**

Marvin Windows & Doors, P.O. Box 100, Warroad, Minn. 56763, 800/346-5128, fax 612-452-3074. **Circle number 308**

Pella (Rolscreen Company), 102 Main St., Pella, Iowa 50219-9988, 515/628-1000, fax 515/628-6070. **Circle number 309**

Sweet's Electronic Publishing, 99 Monroe Ave. N. W., Suite 400, Grand Rapids, Mich. 49503-2651, 616/454-0000, fax 616/454-4140. **Circle number 310** ■

Tearing Down the Temple: The New Civic Architecture

By Aaron Betsky

Tilt-up concrete slabs, rough timber, galvanized metal roofs, large porches, and biomorphic forms are not elements we usually associate with civic architecture. Yet in the Southwestern states, a group of architects is creating community centers, libraries, and other institutions that elevate the ramshackle rather than bury it with marble.

Designers such as Rob Wellington Quigley, Antoine Predock, Rebecca Binder, Koning/Eizenberg, and William Bruder have evolved a new way of creating such buildings to convey a sense of community instead of imposing an alien style for the "good of the community."

We tend to think that our civic structures can act as the repository for the values of a community only by distancing themselves from the slang of everyday buildings. From the Ecole des Beaux-Arts we learned to see architecture as the embodiment of the state, as something intentionally foreign to everyday life. To be recognizable as monuments, the institutions of state have traditionally sought to embody enduring values, usually by wrapping themselves with strong materials such as marble and borrowing elements based on the architecture of the ancients. These buildings tend to have a memorial or "dead" quality, to be bigger than life, to be perfect in ways people never can be.

Scale, legibility, and context

Though we may question such grand tactics today, certain common-sense rules underlie this tradition. "It's a question of scale, legibility, and context," points out architect Rebecca Binder, describing her own recently completed Visual Arts Facility for the University of California at San Diego.

In other words, to establish a civic presence, a building has to be large enough so it won't be swallowed up either by its site or context. At the same time, it has to be recognizable as a place of importance and as a design that embodies its physical and social community. These three issues are at the heart of all civic architecture and can be seen in stripped-down forms in the work of the architects shown in this article.

Forsaking marble for stucco and wood, many Southwestern architects are designing civic buildings that are tied more to the landscape than to Classical traditions.

While the "style" or way of working varies from one architect to another, each of those featured here has dropped what Binder calls "a great deal of monumental baggage that doesn't seem to work anymore," and replaced it with amenities that do. In her own work, that has meant adding large and gestural porches, following local building practices, and echoing forms familiar to surrounding communities.

"It is a question of making something noble rather than grand," she says. To do that, Binder has used overscaled wood members that create shade structures and the elongated proportions of simple stucco forms.

As Rob Quigley puts it, "I use the patterns of the community. Esthetics is only a mechanism to get at the essence of the issues." He does this by designing in a participatory workshop format, thereby doing "an end run around all of the representatives and review boards." Quigley explains, "When you work directly with the people in the community who are actually going to use a building and listen to their needs, you get your design freedom back in spades. By using vernacular building practices, I can draw on a trove of knowledge that makes things a lot easier." It then allows him to use "what little money is left in budgets these days to make a few moves against the institutional character of most of these buildings."

Such "moves" often take the form of outdoor spaces that are highlighted more than the strict programmatic elements. For example, a community-services facility Quigley designed for a Hispanic neighborhood just east of downtown San Diego seems bigger than it really is thanks to ample outdoor spaces and the pergolas that make them the true meeting rooms of the small building. As Quigley explains, it is "both residential and bigger than that." Not only are such add-on structures cheap to construct and heavily used, but, as Binder points out, "nobody is going to object to making courtyards and gardens."

Moreover, this new breed of civic space celebrates what we often think of as the tacky construction of many of our cities, "by getting into it instead of going beyond it,"

says Quigley. While cheap and easy to build, this new kind of civic architecture also follows the Modernist tradition of stripping the forms of the past to their bare essentials.

The simplest act of this new generation of civic design is to open up a space within the confusion of commercial-strip development. "We argue for an architecture that is based on common sense and celebrates the landscape," is how Elizabeth Moule, of the Los Angeles firm Moule/Polyzoides, puts it rather grandly.

Distrust of government and architects

Yet one can also take a more cynical view of this whole process. Civic architecture doesn't have columns anymore because nobody wants to pay for them. Architecture in general, and civic architecture in particular, is expensive to build and difficult to justify in an era when just keeping people fed, sheltered, and healthy takes up more resources than we are able to muster. Moreover, most citizens distrust both their own government and paid professionals as wasteful and out-of-touch.

"People want things that are inconspicuous and harmless," says Julie Eizenberg of Koning/Eizenberg Architects. "They distrust architects' visions." She points out that recent experience with communities using facilities designed by her firm show that people are concerned about security, low maintenance, and low visibility. "They don't want what they see as frills."

As a result, Eizenberg says "we often push our designs toward invisibility or sweetness, which means to the edge of credibility." Many times "there simply isn't any money in the budgets" to do anything that might be associated with traditional monumental building practices. So she and her partner, Hank Koning, use the typology of available building materials—creating civic buildings out of stucco and off-the-shelf materials, while using voids, courtyards, and drop-off areas to accommodate the true civic life of the facilities.

Critic and designer Reed Kroloff has watched the same process at work as Phoenix "has tried to buy itself in one decade all

The projects shown below all use inexpensive materials and elements to reach out to adjacent outdoor spaces: Rebecca Binder's Visual Arts Facility at U. C. San Diego (1), Koning/Eizenberg's Ken Ed-

wards Center for Community Services in Santa Monica (2), Binder's ICS/Engineering Research Facility at U. C. Irvine (3), Rob Quigley's Linda Vista Library (4), and Quigley's Escondido Transit Center (5).

the civic buildings a real city is supposed to have." The original plan for its new city hall, designed by Barton Myers in 1989, was a Postmodern version of a grand civic structure. Now under construction (after numerous political and economic battles) is Langdon Wilson's version, which Kroloff describes as "a Modernist box with a funny screen that responds to our climate and not much more."

Kroloff says, "The real problem is that we have a transient culture, both in terms of values and population, so you can't really fix anything. To most people civic structure means whatever helps you get to the shopping mall more quickly."

What Kroloff sees as an appropriate civic architecture is one that connects people to the underlying forces shaping a particular place—forces that often are obscured by recent urban development—while at the same time accommodating the multifaceted needs of a modern community. A good example, says Kroloff, is Will Bruder's central library in Phoenix, currently under construction, which is "a big shed that reminds us of the city's history as an agricultural depot" and which uses its size to "connect us back to the landscape." On the inside, the building brings together all of the amenities of a modern library, "condensing current reality" in one place.

Two groundbreakers

Frank Gehry and Antoine Predock laid the groundwork for much of this new work. Gehry started in the 1960s by exploring the nature of construction and the imagery of the commercial strip, while Predock examined both the built and the natural landscape in his work. Both architects have developed an enigmatic architecture that these days show marked similarities. It is as if the swooping forms, inward-turned mountains of cascading skins, fractured geometries, and sculptural add-on gestures—whether in Gehry's Disney Concert Hall or Predock's Arizona State University Arts Center—are celebrating and mourning the loss of a legible civic language.

The architects just after Gehry and Predock reject (or don't have the budgets for) this



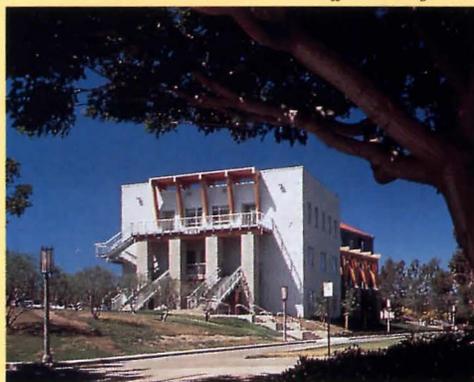
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© Jeff Goldberg/Esto



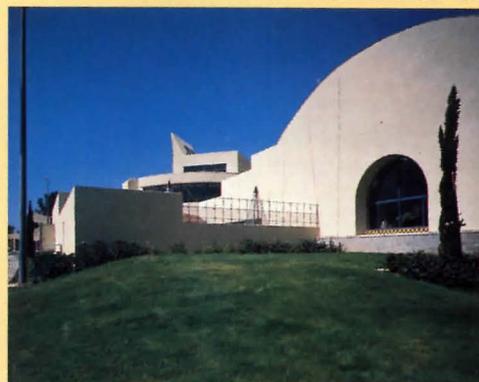
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© Tim Street Porter



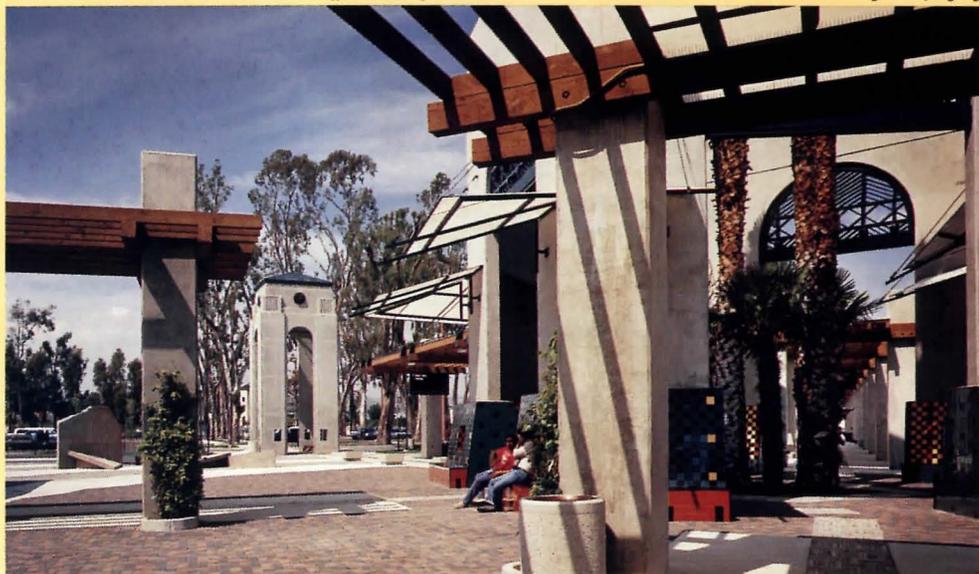
3

© Jeff Goldberg/Esto



4

Rob Wellington Quigley



5

© David Hewitt/Anne Garrison

kind of profound meditation. For them, the task of making a civic architecture in the mobile society of the Southwest revolves around creating structures that mine the building vernacular and carve out spaces that reconnect us with the landscape. They create small moments of coherence and connection within the always changing confusion of urban sprawl. Along the way, these buildings bypass the notion of a common language, a layer of civic agreement that we usually associate with a stable society.

This point is stressed by Craig Hodgetts, partner in Hodgetts and Fung Design Associates, who says, "There was this time when we thought we could bring everyone together by using a Spanish Colonial style, one that appealed to both Anglos and Hispanics. But architects lost the lifestyle in the process of making it a style. They lost the courtyards, the thick walls that sheltered,

the sense of romantic oases. It all became meaningless decoration. We need spaces that empower people rather than overpower them."

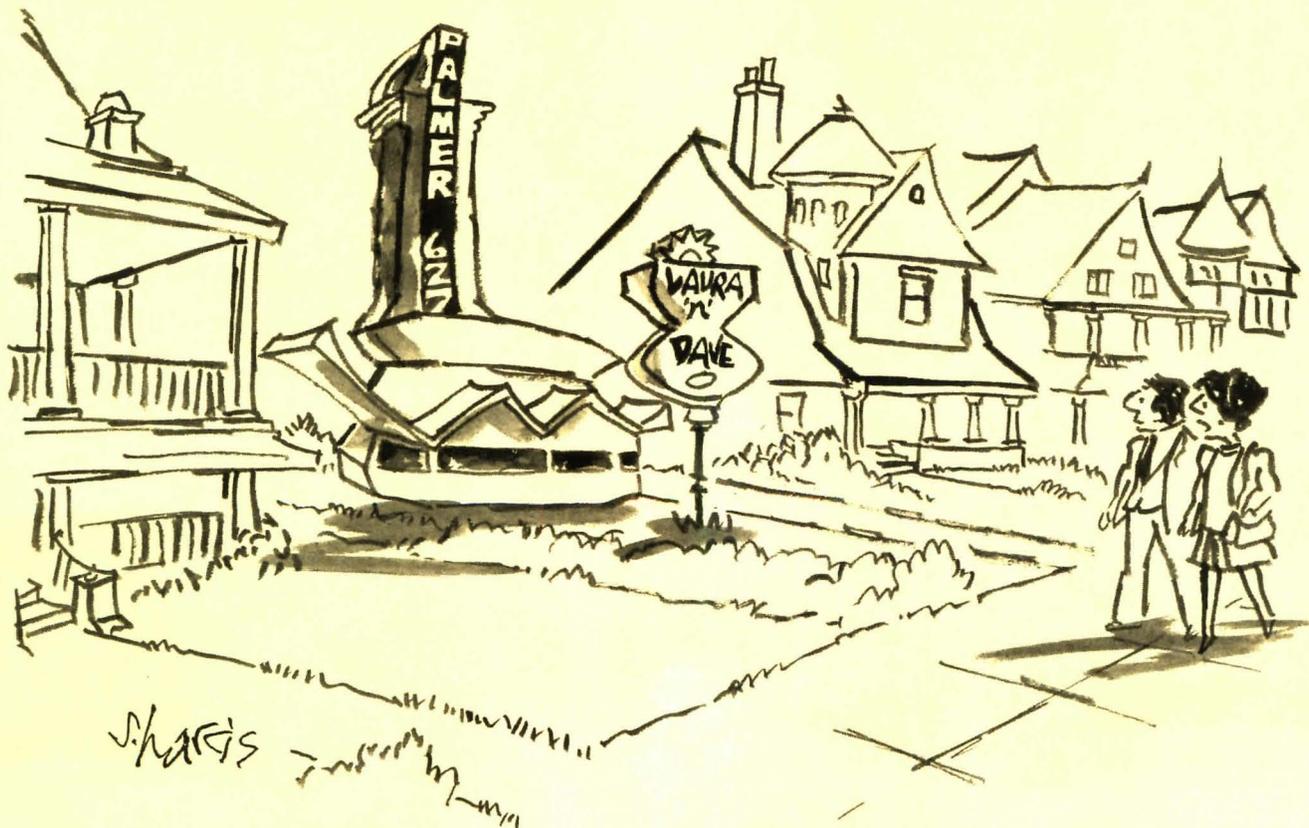
To do that, Southwestern architects have taken two different approaches—either searching for common ground in the abstractions of Modernism and the presence of the landscape or accepting the provisional nature of construction and celebrating the freedom this offers us. The first approach can be seen in the work of Koning/Eizenberg, Bruder, and Predock, and connects us to a sense of place. The second is evident in the architecture of Binder, Quigley, and Gehry, and focuses more directly on buildings and the building process.

Traditionally, cities were places where people came together to create a *civitas* with a common language, a common place, and a common architecture. Today we live in col-

lage cities of different cultures, different languages, and different structures. Their coherence is hidden, unstated, and perhaps only implicit. "We are building new communities today, but they are out there in the 'edge cities' and we need to figure out their nature, not impose some architectural style or idea of propriety on them," says Richard Stacy, a principal of Tanner Leddy Maytum Stacy Architects in San Francisco.

In many ways, society is infrastructure—both the physical systems, such as roads and fiber-optic cables, that connect us to each other, and the historical bonds that tie us to a particular place. As Stacy explains, "If society is an infrastructure, then the work of architecture is to reveal it, bring people into contact with it, make a place out of it." Civic architecture is thus not a question of imposing a style on a community; it is a question of exploring the hidden elements that form a community in the first place. ■

Drawn for ARCHITECTURAL RECORD by Sidney Harris



I understand they're in the fast-food business.

In This Issue

This is an issue of monuments—large and small—each a repository of aspirations. The 1,522-acre Alameda Naval Air Station, the subject of Building Types Study 710 (page 96), is, for now, a monument to a system of defense made obsolete by events. But, as the architects—asked by RECORD to sketch proposals for Alameda’s return to civilian life—point out, its closure gives planners and area residents the opportunity to develop the base into a new extension of the community. Norman Foster’s Carré d’Art in Nîmes, France (page 62) and Rafael Moneo’s Davis Museum at Wellesley College (page 84)—at first glance aloof monuments—are each side-by-side with other architectural masterworks (the Roman temple in Nîmes and the important early work by Paul Rudolph at Wellesley). The new pairings form cultural centerpieces. Though ancient Korean fortresses inspired Tai Soo Kim’s design of a corporate-training facility outside Seoul (page 72), his incorporation of a steep hill and native materials tie his building to its site and local culture. On a smaller scale, Susan Reatig’s church in Washington, D. C. (page 78) is a monument to community commitment, while Hodgetts & Fung’s offices for Click & Flick (page 92), a West Hollywood model/talent agency, is an appropriately theatrical collage of that city’s architecture. This month’s Technology Focus (page 108) reports on strategies for thin veneer or “dumb” walls, which, neither mindless nor mute, resolve a complex technical problem and present an appropriate public face. Ultimately, a true monument is not measured by presence alone, but by its ability to mirror community values. *K. D. S.*

*Manufacturers’ Sources
listed on page 135*

Mediterranean Light



*In Nîmes, France, Sir Norman Foster
holds a memorable conversation
with the classical.*

*Carré d'Art
Nîmes, France
Sir Norman Foster and Partners,
Architect*



English architects have always shown a special fondness for the classical tradition of the Mediterranean, and Sir Norman Foster is no exception. His Carré d'Art in Nîmes, France, a public library and contemporary art museum, engages in a lyrical dialogue with both the adjacent Maison Carrée, a Roman temple from the First Century, A. D., and the region's Mediterranean climate.

Foster was chosen to design the Carré d'Art in a 1984 competition among 12 top architects, including Frank Gehry, Richard Meier, Arata Isozaki, Aldo Rossi, Jean Nouvel, and others. After the competition, Foster characteristically prepared models of 10 different designs before settling on what Foster associate Tim Quick calls "the calmest" of the group: an open, light-filled pavilion of glass walls and slender concrete columns. The building took nearly 10 years to complete, as the city gathered funding and support.

In keeping with the scale of surrounding buildings, half of the structure is underground, "like a ship," says Foster, while the top floor's galleries rise well above the apparent cornice. Four levels of library and museum storage plus two public libraries, including the main reading room, are below grade. A vertiginous, six-story atrium admits daylight into the lowest public levels. It is criss-crossed by open, cantilevered glass-treaded stairs, which soar in dizzying spans from one end of the void to the other, while glass-enclosed elevators rise and fall from various levels.

The building's other dramatic moment comes in its urban setting, as the building addresses itself to the city and the Roman temple. Foster considered the entire plaza around the Maison Carrée as part of his brief, trading the cars which parked there for new outdoor cafés, and repaving the space in the local limestone, of which the temple and much of the city is built. Like the Maison Carrée, Foster's building stands on a stepped limestone plinth, behind a generous portico. The building entrance is located on a corner, in a play of solids and voids which matches the proportions of the side elevation of the Maison Carrée. Under its louvered eaves, the metal portico shelters the projecting volume of the main reading room, which is crowned by a café-terrace with views over the city rooftops, an irresistible terminus for the visitors' spiraling, upward path through the structure.

The experience of entering the building, "bridging" the reading room and passing into the multi-level lobby at the foot of the broad glass stairs, is like penetrating a series of interlocking, transparent volumes whose spatial complexity recalls the best work of Foster's teacher, Paul Rudolph. Diagonal movement toward the corner entry at the back of the building is also encouraged by the plan, a subtle reflection of the diagonal avenues at the front and back corners of the site. According to Tim Quick, the Carré d'Art was not conceived as a high-tech job, in keeping with the city's goal to promote local industries, although details such as the raised limestone floors are typical of Foster's past work.

Throughout the building, sun-control louvers are fixed, except for operable louvers over gallery skylights. The exterior envelope uses conventional thermal-pane glass, framed by concrete columns to match the engaged columns of the Maison Carrée. Much of the glass is silkscreened white, to screen the walls of galleries and services, an illusion difficult to detect in the brilliantly reflected Nîmois light.

Not without a little sleight-of-hand, Sir Norman Foster's Carré d'Art is conceived with consummate lucidity and brilliance, a rival worthy of any of his more technically precocious designs. *David Cohn*

Up Close

A campaign for culture. Nîmes Mayor Jean Bousquet, an independent businessman elected in 1983, conceived the Carré d'Art as part of an economic-cultural stimulus package that has also included subsidized housing by Jean Nouvel, a stadium by Vittorio Gregotti, a rather disappointing plaza by Philippe Starck, and art installations in public spaces. Foster's Nîmes office and other architects are currently preparing various special plans for the future growth of the town. Foster has projected a pair of development axes that extend into the countryside from the ancient springs of the Jardin de la Fontaine at the city's center. The city initiatives have been aided by the French Ministry of Culture, and a state decentralization program. The Carré d'Art is clearly the star of this effort, inspired by the Centre Georges Pompidou and the upcoming National Library in Paris. Replacing a 19th-century opera house that burned in 1952, the Carré d'Art faithfully reflects the evolution of public urban life from the Roman forum to our day. Bousquet's advisor on the project, local art collector Dr. Robert Calle, has organized the art museum from scratch, introducing contemporary art to the Nîmois in 60 exhibitions since 1985 and laying the groundwork for a permanent collection.

© Richard Bryant photos

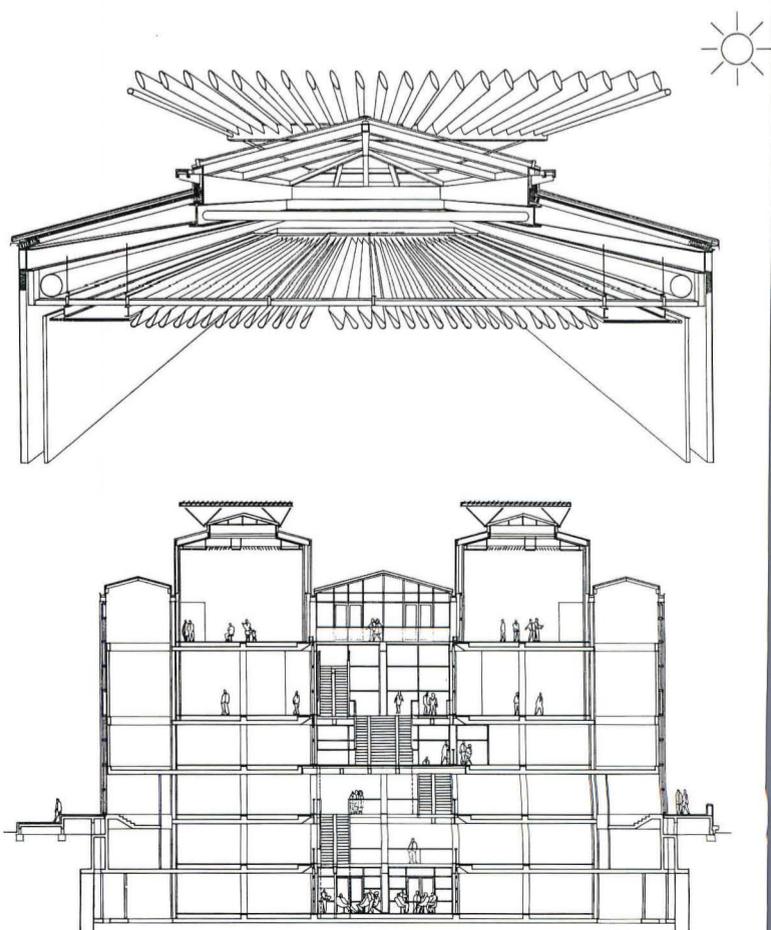


The Maison Carrée stands between two other Roman monuments, an arena still used for bullfights and the ruined Temple of Diana in the Jardin de la Fontaine (above). The plaza around the temple was repaved, tracing the Roman forum which once surrounded it. The facade of the new building matches the proportions of the temple, its glass skin echoing the play of horizontal and vertical divisions. The louvered portico shades the library's main reading room and a rooftop café.





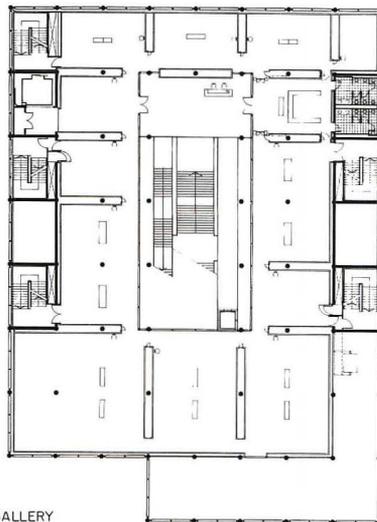
The atrium drops six stories to light underground levels. From the lobby (bottom left), a glass-treaded stair rises to the museum (top left), amid secondary stairs and bridges (opposite). Recessed stringers, cantilevered from columns or spanning the space, support the stairs. The open entry level is a rich weave of space and light (above). The gallery skylights filter sunlight via mechanized louvers above the glass and adjustable diffusing vanes (drawing below). Light fixtures are attached directly to interior vanes.



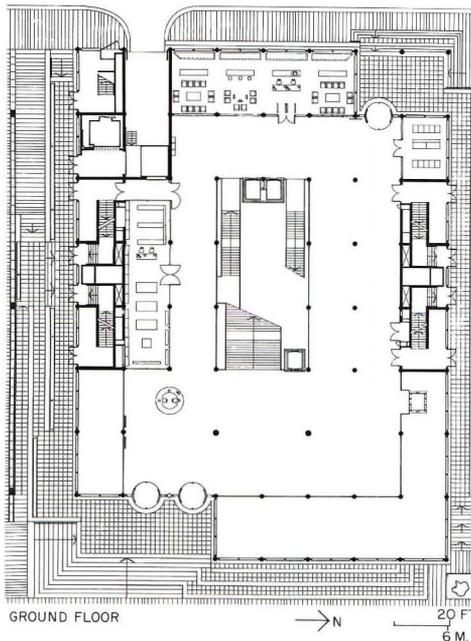




UPPER MEDIATHEQUE



LOWER GALLERY



GROUND FLOOR



As in many of Foster's buildings, the services and emergency stairs are pushed to the two long sides of the plan. As the principal point of interior reference, the atrium mixes rather than separates the building's diverse functions. Sections of the 5 by 7 structural grid are selectively "erased" to create larger volumes.

The cafe under the lowered portico (1) has views over the rooftops of Nîmes. Stairs (2) meet at a mezzanine-level bridge connecting to museum offices and the children's library. The glass walls of the first museum floor (3), home to the permanent collection, overlook the atrium. One of the top-floor galleries (4), which is dedicated to temporary exhibitions and sized for extra-large works, is supplied by air brought up from the floor through the walls. Other mechanical services are hidden above the diffuser vanes of the skylight.

Opposite, the multi-story lobby overlooks the grand L-shaped volume of the reading room, with furniture by Norman and Sibha Foster. Air-supply grilles punctuate the raised limestone floor.

Credits

Carré d'Art (library and contemporary art museum) Nîmes, France
Owner: City of Nîmes; Jean Bousquet, Mayor
Architect: Sir Norman Foster and Partners, Architect—Sir Norman Foster, principal-in-charge; Jean Pierre Genevois, Alex Gounaris, project team
Consultants: Ove Arup and Partners; OTH Marseilles (structural); OTH Mechanical (mechanical); Claude and Danielle Engel (lighting); Optime (acoustical); Thorne Wheatley (quantity surveyor)



This sprawling employee-training facility, designed by Hartford, Connecticut-based Tai Soo Kim Partners for the KyoBo Insurance Co., reveals itself slowly to those driving along the area's winding roads. Only when the road swings around to the rear of the site does the building come into full view—a sinuous brick-faced structure with a 105-foot (32-meter)-wide rectangular opening punched through to the other side. Before checking in, guests can walk through the opening and onto a 50-foot (15-meter)-deep terrace paved in local pink granite and commanding a view of a small lake and the valley below. “I wanted the entry to come as a surprise,” says Tai Soo Kim, “and to provide a feeling of exhilaration.”

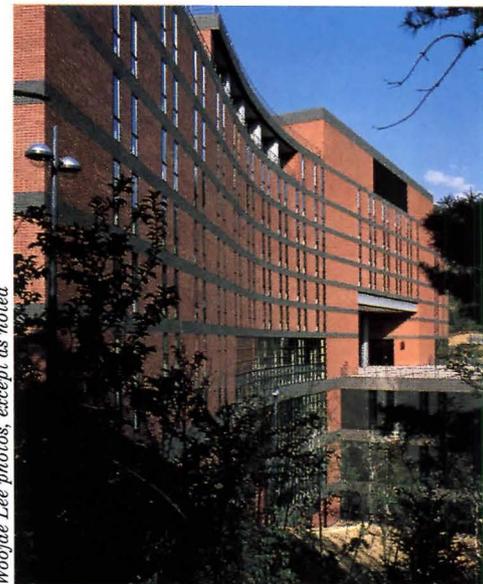
The dramatic entrée to this 300,000-square-foot (28,000-sq-m) facility is the first sign that it is not one of those military-style compounds set on a sheared-off mountaintop and filled with enthusiastically shouting “salarymen” that typifies the employee training-center genre. Instead, says Kim, KyoBo's chairman “sought to create a retreat on this steep mountainside” for his 50,000-strong sales force—which is up to 70 percent female and would train in five-day rotations of 600. “He wanted to let his salespeople come and relax and enjoy a beautiful setting while they train,” notes the Korean-born architect.

To minimize the building's bulk and link it as closely as possible to its site, Kim fit the center's two major components neatly into the terrain. The main building, clad in a deep red brick meant to recall traditional Korean fortifications, curves in a serpentine wall that follows the contours of the mountain. Bands of gray brick delineate the dormitory floors and tie together a facade composition interrupted by vertical rows of floor-to-ceiling windows. While much of the building serves as housing—most rooms are double-occupancy, with some four-person accommodations—the ground and lower levels contain lounges, cafeterias, and administrative areas. Openings along the top level of the dormitory express an executive banquet hall, which is served by a nearby kitchen, one of three in the training complex.

Cutting through the dormitory, the entry-level platform moves through the building and cascades down the mountainside in a series of four darkly glazed projections that house a lounge, cafeteria, study areas, and gymnasium. The steeply terraced projections are accessed indoors by a grand stair running down the middle. In the main building, glass wings enclosing corridors and lounges also look out to the south and the valley below. On the north side of the building, the architects tucked a 450-seat auditorium beneath the main driveway.

Building the concrete-frame complex on its rugged site 50 miles (80 km) south of Seoul made for what Kim calls “tough construction.” The architect explains “we had to erect a special crane in the middle of the site and build from the bottom up, then dismantle the crane and finish construction.” Kim used mostly native materials, including the exterior brick, which is carried through to the stripped-down interior spaces.

“The chairman is very proud,” says Kim. “He shows the center to lots of other companies to prove that you can build a training center that's not a military camp.” *Peter D. Slatin*

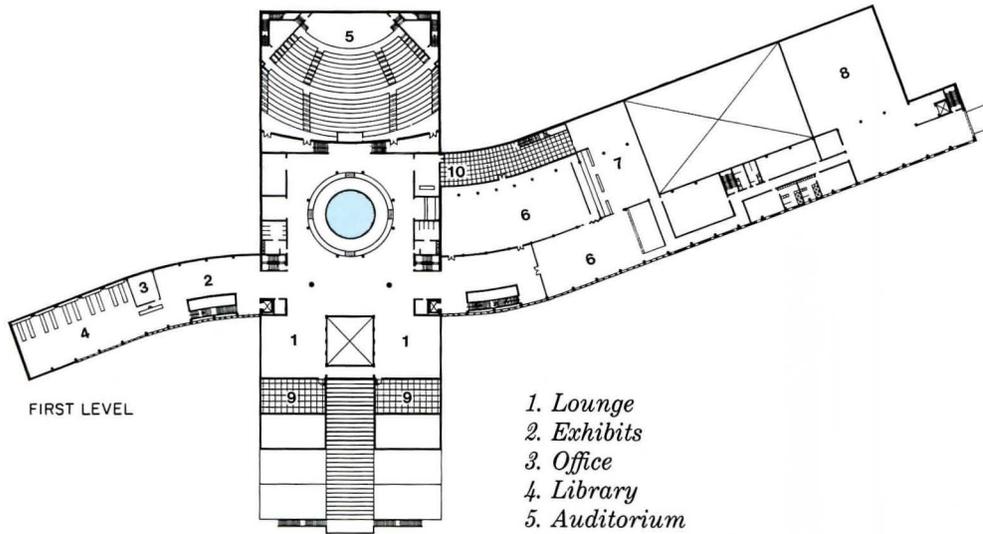


Woojae Lee photos, except as noted



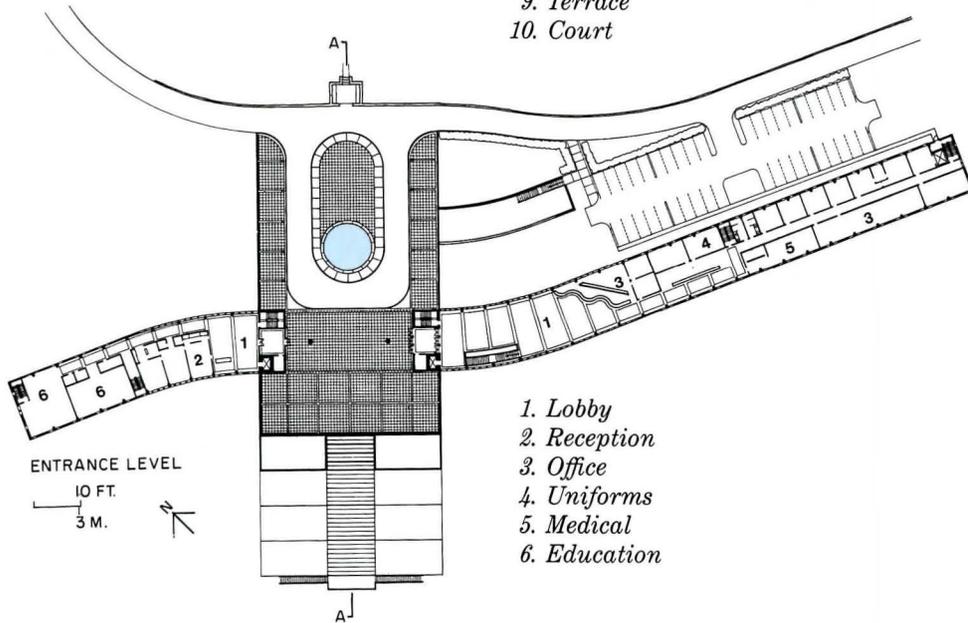
A through-building gateway (above) leads from the front of the building on the north (opposite top) to a broad south terrace overlooking the valley. The stepped terraces projecting from the south facade (opposite top and bottom) house a lounge, cafeteria, classrooms, and gymnasium, and are flanked by long, glassed-in corridors in the main building.





FIRST LEVEL

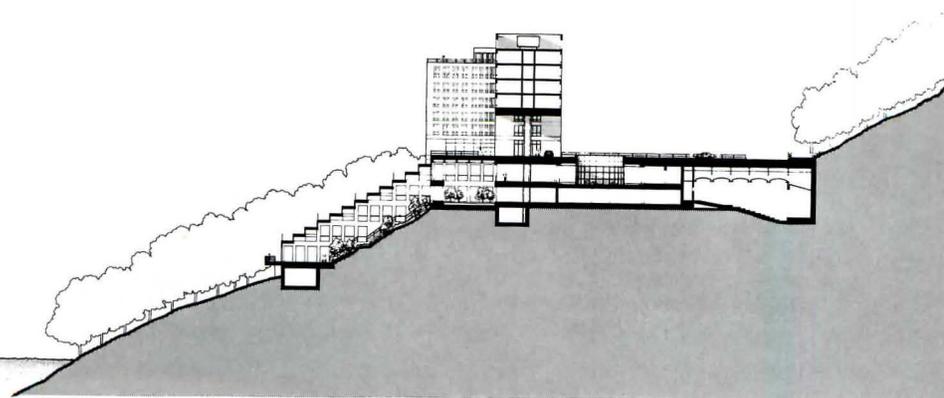
1. Lounge
2. Exhibits
3. Office
4. Library
5. Auditorium
6. Restaurant
7. Kitchen
8. Storage
9. Terrace
10. Court



ENTRANCE LEVEL

10 FT.
3 M.

1. Lobby
2. Reception
3. Office
4. Uniforms
5. Medical
6. Education



SECTION A-A

10 FT.
3 M.



Public spaces, such as the main lobby (opposite top) and the cafeteria (opposite bottom) were kept simple to handle large numbers of people and to highlight mountain scenery visible through broad expanses of windows. Furnished only with straw mats, the meditation room (above) is the one space with a clearly Asian feeling. Although the building is 300,000 sq ft (28,000 sq m), its serpentine plan (left) and siting up against a mountain (section left) help reduce its apparent mass. Visitors enter at a middle level, with four floors of classrooms, lounges, dining areas, and common spaces below, and six floors of housing above. On the main level, administrative functions are on the west, while the lobby and reception area are on the east. A 450-seat auditorium is one story down.

Credits

*KyoBo Training Center
Chun An, South Korea*

Owner: Daehan Kyoyuk Insurance Co.

Architect: Tai Soo Kim Partners—Tai Soo Kim, chief architect

Associate Architect: Shim Wan Associates

Engineers: Saen Structural Engineering Co. (structural); Sanshin Inc. Engineering Co. (mechanical); Moon Y. H. Electrical Planning Co. (electrical)

Landscape Architect: Daewoo Engineering Co.

General Contractor: Daewoo Construction Co.

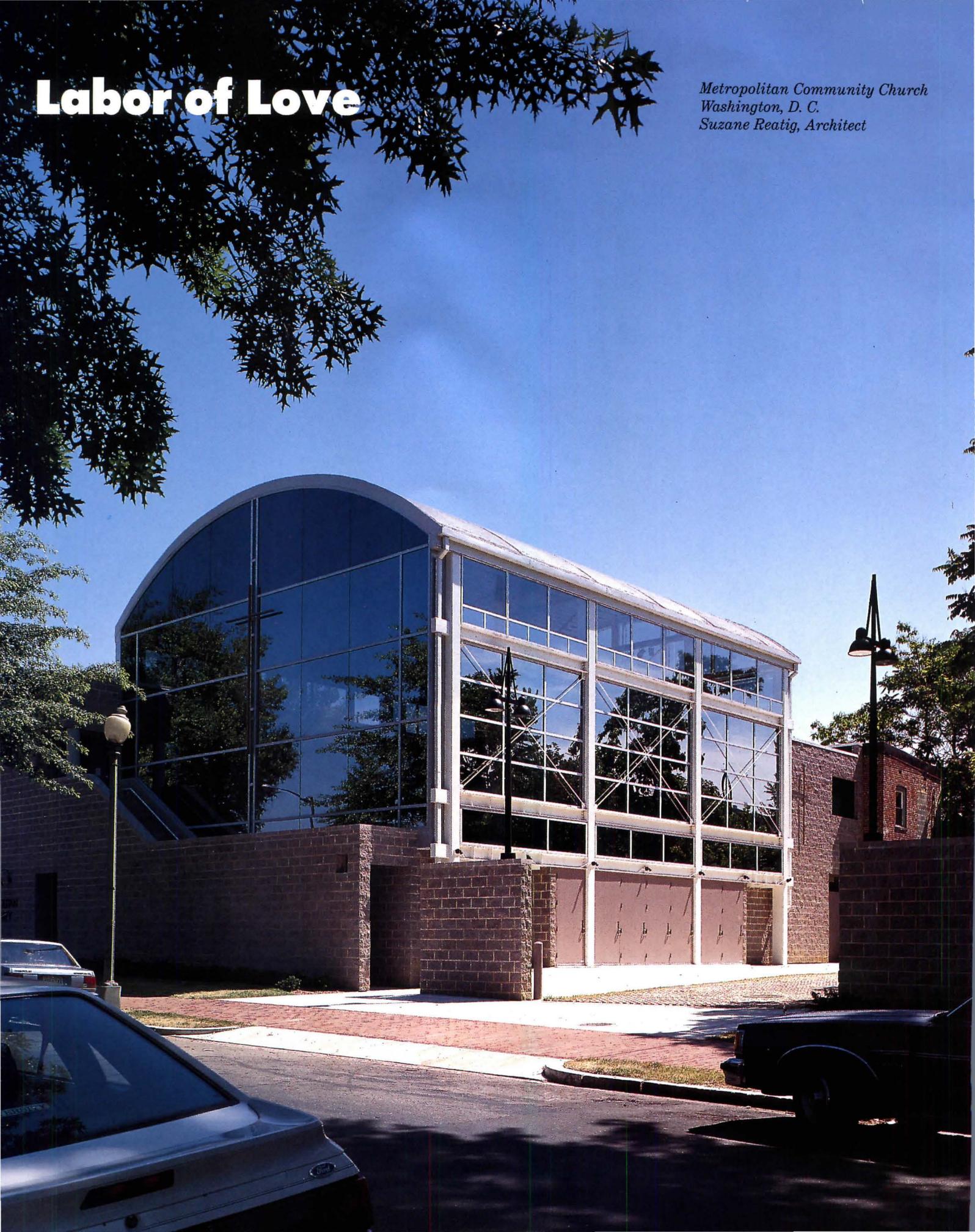


Tai Soo Kim photos this page and opposite



Labor of Love

*Metropolitan Community Church
Washington, D. C.
Suzane Reatig, Architect*



The Universal Fellowship of Metropolitan Community Churches has a hundred-year-old history of compassionate service. This recent church brims with openness, light, and hope, extending the MCC's tradition into the context of the 1990s and serving its mostly gay and lesbian congregation that draws its members from all over the Washington, D. C., region.

This church is the brainchild of a progressive board, two pastors (Larry Uhrig and Candace Shultis), and a persevering architect, Suzane Reatig, a young practitioner trained in Israel. Without her four-year commitment to the project, innovative methods for getting the most building out of restrictive zoning, and rigorous marketing, the structure might never have been built (see *Up Close*).

The ostensible program called for a sanctuary to accommodate a congregation of 300, with overflow space in a walled yard also used for staff parking. The real, if unwritten, program demanded a sanctuary that was open, congenial, acoustically suited for a highly music-oriented service, one that encouraged fellowship and recognized the nature of its members, whose AIDS-occasioned mortality rate has hovered like a pall over all its work and worship.

Limited by a \$1.2-million budget for 13,400 square feet of space, Reatig decided to eschew decoration and to use a spare vocabulary of steel, aluminum, and glass, with a counterpoint of light-red concrete block, to obtain an atmosphere of lightness, clarity, awareness of the passing sun (the main glass areas face west and south), and of the panorama of sky, clouds, trees, and flying birds in view from every seat. Four steel bowstring trusses 16 feet on center support a steel deck in the form of a shallow vault, which due to a clever use of glazing of different degrees of reflectivity, extends the appearance of the vault to twice its real length at certain times of the day (see photo, top right, page 81). But as a focus, a stretch of clear glass behind the altar spells out a cross, a simple but highly creative way of using technology for symbolic use.

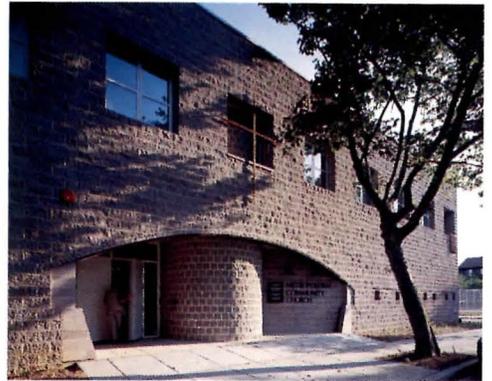
Since all other ornament had to be derived from the materials themselves, connecting details were worked out with great care, especially at the points where the turnbuckle bracing connects with the steel support columns (Reatig had wanted costlier tube columns but had to settle for the cheaper flanged H-columns), and in the connections between steel structure and split-block masonry.

The plan itself (two stories and a basement, the maximum allowed by zoning) is a classic example of Louis Kahn's served-and-service spaces, with an L-shaped server-space of offices, library, and circulation functions embracing the nearly square sanctuary.

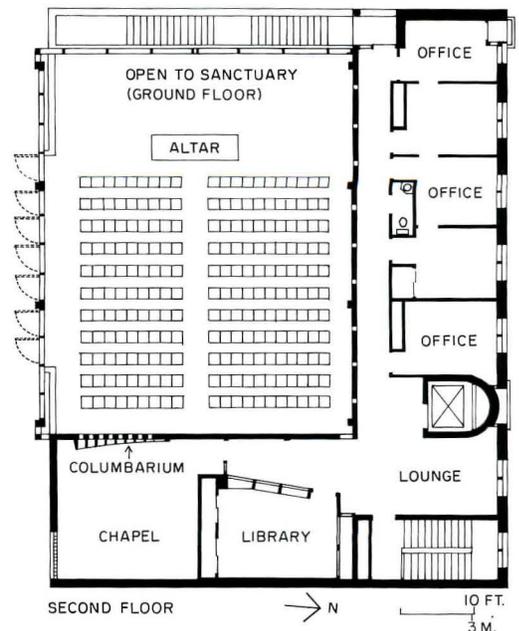
It is only in the heavy-set street-level entrance that Reatig's sure touch with materials stumbles. The shallow archway spanning the curved exterior elevator shaft is awkward, and the entrance is mean. In truth, on a warm sunny day, the side doors on the stone-block-paved parking side are thrown open as a grand welcoming gesture.

The building is a hit with the congregation, architects, and students. A group of visiting students told Reatig that this was "the first modern building in Washington." Because of the play of light, one member says that "every time I come to the church, it's like I saw it for the first time." And best of all, a worshipper told Reatig on the day of dedication: "Thank you. This building is us."

Stephen A. Kliment



MCC is sited in a tree-lined residential neighborhood near downtown Washington (top). The principal entrance (above) is split-face unit masonry. The upper-level plan (below) shows a Kahn-inspired scheme of server-and-served spaces, with server spaces in the L embracing the almost square 300-seat sanctuary. A row of doors on the south side of the sanctuary leads to a small parking lot paved with 3-inch-square blocks separated by thin grass strips, used on clear days as an extension of the sanctuary.





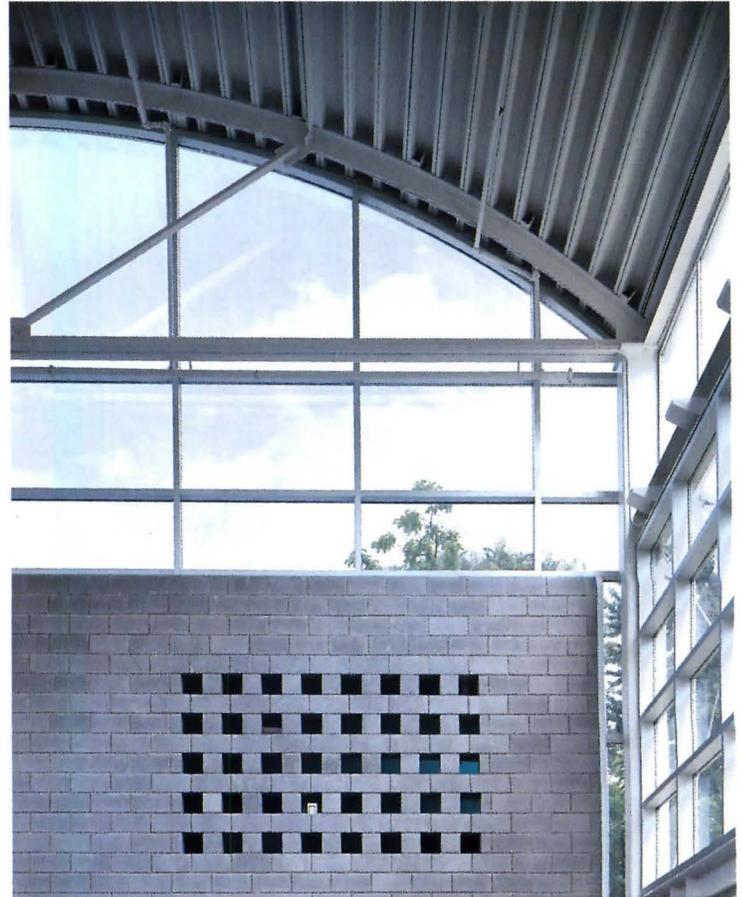
Up Close

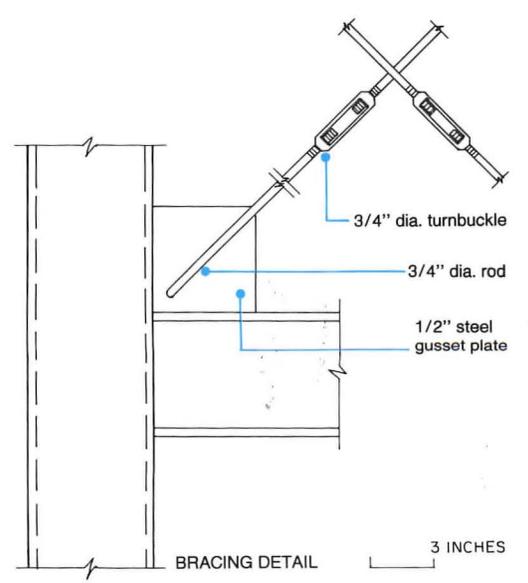
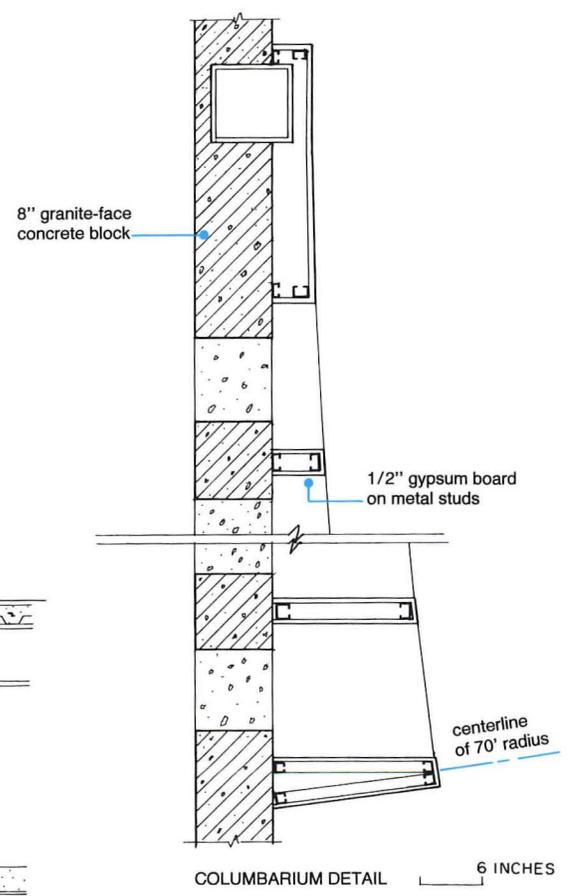
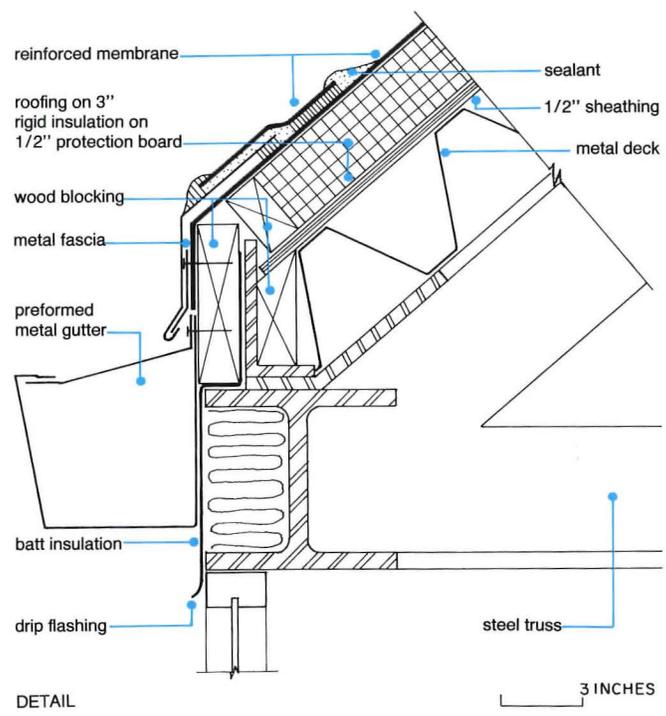
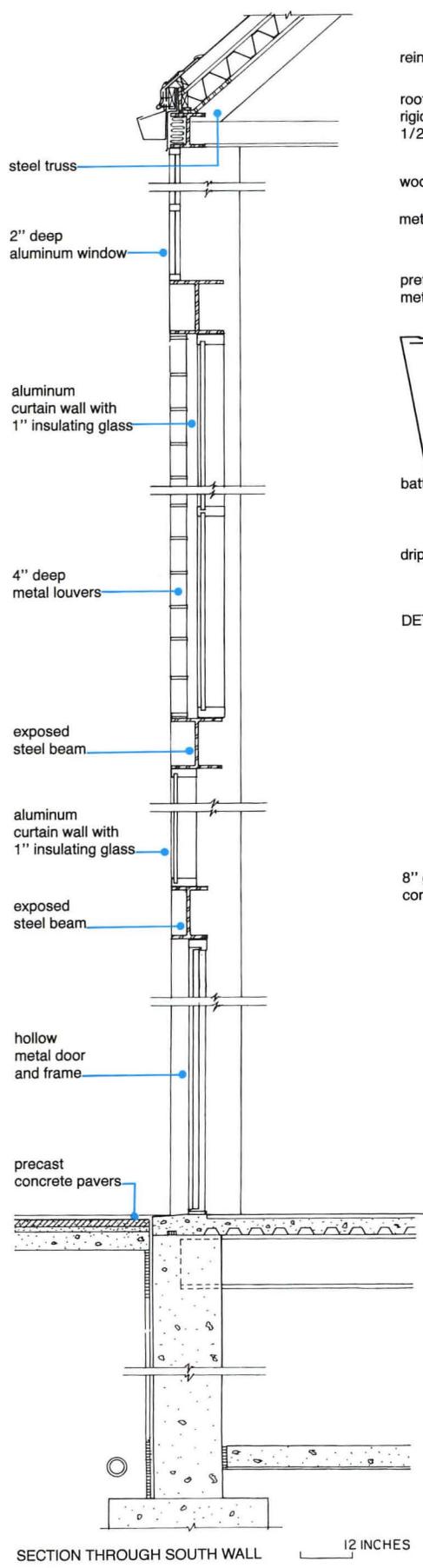
From vision to occupancy. Architect Reatig, who arrived from Israel in 1975 and worked for several architects around Washington, was introduced to MCC's selection committee by an associate who was a member. As the committee already had four proposals, and Reatig had never done even a multiple assembly building let alone a place of worship, she was an unlikely choice. She did, however, have unconventional ideas, chemistry, and enthusiasm. Yet, even after her selection, it wasn't all smooth sailing. Pastor Uhrig had very traditional ideas of what a church should be—a dark space that allowed control through lighting, stained glass to add atmosphere, and a formal seating arrangement with a nave leading to a raised altar. Reatig was able to overcome these preconceptions and carry out her vision. MCC received added value from Reatig's services. For example, by convincing the building department that the cars-to-seats ratio should be calculated on the basis of actual seating area, not total area, parking was reduced to 15 spaces from 30, which would have eaten up half the site. She spent over half her fee on daily field visits to make on-site decisions about such details as floor-tile patterns and placement of cabling to preserve the pristine design.



Light pours into the glassed-in sanctuary during a service (opposite). Lighting varies dramatically at different times of the day (right). The columbarium (above) opens out over the sanctuary, a deliberate gesture, as Reatig puts it, to have deceased members of the congregation take part in services.







The structural system consists of 40-foot bowstring trusses 16 feet on center, resting on wide-flange columns. The enclosure is a glass and aluminum curtain wall, with glazing in various degrees of reflectivity. The turnbuckle cross-bracing is echoed across the hall by a high-relief pattern of split block (opposite, bottom left). Lighting is a system of uplighting at the perimeter and downlights attached to the bottom chords of trusses. Sound is amplified, but a rather high reverberation time favors music over speech. The columbarium is built on a curve to accommodate varying sized urns (detail, left).

Credits
Owner: The Metropolitan Community Church of Washington, D. C.
Architect: Suzane Reatig Architecture
Engineer: McMullan & Associates (structural), Setty & Associates (mechanical), Macris, Hendricks P. A. (civil)
Consultant: Melinda Morison, lighting
General Contractor: Harvey Construction Company

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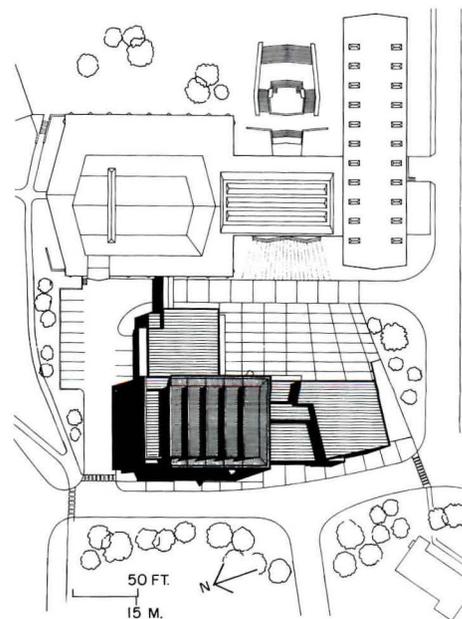
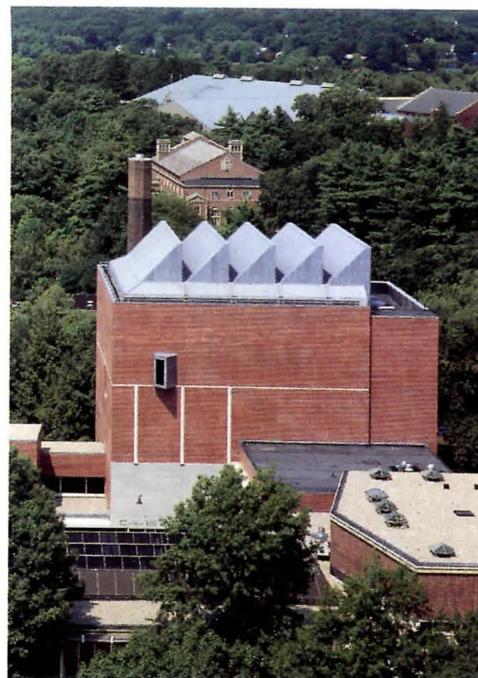
It entered on tiptoe," says Rafael Moneo, referring to the way he nestled the 61,000-square-foot Davis Museum and Cultural Center within Wellesley College's picturebook academe, complete with Gothic Revival main quadrangle and Frederick Law Olmsted landscape. Despite a quiet entrance, the building commands attention. Its cube of galleries dominates a hilltop site and taut facades of steel-reinforced brick and sand-blasted concrete frame an austere courtyard that might have inspired painter Giorgio de Chirico (previous pages). The Davis Museum is not only the Spanish architect's (and former chairman of Harvard's department of architecture) American debut, it is also Wellesley's first building devoted to displaying works from its impressive 5,000-piece permanent collection, previously on limited view next door in the 1958 Jewett Arts Center, an important early work of Paul Rudolph.

Yet Moneo's building is no upstart newcomer. In fact, Moneo configured Davis to continue the pedestrian thoroughfare of Rudolph's grand Italianate outdoor stair, which before culminated in a parking lot. Now the route extends beneath second-floor galleries, leading to a road looping the campus. This belated fulfillment of Rudolph's overall site strategy is only part of Moneo's homage to his American colleague. "I wanted to enhance the values of the Rudolph building," explains Moneo.

Toward that end, he stacked the galleries in the north corner of the site, placing a movie theater to the south and museum offices and study rooms to the east in lower volumes that reach toward Jewett. While Moneo's use of brick as principal cladding is in keeping with the Wellesley tradition, his choice of ruddy blocks arranged in a common bond pattern with unusually tight 1/4-inch-thick horizontal white mortar joints emphasizes Davis's squat density. Along the plaza, an unmuseum-like glass-and-steel storefront and band of office windows screened by a concrete canopy echo the narrow openings and sunshades of Jewett. Moneo conceived the plaza in between as a giant outdoor room that he lit from above by suspending fixtures from wires.

Inside, Moneo continues what Davis Museum director Susan Taylor refers to as the architect's "gentle nudge to accepted canons of museum design." A prominent central staircase is eschewed in favor of a hidden but still dramatic passageway: maple-clad walls line a narrow 5-foot opening. The effect of compression is offset by the gentle rise of 4- to 6-inch-high concrete risers (page 88). Together, the confined space, gradual slope, and modest materials demonstrate Moneo's contention that "neutral architecture doesn't prevent spatial complexity."

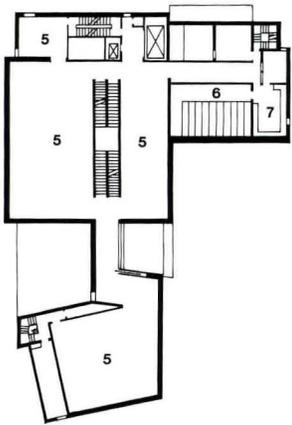
Galleries are overlapping spaces in plan and section, allowing visitors to move through areas devoted to specific artistic periods continuously aware of the range of the encyclopedic art collection on display elsewhere. "I don't like museums that force a specific itinerary," says Moneo. The architect paid particular attention to proportion—main galleries are roughly twice as long as they are wide—and to the detailing of surfaces—stainless-steel projecting edges atop power strips give drywall planes a crisp edge. But drama is not sacrificed for simplicity. From the moment you enter the second-floor gallery, you perceive interlocking spaces bathed in daylight and your eye is always drawn up 60 feet toward the five rows of clerestory windows that form a serrated, lead-coated copper crown. By the time visitors reach the top floor sculpture gallery (pages 90-91), there's no doubt that Moneo has realized his true intent: creating "a kingdom of light." *Karen D. Stein*



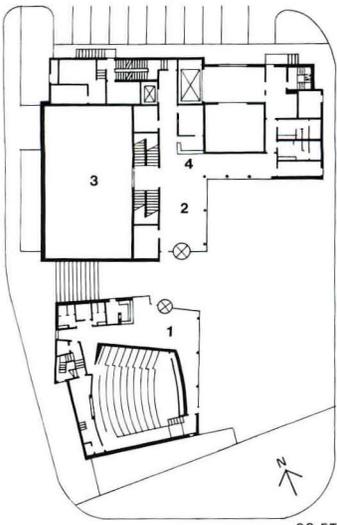
Moneo's museum is west of Paul Rudolph's Jewett Arts Center (site plan). Lead-coated copper-clad clerestories echo Jewett skylights (top and opposite), and a concrete plaza connects the buildings (above).



A compressed 5-foot-wide staircase links galleries (plans below and photos opposite and top right). Stairwell walls are clad in maple panels coated with polyurethane, giving the effect of perpetual sunlight. Concrete risers of 4- to 6-inch heights create a gently sloping promenade through the museum. Glass balconies overlook galleries (bottom right). Daylight is supplemented with fluorescent ambient lighting and incandescent spots; fluorescents are also grouped in "roll bars" mounted beneath clerestory windows.



SECOND FLOOR



FIRST FLOOR

20 FT.
6 M.

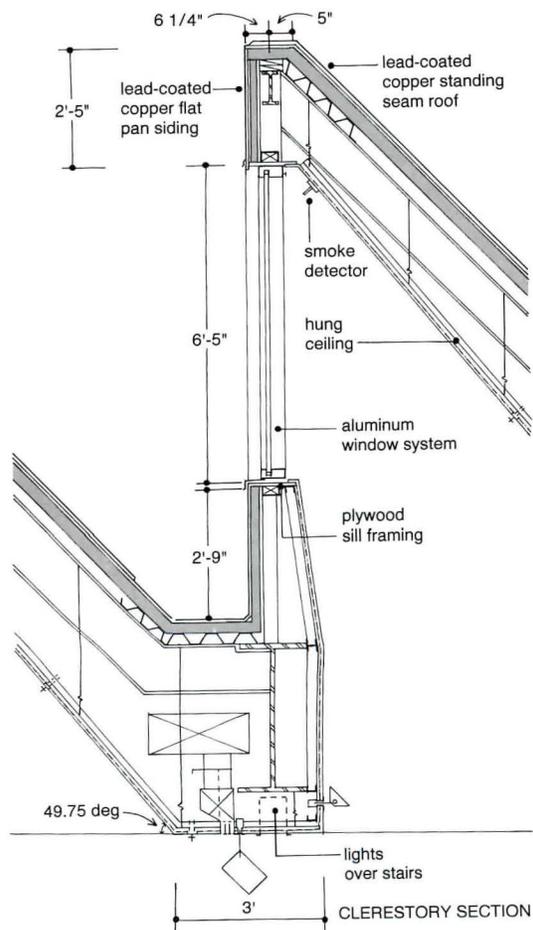


- | | |
|---|---------------------------|
| 1. Theater | 4. Information desk |
| 2. Lobby | 5. Gallery |
| 3. Open to temporary exhibition space below | 6. Archives |
| | 7. Photography study room |



Up Close

Clerestories. Davis Museum director Susan Taylor is familiar with curatorial and conservation-minded arguments against admitting daylight into exhibition space. At Davis, however, Taylor and architect Rafael Moneo favored top lighting, opting for north-facing double-paned clerestory windows with tinted coatings that transmit 60 percent of visible light, an appropriately "conservative solution" according to Taylor. Top-floor galleries are 7 1/2 feet from perimeter walls; the architect's studies indicated that the distance was enough to soften the rake of sunlight on artwork hanging below. Fluorescent fixtures mounted in bars beneath the clerestory windows wash the upper reaches of the space at night.



Credits

Davis Museum and
Cultural Center
Wellesley College
Wellesley, Massachusetts

Architect: Rafael Moneo
Architect—Rafael Moneo,
principal-in-charge; Victoria
Kiechel, project architect

Associate Architect: Payette
Associates—Thomas Payette,
George Marsh, principals-in-
charge; Scott Payette, project
manager; Paula Byers, Dian
Love, interior designers; Lauri
Phelps, assistant

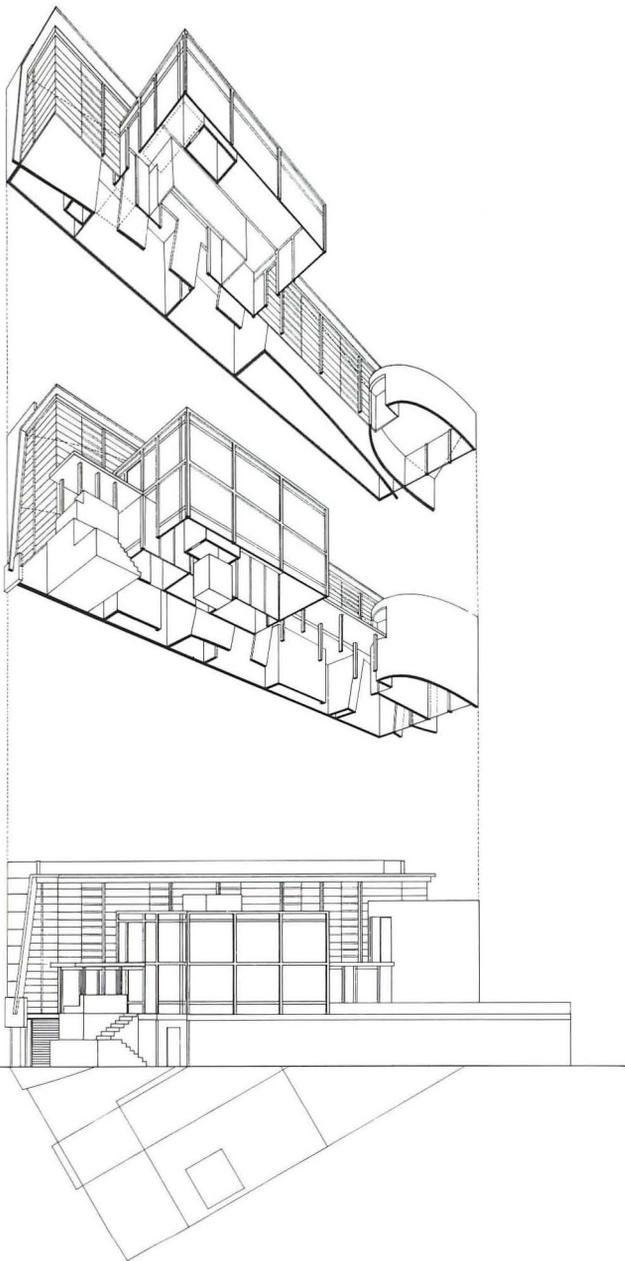
Engineers: Le Messurier

Consultants (structural):
McPhail Associates
Consultants (geotechnical): John Altieri
Consulting Engineers
**Consultants (mechanical/ electrical/
plumbing):** J. R. Andrews
Survey & Engineering (civil)
Consultants: Fisher, Marantz,
Renfro, & Stone (lighting);
Chapman Ducibella Associates
(security); Acentech, Inc.
(acoustic); Carol R. Johnson &
Associates (landscape); Andrew
Chartwell & Company (cost
estimating)
General Contractor: Richard
White Sons

Casting Castle

*Click & Flick
West Hollywood, California
Hodgetts & Fung, Architects*





Noises off: "Get him into Gus's new movie. . . Who's his agent? Get me that shot!" Alan Mindel, president of the the Flick Talent Agency, is an unseen voice yelling through the windows, doors, and passages of the compact castle that houses his agency and its twin, the Click Model Agency. His voice echoes through the elegantly elongated spaces and bounces off stucco, glass, metal, and wood surfaces. More messy than glamorous, this building contains all the excitement of Hollywood in so few square feet that most of the work goes on in the hallways. "It's like somebody's attic," says Ming Fung, "We try to get them to clean it up, make it all rational, but that's not what they are." "Both our shop and theirs are sort of funky," adds design partner Hodgetts. "I guess that's why they hired us."

If the truth were told, the reasons behind this building's messy vitality are more prosaic. Click & Flick, as the intertwined enterprises are known, owned a 40- by-100-foot lot on a mixed commercial and residential street in West Hollywood, California. Given the narrow width of the site, the designers could only shoehorn seven parking spaces on the lot. That meant the building could not exceed 2,200 square feet of occupiable floor area, and glass in exterior walls had to be kept 15 feet away from the lot line to satisfy building-code requirements. To meet West Hollywood's strict commercial-zoning requirements, the entry to the parking area had to fit within the lot's 40-foot frontage, as well as an elevator for handicap access. The architects added an outdoor waiting area, "like an old Hollywood bungalow, where you waited on the porch for your casting call," says Hodgetts. "Then, we took advantage of the California climate to put as much of the building outdoors as possible." A courtyard Fung calls "the big room," is used as a meeting space.

The actual building is a long bar that hugs the western edge of the site. It is anchored by a massive concrete block wall that architect and client alike hope will become less noticeable when the small bungalow next door is developed. The width of the main building is slightly curved and stands in contrast to what the architects call the "bridge" building, a suite of offices resting on an eight-foot grid of steel columns. A semi-circular metal-clad tower in the rear houses the office of Click & Flick owner Frances Grille, who always wanted an office with curved walls. The elevator's concrete-block tower anchors the composition. A pink stucco wall ties the pieces together by defining the edges of the courtyard.

The result is a slightly overscaled collage of building parts that look like fragments of a film set marooned in a neighborhood of bungalows. "We see the whole building as additive," explains Hodgetts. Click & Flick's unfinished look partially reflects the hope the owners can buy the lot to the east, which would lighten the impact of the zoning restrictions and enable them to make better use of the site. "Then it will finally be a courtyard building," sighs Fung. *Aaron Betsky*

Credits

Click & Flick, West Hollywood, California

Owner: *Click Model Management*

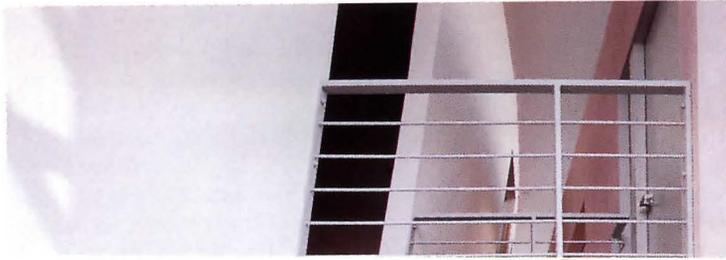
Architect: *Hodgetts and Fung Design Associates—Ming Fung and Craig Hodgetts, design partners; Lynn Batsch, project architect*

Engineers: *Niver Engineering (structural); Patrick Bryne (electrical)*

General Contractor: *Pacific Southwest Development, Inc.*

Building Cost: *\$683,625*





Building Types Study 710/Military Base Conversions

Tour of Duty

By Charles Lockwood

Despite the apocalyptic headlines and doom-and-gloom pronouncements from local officials, the current wave of military-base closures offers unparalleled opportunities for many metropolitan areas, and considerable work for architects and planners in the decades ahead. Although the federal government disposed of redundant military installations throughout the 1960s and 1970s, it has named over 150 bases for closure since the late 1980s, far more locations than ever before.

Nor does this figure signal the end of the military downsizing. The Defense Base Closure and Realignment Commission will recommend another round of closures in 1995. Future military reductions, said Secretary of Defense Les Aspin in *Time* earlier this year, "will mean more, not fewer, base closures."

What can be done with all this former military land? In most instances, bases are ideal sites for commercial and residential development as well as parks and open space. In Orange County, California, for example, the 4,738-acre El Toro Marine Corps Air Station is bordered on three sides by the city of Irvine, and is near the business districts of Costa Mesa, Irvine, and Newport Beach.

Given these opportunities for development, plus the urgency of replacing jobs lost to base closures, municipal officials, citizens' groups, and architects are proposing reuse strategies, such as housing, office and industrial parks, airports, college campuses, and open space. Some suggestions range from the imaginative to the far-fetched. For example, reuse proposals for 44-square-mile Fort Ord on Monterey Bay in California include a grab bag of options such as a Disney theme park, a cruise-ship pier, resort hotels, an Olympic training center, a university, and a golf hall of fame.

Charles Lockwood has written about architecture and planning for The New York Times, The Los Angeles Times, and The Atlantic.

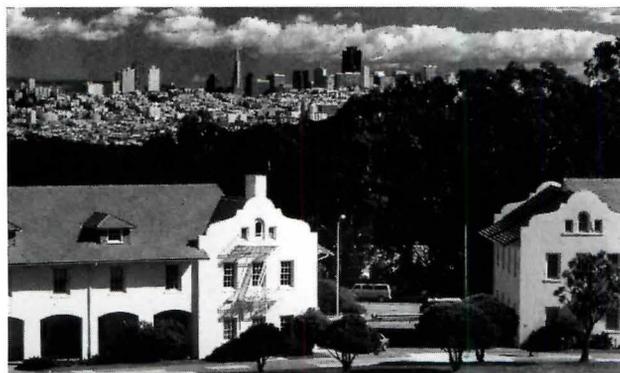
Looking beyond piecemeal proposals, some architects offer larger visions for former bases. "There is no automatic formula for base reuse," says architect and planner Elizabeth Plater-Zyberk. "Each property should be developed according to specific regional needs and its urban or rural location," cautions Plater-Zyberk. "If the base is surrounded by suburban sprawl and is already a transportation focus—as many of these properties are—it could become a multi-use town center. If the site is located far from a metropolitan area, it might be a practical location for what Anthony Downs of the Brookings Institute calls 'LULUs' or 'locally undesirable land uses' like prisons or waste-management facilities."

"The federal government has its objectives in base closures," notes Richard Krauss, principal at Arrowstreet in Somerville, Massachusetts, "and various members of each local community will fight for their agendas. The challenge is balancing all the competing interests, and achieving what's best for each community in the long run."

Success stories

With intelligent planning as well as government and local support and cooperation, base closures can become a remarkable boon for the surrounding community. The Charlestown Navy Yard in Boston, which closed in the 1970s, now has more than 2 million square feet of office and research facilities, 1,200 housing units, a hotel, cultural facilities, a marina, and a 16-acre waterfront park. Larson Air Force Base in Moses Lake, Washington, is a jet-pilot training center and aircraft-testing site. Dow Air Force Base in Bangor, Maine, now has an airport, hotel, and branch campus of the University of Maine.

But some base closures do not have such happy endings. Closures can wreak long-term economic havoc on regions, particularly if plans stall because of unexpected factors like excessive toxic cleanup costs or protracted legal challenges. In these worse-case scenarios—which resemble some of the ill-conceived and never-completed urban-re-



Ernest Braun



U. S. Navy

Converting military bases to civilian uses can be a devastating experience or a boon to surrounding areas, depending on factors such as location, planning, and local participation.

new schemes of a generation ago—the military payrolls and related civilian jobs are gone, the former base sits vacant, and the surrounding communities cannot launch reuse strategies.

To avoid this devastating scenario and reap the long-term benefits of base closures, the government, citizens' groups, and architects must not only prepare innovative reuse plans but also pursue more effective land-disposition and redevelopment procedures. The federal government and states must first provide greater assistance to communities facing severe economic dislocation from base closures. Otherwise, the pressure to replace lost jobs in affected communities, and replace those jobs fast, will make long-range planning for base reuse all but impossible. Sweeping visions will fall by the wayside.

In a recent article in *Urban Land*, Bonnie Fisher, a principal at ROMA Design Group in San Francisco, recommends that the federal government and affected communities consider such actions as establishing clear national objectives and priorities to guide reuse strategies, creating an appropriate management entity for former bases which remain under public ownership, streamlining the approvals process, and reconnecting these sites to the surrounding metropolitan fabric.

"The General Services Administration must revise its archaic land disposition system if communities want to avoid piecemeal base redevelopment and further urban sprawl," she says. "A single non-profit corporation should retain ownership of the lands, transferring sites through long-term leases to public and private leaseholders, although outright land sales may be necessary for private residential use," states Fisher. "Backed by the federal government, this corporation will have the resources and perspective necessary to assure long-term planning and development that benefits the entire region," she continues. "This nonprofit corporation can also be an effective master developer, taking lead responsibility for planning,

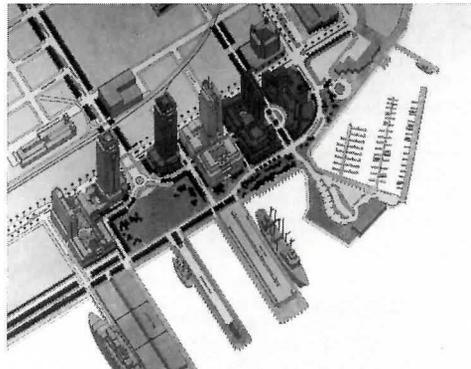
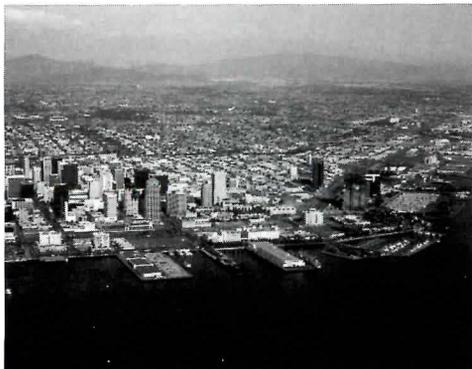
site preparation, parcelization, public approvals, and developer negotiation." To avoid delays in implementing reuse programs, Fisher recommends a federal toxic cleanup jobs corps similar to the Works Progress Administration of the 1930s to clean up bases.

Money for planning

Architects must join with the government and community groups and spearhead long-range planning activities for base reuse programs. "For many years, Americans haven't done much planning or even had funds for planning," says Herbert McLaughlin, of Kaplan/McLaughlin/Diaz in San Francisco. "Base closures, together with the recently enacted Intermodal Surface Transportation Efficiency Act (ISTEA), represent a chance to get some planning money. The amount needed is infinitesimal compared to other base reuse costs like toxic cleanups, and it is more important in the long run to the region's economy and livability," says McLaughlin. "The architectural profession's first responsibility is to make sure that more money is available for planning. If we must go to Congress to get this money, then we should lobby. Isn't this what we pay our AIA dues for?"

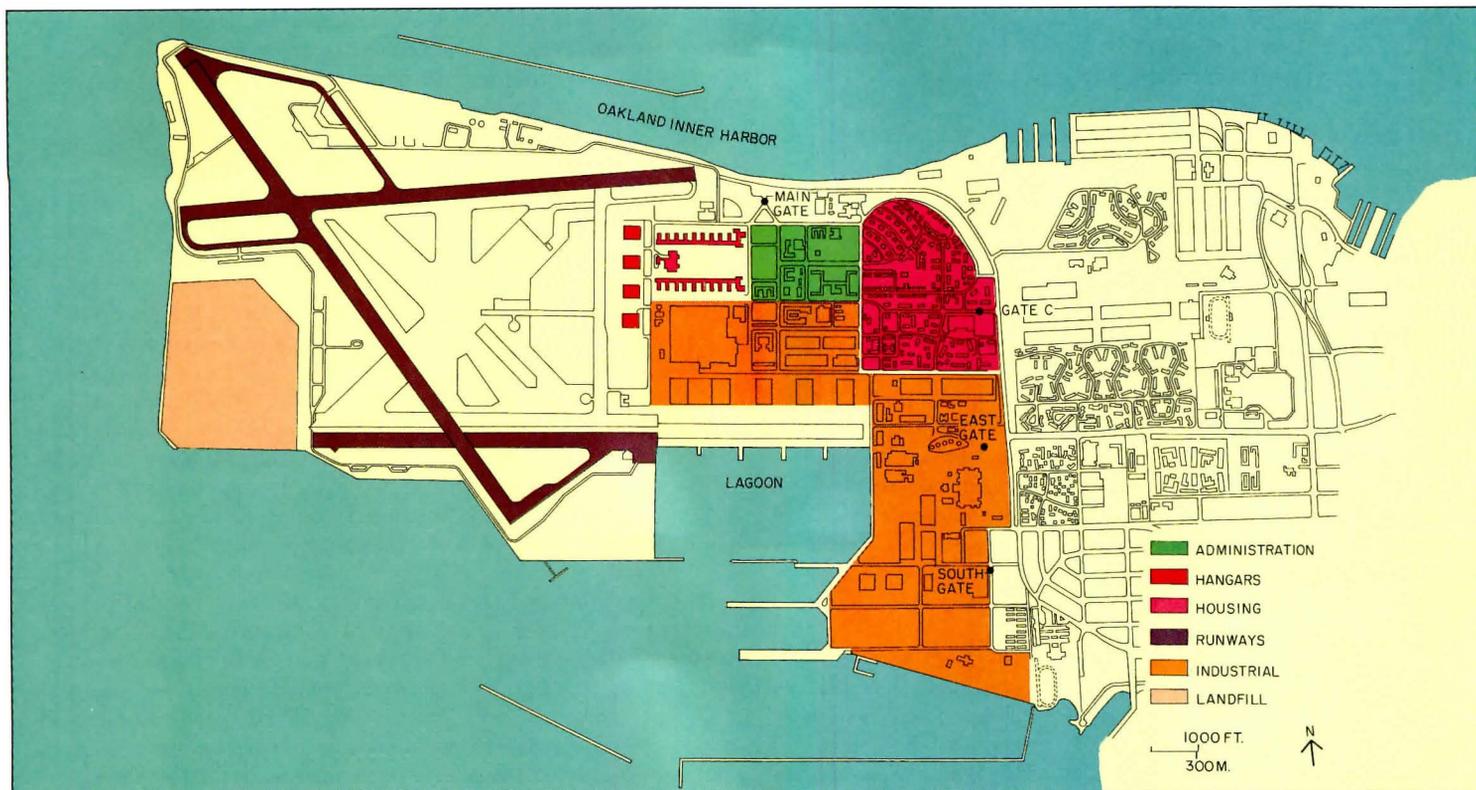
The vast size of many bases under single federal ownership gives architects an unparalleled opportunity to mold our metropolitan areas with imaginative reuse plans. "Why not use former bases to stop sales-tax-hungry municipalities from the mad over-zoning of land for commercial uses?" asks McLaughlin. "The impending redevelopment of these large parcels could encourage surrounding communities to enact regional tax-sharing treaties. Afterwards, these jurisdictions could restrict commercially zoned land over a large area, thereby controlling growth better."

Today the life cycle for these military bases must begin all over again through redevelopment, says Bonnie Fisher. "Their promising futures must be planned with the same degree of forethought and commitment that was devoted to their original creation." ■



The Presidio in San Francisco (left opposite) will become part of a national park in 1994. Mare Island Naval Shipyard (right opposite), also in the San Francisco area, is one of the latest bases set to be shut down. Plans by ROMA Design Group for the Broadway Complex in San Diego (drawing left) call for redeveloping a Navy supply center downtown (far left) as a public-private complex.

Case Study: Reinventing Alameda



Not every military base targeted to be closed is blessed with such a spectacular location—views of the San Francisco skyline and the Golden Gate Bridge, waterfront property on three sides, and proximity to two international airports, a modern rapid-transit system, and an interstate highway. But the Alameda Naval Air Station (NAS) faces many of the same problems as other bases chosen to be closed in the next few years. Like most of these military installations, the Alameda NAS will have to clean up toxic-waste sites, work with local and regional groups to figure out what new uses might be appropriate for the site, and run a gauntlet of regulatory approvals. Once all that is done, public agencies and private developers will have to be found to implement whatever plans are finally devised.

To get beyond a general discussion of the issue of base closures, ARCHITECTURAL RECORD asked four architects to draw up some preliminary ideas for converting the Alameda NAS to civilian use. We selected Alameda just outside Oakland for many of the same reasons President Bill Clinton chose it in August as the place to unveil his Administration's plan to assist communities hit by base closures: it is a high-profile facility with great opportunities for re-

development and, if handled properly, could become a model for base conversions around the country.

Vital statistics

Commissioned in 1941, the Alameda NAS occupies 1,522 acres on the western quarter of Alameda island. The base falls within the city of Alameda, a mostly residential community with a pedestrian-oriented downtown and many Victorian houses. The largest employer on the island, the base has 3,100 military personnel and 5,400 civilians working within its limits. In addition, the aircraft carriers and other ships that use the base as their home port employ another 10,000 people. Major facilities at the base include two runways totalling 338,000 square yards, seven aircraft maintenance hangars, 5,000 feet of berthing space at two major piers, ship maintenance facilities, dozens of warehouses, and 1,234 units of family housing.

Like most military bases, the Alameda NAS has a mix of buildings that gives it the sense of a small American town, an important asset for future development. It also has large tracts of open land used for runways, training areas, and loading that can be converted to

Set to be closed in 1997, the Alameda NAS offers excellent opportunities for redevelopment thanks to its site on San Francisco Bay and its stock of utilitarian buildings (below). Before private companies can bid on land, federal agencies, then state, local, and non-profit housing agencies must be given the chance to develop the property. Because of its lo-

cation on an island with limited bridge and tunnel connection to Oakland (site plan opposite), the base poses a serious problem of access for any major redevelopment. "To a large extent, the future of the base," says Donna Hoard, director of community development for the city of Alameda, "is dependent on additional access."



Pacific Aerial Surveys

recreational uses. While some bases are in more remote areas, almost all are well served by transportation links.

The four architectural firms invited to sketch some ideas for Alameda—Esherick Homsey Dodge and Davis from San Francisco, William P. Bruder from Phoenix, Perkins & Will from Chicago, and Deborah Berke from New York—were asked to focus on renovating existing buildings and to deal with environmental concerns. Although few of the base's structures have any great architectural significance, all of the participating architects agree that the unpretentious, utilitarian nature of the buildings make them good subjects for adaptive reuse. "It is truly tragic that with all that we learned from the 'bulldozer' redevelopment of our cities in the 1950s and '60s, that we still blindly tear down so much of what we have so recently built," says Bruder. While some buildings on the base will certainly be torn down, many of the large-span structures offer exciting opportunities for reuse.

Some of the most critical environmental problems found at the base are jet fuel in the water table, dumps with unexploded bombs, and

Photos courtesy of Kaplan/McLaughlin/Diaz



toxic, medical, and radioactive wastes. The Navy has estimated that cleaning up the mess could cost \$180 million. Since much of the base rests on landfill and water is on three sides, wetlands are an issue as well. A final concern is a five-acre patch of asphalt adjacent to an airplane taxiway which the California least tern, an endangered species, surprisingly has adopted as a preferred nesting area.

Beginning of a long process

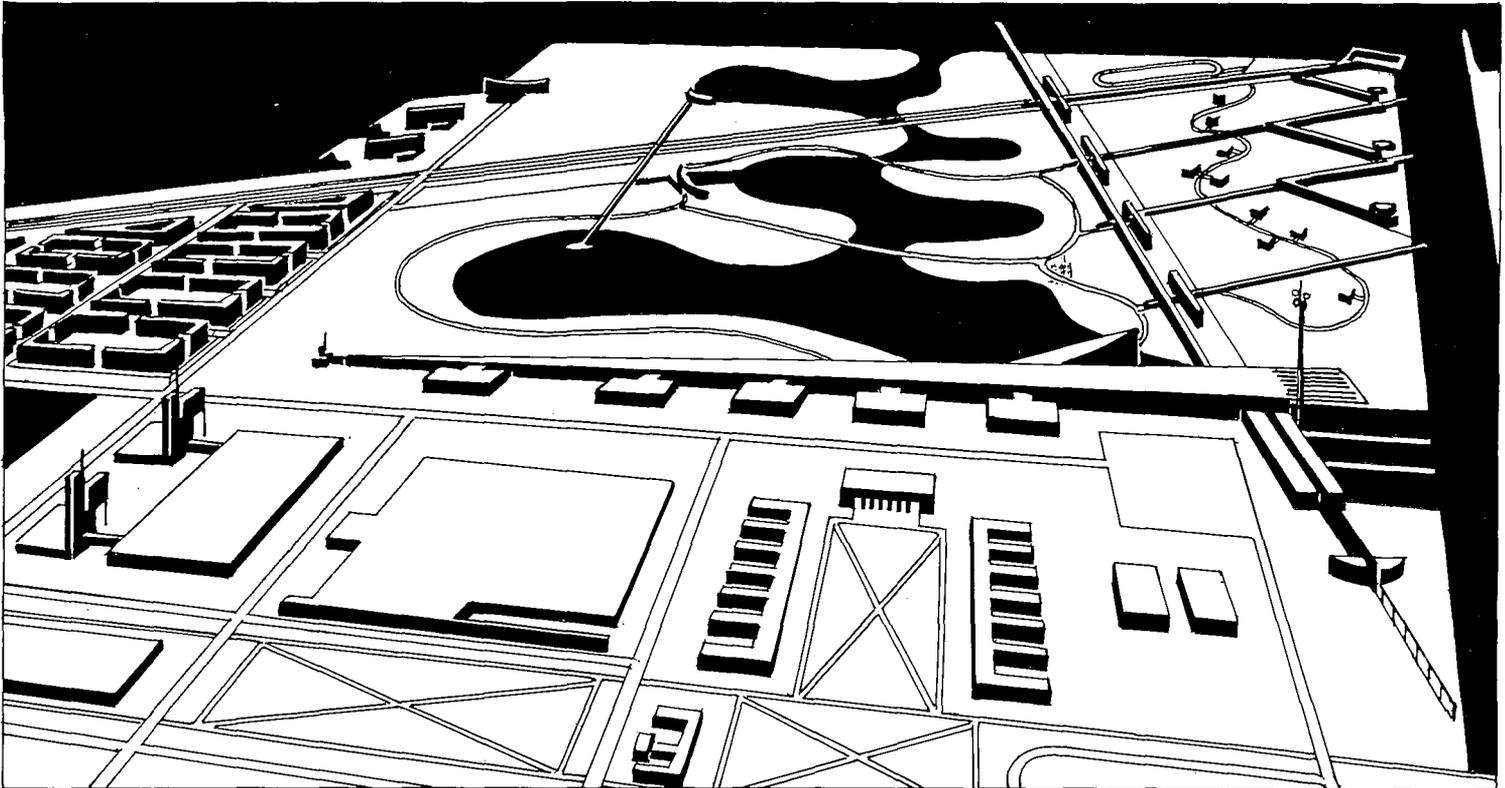
The designs shown on the following pages are offered only as the very first steps in a long process that must involve the residents of Alameda, the military, and a bevy of regulatory agencies. RECORD's intent is not to recommend solutions, but to start a discussion and suggest a range of approaches. In fact, the official process has begun with the establishment of two commissions by Congressman Ronald Dellums and the city of Alameda to examine the base's reuse potential. According to Donna Hoard, director of community development for the city, residents worry about employment and retraining issues and improving access to the island without overwhelming the existing community. Above all, the people of Alameda want to ensure that their voices are heard. *Clifford A. Pearson*

Urban Collage

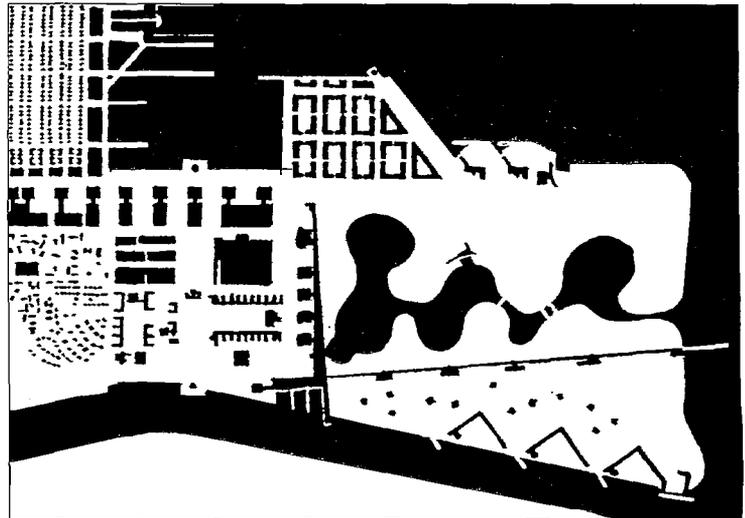
*Perkins & Will, Architect
Ralph Johnson, partner-in-charge*

Trying to create a master plan that is both visionary and realistic, Ralph Johnson imagined a diverse range of new facilities that could be phased in over a period of time. Working together, the rich mix of uses would form a new regional center within an existing metropolitan area. Because the site is too large for any one use, a strategy of mixing uses

seemed to make the most sense—for both economic and regional-planning reasons. “It’s such a great site,” says Johnson. “But in the face of a down market, it’s also a little frightening.” Underlying all of the architect’s decisions was a desire to retain as many of the existing buildings as possible and to work with the memory of what the base has been. As a result, struc-



Architect Ralph Johnson sees the mix of uses as an urban collage with several layers of old and new elements. The western end of the island would be rebuilt as a park, “giving this part of town what Burnham gave Chicago” with his waterfront plan, says Johnson. “One of the opportunities here,” he adds, “is to activate the edges, open up the waterfront.” As for the residential portion of the plan, “the idea was to take the existing neighborhoods and work with them, extend them.”

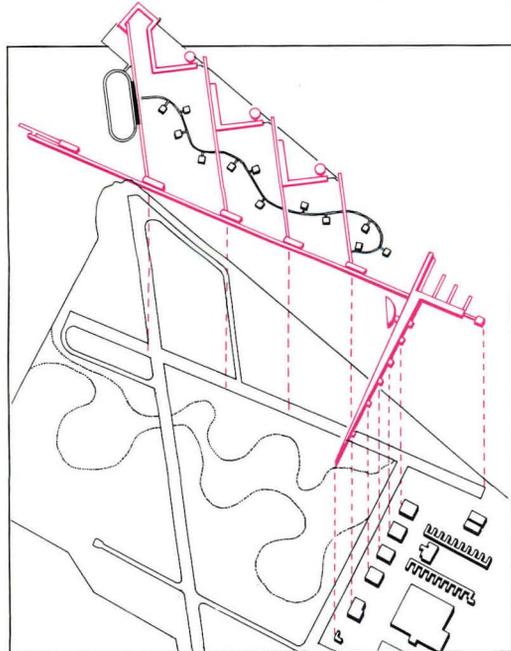
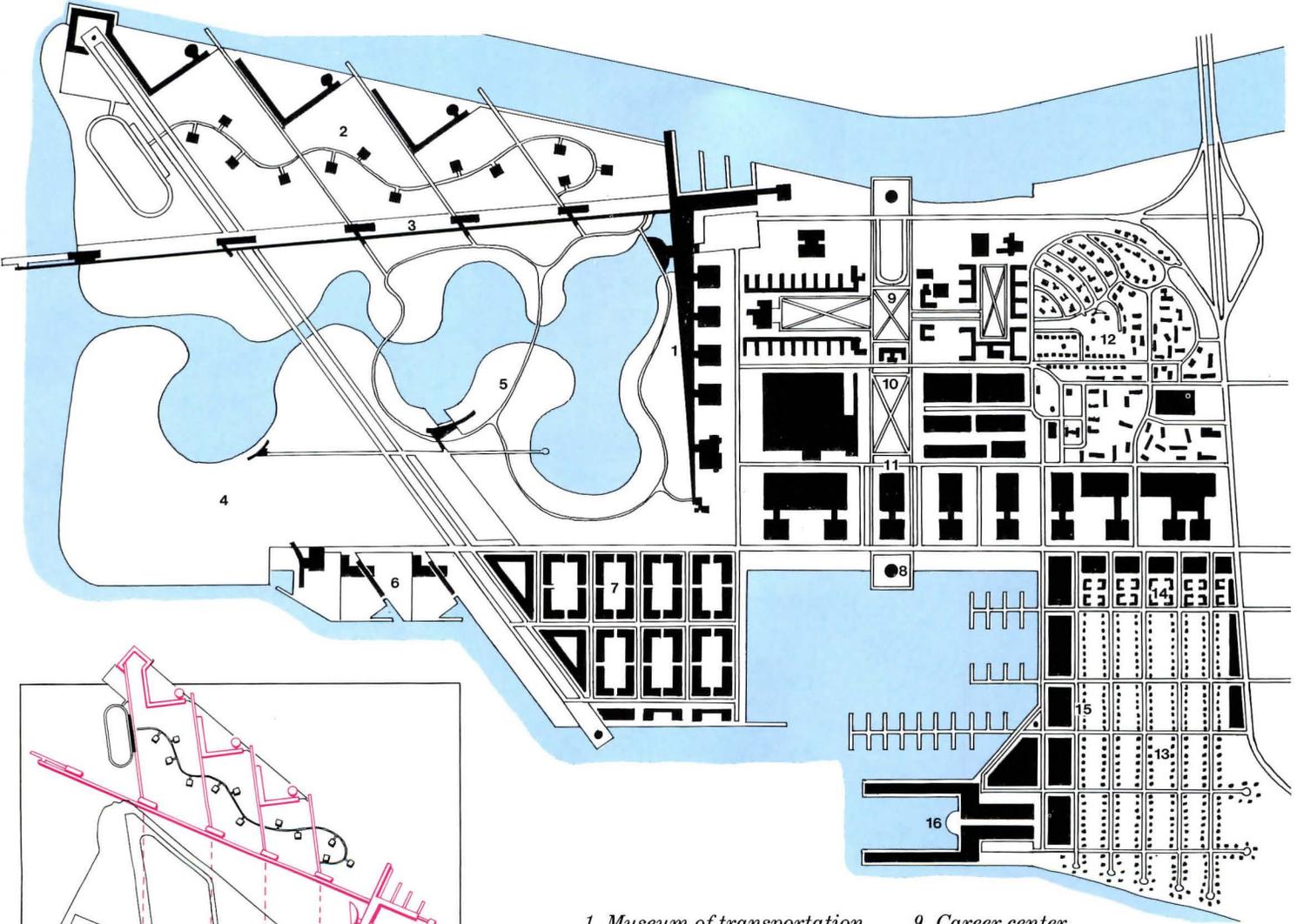


tures such as aircraft hangars, repair shops, and barracks would be converted to new uses. Taking full advantage of the large-span spaces of the hangars, the architect designed a regional museum of transportation that would tie the great structures together and display airplanes, seaplanes, and other vehicles associated with the history of the base. A monorail

would take visitors from the main portion of the museum to a series of remote exhibits. Transportation could also be used as the organizing idea for a theme park on the western portion of the site. Existing repair shops would be converted into space for light industry and used as a hands-on resource for a new community college and career center occupying the current

barracks and officers' quarters. To better define the spaces between these buildings, Johnson recommends adding some new structures that would create a series of linked quadrangles. New laboratory towers could be added to maintenance structures to create a research and development zone that would work in conjunction with the educational and industrial components of the

plan. An office zone would offer space for businesses lured by the mix of educational, industrial, and R&D activities. Along the waterfront, the architect envisions parkland and a festival marketplace at the seaplane harbor. Completing the mix of uses is new housing—both multi-family and single-family—built as an extension of the adjacent community. C. A. P.



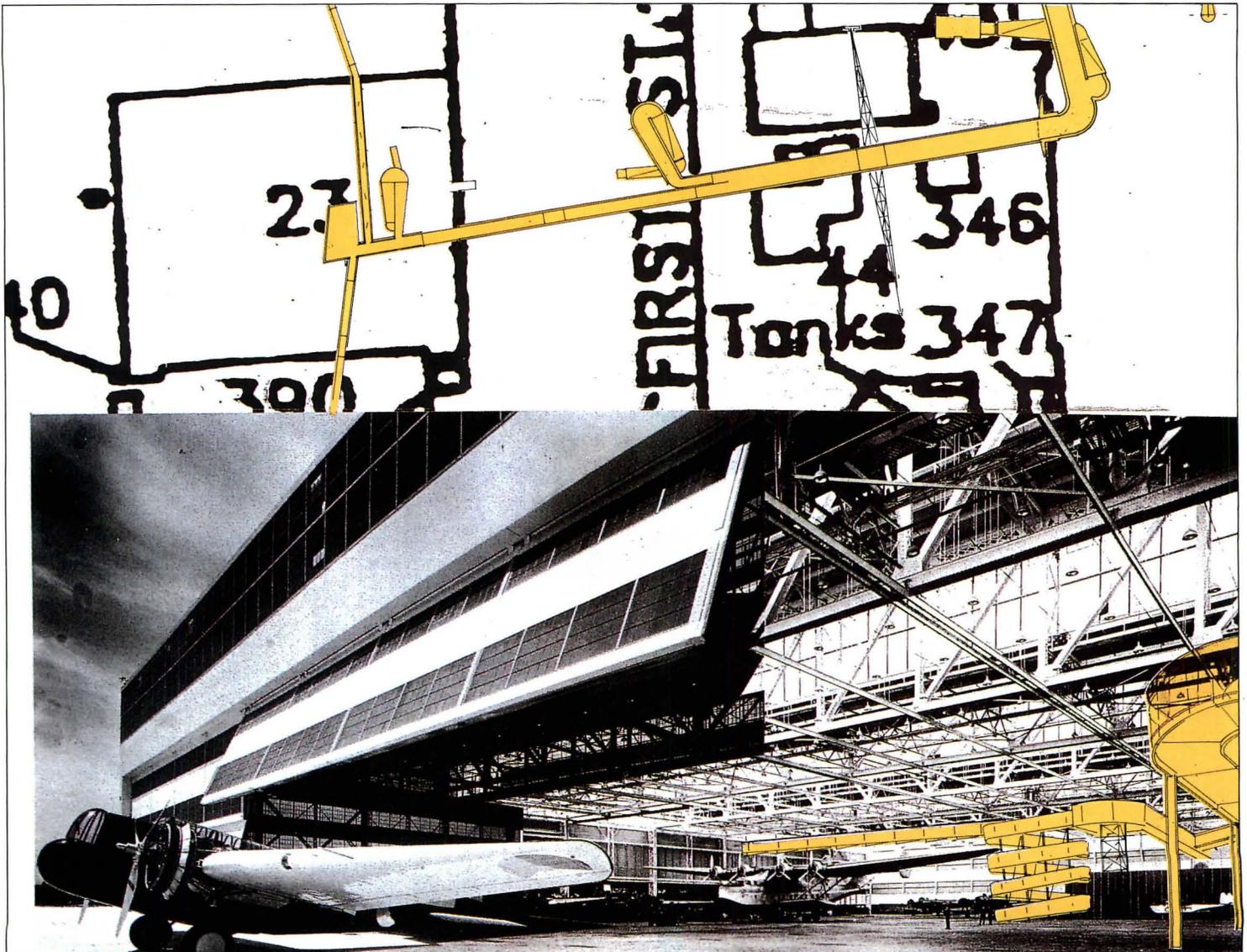
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|-----------------------------|----------------------------|
| 1. Museum of transportation | 9. Career center |
| 2. Theme park | 10. Light industrial |
| 3. Monorail | 11. Research & development |
| 4. Nature preserve | 12. Renovated housing |
| 5. Park | 13. Single-family housing |
| 6. Hotels | 14. Multi-family housing |
| 7. Office buildings | 15. Retail and housing |
| 8. Waterfront park | 16. Festival market pier |

Connecting the Spots

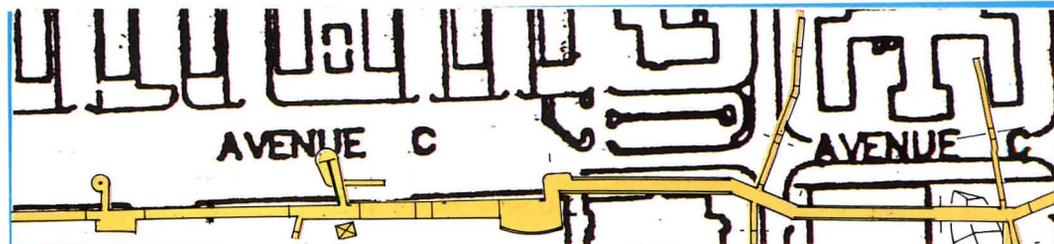
*Deborah Berke Architect
Deborah Berke, Maitland Jones,
design team*

Recognizing that any redevelopment of a base as large as NAS Alameda will take a long time, New York architect Deborah Berke and her associate Maitland Jones decided to design an element that would quickly establish a civilian presence while also linking old and new. To signify the base's new status as a place open to everyone, the architects developed the idea of an

elevated walkway that would serve as an east-west corridor connecting the town of Alameda with the heart of the old base. Painted yellow to differentiate it from existing military structures, the walkway would snake its way around, between, and even through buildings. Believing that programming for the base should evolve out of discussions with the people of

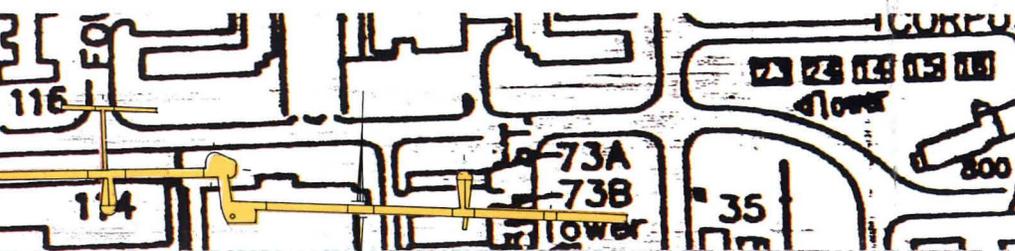
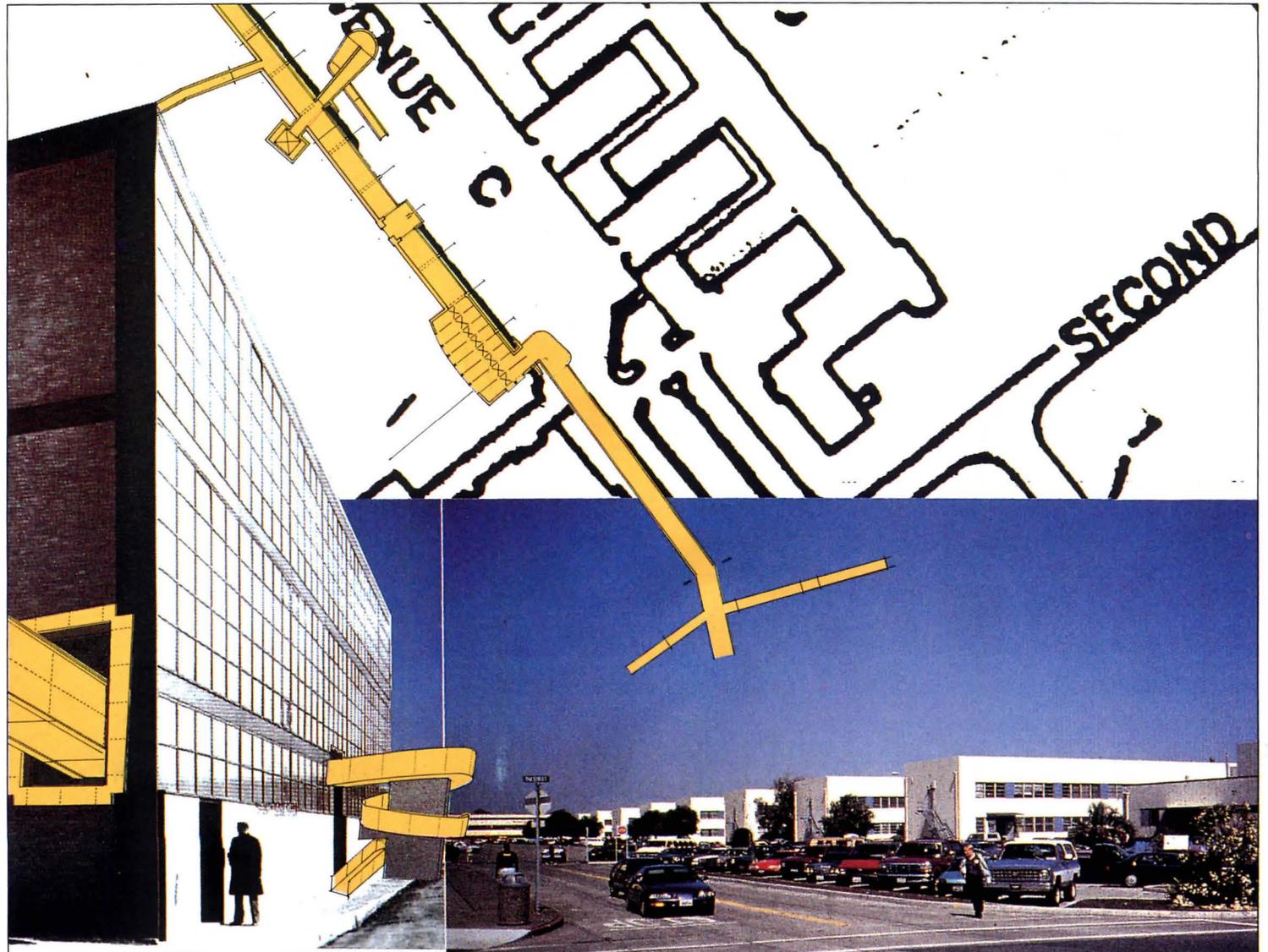
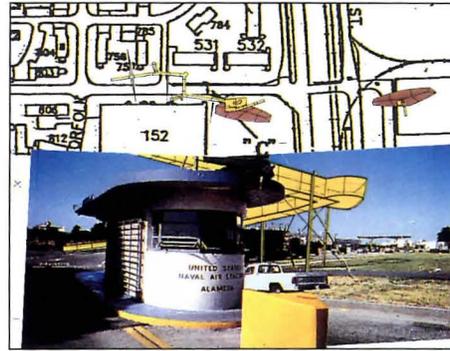


Today the ramp has become a symbol of accessibility, says Berke, and is no longer just a Corbusian element. Here a ramped walkway is a metaphor of accessibility for all people—civilian and military, able-bodied and handicapped.



Alameda, Berke and Jones didn't designate specific uses for existing buildings, but instead designed an element that could weave together all kinds of structures. Since any cleanup of toxic wastes on the site would be one of the first steps in redevelopment and might close the area for an extended period, the elevated conduit could provide safe access for the public to visit the

area and observe the cleanup in progress. Later, it could serve as a new plane on which redevelopment could take place. Not wanting to imitate "skywalks," which often reduce the importance of streets by providing an alternative means of circulation, Berke and Jones designed their path to include frequent ramps, stairs, and elevators to the ground. *C. A. P.*



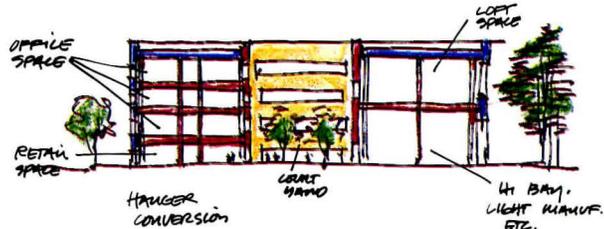
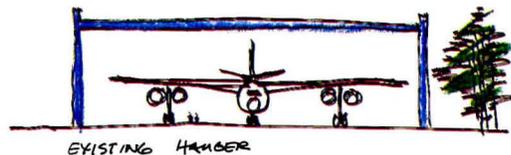
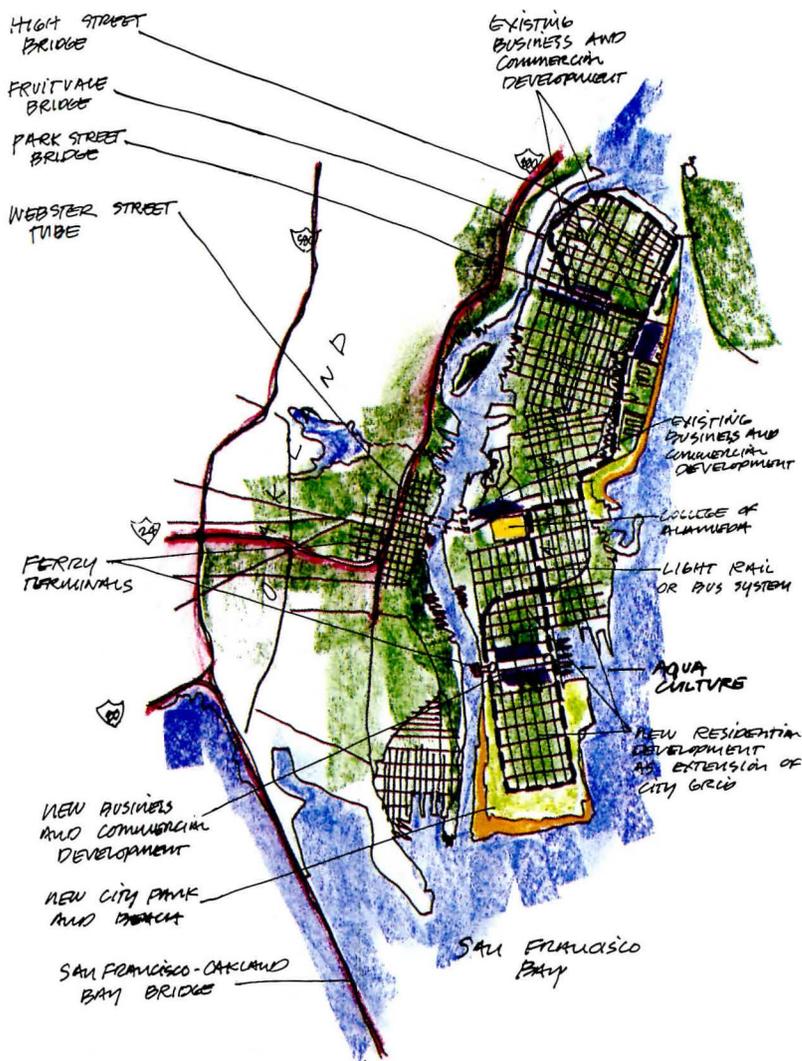
Artwork includes images of Albert Kahn's Glenn Martin Plant (opposite), photo by Damora, from *Designing for Industry: The Architecture of Albert Kahn*, by Grant Hildebrandt, MIT Press, 1974; and Mies van der Rohe's Minerals and Metal Research Building (above, left), photo by Hedrich-Blessing, from *Time and Architecture*, by Siegfried Giedion, Harvard University Press, 1967.

Balancing Act

*Esherick Homsey Dodge & Davis,
Architect
Joseph Esherick, David Maglaty,
Edward Dean, Cathy Schwabe,
Russ Drinker, design team*

Almost by definition, military bases are physically and socially isolated from their surrounding communities. Fences, walls, and gates separate them from whatever is next door, while the scale of their buildings and open spaces breaks sharply with that of their neighbors. Although they provide employment for people who live in the area, their overall mission is national in

scope, not local. As a result, the architects at Esherick Homsey Dodge & Davis saw their most important task as that of integrating the naval air station with the town of Alameda. In the process, the base's large-scale single-function facilities will have to be adapted to serve more diverse, small-scale uses. Limiting what can be done, however, is the base's location on an

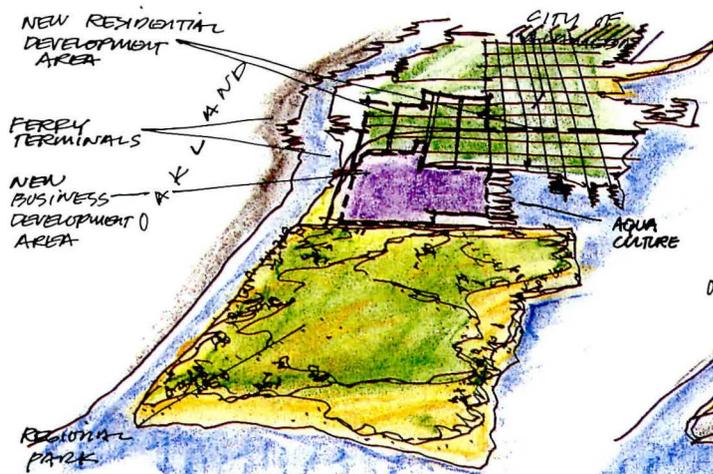


Three plans (opposite) sketch out a range of possible approaches to redeveloping NAS Alameda. (1) This scheme shows a large regional park occupying the entire western portion of the base, with a new residential area on the east and a mixed-use aquaculture and new business district in between. Such a large park, though, might bring in too much new traffic to the island. (2) This plan shows the town's street grid extended throughout the entire site and residential development reaching to the western edge of the island. (3) The architects' recommended scheme is to emphasize residential development, while still providing parkland around the waterfront. Existing hangars could be converted into space for "incubator" businesses (above). Regional map (left) shows existing transportation links and proposed ferry terminals on either side of the estuary.

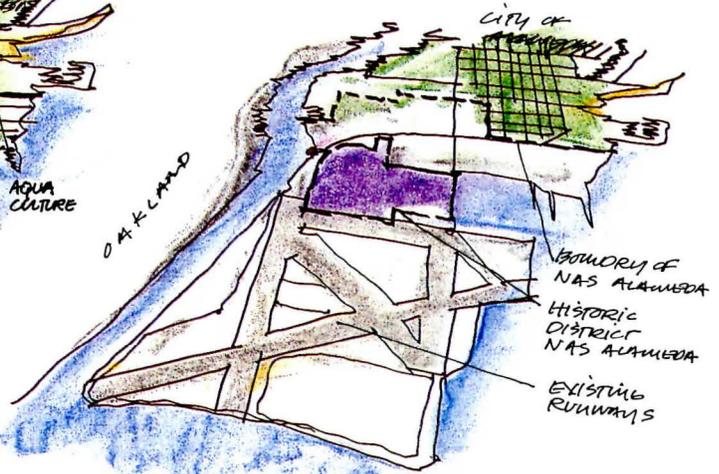
island with only a few transportation links to the rest of the Bay area. Without expensive additions to the existing bridge-and-tunnel system, new uses that draw large numbers of people from other parts of the Bay area do not make sense, says Esherick. The architect also strongly believes that re-programming the base must be done through a participatory

process in which the residents of Alameda play a leading role. In the meantime, Esherick's design team has identified a couple of basic strategies for new development. The first is to extend the existing street grid of the town onto the base, creating a seamless connection between what are now two worlds. The second is to create a balance between new uses that serve local needs

and those that serve regional ones. In their plans, the architects emphasized new housing and parkland, while also proposing that some of the waterfront be used for aquaculture (raising abalone or other shellfish, for example). New ferry terminals would help link the island to surrounding areas without overwhelming it with traffic. C. A. P.



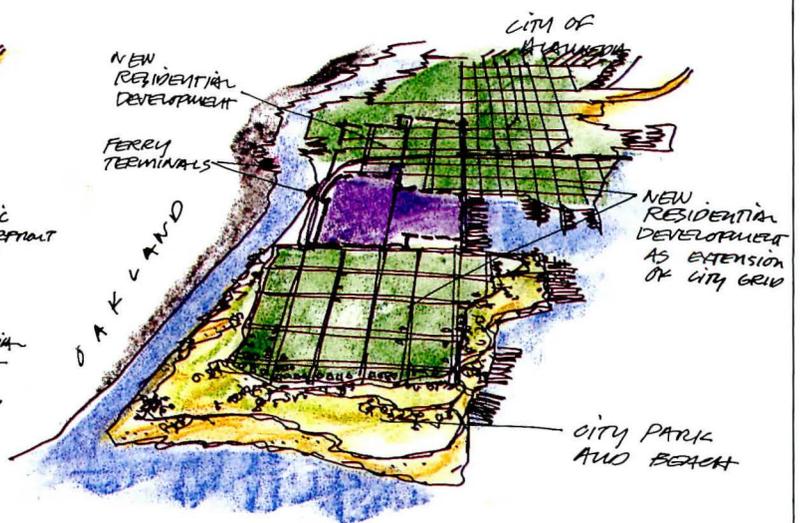
① PROPOSED USE FOR NAS ALAMEDA



EXISTING NAS ALAMEDA



② PROPOSED USE FOR NAS ALAMEDA



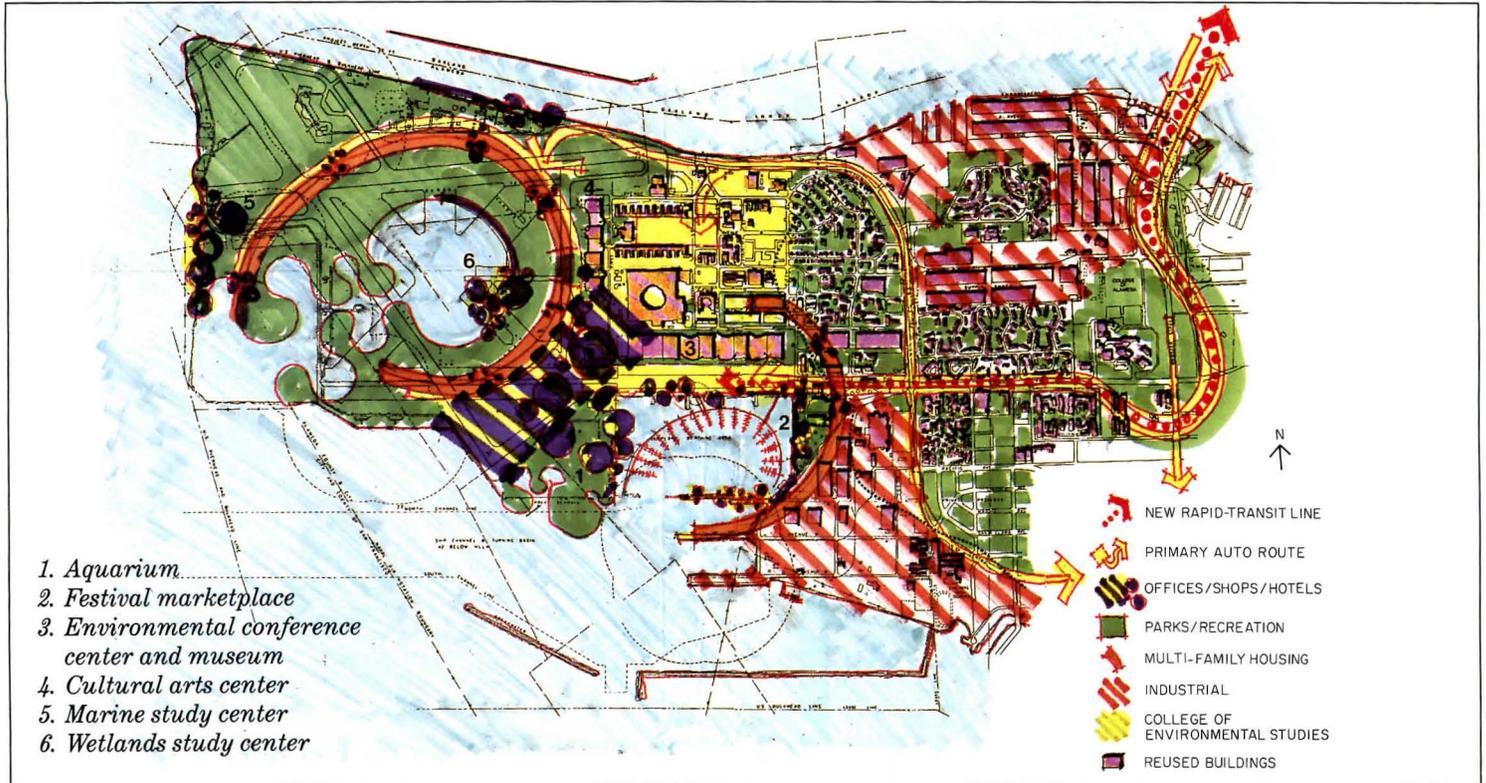
③ PROPOSED USE FOR NAS ALAMEDA

Green Piece

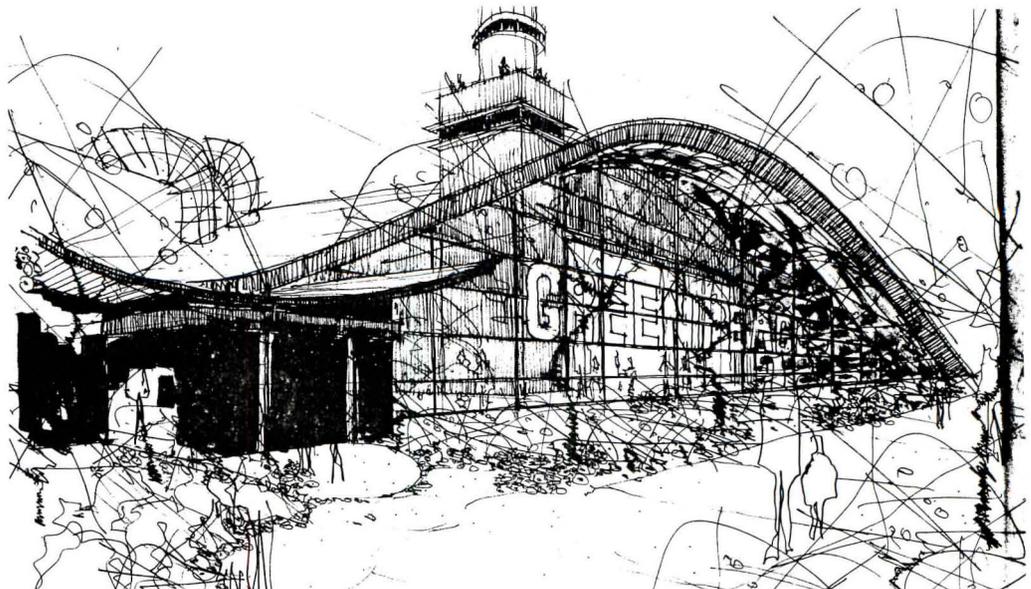
William P. Bruder, Architect

Looking at the environmental hazards presented by Alameda Naval Air Station—toxic wastes, unexploded munitions, asbestos, and degraded wetlands—Will Bruder sees the chance to create an ecological community that could serve as a model for base conversions around the country. In the spirit of taking life's lemons and making lemonade, Bruder suggests converting a

series of seaplane hangars into an environmental conference center and museum, and linking the existing bow-trussed structures with solar greenhouses. The new center's glass facade and building systems could be showcases of the latest energy-efficient and "green" building technologies. Not far away, Bruder would turn the base's administration buildings and



A new museum with a save-the-earth theme could occupy some existing seaplane hangars and be part of a larger environmental conference center (right). Bruder would link the hangars with greenhouse pavilions so the combined roofs would form a wave-like element.

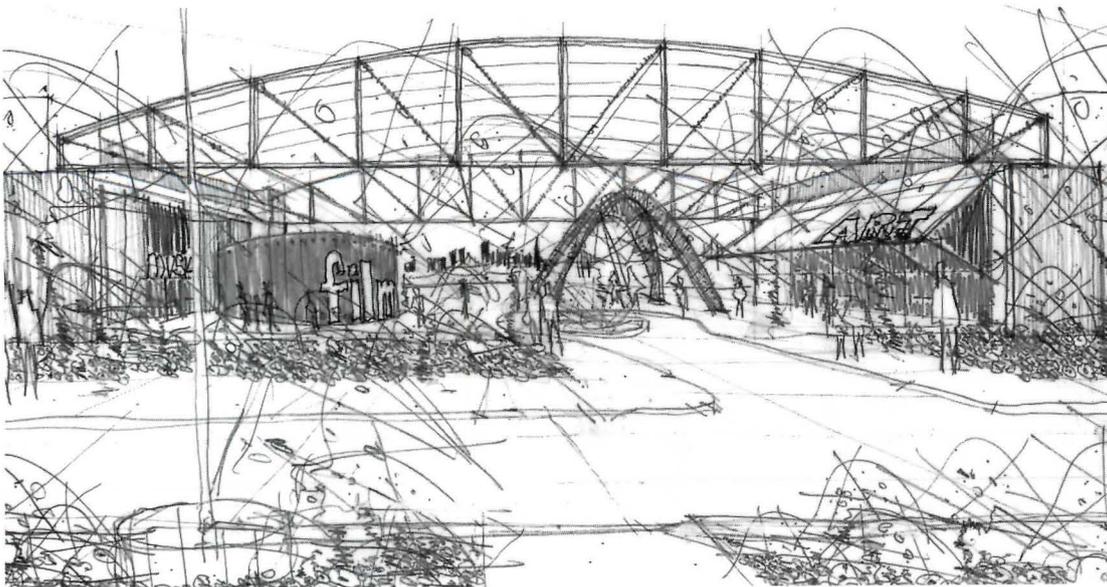


dormitory-style housing into a college devoted to environmental studies and research. In the southeast corner of the base, he would use existing repair shops and warehouses as building blocks for a vocational retraining center that would focus on "green" industrial production. Understanding the power of water to draw people, Bruder recommends turning the sea-

plane lagoon into the focus of a new town center that would blend together offices, hotels, shops, restaurants, recreational facilities, and an aquarium. A new park and nature-trail system could link up with the aquarium and wrap around the perimeter of the island, while a bird and wildlife sanctuary could occupy the western edge. "The idea is to re-establish the ro-

mance of Alameda *island* as a unique place," explains Bruder. Rounding out the mix of attractions would be a new cultural arts center that would take advantage of the great spaces inside existing aircraft hangars for performances and exhibits, while also turning the spaces between these huge structures into covered courtyards and piazzas. The architect would also

upgrade existing housing and provide new neighborhood amenities such as shops, preschools, and recreational facilities. In addition, he proposes two sweeping "crescents" to provide medium-density multi-family housing. The crescents, reminiscent of those in Bath, England, could be attached rowhouses, perhaps with stacked duplexes accessed from a middle level. C. A. P.



Bruder proposes creating a cultural-arts center by inserting performance and exhibition spaces inside existing hangars and erecting glass roofs over outdoor spaces between the hangars (above and left).

The End of Dumb Walls

The case of the Polk County Courthouse, in Bartow, Florida, sounded like Sick Building Syndrome. The 1987 building had to be abandoned soon after completion when occupants complained of health problems. A forensic evaluation by consulting engineers Simpson Gumpertz & Heger, of Arlington, Massachusetts, did find the hvac system inadequate for Florida's high humidity. (Levels "often rose to 80 percent or more," reported the engineers.) But they also found a litany of all-too-common architectural detailing problems: poor roof/wall connections (they leaked), rampant mildew growth around leaky windows (gaps allowed moist air infiltration, which condensed on cooled interior surfaces), bulging and cracking brick veneer (improperly detailed movement joints). Reconstructing the roof, walls, and hvac system cost \$20 million.

Few buildings suffer so many maladies, but too many suffer one or more. Why does this happen? Don't we have better materials and know more about how walls work? Yes, says Thomas Schwartz, principal and head of the building technology division at Simpson, Gumpertz & Heger. However, he explains, some builders think "that you can always do something cheaper without sacrificing inherent quality." In an economic climate where clients measure the value of building construction and design services by whether the project opens on time and meets ever more punishing budgets, it's very tempting to design what might be termed "the dumb wall"—a thin veneer of something over light-gage supporting something. Any gaps are filled with sealant. Such systems even work sometimes, though they rely on—as one architect puts it—"magic pookie and prayer." In the design of walls, Schwartz explains, "There are certain minimums. All too often the boundaries are crossed."

Dumb walls: No one is responsible

Architect Thomas K. Butts, president of Interactive Resources, an A/E in Richmond, Calif. has faced the problems of widely used but poorly performing technologies. He has become an expert in thin-brick veneers because, he says, "no authoritative standards provide comprehensive technical information about these systems." Do you follow mortar and grouting recommendations of the brick industry, the tile industry, or the plaster industry? Butts has sorted them out as best he can.

Simplistic wall designs often neglect details appropriate to various climates. In South Florida, for example, merchant builders from other parts of the country introduced stud wall systems to an area accustomed to building in concrete block with stucco. While well-designed and constructed stud walls could in theory survive high winds, Hurricane Andrew's path of destruction last year showed that the theoretical criteria were rarely met on site [RECORD, August 1993, pages 30-31].

Dumb walls: Sealants as curse instead of salvation

"I am not convinced we should continue detailing buildings that are so dependent on sealants," wrote H. Maynard Blumer in *The Construction Specifier* (in a story aptly titled, "Sealants Are Too Complex," December 1990). "I am not able to identify the many exceptions and compatibilities . . . I am not able to control or

anticipate the width and depth of many joints and how that will affect which sealant to use. I do not know what material will be furnished to receive the sealant until it is on the job site, yet the sealant manufacturer would like to test the compatibility of the exact granite or aluminum to be used," he wrote. If Blumer, a specialist in architectural technology and a specifications writer, is overwhelmed by such conflicts, where does that leave everyone else?.

According to Thomas Schwartz, the problem is "just as often with the sealant joint in its totality. The water is bypassing the sealant because what it's stuck to is porous or has many small cracks. Often there is nothing wrong with the sealant, there is something wrong with the detailing of the sealant-joint system." Many of the thin-wall cladding systems are "barrier" systems, intended to form a water-tight membrane to prevent moisture penetration. They require extraordinary attention to field craftsmanship and need constant maintenance. Time and again Schwartz's firm has seen problems "when you put together the concept of a barrier wall with backup such as gypsum board or metal studs susceptible to rapid degradation from relatively minor water penetration," he says. "Designers and builders must recognize that cavity construction with waterproofing inside and flashing at appropriate intervals gives you a lot of security." Some manufacturers of EIF systems, which have been criticized for the inadequacy of their barrier techniques, now offer configurations that channel water within the wall to joint devices meant to carry it to the exterior. This brings such systems closer to the performance of proven cavity walls or pressure-equalized walls often called for on highrise buildings.

Dumb walls: Mildew factories in hot, humid climates

The South has also been plagued with more than its share of indoor air-quality problems in sealed buildings designed without regard for the exterior-to-interior vapor drive created by air conditioning in hot, humid climates. As mechanically cooled and drier interior air draws warm humid air into the interior, the resulting condensation ruins insulation, corrodes metal supports, and causes mildew growth. Mildew problems have been particularly prevalent in hotels and motels where vinyl wallcoverings make wrong-side vapor barriers. Condensation on the wall side provides perfect growing conditions for mold. A well-designed wall for this climate places an air barrier (with a perm rating of 0.5 or less) near the exterior and adds enough insulation to keep the location of the dewpoint—the temperature at which vapor condenses—well outside vulnerable wall components. (A completely uninterrupted membrane is probably unattainable, but a design that prevents water accumulation permits periodic drying which minimizes damage.)

Some architects are moving away from simplistic wall-detailing toward more sophisticated techniques. From studying "how old buildings fall apart," explains architect Steve Kieran, of Kieran Timberlake & Harris, his firm has "reconsidered the material selections and manner of assemblage in our new structures." Among the earliest results is the University Center at East Stroudsburg University, featuring a wall that is both technically sophisticated and esthetically arresting (opposite top and pages 110-113). On an even

Yesterday's simplistic skins are giving way to walls that recognize more sophisticated needs.

more modest scale, Jonathan Levi avoided visible sealant joints at a strip retail center (opposite middle and pages 114-115).

Smarter walls: Cutting energy loads; improving comfort

Improving technology is allowing walls to do more. Too often mechanical engineers make lowest-common-denominator assumptions about the design of the exterior wall which can result in inappropriately oversized systems. Resource conservation researchers such as Amory Lovins of the Rocky Mountain Institute have found that huge strides can be made by exploiting synergies between wall details, mechanical, and lighting systems. (See RECORD, December 1992, page 16 and February 1992, pages 34-35.) How to do it? Architects can now choose glass with remarkably project-specific properties. "Spectrally selective" coatings (such as widely used low-emissivity coatings) reflect the spectra that add the most unwanted heat, while permitting high transmittance in the visible wavelengths. (Suspended films can trap even more heat.) Such glazing combined with appropriately designed sunshades and light shelves, high-efficiency dimming fixtures and photovoltaic sensors, can allow daylighting—another until-now little-used innovation of the '70s. If properly designed and managed, this combination can actually permit engineers to size a far smaller cooling system, multiplying energy savings. And some of the costs may be amortized by utility company demand-side management programs that offer monetary incentives to reduce peak-energy demand.

Further improvements are on the way. Traditionally daylighting has foundered on poor control of light on bright days. Acceptance of electrochromic glazing, which can switch to translucent or opaque modes, has been slow due to high costs. Photovoltaic spandrel panels, which could supply power to switchable glazing and for other uses, have also had problems finding a market, though a manufacturing facility has just been completed in Fairfield, California. (See also RECORD, June 1993, pages 26-28).

Can we justify building better walls? As clients become more cost driven, there's been a migration of low-performance technology from fast-food stores and highway strip shopping centers to wider use in presumably permanent commercial and institutional structures. (For more on lightweight cladding systems, see RECORD, December 1991, pages 18-20.) On the strip, developers and owners are willing to trade high maintenance and high operating costs for low first cost because they recognize that the designs will become dated and the cheap stuff will "ugly out," even if it doesn't wear out, and need to be updated every 10 to 15 years. When this mentality moves to building types where occupancy is more sensitive and O&M budgets lower, owners may find performance unacceptable. Even Simpson Gumpertz & Heger, a firm that can point to many examples of the consequences of poor design and construction, faces situations where clients are under intense pressures to reduce construction costs. They lose their appreciation for reliable and durable construction, and "don't know whether we're being prudent or unreasonable," says Thomas Schwartz. On the other hand, Schwartz says the reason certain clients are looking for more durable systems is, "They've had problems." *James S. Russell*



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Taylor Photographics

Three modest-scale projects suggest alternatives to the dumb wall. Stephen Kieran likens the University Center project at Pennsylvania's East Stroudsburg University as "the first step toward a sealant-free building" (top). Architect Jonathan Levi uses subtle moves in a strip retail center to develop

three-dimensional solidity (middle), rethinking coping details and movement joints. The Hillier Group designed a curtain wall (above) that could accept different details to take advantage of each solar orientation.



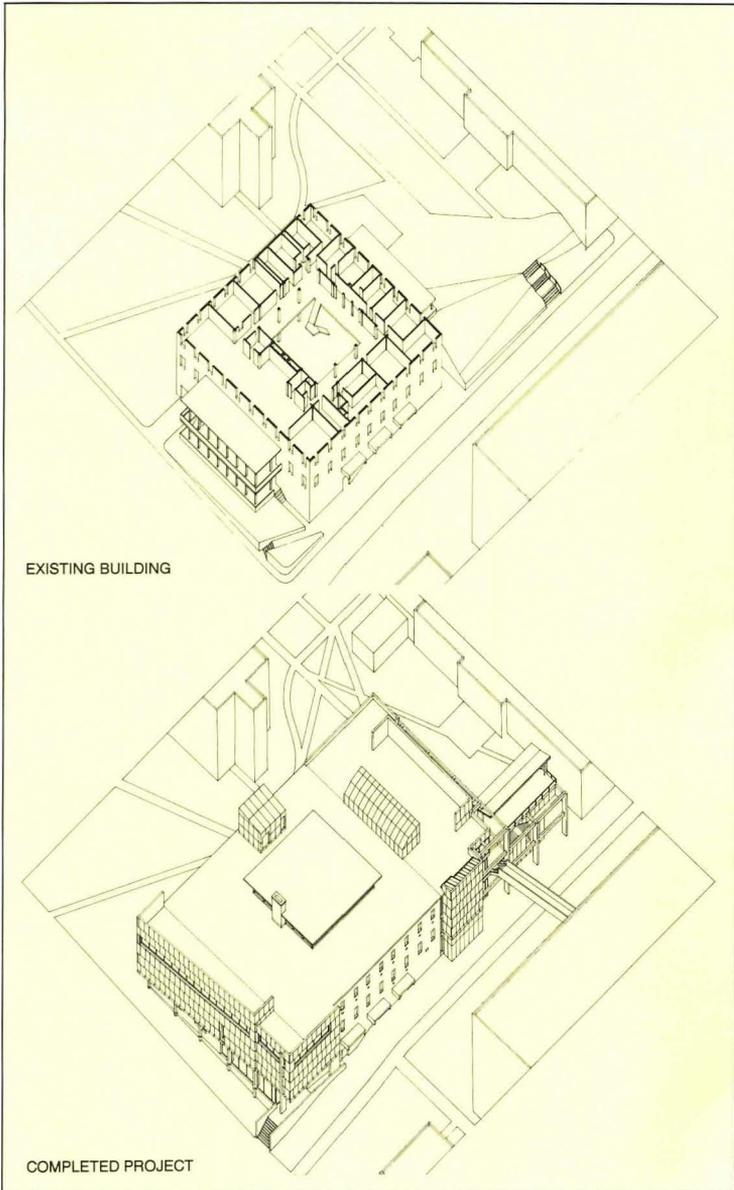
Tom Bernard

University Center East Stroudsburg University

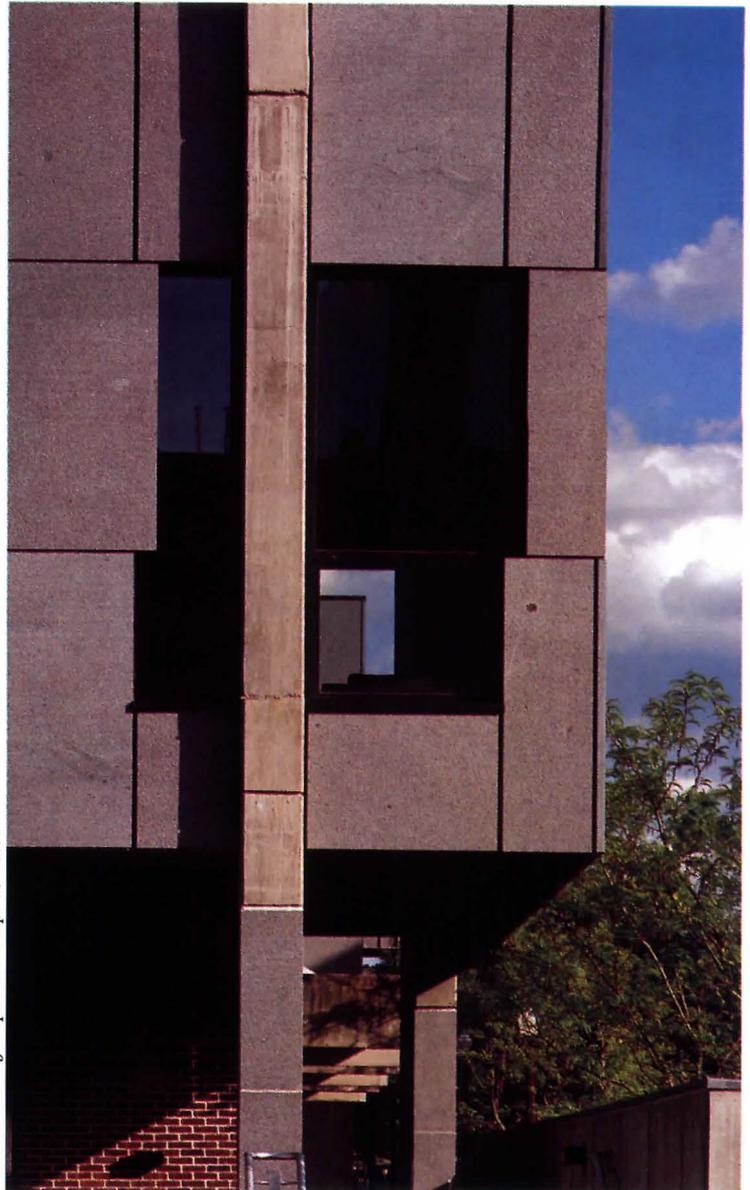
A ventilated wall in Pennsylvania

A technical rationale drove the design of this addition to a student center for a state university. By organizing mechanical systems and the building's structure on separate interweaving grids, Kieran, Timberlake & Harris has created an order that unifies an awkwardly proportioned square building, built in 1965, and additions on its north and south sides (drawings opposite). The design visibly comes together in the outside wall, which contrasts a cast-in-place concrete frame with a layer of thin-cut granite panels suspended in front of deep-set windows. The architects sought a system that was more reliable than sealant-dependent thin-skin curtain walls and lighter and simpler than a typical cavity wall.

Though the stone panels are stacked in a fashion resembling a traditional load-bearing bond pattern, they are in fact suspended from the building envelope by clips and their joints are unfilled. The granite's purpose in this wall is to protect the building from driving rain and sun. The building's actual envelope is a concrete-block backup wall that is insulated and waterproofed with a rubberized-asphalt membrane. Moisture passes freely out of the wall system through a

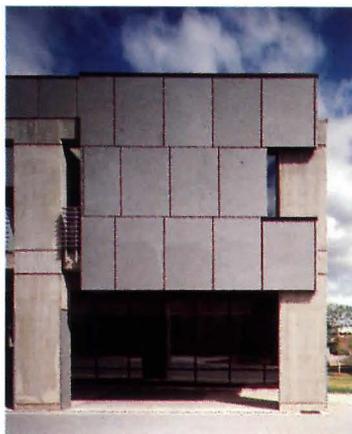


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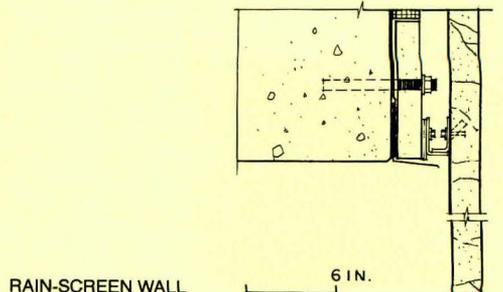
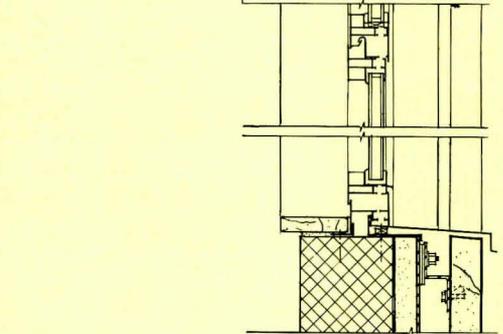
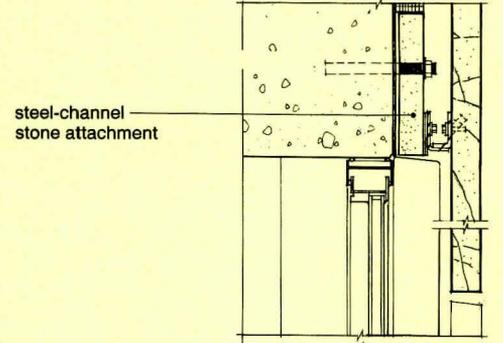
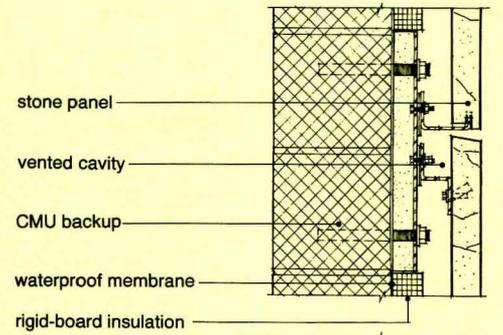
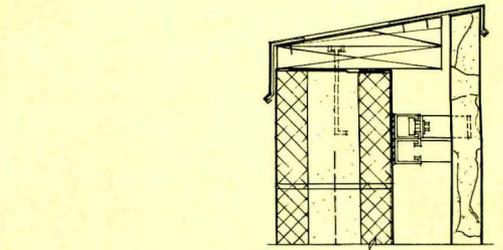
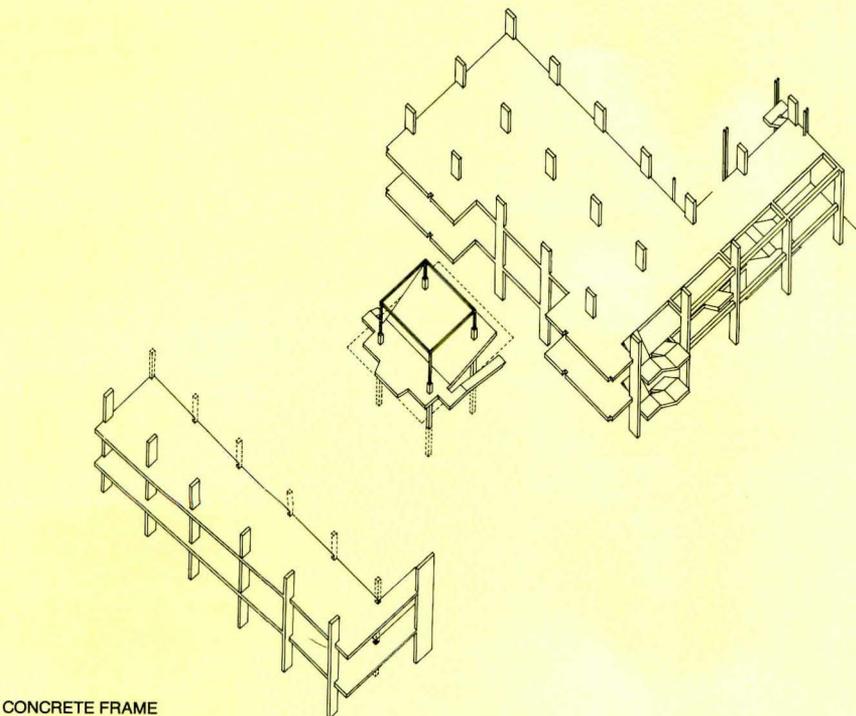
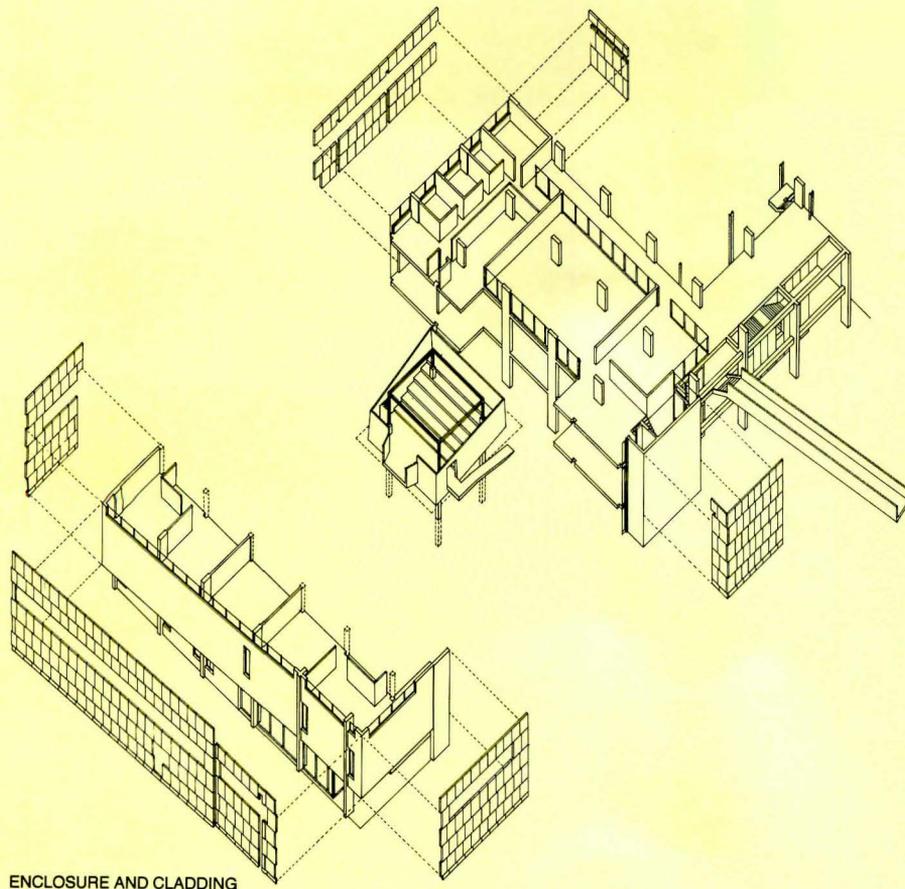


2-in. clear space between the suspended panels and the backup. It's not quite a cavity wall, as commonly seen in brick and block construction, nor is it quite the pressure-equalized rainscreen wall seen on highly engineered curtain-wall systems. This idea is called a "ventilated wall" in Europe, where it is more widely used, though systems are now available here (you can buy clip systems for stone or tile panels). "It's a step toward the sealant-free building," says Stephen Kieran.

This design sets the windows in the backup wall, which offers superior protection of the vulnerable window-to-wall joints. The architects allowed the stone panels to overhang the tops of the windows so that this layering is visibly expressed. "It reinforces the conceptual separation of structure and enclosure," explains Kieran. The inset windows simplified detailing and the wall-panel pattern minimized special stone cutting with the result that this rigorous approach met a typically tough institutional budget. (Remodeling and the addition came in at \$113 per new square foot.) *J. S. R.*



To economically add lounges, offices, and food-service areas to an existing student center, Kieran, Timberlake & Harris wrapped the brick-clad original with a small addition to the south and a larger addition to the north (drawings above). The wall expresses its layering of cast-in-place concrete frame (which forms an arcade on the north side, opposite and left), suspended open-joint granite panels, and windows set in the backup wall (above).



The original University Center was square, an awkward shape with already-deep floors. To maintain a perceptible order in new and existing construction, the architects first created a grid of cast-in-place concrete piers (opposite bottom left), which are uncovered in the interior and expressed as an open framework system on the west elevation. (They also invented a "troffer" system on the interior to organize new lighting, wiring, and hvac ductwork.) Then they enclosed the new parts of the building with their ventilated wall system (opposite top left and opposite right).

According to the architects, the wall system offers the advantages of pressure-equalized rainscreen walls (through open joints and sills) without the usual engineering costs. (Air spaces have to be analyzed for a variety of wind conditions, for example, and compartmentalized to assure that the pressure is indeed equalized. Rainscreens that are not pressure equalized can actually draw water into the wall through suction or capillary action.)

Credits

University Center
East Stroudsburg University
East Stroudsburg,
Pennsylvania

Architect: Kieran, Timberlake & Harris—Stephen Kieran, James Timberlake, Samuel Harris, partners-in-charge; Steven Irvine, Christopher Macneal, project architects

Engineer: Brinjac, Kambic & Associates, Inc. (structural, civil, mechanical, electrical, plumbing, fire protection)

Consultants: Lisa Roth (landscape); Tigue Lighting, Inc. (lighting); Chink and Associates (food service); ICI, Inc. (cost and scheduling)

Contractor: MSG Associates, Inc.





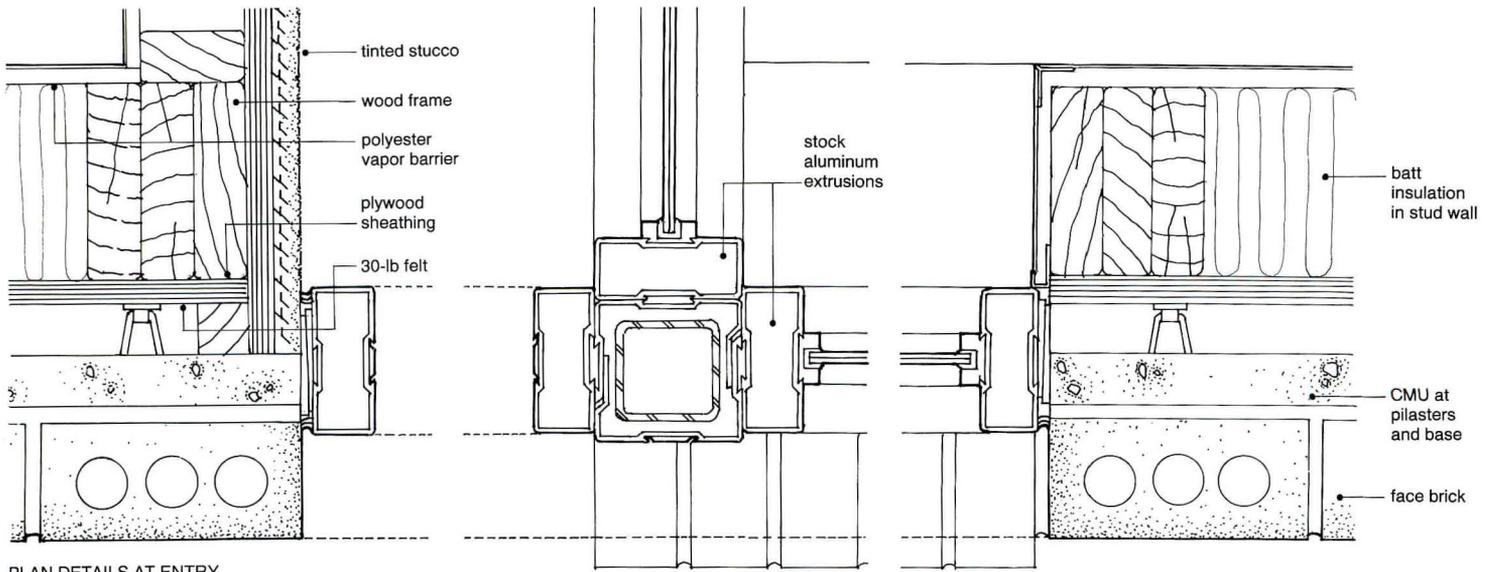
Southgate Commercial Block



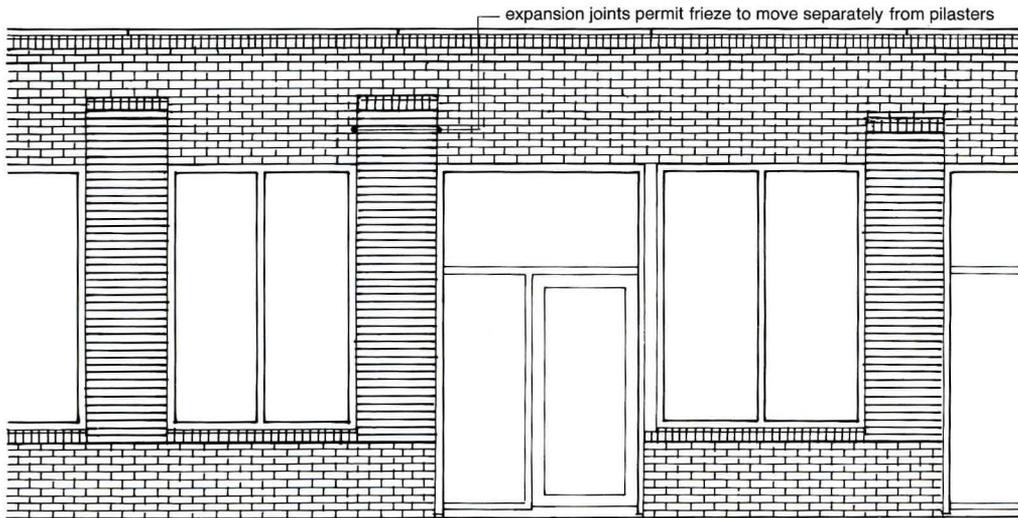
Disguising the shortcomings of a thin wall in Boston

Architect Jonathan Levi took the strictures of budget retail architecture in stride for this shopping strip in Boston's Jamaica Plains section. For him it was a chance to reinvent all of the details he had found problematic on similar projects. The design picks up the predominant rhythm of the residential neighborhood's columned porches in the typical bay (above left and opposite middle). He recessed the entrance, surface-mounted the window, and projected a pilaster.

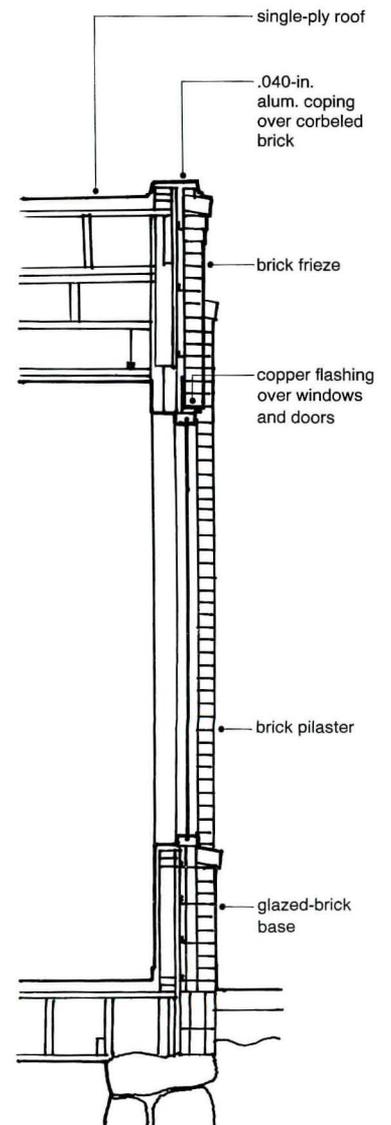
He worked out small-scale details to convey a solidity not easily achieved using a brick with stud-wall backup system. The budget did not permit returning the foundations to support the recesses, so a stock aluminum section covers the transition between brick veneer and stucco (top right). To avoid interrupting the wall above the storefront with vertical expansion joints, Levi placed the joints around the pilasters, permitting the entire length of the fascia over the openings to move as a unit in response to thermal and moisture forces. *J. S. R.*



PLAN DETAILS AT ENTRY



TYPICAL BAY ELEVATION



WALL SECTION



Levi achieves a powerful rhythm with small-scale gestures. The strip's composition is united by a glazed-brick base. He deeply raked joints to emphasize pilasters (opposite left). A slip joint at the end wall (left) allows independent movement of the long fascia above the openings. Since standard metal copings provide an unattractive cap to the wall, Levi set them back over a rowlock course of canted bricks (wall section right). He butted the coping joints together over a metal base flashing that carries water out of the gap, thereby avoiding typically sloppy "lap and flap" splices.

Credits

*Southgate Commercial Block
Boston, Massachusetts*

Architect: Jonathan Levi
*Architect—Jonathan Levi,
partner; A. Anmahian,
I. Strong, staff*

Engineer: Foley and Buhl
Engineering (structural)

Contractor: Bay State
Construction, Inc.



Taylor Photographics

AT&T Information Services

Advancing the state of the art in New Jersey

The design of the envelope of this three-building, 383,000-square-foot office-building complex made an energy-saving daylighting scheme possible. The Hillier Group devised a modular curtain-wall system with an appearance that is uniform yet capable of different configurations for different orientations. The east and west elevations of the building use a two-layer curtain wall with a two-and-a-half-foot insulating air space (above). The air space holds heat from the winter sun. In the summer, vents in the thermostatically controlled airspace automatically open, releasing built-up heat. On the south elevations, horizontal sunshades (opposite bottom) bounce high-angle spring and fall sun onto ceilings. The shades prevent direct entry of overpowering low-angle winter sun. The well-insulated north elevation is subject to minimal solar-heat gain. On the interior, sensors step lighting down on bright days, taking full advantage of daylight. According to Jordan Fox, of consulting engineers Flack & Kurtz, the double-wall system would have multiplied energy savings had it been used for winter heat reclamation as originally designed. The design was simplified, however, to reduce construction costs.

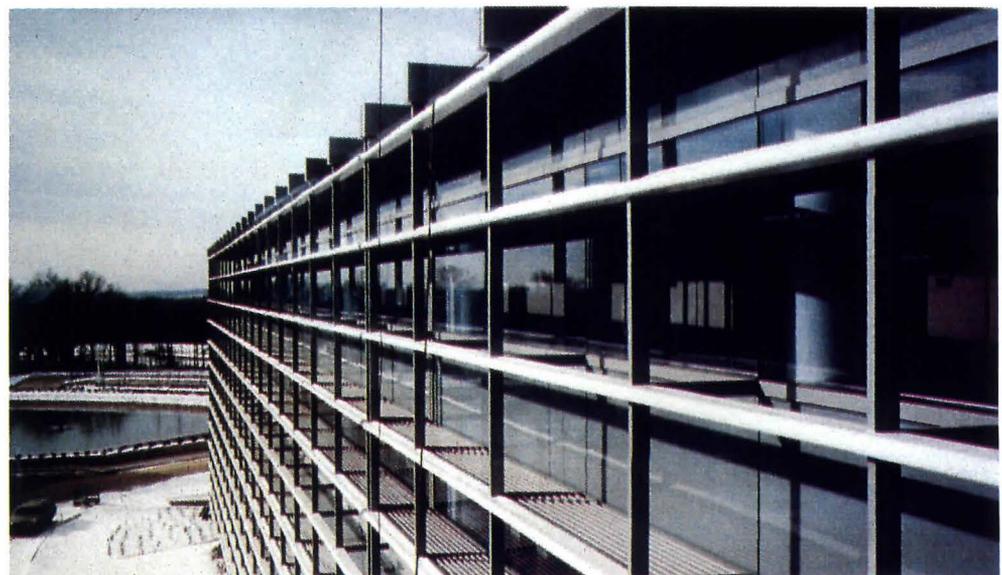
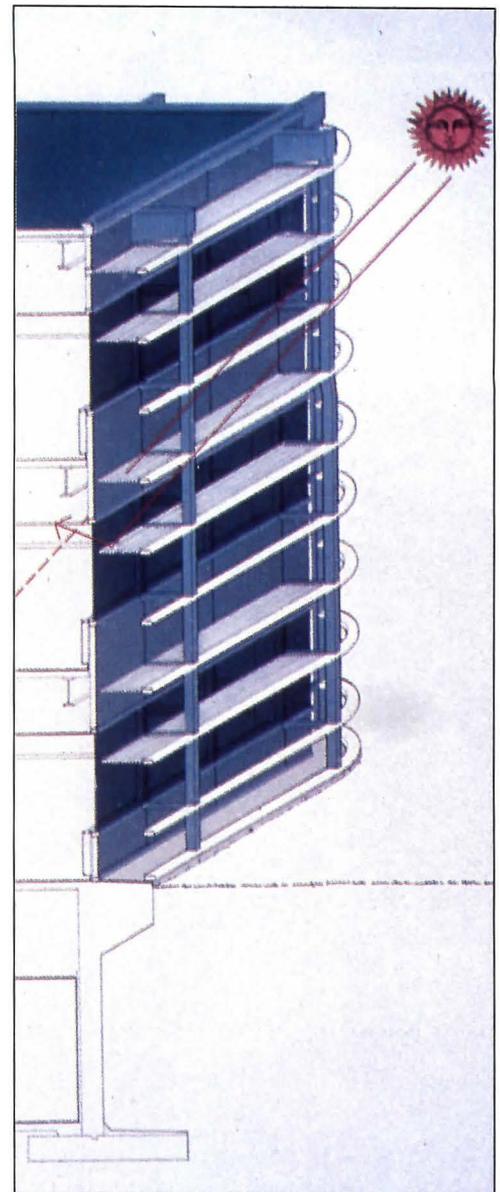
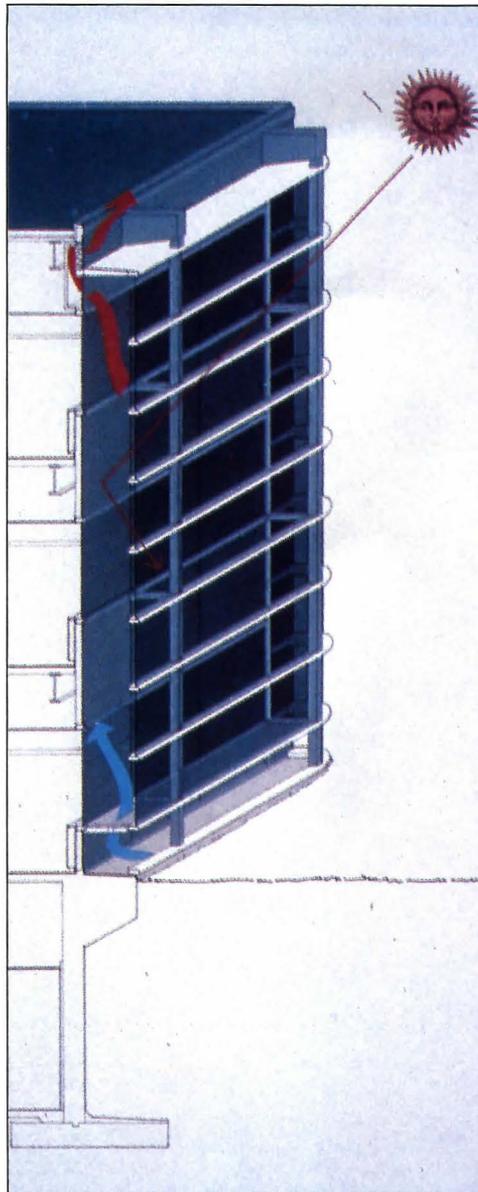
J. S. R.

In New Jersey winters, where sunny days are frequent but temperatures can range from the low 30s to single digits, the airspace between the outer and inner curtain wall captures solar heat, insulating the wall (near right diagram). In summer, the stack effect vents hot air at the top. The outer wall is single-glazed with a low-E coating. The inner wall is uncoated insulating glass.

Blinds were originally installed within the insulating space to be operated automatically in response to the sun angle. The operating motors, however, were unable to synchronize operation of the blinds across the entire elevation as intended. Conventional interior blinds have since been installed. On the south elevation, fixed sunshades direct high-angle sun to bounce off the ceiling deep into the space. The shades prevent direct sun from overlighting work surfaces (far right diagram).

Credits

AT&T Information Systems
Bridgewater, New Jersey
Architect: The Hillier Group—
Steve DeRochi, principal;
Robert J. Kady, project
manager; Ernest Hunt, project
coordinator; Tetsu Amagasu,
designer
Engineers: Flack & Kurtz
(mechanical, electrical,
plumbing), Paulus Sokolowski
& Sartor (site, civil, structural)
Construction Manager:
Lehrer/McGovern



CALL FOR ENTRIES

RECORD HOUSES 1994

The editors of ARCHITECTURAL RECORD announce the 39th annual RECORD HOUSES awards program. This program is open to any registered architect; work previously published in other national design magazines is disqualified. Of particular interest are projects that incorporate innovative programs, building technologies, and use of materials. There are no entry forms or fees, although submissions must include plan(s), photographs (transparencies, slides, or prints), and a brief project description—bound firmly in an 8½ by 11 in. folder—and be postmarked no later than October 30, 1993. Winning entries will be featured in the 1994 RECORD HOUSES. Other submissions will either be returned or scheduled for a future issue. If you would like your entry returned, please include a self-addressed envelope with appropriate postage.

Submissions should be mailed to:

Karen D. Stein

RECORD HOUSES

ARCHITECTURAL RECORD

1221 Avenue of the Americas

New York, New York 10020

Product Literature/Metal



400. No-mar stainless steel
A color brochure illustrates a new, unbroken finish available for architectural stainless-steel sheet, one that shows no directional buff or grinding lines. Inventoried in several gauges and sheet sizes, the standard finish is mirror-polished #8; bronze, blue, gold, red, green, and black are available on special order. Clark Metals, Gardena, Calif.



401. Perforated-metal guide
An Applications Directory provides the designer with a single-source reference to planning and creating projects using perforated metals, illustrating specific patterns appropriate to various gauges and finishes. Diamond Mfg. Co., Wyoming, Pa.



402. Metal roofs for schools
Two colorful brochures highlight the design benefits attributed to standing-seam roofing, illustrating several award-winning school reroofing projects. Also covered are life-cycle cost analysis, recommended insulation materials for metal roofs, and installation techniques. American Iron & Steel Institute, Washington, D. C.



403. Foundry
Though specializing in fine-art castings, the facility founded by sculptor J. Seward Johnson, Jr. has expanded its expertise in induction welding, casting, and mold-making to architectural custom-design and restoration projects. Recent work includes huge ornate lampposts for New York City's Bryant Park. Johnson Atelier, Mercerville, N. J.

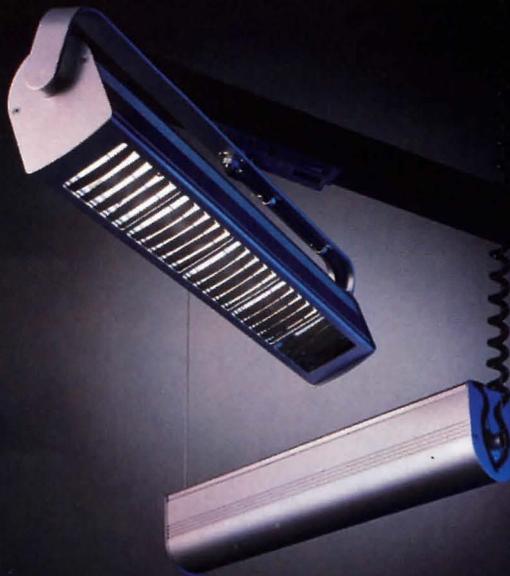


404. Component railing system
Fabricated from pre-anodized aluminum pipe, cast aluminum/magnesium fittings, and stainless-steel hardware, shop-assembled railings are said to be as rigid as welded rail. Five CAD disks provide complete railing details, as well as specs on ladders, gratings, and slide gates. Thompson Fabricating Co., Inc., Birmingham, Ala.*



405. Stainless-steel guide
A data sheet provides concise information about grade classifications of stainless steel, lists standard dimensions for various products (such as sheet, strip, plate, bar, wire, pipe, and extrusions), and describes finish options. Specialty Steel Industry of the U. S., Washington, D. C.
Continued on page 121

*Product data on CAD disk
For more information, circle item numbers on Reader Service Cards



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General Services Administration Building, Oakland, CA. Architect: Kaplan, McLaughlin & Diaz. General Contractor: Walsh Construction Co. Products: Custom 5600 Curtain Wall, Series D-500 Entrance, Series 2000 Sliding Glass Doors, Custom Series 890 Equa-Vu™ and System II™ Windows.

The GSA contract called for random testing to verify the air infiltration and water resistance specifications of the building's glazing systems.

The curtain wall, storefront, doors, and windows all had to perform to spec or they would be rejected. We wanted to work with a manufacturer that could give us the kind of products and performance we needed to keep the job moving on time and on budget.

We awarded the job to EFCO.



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Product Literature/Metal



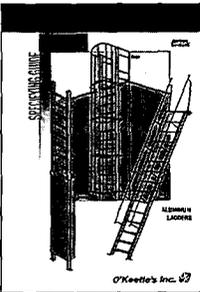
406. Welded spiral stairs

Made-to-order spirals are shipped as fully fabricated units and need no hubs or bolts. A catalog illustrates wood, steel, and aluminum stairs used in churches, lofts, stores, and homes. Rail options include ornate ironwork to match period details. Stairways, Inc., Houston.



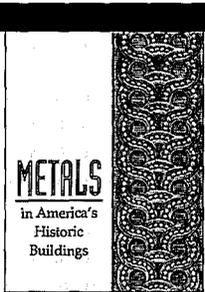
407. Metal graphics

A four-page brochure highlights some of the sheet-metal finishes created by combining multi-directional and non-directional brushing, sandblasting, polishing, or electroplating of gold, nickel, or copper. Standard patterns are available, and almost any custom design is possible. Surface Design+Technology, Hialeah, Fla.



408. Aluminum access ladders

Cage, access, and ship ladders available in dimensions and tread configuration to meet both standard and custom requirements of industrial applications. An eight-page catalog illustrates all ladder types with 1/4-scale detail drawings. O'Keeffe's, Inc., San Francisco.*



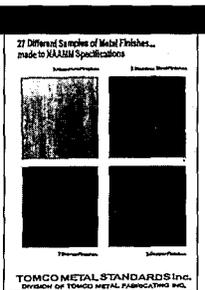
409. Historic metal elements

A 1992 revision of *Metals in America's Historic Buildings* reflects the most recent conservation technology covering the repair of building parts of tin, lead, zinc, copper, iron, aluminum, and other alloys. Photos illustrate before and after; all techniques are explained step-by-step. \$10 charge. National Park Service, Washington, D. C.



410. Embossed-metal doors

Designs described as permanent and abuse-resistant are pressed into stainless steel, bronze, and aluminum sheets. Other metal-door options include juxtaposed surfaces and patterns in five designs, and System 8, which combines metal faces with an unframed glass-panel meeting stile. Forms+Surfaces, Santa Barbara, Calif.



411. Finish standards

Metal-alloy and surface-treatment options for architectural metal have been standardized to facilitate design coordination and specification. A fabricator's program samples 28 different finishes; metals include aluminum, stainless steel, bronze, and copper. Tomco Metal Standards, Cleveland.

Continued on page 129

We've got a better idea than a better mousetrap.

We're Bill and Craig Markorow. A few months ago we invited you all to enter our *Urban Outhouse Design Competition*, and for a while there we thought that *all* of you really would. We received



over 2,000 inquiries about the competition and, finally, 311 entries from everywhere in the United States, from the state of Georgia to the Republic of Georgia and fourteen other countries, from Japan to Estonia. Five graduate schools of design used the competition as class projects.

Thank you, every one of you. Especially for making it all so much fun. We told you to enjoy yourselves, and you did. One entry was shaped like a huge fire hydrant (with huge attendant dog, of course), another like an Ionic column, and one had plate glass walls that turn opaque (we hope) when the outhouse was in use. In the words of our panel of judges, the entries "ranged from serious to frivolous to bizarre."

How's this for a distinguished panel?



The judges? Philip Johnson, Henry Meyerberg, Karen Stein, Tucker Viemeister and Lella Vignelli. And we thank every one of those gracious, talented people, too. They met in New York last May, near our Grand Army Plaza urban outhouse site,

and chose the winning designs, which are:

- \$5,000 Grand Prize Winners: Cynthia Sours and John White of Paris, France;
 - \$2,000 Second Prize Winner: Sheila Riley of Santa Fe, NM;
 - \$1,000 Third Prize Winners: Irwin Berman, Ed Cheshire and Harlan Hambright of Brunswick, Georgia.
- The eight \$200-winning Runners-Up, in alphabetical order, are:
- John Beckmann and Margaret Janik, New York, NY;
 - Kyra Clarkson, New Haven, Connecticut;
 - Dennis DeLap, Sycamore, Illinois;
 - Paul Lewis, Peter Pelsinski, Marc Tsurumaki and Lawrence Turner of Peter Moore Associates, New York, NY;
 - Jun Nagase, Tokyo, Japan;
 - Ira Smith, Cambridge, Massachusetts;
 - Makoto Sei Watanabe, Tokyo, Japan;
 - Allen Wilpon and Maria Isabel Wilpon, New York, NY.

Influence and affluence, through effluence.

We'd hoped this competition would generate as much interest (and publicity, of course) as our first, *Design-A-Gazebo* contest (140 entries) did three years ago. But the *Urban Outhouse Design Competition* proved that there is nothing as compelling as, uh, fundamental concerns. It was written up in *The New Yorker* and many other publications, and featured on several radio shows. And New York's *Municipal Art Society* was so intrigued it mounted a summer-long exhibition of the winning designs—*now extended through October 31*. Not bad for a little slate company from Vermont.

P.S.: By the way, go see the new Middle School Building at The Shipley School, Bryn Mawr, Pennsylvania.

VERMONT STRUCTURAL SLATE COMPANY, INC.

Fair Haven, VT 05743
Phone: 1-800-343-1900.

Computers/MiniCad+

Continued from page 33

3-D (by rotating or extruding), but as is common with 3-D software that can run on small computers, 2-D and 3-D objects can coexist in the same drawing; the 2-D object is not a subset of the 3-D.

As with many Mac packages, MiniCad+ also uses an integer-based database to define entities in your drawing. This allows it to run quite well on systems that do not have the FPU floating point math coprocessor. Screen redraws are slower, however.

The built-in database is based on a spreadsheet model that's particularly easy for architects to grasp. As with a printed table, rows are data records and columns are fields. MiniCad+ can also import data files into drawings. All this facilitates the development of quite fancy macros.

MiniCad+ supports TrueType and scaled fonts. It is System 7 "friendly" but does not support balloon help; tools and modes are identified in the drawing window. It will run in as little as 2 MB using System 6, but 4 MB is more realistic—and mandatory for System 7. **Circle number 305**

Automated Catalogs

Continued from page 33

details) as a stand-alone, and a third does product specifications in a format that can be edited in word-processing software.

Marvin Windows & Doors had another problem; it sells 11,000 standard sizes and an almost infinite variety of custom products. So it developed a little stand-alone CAD program that runs in Windows; you design your item, and save it as a DXF file that can be picked up by just about any CAD package, in Windows, DOS, UNIX, or Macintosh. It also has a version that works inside AutoCAD (DOS version) itself (these packages are versions of the Marvin Design System), and a separate price guide (Marvin Quote System) on disk.

Sweet's Electronic Publishing (a division of McGraw-Hill) released its first CD-ROM disk this spring, with about 500 vendors' products listed. CAD users can paste information from the disk to drawings and specification text. The disk is cross-referenced to the multi-volume catalog sets. Sweet's promises better search software in future disks.

Another company, *EPIC* (Electronic Product Information Corp.) has been developing electronic catalogs for many vendors, and is now cooperating with *Cahners*—publisher of magazines for construction and specification professionals—also as a CD-ROM catalog.

These firms answer an old question—if some vendors computerize, thus making their products easier to specify, would it be unethical to ignore the vendors who don't? The answer: They are all computerizing anyway. And, broadly speaking, they are all computerizing the same way—with price-estimating and specification databases, standard file formats for their drawing data, and so forth.

You'll soon be able to use search software built into your CAD program to search everyone's catalog at once. Anaheim is one approach (and the vendors' software will need some modification for seamless use). Softdesk and other suppliers of add-ons—especially for Windows, Windows NT, and UNIX CAD packages—will be there, too.



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Drive Size	1" Industry Standard	1" Industry Standard	NO
Free 3M Tape	YES	YES	NO
DOS/Windows Software	YES	YES	NO
2-Year Warranty	YES	YES	NO
Full Cartridge Insertion	YES	YES	NO
Suggested Retail Price	\$179.99, with all the above, including a formatted 3M minicartridge	\$199.99, with all the above, including a formatted 3M minicartridge	\$199.99

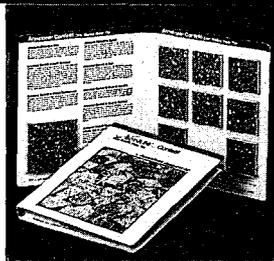
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Product Literature/Interior Materials



412. Carpet-pattern options

A colorful, 40-page catalog illustrates all standard Commercial on cut-pile carpeting designs, including patterns developed for hospitality and corridor use. Custom colors and patterns, such as corporate logos, offered at a 300-yd minimum. J&J Industries, Dalton, Ga.

413. Multifleck cast marble

An architectural sampler contains chips of the entire color palette for new Confetti-pattern flooring, which is made of recycled Armstone tiles. A lively, multicolor pattern, it is said to be particularly suited to hospitality applications. PermaGrain Products, Inc., Media, Pa.

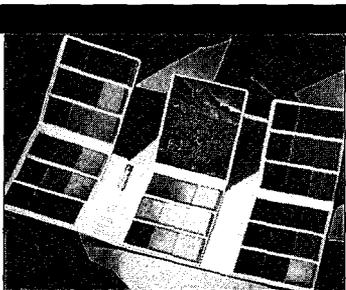
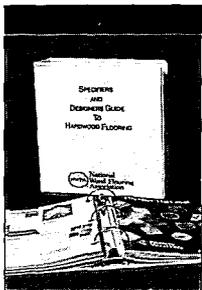


414. Healthcare furnishings

An eight-page capabilities brochure highlights furniture elements for many medical and patient-care functions, from patient room and nursing station to back office and pediatric-play areas, illustrating tables, chairs, storage, and other products from five Haworth companies. Haworth, Inc., Holland, Mich.

415. Laminated fabrics

Decorative and protective laminating services described in a 32-page catalog include paper backing for fabric wallcoverings, vinylizing upholsteries, and stain repellent for materials such as grass cloth. Coordinating window treatments, wallcoverings, and upholsteries is a specialty. Trade-price list. Custom Laminations, Inc., Paterson, N. J.



416. Wood-flooring guide

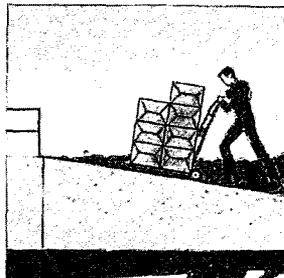
A resource book for architects and designers contains general information on the industry, technical/performance data, and product and design information on specific lines of hardwood flooring. Now in a binder format, the extensive guide is available without charge to design professionals. National Wood Flooring Association, Manchester, Mo.

417. Cut-and-loop carpeting

For healthcare and corporate use, Contours 30-oz carpet is said to be the first completely solution-dyed style to have integrated patterns, not printed or applied. A sampler holds an 18- by 18-in. piece, and swatches of coordinating border and accent products. Mannington Commercial, Calhoun, Ga.
Continued on page 131

**Product data on CAD disk
For more information, circle item numbers on Reader Service Cards.*

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Circle 33 on inquiry card

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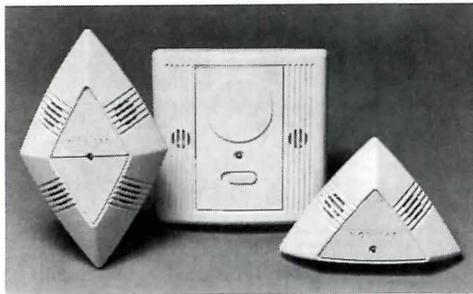
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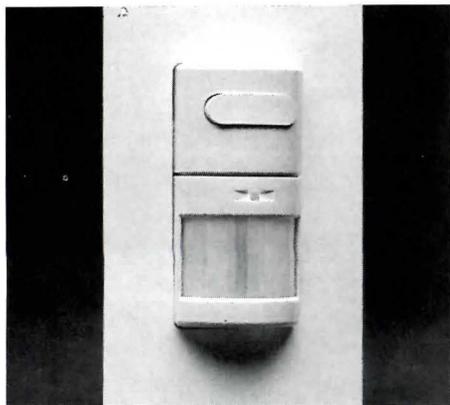
311. Windows-format CAD

Said to retain all of the performance features of the Macintosh-based original, ArchiCAD for Windows can read and write .dwg format files. It can generate elevations, 3-D sections, renderings and animations, and includes a parametric object library. Graphisoft U. S., Inc., S. San Francisco, Calif.



312. Smaller size, wider coverage

Wall and ceiling occupancy sensors come in a new housing said to be 50 percent smaller than previous models, but with increased coverage. Novitas, Inc., Culver City, Calif.



313. Low-profile sensor switch

A compact design fits behind a decorative wall plate, replacing existing devices. An integrated light-level sensor override keeps lights off if a user-set ambient-light level is present. Watt Stopper, Santa Clara, Calif.

Continued on page 127

Important Information

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

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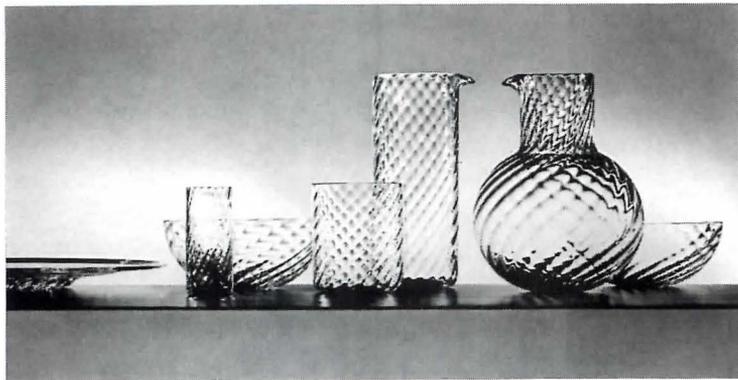
Aquafleck will look as good five years from now as it does today. Because application and clean-up are so simple, it's easier to get jobs done on time. And one more reason for the ages—Aquafleck generates no hazardous waste. A definite victory for responsibility.

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California Products
CORPORATION
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New Products continued from page 107



314. Vignelli at the bar
The first in a series of high-design handmade American glassware, Massimo Vignelli's carafe and tumblers capture refracted light in a Venetian manner. Priced in the \$50-

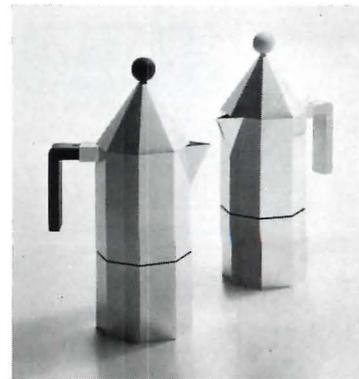
\$500 range, the Sequence Collection is aimed at what the maker hopes is a new generation of design-aware consumers, and will include pieces by Monica Guggisberg and Richard Meier. Steuben, New York City.



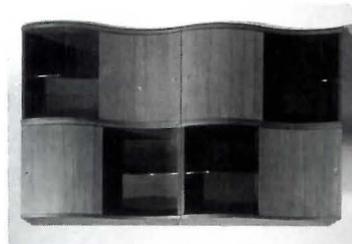
316. Economically-scaled stacker
Architect Brian Cox says his lean Gallery Chair uses the bare-bone construction and flexible function of the "cheap seats" of a theatrical gallery. Bernhardt, Lenoir, N. C.

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

317. Inspiration strikes twice
Aldo Rossi's new espresso pot for Alessi resembles his Teatro del Mondo in Venice. Made of aluminum, with knob and handle in blue or black, it's called (naturally) Ottagono. Markuse, Woburn, Mass.

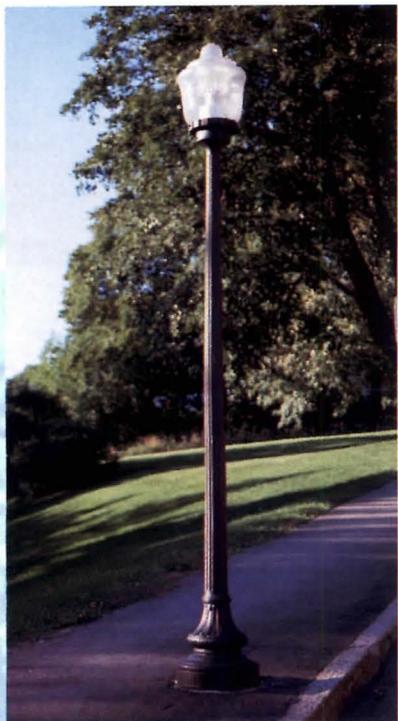


315. Colorful HPL woodgrains
Produced in soft yellow, copper, blue, and green shades, woodgrain-pattern laminates have the muted look of pastel-stained woods. Called, with Italian flair, Serie Acero Legni Colorati, surfacing materials come in a matte finish. Abet, Inc., Teterboro, N. J.



318. Franco-Italian
A prize winner at last year's Contemporary Furniture Fair, the Zadig modular storage unit was created by Milanese designer Emilio Rossi for the French manufacturer MCB (Meubles Chantiers Baudet), a major supplier to European hotels and public buildings. Derekshenz, Farmington, Ga. ■

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AutoCAD - T1
File Edit AdCADD Misc Draw View Layer Diffuser Duct
Fittings Design Other Help
Layer 0 -42.0000,225.0000

AutoCAD - T1
BOUNDARY LINE ADJUSTMENT PLAN
PREPARED FOR
A.J. COLLIER JR.
CEDAR HILL RD., HENNIKER, NH
DATE: APRIL 4, 1982 SCALE: 1" = 24'

AutoCAD - T1
File Edit AdCADD Misc Draw Edit. View Layer Wall
Door Window Program Symbols Help
Layer 0 110.0000,52.0000

AutoCAD - T1
File Edit AdCADD Misc Draw Edit. View Layer Wall Door
Window Program Symbols Help
Layer 0 87.0000,119.0000

Style Names
BLOCKB
BLOCK12
MASONRYB
MASONRYBF
MASONRY12
MASONRY12P
FOUNDATNB
FOUNDATNT0
FOUNDATNI2
LOW4
ONELINE
SOFFIT
COUNTER
12CENTDS
14CENTDS
GUTTER
WALLEL3
TOPFACE
FACEWALL
FACEDWALL

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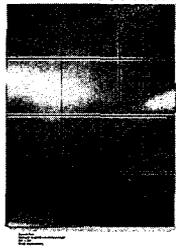
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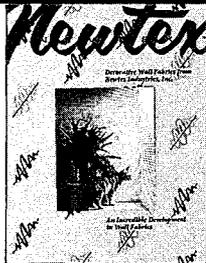
Product Literature/Interior Materials

SURFACE SYSTEMS



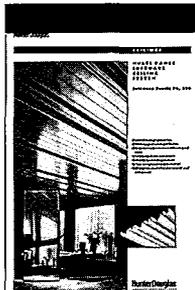
418. Versatile wall treatment

A Surface Systems binder supplies application photos, product data, installation details, and pricing information for this new interior-wall technique. Surfacing options include wood veneers, faux finishes, light-weight cement, and metal-faced panels, carried on three decorative and defining grid styles. Marlite, Dover, Ohio.



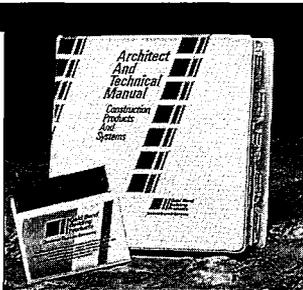
419. Tough and textured

Non-toxic and flameproof, Newtex wallcoverings are woven of Vitron fibers in several distinctive textures, all said to resist the impacts, harsh cleaning, and scuffing common in public-area and industrial applications. Material is designed for use with site-applied decorative topcoats. Newtex Industries, Inc., Victor, N. Y.



420. "Artistic" metal ceilings

An eight-page brochure describes how multipanel linear metal-ceiling systems allow varying panel widths to be combined on the same carrier, and to have rounded Softwave panels clipped on in-between for a site-specific decorative effect in a selection of 70 available colors. Hunter Douglas Architectural Products, Duluth, Ga.



421. Gypsum-plaster products

Available in both paper and CAD format, this maker's Architect and Technical Manual for Construction Products and Systems includes performance data, drawings, and substrate/installation information for board, plaster, plaster veneers, prefinished panels, and other products. Gold Bond Building Products, Charlotte, N. C.*



422. Rubber-based flooring

An architectural catalog covers all Nora products, including Norament, a pastille-type floor offered in over 50 colors, two-tone effects, and non-directional textures, and Noraplan, a more traditional, smooth surface. Rubber floors are said to retain good appearance in very-high-traffic environments. Freudenberg Building Systems, Lawrence, Mass.

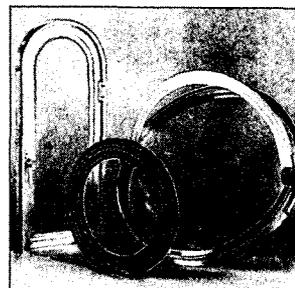
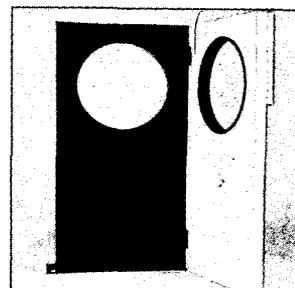


423. Hospitality textiles

An eight-page Technology Update discusses soil- and stain-repellent, antimicrobial, self-extinguishing, and static-protective fibers used to construct jacquards, velvets, dobbies, tapestries, and other contract textiles. Samples available to design professionals. Douglass Industries, Egg Harbor, N. J. Continued on page 133

*Product data on CAD disk
For more information, circle item numbers on Reader Service Cards.

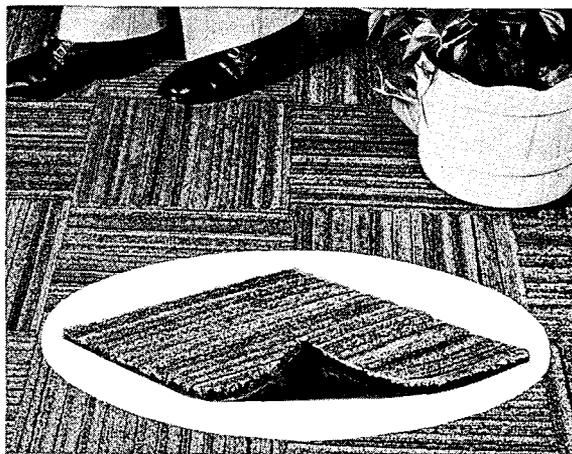
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We invite you to find out more about us, more about the many advantages of our top-quality, competitively priced pre-formed metal roofing systems. Take a look at your Sweet's Catalog: 07410/MBC and 07610/MBC. Then call the MBCI office nearest you.



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Richmond 804/526-3375

Dallas 214/988-3300

Indianapolis 317/398-4400

Developer: Leonard, Kinsey & Associates, Hilton Head SC • Architect: Geheber Lewis Associates, Atlanta GA

General Contractor: Graves Commercial Builders, Hilton Head SC

Roofing Contractor: Ronnie Smith Roofing, Hilton Head, SC • Metal Roofing System: MBCI's Craftsman SB-12 Polar White

Circle 42 on inquiry card

Product Literature/Interior Materials



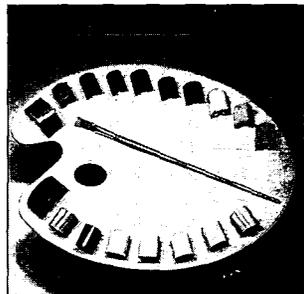
424. Architectural drywall trims

A Final Forms bulletin highlights extruded-aluminum trims for interior and exterior use. Drawings and color photos illustrate custom-made friezes, intersections, end caps and corners, and reveal inserts, plus standard drywall and plaster trims. Drywall light covers are a specialty. Gordon, Inc., Shreveport, La.



425. Vinyl wallcoverings

An eight-page brochure illustrates corporate, healthcare, hospitality, and retailing applications of Guard contract-vinyl wall treatments in both 27- and 54-in. widths. Product features include stain-resistant top coats; non-toxic mildewcide; and a wide range of custom-pattern options. Columbus Coated Fabrics, Borden, Inc., Columbus, Ohio.



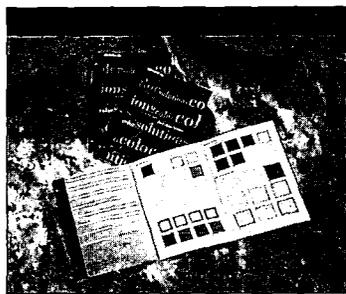
426. Impact-protection selection

The Boston Bumper, an interlocking, resilient wall-protective trim system, is now available in an expanded range of 18 standard vinyl colors, offering an economical method of customizing a high-traffic interior. Custom-color products can match paint, laminate, tile, or other materials. Boston Retail Products, Medford, Mass.



427. Decorative noise control

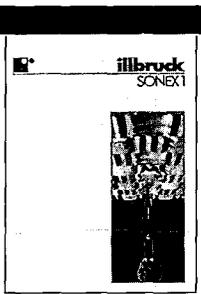
An architectural brochure describes Acousti-Tack wall panels and Soft Sound ceiling baffles and tiles. Built with a fiberglass acoustical core, fabric-covered wall and ceiling treatments can follow convex or concave walls, radius at edges, and be formed in custom shapes. Golterman & Sabo, Inc., St. Louis, Mo.



428. Grid and tile guide

A six-page Color Solutions paint-finish guide is offered to help architects and designers better integrate ceiling colors into overall interior color schemes. Includes swatches of 24 pre-painted-tile colors, 32 grid colors, and nine Artisan panel colors. USG Interiors, Inc., Chicago.*

*Product data on CAD disk

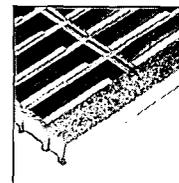
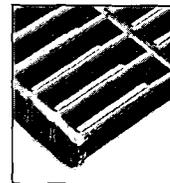
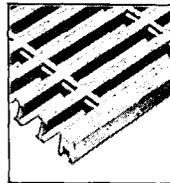
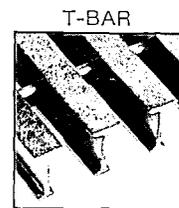
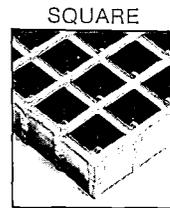
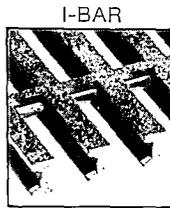


429. Fire-rated acoustic foam

Sonex 1 is a flame-resistant version of Sonex anechoic-wedge-design sound insulation. An optional Hypalon coating allows sponge-and-hose cleaning, and Class 1 performance values permit use in high-risk occupancies. Illbruck, Minneapolis. ■

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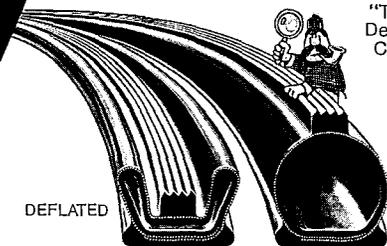
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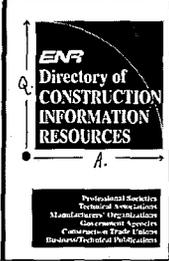
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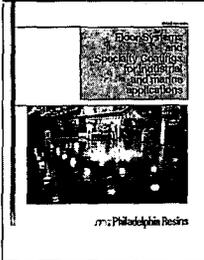
Circle 45 on inquiry c

Product Literature



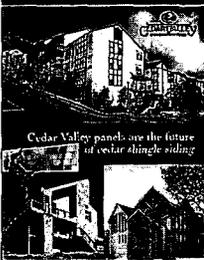
430. Design/construct reference
A 562-page Directory gives contact name, address, and phone/fax numbers for over 1,600 professional and technical associations, manufacturers groups, and government and code organizations, cross-referenced by CSI format and appropriate key word. Flyer includes a sample page and order form. Engineering News Record, New York City.

431. Secure door closers
Constructed to meet the requirements of correctional facilities, banks, schools, and other public-access buildings with significant potential for vandalism, escape, or damage to door hardware, HS 7800 surface-applied closers have a full metal cover and reinforced, one-piece arms. DORMA Door Controls, Reamstown, Pa.



432. Industrial floorings
Heavy duty, non-skid floors, self-leveling epoxy floors, chemical-resistant urethane coatings, and other protective flooring and coatings are described in a six-page bulletin. Most products meet OSHA, USDA, and state VOC regulations; all color options are illustrated. ITW Philadelphia Resins, Montgomeryville, Pa.

433. Modified-bitumen roofing
High-profile projects, such as the Library of Congress, are featured in a 24-page architectural brochure on Siplast roofing systems. Product coverage for Paradiene, Parafor, and Veral materials includes technical data, details, slope requirements, and fastening- and insulation-selection charts. Siplast, Inc., Irving, Texas.



434. Panelized cedar siding
A brochure illustrates features such as an interlocking, watertight vertical-end joint (which eliminates the "panel look") and asphalt-coated fiberglass mats premounted under each shingle course. Panels with up to five courses offer a choice of exposure, cedar grade, and decorative buttlines. Cedar Valley Shingle Systems, Hollister, Calif.

435. Interlocking floor mats
A self-draining floor suggested for wet areas such as pool decks, locker and shower areas, saunas, and exercise rooms, Dri-Dec snap-together and roll-type mats are made with oxyB1 vinyl, an EPA-approved anti-fungal and bacteriostatic compound. Brochure shows all seven colors. Dri-Dek Corp., Naples, Fla.
Continued on page 137

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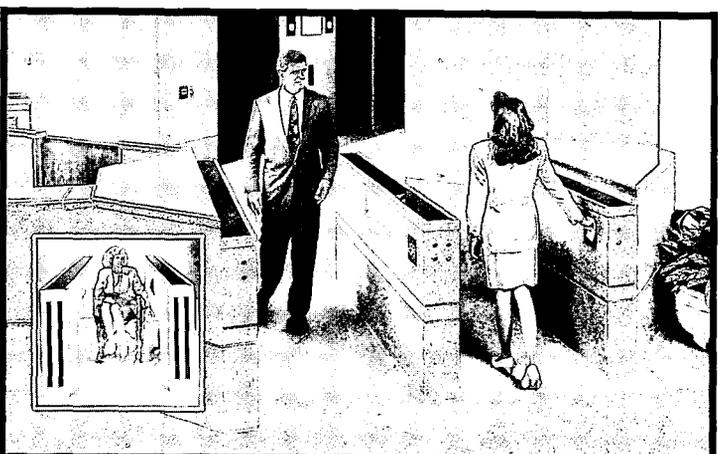
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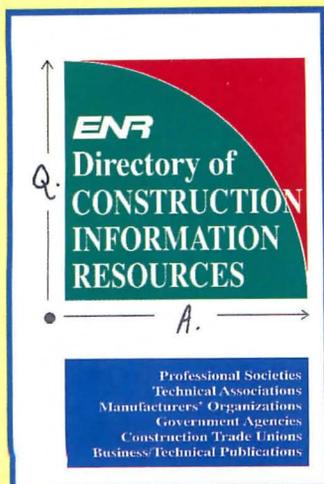
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Manufacturer Sources

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 62-71

Carre d'Art, Nimes
Sir Norman Foster and Partners, Architect
Curtain wall and windows: CFEM Facades. Concrete frame: Meridionale des Travaux. Glazing: St. Gobain. Limestone flooring: Hiross. Door and cabinet hardware: D-Line.

Pages 78-83

The Metropolitan Community Church of Washington, D. C.
Suzane Reatig Architecture
Storefronts: Kawneer Co., Inc. Split-face CMU: Fizzano Brothers, Inc. Entrance: Swingin Door, Inc. Acoustic ceiling: USG Interiors. Coatings on metal: TNEMEC. Paint: PPG (Duron). Porcelain stoneware tile: Graniti Fiandre. Wall-mount uplights: Limburg. Exterior lighting: BEGA.

Pages 84-91

Davis Museum and Cultural Center, Wellesley College
Rafael Moneo, Architect
Brick: Morin Brick Co. Precast: James Farina Corp. Single-ply roofing: Carlisle SynTec. Standing-seam roofing: Lead-coated copper, fabricated by C&C Cornice. Aluminum-framed windows: Kawneer Co., Inc. Solar-control film: 3M Co. (Scotch Tint). Entrance: Hi-Rise Revolving Door Corp. Wood doors: Weyerhaeuser. Schist flooring and custom tables: Ashfield Stone Quarry. Silicone stone finish: L. M. Scofield (Lithofin). Red

oak plank flooring: Tarkett. Carpeting: Prince Street. Suspended exterior fixture: BEGA. HID and track lighting: Edison-Price. Linear fixtures: Litecontrol. Acoustic ceilings: Armstrong. Grid: Donn. Latex paints: Devoe & Reynolds.

Pages 92-95

Click Model Management, Inc.
Hodgetts and Fung Design Associates, Architects
Windows: U. S. Aluminum. Stucco: Highland Stucco. Clear and green-tinted glass: Libbey-Owens-Ford Co. Exterior signlighter fixtures: Day Brite-Benjamin. Recessed downlights: Halo. Cabinetwork: James Douglas Carpentry. Paints: Frazee. Desks, booking tables: custom by architects; laminate surfaces: Wilsonart. Low table: designed and fabricated by architect; top: Alucobond Technologies, Inc. Column-mounted spots: Smith Victor. Cove lighting: Prudential.

Pages 110-113

East Stroudsburg University
Kieran, Timberlake & Harris, Architect
Open-joint granite panels: Cold Spring Granite Co. Three-dimensional stainless-steel clip system: custom by architects. Windows: EFCO. Waterproofing: W. R. Grace Co. (Bituthene). Integrated ceiling troffers: custom by architects, fabricated by MSG Associates. Student-center seating: ICF (Jacobsen Chair). Tables: Berco.

Pages 114-115

Southgate Commercial Center
Jonathan Levi, Architect
Iron-spot brick (glazed and face): Endicott. Integrally colored stucco: Tamms Corp. Storefronts and fixed windows: Closure Co.

Corrections

• Credit for the Spiegel Corporate Headquarters Building [RECORD, July 1993, page 68] should have listed Grenald Associates as Lighting Designer, excluding office areas and the cafeteria, which were lighted by Horton Lees.

• OWP&P was the firm that came in third in the *Chicago Tribune* redesign contest for the Cabrini Green housing project, not OWP&T [RECORD, July 1993, page 27].

• In the August 1993 issue of RECORD, page 25, the aerial composite of Yerba Buena Gardens (photo 1) should have been credited to View by View.

• Photo 315 on page 47 of the August issue should have been described as an image by Graphisoft.

• Credit for the landscaping of Arata Isozaki's planned Bass Museum expansion [August, page 27] should have been given to the landscape-architect firm of Savino & Miller Design Studio, Miami Beach.

Clarification

• A quote in our story on Hurricane Andrew [August, page 30] was inadvertently misattributed: "Damage followed the rigid lines of subdivisions, not the whimsy of the wind. Construction quality and design largely determined the degree of hurricane damage." The quote does reflect some of the conclusions of Ronald F. Zollo's report ("Hurricane Andrew: August 24, 1992"), but was in fact drawn by Zollo from the *Miami Herald*. ■



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Product Literature



436. Water-saving toilets

A color folder illustrates all of this maker's 1.5-gal. toilets, including gravity-fed, flushometer/tank, and flush-valve units, as well as 1-gal. urinals for commercial installations. Individual spec pages for each design give plumbing and dimensional data. Briggs, Tampa, Fla.



437. Ground-source heat pumps

Booklets cite the benefits of "earth energy" for space heating and cooling in both home and office. Three types of geothermal systems—closed-loop, direct expansion, and open-loop—are said to insure constant interior temperatures with minimal energy use and no emissions. 1-800-35-NYSEG. N. Y. S. Electric & Gas Corp., Kirkwood, N. Y.



438. Forest husbandry

A color foldout describes the environmental practices of land owners in the American Tree Farm System. The program selectively manages forests through natural reseeding of hardwood species such as oak, hard maple, yellow birch, and beech for use in fine furniture, cabinetry, millwork, and flooring. Hardwood Mfrs. Assn., Memphis, Tenn.



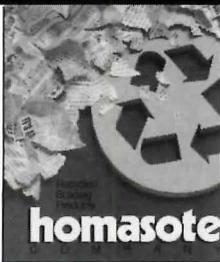
439. Furniture from carpeting

Benches, curbing, and other site fixtures are being constructed from recycled carpet materials. A folder highlights a major mill's efforts to "close the loop" by minimizing waste in the production, maintenance, and disposal of Powerbond RS carpet, which itself can be installed over existing carpet. Collins & Aikman, Dalton, Ga.



440. Wood from plastics

Futurewood, made entirely from post-consumer waste plastic, is a dense, intergally colored material that is said never to splinter, rot, or need painting, and that can be worked with conventional tools just like lumber. Photos show Futurewood benches, docks, decking, and tables. National Waste Technologies, Inc., Ronkonkoma, N. Y.



441. Plywood substitute

A 10-page brochure supplies technical data and in-use photography on building products made (since 1909) from recycled newsprint. Wallboard, underlayments, sound-control boards, and structural decking materials are unaffected by fluctuations in lumber prices. Homasote Co., West Trenton, N. J. ■

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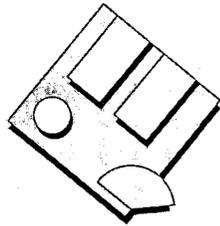
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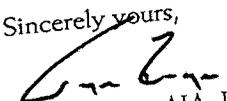
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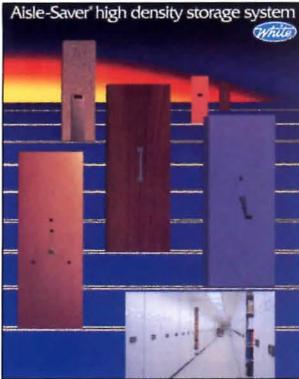
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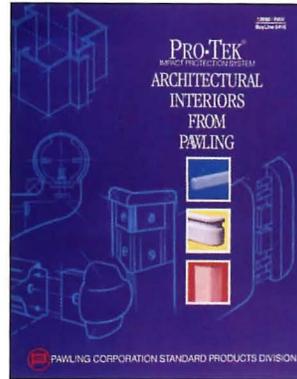


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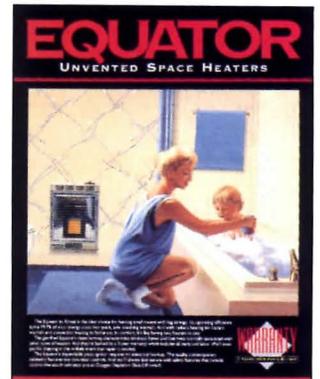


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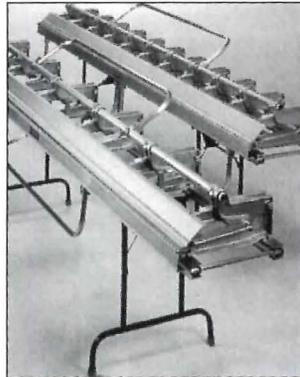


Supra-Slate II® is an environmentally-friendly fiber-cement slate - the only manufactured slate with an unpainted, "quarried slate" finish. It will provide "UL class A" security, freeze-thaw protection & maintenance freedom. Manufactured with beveled edges, it is available in Bangor Black, Pennsylvania Gray, Vermont Green, Rutland Red or, a new color, Granville Purple.

Supradur Manufacturing

Circle 59 on Inquiry card

The Mark I Bending Brake

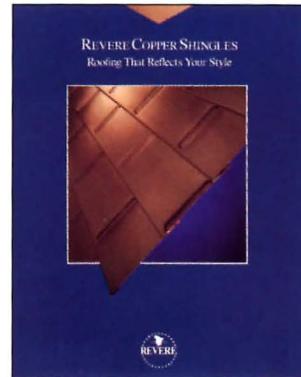


The Mark I brake by Van Mark Products Corp. is the most advanced portable bending & heating machine built. It is ideally suited for siding & window installations. It will bend all prefabricated shapes PLUS many custom shapes. The Mark I is virtually Maintenance Free & uses a unique, self-adjusting cam-lok system. This ensures increased reliability over ordinary toggle-locking brakes. It is the most rugged & durable portable brake in the industry. Call toll-free 1-800-Van Mark.

Van Mark Products Corp.

Circle 60 on Inquiry card

Revere Copper Shingles

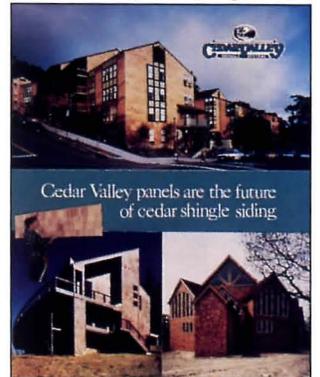


Revere Copper Shingles are quicker and easier to install than ordinary asphalt shingles. There are no special skills required & no special tolls. Because Revere shingles are manufactured from solid copper, not a foil laminate, they will likely last as long as the building they protect. To learn more about our copper shingles, or any of our other copper roofing products, call us toll-free at 800-448-1776.

Revere Copper Products

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The Future of Cedar Shingle Siding



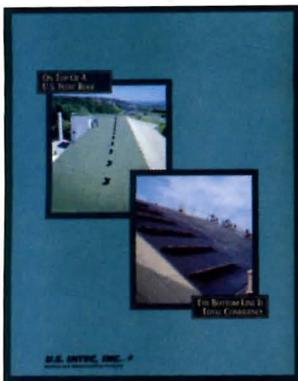
Cedar Valley's new 8-page color brochure details the panelized exterior siding system. Included are specifications, product descriptions & illustrations, finishing & application information and nearly four pages of color photos of significant projects by leading architects throughout the U.S. who used conventional & Decorator shingle panels. Cedar Valley. Call: 800-521-9523. Fax: 408-636-9035.

Cedar Valley Shingle Systems

Circle 62 on Inquiry card

Product Literature Showcase

Roofing and Waterproofing Products

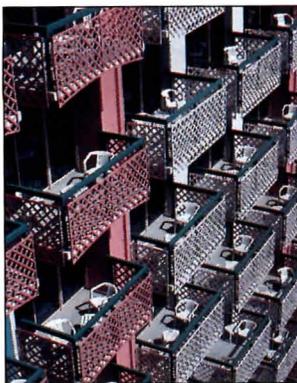


U.S. Intec introduces a new brochure detailing its complete modified bitumen product line. Both Brai (APP) and Brai/Flex (SBS) membranes are featured along with the accessory products that complete the total U.S. Intec roofing system. Of the six manufacturing locations nationwide, U.S. Intec manufactures modified bitumen in 4, with the other 2 facilities used to produce BUR under the Intec/Permaglas trade name.

U.S. Intec, Inc.

Circle 63 on Inquiry card

Vinyl & Aluminum Lattice Panel Systems

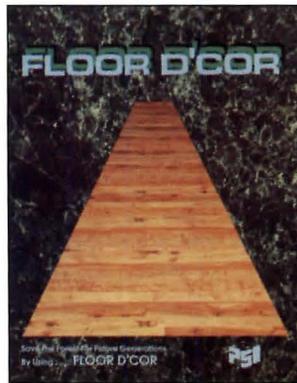


Easily installed, durable system is ideal for porch, deck, balcony & utility enclosures, building facades, fences, arbors, trellises & a variety of exterior & interior applications. Variety of weights, patterns & finishes available. Installations can be shipped in pre-assembled sections thus reducing labor costs & waste. Cross Industries will custom fabricate to meet special design or code requirements. Send sketches/drawings for quotation to 3174 Marjan Dr., Atlanta, GA 30340. Call 800-521-9878. Fax 404-457-5125.

Cross Industries

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High-Wear Laminate Flooring System



This innovative laminate-clad flooring system mfg. by Panel Specialists, Inc. creates the traditional beauty of natural flooring by using 21st century material technology. FLOOR D'COR is a floating floor system, tongue & grooved on all four sides in standard plank sizes of 11 1/2" x 48" & available in over 250 laminate colors & patterns. Nature's look of elegance & charm is preserved while durability is enhanced to provide a floor that will offer a lifetime of service in the most demanding traffic areas. FLOOR D'COR is "made in the USA" & readily available so no project need suffer from the delays caused by scarcity of raw materials or the lead time of imported products.

Panel Specialist, Inc.

Circle 65 on Inquiry card

Solnhofen Introduces Fossil Brochure

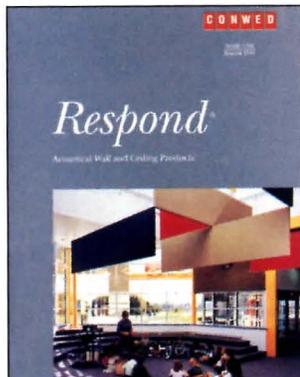


Solnhofen Natural Stone, Inc. is pleased to announce the release of its New Fossil Brochure. This 8 1/2" x 11" four page full color brochure will guide you through the history of the intrinsic beauty of the Solnhofen® Limestones that often have been mistaken as "defects", which are instead exquisite examples of the wide variety of creatures representative of the Jurassic Period, when dinosaurs ruled the earth. The front cover shows Solnhofen's latest installation at the Fernbank Museum of Natural History in Atlanta designed by Graham Gund. This brochure, also available unfolded as a poster for showrooms, can be considered a twentieth century "Treasure Map" for the Jurassic Period.

Solnhofen Natural Stone, Inc

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Acoustical Wall & Ceiling Panels



Conwed, the industry's acoustical expert for over 70 years, offers Respond, a custom acoustical products line. The innovative & coordinated array of acoustical products - wall & ceiling panels, baffles, ceiling clouds, absorbers, and diffusers - can be combined to solve any noise problem, whether it's in a music or practice room, gymnasium, cafeteria, or multi-purpose room. Conwed, 1205 Worden Ave, East Ladysmith, WI 54848; 800-932-2383, Fax: 800-833-4798.

Conwed Designscape

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Architectural Masterworks



Architectural Masterworks moldings are historically correct period moldings made of high density polyurethane resin. These beautiful, heavily sculpted, highly detailed reproductions are incredibly durable, yet lightweight & easy to install. One piece construction & premitered corners also aid in the installation of our molding. These moldings offer a new way for builders & specifiers to add value, & prestige to select homes. All of our products are in stock & we offer 10 day delivery. Also available, ceiling medallions, friezes, chair rails, & louvers.

Architectural Masterworks

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Architectural Specification Binder



HMK, the world's leading manufacturer of specialty cleaning, protection, maintenance & refinishing products for all natural stone & marble announces it's Architectural Specification Binder. This new format has been developed to make HMK's written materials even more accessible. It should serve as an easy to follow manual to guide the reader through all the necessary steps with any given stone & marble installation.

Please contact us at: 415-647-3086 or 1-800-424-2HMK.

HMK

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Architecture In Glass



A m d e g a - M a c h i n Conservatories' new architectural handbook is now available. The handbook sets out the general design principles of the two conservatory systems produced by Amdega. The Amdega line has established a reputation for making the finest traditional style conservatories since 1874. The Machin line is reminiscent of the graceful & romantic structures of previous centuries. Amdega-Machin Conservatories, P.O. Box 713, Glenview, IL 60025: (800)922-0110.

Amdega Conservatories

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Compotite Corporation

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New Custom Lamp For Your Lounge

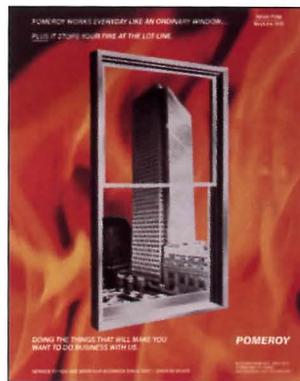


New lounge lamp is ideal for educational environment. Heavy-duty, tamper-resistant construction provides security and low-cost maintenance while handsome Brass'n Color® design compliments a variety of interiors. Plus you can Perma-Mount™ to any end table to prevent theft. Available in 7 design colors. UL and CSA listed. Free 30-day trial sample.

Adjustable Fixture Co.

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Pomeroy



Pomeroy features its line of automatic closing steel fire rated hollow metal windows. UL Listed.

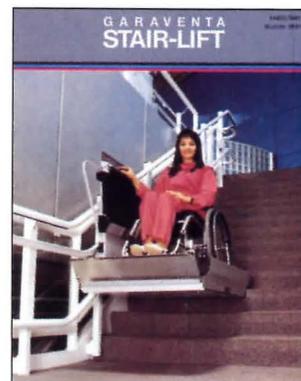
Call: 203-324-6775 or Fax: 203-325-3397 for more product information.

Pomeroy, 64 Sunnyside Avenue, Box 1377, Stamford, CT 06904.

Pomeroy

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Wheelchair Platform Lift

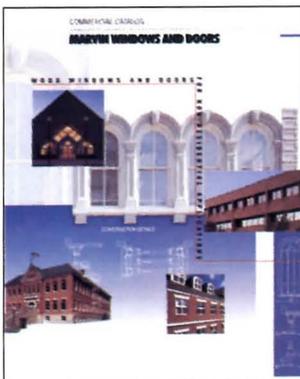


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Garaventa

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Marvin Windows' New Commercial Catalog

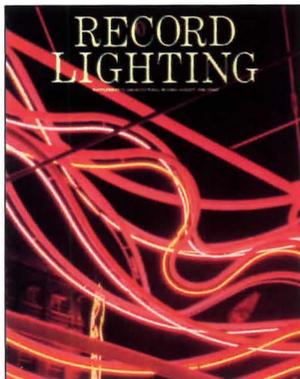


Marvin Windows' new commercial catalog describes the commercial capabilities of Marvin's entire line of wood and clad wood windows and doors. The catalog provides information on product styles, performance and design capabilities, as well as Marvin's Architectural Support Department and other non-residential service.

Marvin Windows

Circle 75 on Inquiry card

Back Issues of Record Lighting



Add to your files by ordering back issues of RECORD LIGHTING, the exciting color supplement to Architectural Record. The price per issue is only \$3.50 each (includes postage and handling). Send check or money order to Architectural Record, 1221 Avenue of the Americas, New York, NY 10020. Attn: Back Issues.

Record Lighting

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Designed with safety and energy efficiency in mind, Thorocoat 200 adds improved light reflectivity to non traffic-bearing surfaces in dormitories, parking areas, gymnasiums, hallways, etc. A two-man crew can cover 20,000 feet a day with standard electric airless sprayer as easily as they would apply latex-based paint. Call 305-597-8100 or Fax 305-592-9760.

Thoro System Products

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USHIO LOW HEAT REFLEKTO LAMPS



The Ushio line of REFLEKTO low heat MR-16 style lamps offers designers increased flexibility for accent lighting without backward light spill & aesthetically pleasing design for open fixtures. The glass reflector has a decorative aluminum coating to accent any decor, & is available in matt black, clear, silver, white & gold. REFLEKTO lamps are 12 volt; 20, 35, or 60 watts & are available in 3 beam angles. For more product information, call 800-326-1960, Fax 800-776-3641.

Ushio America, Inc.

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To Advertise Call Cherie Jolley 801-974-2843 or Fax 801-972-9409

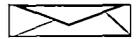
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Architectural Designer to prepare designs for government office & public transportation facilities, work with principals of firm to develop architectural design of housing, office, health & education building projects; confer with clients, real estate representatives, engineering personnel & architects to determine functional & spatial requirements of particular projects; plan layout of projects & integrate engineering elements & building types into unified design

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Project Architect, 40hrs/wk., 8:30 - 5:30pm, \$31,678/year. Design/planning of long-span elevated rapid transit stations and maintenance shops with moving cranes for light-rail and rapid transit systems. Work with transportation personnel in evaluating project requirements. Coordinate building systems design with subconsultants. Coordinate contract document preparation. Cost estimation and construction administration. Master of Architecture as well as one year experience as a Project Architect or Architect required. Must have Illinois licensure. Previous experience must include: design of long-span elevated rapid transit stations and maintenance shops with moving cranes for light-rail and rapid transit systems; cost estimation; construction administration. Must have proof of legal authority to work permanently in the U.S. Send two copies of resume to: Illinois Department of Employment Security, 401 South State Street - 3 South, Chicago, IL 60605, Attention: Jean Woodson, Reference #V-IL-10634-W. No calls. An employer paid ad.

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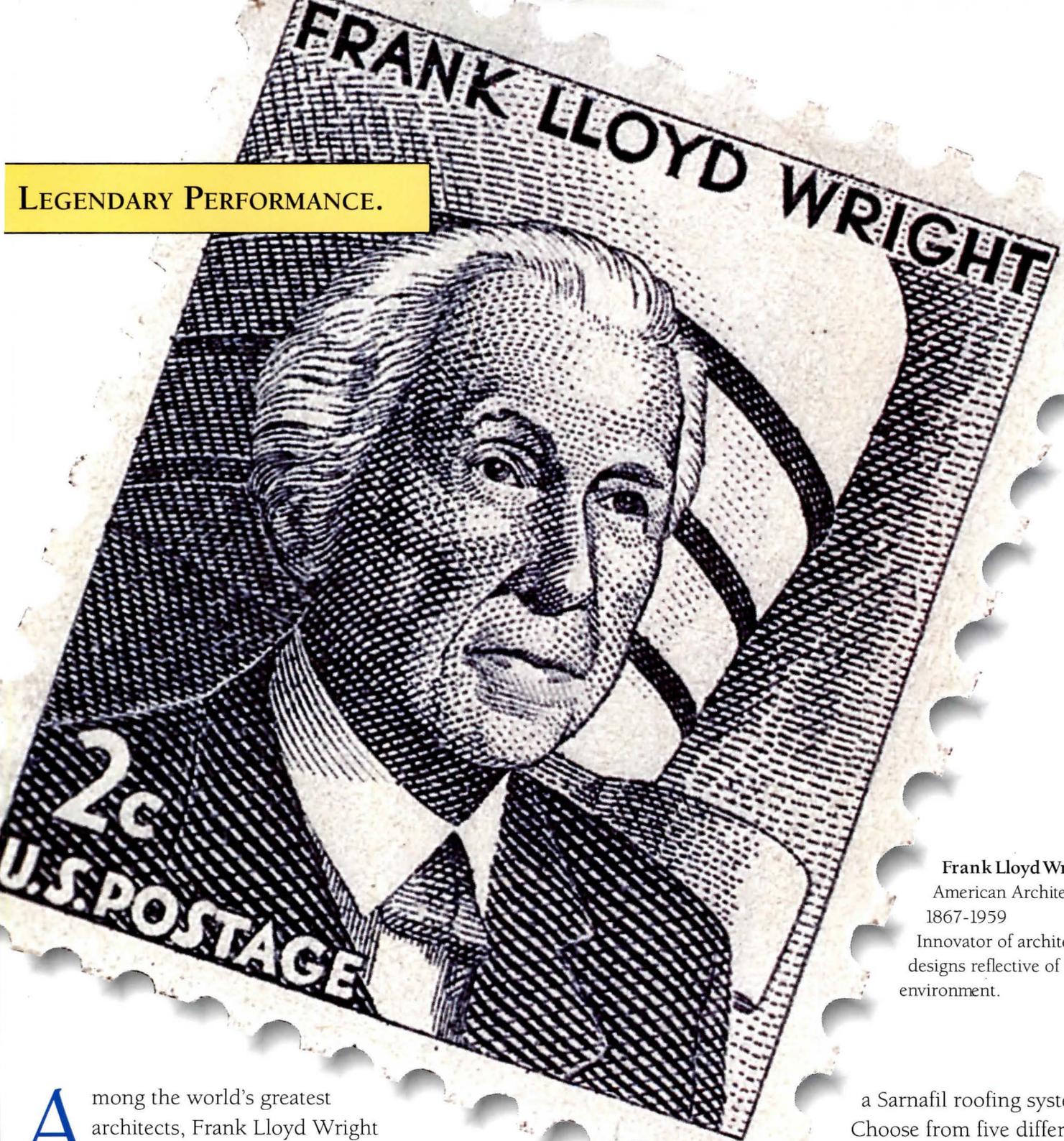
278 Color Slides of architecture from EXPO/92 in Seville have been published by Icarus UK. Many of the world's great architects created spectacular Expo pavilions for the 110 participating nations. Also available are 251 computer-generated color slides of plans and elevations illustrating Italian Architecture AD 300-1500. These images will enrich many a presentation. For full information, contact: Icarus, 158 Boundaries Road, London SW12 8HG, UK. Tel +44 81-682-0900.

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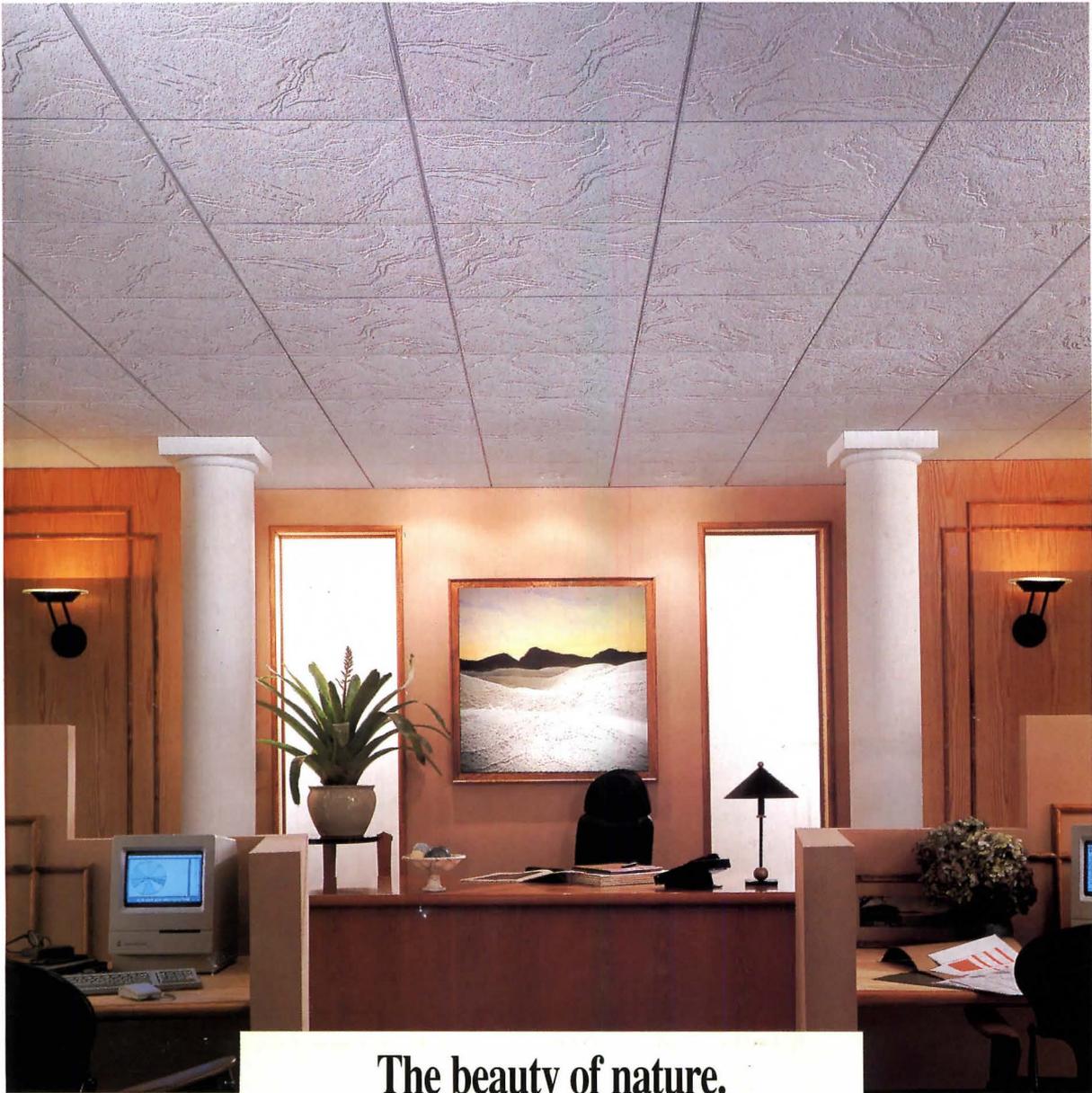
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