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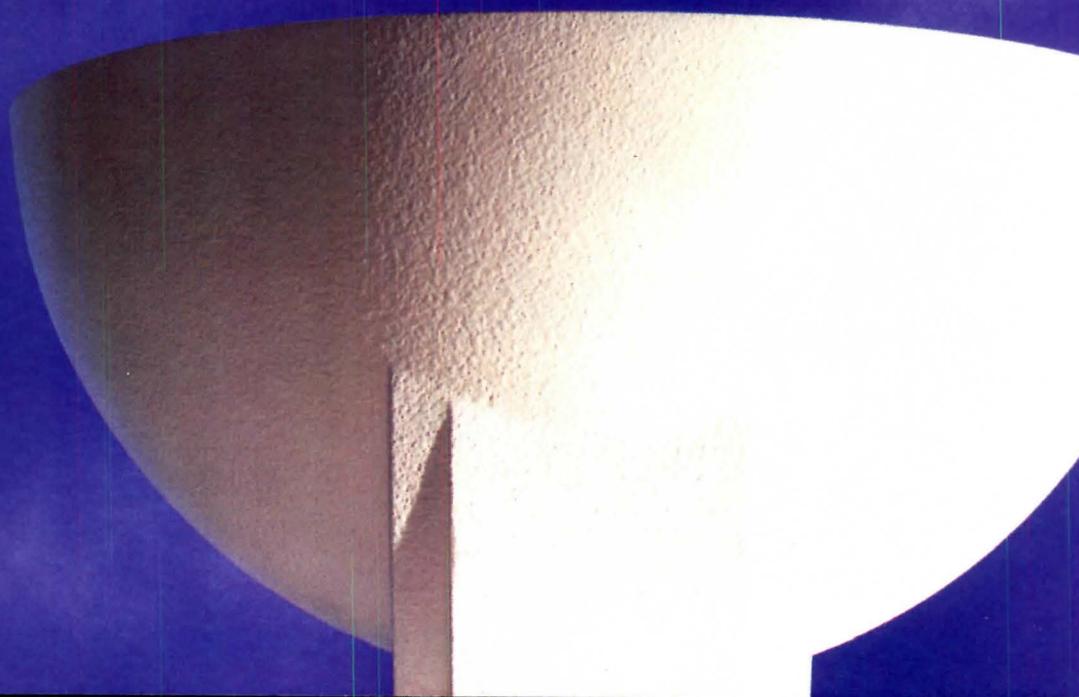
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From the Promenade:

© Charles Linn

The view from the Promenade near my new home in Brooklyn Heights may be New York's finest: the city and its waterfront snap into perspective from across the river. Manhattan's proud towers cluster, then crash toward the water's edge, their juncture fragmented into a splayed collar of docks and piers, cafes, and bubble-topped tennis courts. From this distance, the city looms whole and iconic, the culmination of heroic materialism. The architecture takes your breath away.

The view from the new riverside park in my hometown, Columbus, Mississippi, is more languid. It is amazing that the river is apparent at all. For fifty years, the water's edge lay hidden behind scrubby undergrowth and scattered debris, unapproachable and walled-off below a wonderful, rumbling bridge. Things began to change when a friend of mine, a local architect, stared down at the clutter, rolled up his sleeves, and helped improve the community's perception of itself.

The park did not happen overnight; the idea percolated slowly in one person's consciousness. The genesis of the idea emerged twenty years ago, after my friend had moved back to Columbus from a successful partnership in an urban firm. He did what many architects do: he established a small practice, joined the civic clubs, acquired clients, sat on tedious zoning and planning boards, made buildings, fought for historic preservation and for his downtown. He also realized, with a singular vision, that the riverfront, which lay ninety feet below the main street, deserved to be shared.

Ironically, my friend didn't design the new park. Someone else got the job, but the service he performed was just as vital: he framed the debate that made it possible, then fought for the improvements. The mayor, others in government, and local developers attended a forum the architect and his friends helped sponsor. The river's unfulfilled promise was apparent. Ultimately, after months of meetings and consensus building on the city's and the architect's part, the town's leadership called for change. What began in an individual's commitment broadened into shared vision and collaboration. Today, the park is nearing completion--a modest, humane public space at the community's front door.

There is differentiation of scale, but no hierarchy of values between the two riverfronts. Both count. The small town story is explicit; the city's, exceedingly complex. Whether in sparsely settled mid-America or across the East River, by one architect or a larger group, small actions are additive, weaving community with a seamless effort, uniting those who care about and are committed to the built environment. The little park, as much as the great riverfront, bears witness to design's transformational power for us all.

It is seductive, from the Promenade, to marvel at the city's buildings, the monumental artifacts of human ingenuity and will. However, sometimes the overlooked story is not what architects build at all, but in the influence of their ideas, commitment, and efforts, in my hometown or your own. *Robert Ivy*

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Pakistan

14th Century Baltit Fort Is Transformed Into Cultural Center

Following a multimillion dollar restoration project, Baltit Fort, one of the most impressively situated and architecturally innovative Medieval castles in the world, has been transformed from a graffiti-riddled, crumbling heap into a museum and cultural center. The new complex will be the focal point of the economic, social, and cultural development of the historic village of Baltit, renamed Karimabad to honor the Aga Khan, whose trust funded the project.

The fort, located at the top of a natural amphitheater in Pakistan's high Hunza Valley, was begun in the 14th century by the ruling Mirs, as a compound of houses with a defensive tower. They found its location ideal—not just because of the ample water supply (essential since the entire valley floor is a mountain desert), but because it was close enough to the Silk Road to raid the trading route. The Mirs used the booty to fund the expansion and improvement of the fort 70 times over 700 years. The last alterations were completed in the early 20th century, when the entire top floor was transformed into a palace. After World War II it

remained empty and unmaintained until this present restoration.

According to Jack Kennedy, a spokesperson for the Aga Khan Trust for Culture in Geneva, Switzerland, architects found the structure, though decayed and near collapse, a masterpiece of craftsmanship, thoroughly adapted to site, climate, and function. Its wood construction was conceived to resist earthquakes, a frequent event in the region. During the renovation, original construction techniques and materials were used for repairs whenever possible. In some instances, advanced technology was introduced, such as tie-ropes and geo-mesh soil stabilization, to remedy serious structural problems. Young architects and engineers involved in the project were provided with training in international conservation standards at York University in England and at UNESCO's International Center for Conservation in Rome.

While the museum/cultural center opened in September, the demonstration development project in Karimabad continues as the



©Aga Khan Trust for Culture

local community struggles to manage infrastructure problems and environmental pollution. A planning office is also involved in the renovation of historic stone houses, the introduction of modern sanitary facilities and basic services, and the development of guidelines for new houses, shops, and hotels.

The historic Cities Support Programme, an arm of the Aga Khan Trust for Culture, is part of the Aga Khan Development Network, a group of nonprofit institutions working to improve living conditions in specific regions of the developing world.

Katherine Kai-sun Chia & Julie Moline

Miami

Architects Plan to Help Rehabilitate East Little Havana

The University of Miami School of Architecture and the School of Medicine's Center for Family Studies are collaborating to rehabilitate East Little Havana, Miami's poorest neighborhood.

The project, funded by a \$600,000 Henry R. Luce Fellowship, also involves faculty from the University of Miami's schools of business, education, and law. The schools plan to concurrently regenerate the architectural environment, spur economic growth, and maintain the ethnic character of this predominantly Latino neighborhood.

East Little Havana was chosen, said Miami architecture dean Elizabeth Plater-Zyberk, because the university's Center for Family Life had already established a beach-head there. The Center is headed by Jose Szapocznik, a professor of psychiatry and behavioral sciences who has been recognized for his work in family-based interventions in troubled inner-city neighborhoods. "We found strong parallels in how social scientists think about the relationships of individuals and families to the larger community context, and the way architects and urban designers approach individual buildings and neighbor-

hoods in their larger urban context," said Plater-Zyberk.

Preliminary architectural plans call for the rehabilitation of houses, the rerouting of traffic to facilitate a more peaceful pedestrian life, and the conversion of an abandoned warehouse into a crafts market where local artisans would be able to showcase their work. On the social services side, plans call for the development of parent-training programs, venture capital for small business development, and the creation of on-site legal services. *Beth Dunlop*

Department store to be opera house

The Washington Opera is planning to adapt the eight-story 500,000-sq-ft Woodward & Lothrop department store in Washington, D.C., into an opera house, ready for year 2000 when the lease expires on its current home at the Kennedy Center. Architect Harry Weese Associates and theater consultant Schuler & Shook developed the \$200 million preliminary retro fit proposal for the 100-year-old department store. The design architect has not yet been named.

New hall for the Seattle symphony

Loschky Marquandt & Nesholm Architects of Seattle has begun construction on Benaroya Hall, a \$109 million, 187,000-sq-ft concert hall for the Seattle Symphony scheduled to open in 1998. Owned by the City of Seattle, the main auditorium will have a seating capacity of 2,500 while a smaller hall will hold 540. The design includes a grand semi-circular lobby with sweeping views of Puget Sound, the Seattle Art Museum, Veterans' Memorial Garden, and the downtown skyline.



© Mike Zens

*Benaroya Hall***N.J. college to get recreation center**

Maria C. Romanach Architect has been commissioned by the Richard Stockton College of New Jersey to design a \$15-million 70,000-sq-ft multi-purpose recreation center. The facility, slated for completion in 1999, will include a gymnasium/field house for indoor and outdoor sporting events, as well as assembly space for 5,000 students.

Raab named CEO of New York agency

Martin D. Raab was named president and chief executive officer of the New York City School Construction Authority. Formerly a partner at Haines, Lundberg & Waehler, he is the first architect to head the agency. ■

New Housing Prototype for Homeless

In the Bronx, one of the first two special-needs buildings from Gran Sultan. Extras, like two-color block walls, make the interiors look less institutional.

A new prototype for housing the mentally disabled homeless is generating nationwide interest as a cost-effective, user-friendly model for special-needs housing, including residences for AIDS patients, battered women and their children, and the elderly.

As part of a demonstration program conducted by the New York State Office of Mental Health and the Corporation for Supportive Housing, Gran Sultan Associates of New York is building 200 units in four buildings in Brooklyn, the Bronx, and Manhattan for homeless adults in recovery from substance abuse. The 40-55 unit buildings, a cross between a traditional SRO-type dwelling and community residence housing, are designed to offer comfort, privacy, and independence. The facilities also provide a group dining room, lounges, offices for social service agencies, and on-site laundries.

The two buildings now open are getting the thumbs-up from residents and from social service agencies, which find them cost-effective to build and maintain. *Time Magazine* hailed Warren Gran and Joe Sultan as "local heroes." Forty-six year old Edwin P. Alacios, a resident since July, said, "When I saw the apartment I decided I had to change the rest of my life. It made me feel responsible." Architect Sultan said the SRO apartments cost about \$62,000 to construct, and maintaining a resident costs about \$10,000 a year. The tab at a mental institution averages around \$100,000 per person per year. The units are small (255-sq-ft) but self-contained, with separate areas for sleeping and eating, a kitchenette, and private bathroom. The buildings were designed not to look cheap or institutional. "We used six different tile

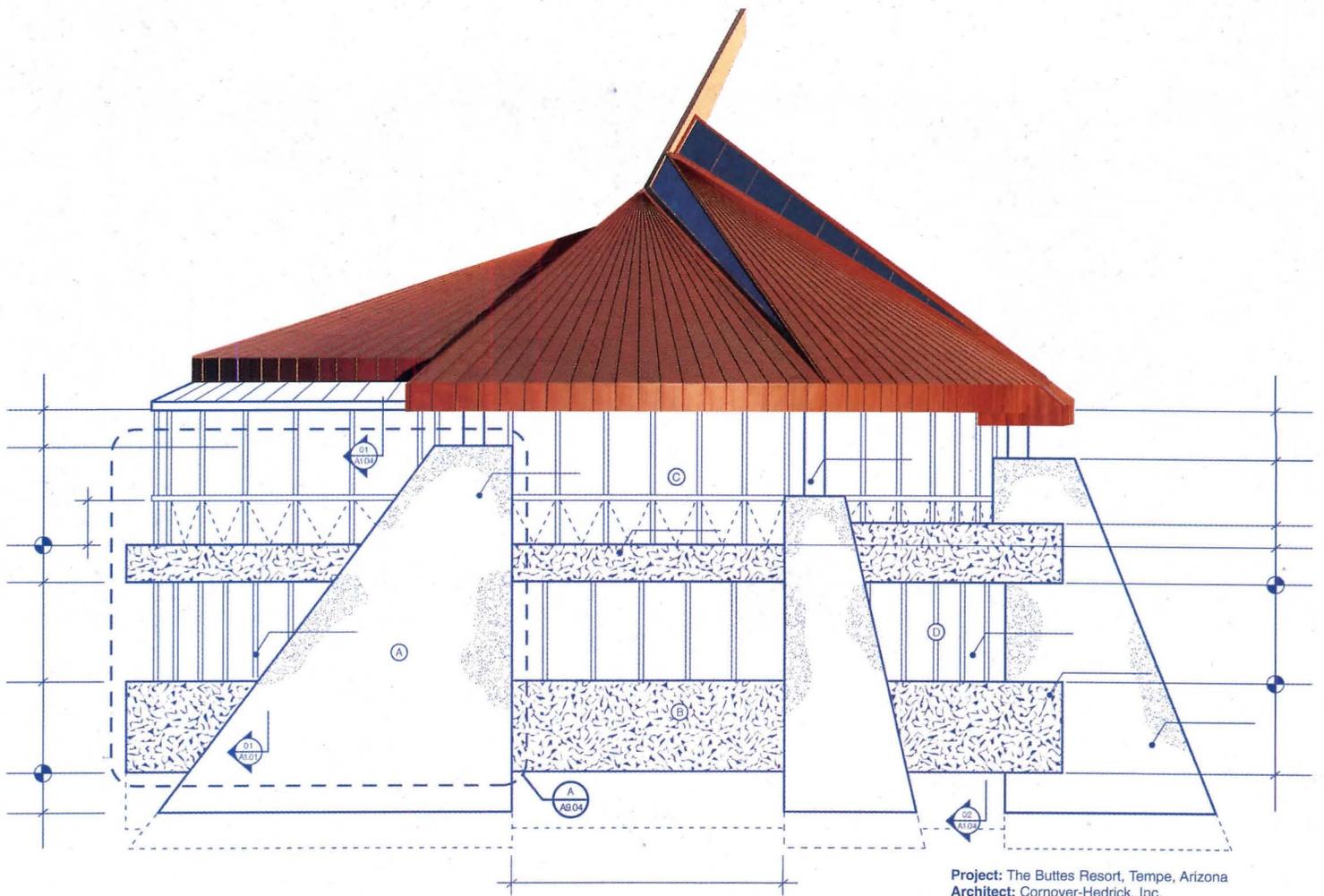


colors, 10 different paints, and mixed them up to make each apartment unique," explained Sultan. "A lot of people think that if you give a homeless person anything, it's better than nothing. But it isn't. People are waking up to the fact that stability in housing equates to stability in treatment, and ultimately to integrating people into the community." The design manual is available through Gran Sultan Associates, 212/206-1560. *Julie Moline*

St. Louis**Managers Picked for Add to Airport**

The City of St. Louis has selected project managers Sverdrup/Parsons/Kwame for the proposed \$2 billion expansion of Lambert International Airport. The 15-year program will increase capacity and provide for improved all-weather operations for Lambert, one of the 10 busiest airports in the U.S. The selection process involved 11 team proposals and site visits to several cities. Construction is expected to begin in 1998.

Sverdrup's aviation group has managed expansions at nine of the nation's 20 largest airports, including current work on a major expansion in Detroit. The Lambert proposal calls for a third parallel runway to allow for all-weather operation, a 2,000-foot runway extension, 20-25 new passenger gates, bringing the total to 100-105 gates, a new 1.3-million-sq-ft terminal, 6,200 new parking spaces, and a new people-mover system. ■



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Straw Bale House Design Earns Code Approval Even in Damp Climate

The owner/designer of a 1,500 sq-ft plastered straw bale house in Ship Harbour, Nova Scotia is proving that straw bale construction can be adapted to a damp climate. Completed in November, 1993, Kim Thompson's two-story home was the first code-approved, load-bearing building of its type in Canada.

The house was built with three-foot overhangs in a sheltered site, with the bales placed a minimum of eight inches above grade. Cement stucco on the interior and exterior walls and the absence of a vapor barrier render the building breathable. A vapor barrier installed underneath the straw bale floor to stop the rising damp has become the house's only weak spot for moisture penetration. Thompson now recommends that a heavy screen be used in its place.

The two-string bales (14in.by 18in.by 36in.) have an R-value between 30 and 40 during the winter, which is twice that of 6 in. fiberglass in wood frame construction. Thompson says she heats the house by burning four-and-a-half cords of wood annually in an airtight wood stove. The National Research

Council and the Technical University of Nova Scotia monitored humidity, insulation, and strength of the walls for a two-year period. Thompson has made the results available in *The Straw Bale Handbook*. Architect Jennifer Corson, principal of Solterre Design of Halifax, coordinated the testing program and co-wrote the handbook. Straw bale is an excellent option for homeowners who want hands-on involvement in construction, according to Corson. It is also the most energy-efficient material available to complement a passive solar design, she says. However, straw bale is not recommended for either fast track or modular projects. What makes straw bale so environmentally friendly, says Corson, is that it makes use of an annually renewables; naturally growing product that's normally burned at the end of the season.

Interested parties can use the Internet news group, <http://www.solstice.crest.org.straw-bale>, or order *Straw Bale Construction: A Manual for Maritime Regions*. Phone: 902/845-2750; E-mail: aa983@chebucto.ns.ca
Andrew Safer

Amtrak Seeks To Upgrade Stations

Amtrak has provided seed money to create the Great American Station Foundation, a non-profit organization established to promote and facilitate the renovation of railway stations throughout the U.S. The foundation will form financial and technical partnerships with communities to help them rebuild and revive stations, creating both transportation hubs and magnets for business activity in the center city.

The foundation will provide grants and technical expertise, including architectural design assistance, intermodal planning, engineering guidance, and community organization strategies; convey best-case practices and help plan and design a successful retail environment in a renovated station.

Members of the founding board of directors include Richard Moe, president of the National Trust for Historic Preservation; Ellen Guidera, vice president for business development, Disney Consumer Products; Thomas Downs, president, chairman and CEO of Amtrak and David Burwell, president, Rails to Trails Conservancy. ■

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Comments: _____

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Has American architecture lost its boldness?

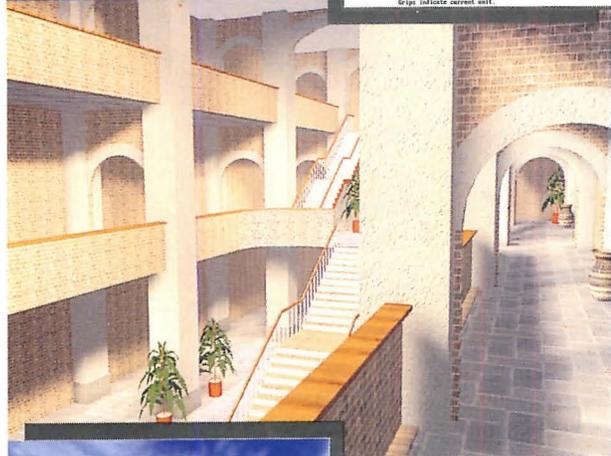
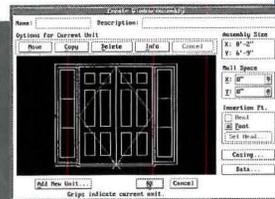
According to Pulitzer Prize-winning critic Robert Campbell, the architecture in other countries, particularly countries in East Asia and Europe, is bolder, more intense, and more daring. By comparison, he says, American architecture looks weak and confused [Architectural Record, November 1996, p. 76]. Campbell is not criticizing American architects per se, but rather the cultural, political, and economic environment in which they work.

Do you agree that American architecture has lost its boldness, or do you disagree.
 Agree Disagree

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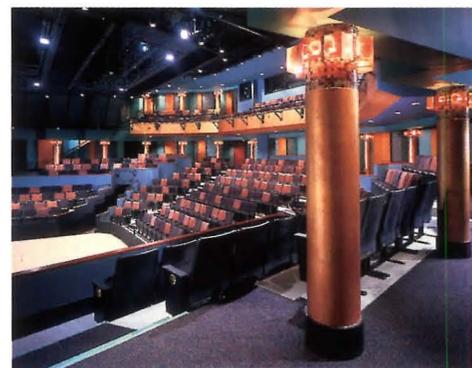
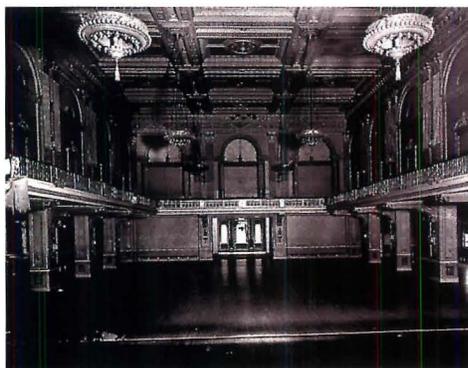
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Seattle

Historic Eagles Auditorium Renovation Is Completed

Seattle-based Callison Partnership and a local repertory company, A Contemporary Theater (ACT), have completed the transformation of the Eagles Auditorium into a new performance complex. The old auditorium, an historic landmark building erected in 1925 for the Fraternal Order of Eagles, had been abandoned for years despite its prime location adjacent to the Convention Center.

The new interior configuration includes a traditional theater and a theater-in-the-round arena stacked in the center of the existing building. A flexible cabaret space is located in the basement. Public spaces are located on the windowed street side; support spaces are located on the blank wall of the adjacent building. The four upper levels are reserved for the Seattle Housing Resource Group's affordable housing program. Callison took care to maintain the historic features of the original building. New stairs and support areas blend in with the original decor; much



The Fraternal Order of Eagles hall 1925 (left) and one of two new theaters built in its space.

of the extensive technical lighting and sound equipment are suspended in the space from a massive steel armature to avoid touching the original fabrics and wall coverings. A skylit lounge at the top of the building, surrounded by scene shops, design studios, rehearsal room, conference areas, and an outdoor terrace area, was designed as the theater

company's "living room" to facilitate interaction between performers from different troupes. The theater's opening generated enough income to allow Callison to design a new street canopy that gives the refurbished landmark a strong street presence.

*Katherine Kai-sun Chia
News continues*

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Winston-Salem, N. C.

New Arts Buildings Serve As Film Sets

The new \$15-million School of Filmmaking at the North Carolina School of the Arts in Winston-Salem is expected to open its doors in September 1997. Designed by Lee Nichols Hepler Architecture of Charlotte, N.C. in association with Baeken, Arrigoni, and Ross, Inc. of San Francisco, the 62,000-sq-ft facility consists of three main buildings housing sound stages, an underwater tank for filming, editing and sound studios, and classrooms. Each building facade represents a different architectural scenario, including a rustic mountain cottage, a Louisiana Low Country house, a southern California ranch house, and a New England salt box cottage, so that film students will have a variety of backdrops at their disposal. The construction of a small-town main street, complete with retail shops, a municipal building, and an Art Deco theater marquee, will also serve the school and its alumni. ■



Orange County, Fla.

\$2.5 Billion School Expansion Program

The School Board of Orange County, Florida has been asked to approve the selection of Heery/Sverdrup as program managers for the planning, design, and construction of a \$2.5 billion school expansion program, the largest ever for a public school system in the U.S.

Orange County, one of the fastest-growing school districts in the nation, needs at least 37 new schools over the next 10 years plus extensive renovation of existing buildings, according to David Wofford, Orange County's associate superintendent for Facilities and Transportation.

Heery/Sverdrup, based in Maryland Heights, Missouri, was one of seven groups that participated in a national competition for the contract, and was ranked first by seven of the nine committee members. Work is expected to begin in January, 1997. ■

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Building Types Study 744/Knowledge-Based Production Facilities

Architects have become more important to industrial companies as facilities increasingly need to blur lines between production and front-office functions, such as design, sales, and management.

Manufacturing Collaboration

The clients for the projects shown in this building type study are flouting the broad movement in business to outsource or send employees home to work. They are instead putting people together: factory workers with engineers; R&D with sales. Computer hardware and software companies are leading the way because they are caught in a competitive vice. They must turn out higher and higher quality products on excruciatingly short turnarounds, which means they must lure the best staff and ensure that huge teams work together efficiently.

“Knowledge-based production,” is what they call it when engineers help iron out production glitches and line supervisors advise designers. And it is not confined to computers. With cleaner production processes and more hands-on management, it is easier to blur the line between manufacturing and front office. In so doing, companies learn that the generic office building or the windowless builder’s-catalog box they used in the past no longer work.

There are common traits that emerge from companies leading this charge. Reorganization is a fact of life, so the ability to flip space from office to manufacturing (and vice versa) is a virtue, as well as the ability to quickly add new facilities or lease unneeded space. Budgets remain close to low-end manufacturing norms, so bare-bones offices are often enlivened by low-cost amenities like daylighting. On the other hand, these companies are upgrading production areas with skylights, natural ventilation, and windows to landscaped views. Companies see these amenities as improving productivity and retaining valued staff. Fitness centers, well-appointed meeting places, and carefully situated and attractively designed coffee bars, break areas, and food-service areas not only express a company commitment to staff, they encourage needed collaboration and solidarity among workers who traditionally operate in separate spheres. Impetus for such amenities may come from the top: the fitness centers and greenery reflect the interests of these companies’ often-youthful leadership.

Style is increasingly important. Company logo-ware is sold in appealing stores; retail-style training centers speak to motivated potential employees; expressive buildings are a form of advertising to passersby. It’s too early to know how many companies will embrace these trends. Suffice it to say it’s a heady time for the architects involved who see an increasing valuation of their skills by the nation’s most innovative businesses. *James S. Russell*

Studios Architecture has become a leader in the design of expressive facilities for high-tech companies. Right, construction at Silicon Graphics’ new headquarters.



© Michael O'Callahan/Studios Architecture

Continuing Education

This Building Types Study is this issue’s installment of the AIA/ARCHITECTURAL RECORD Continuing Education Series. You can receive continuing-education credits by studying the learning objectives below, reading the introduction this page and the case studies through page 49, answering the questions on page 165, checking your answers, and returning the self-report form, page 166.

Mark Scher is AIA Director of Continuing Education Programs and Products.

Learning Objectives

After reading the Building Types Study and completing the exercises, you will be able to:

- ◆ List six programmatic influences that enable increased worker interaction and cooperation, and give at least three examples of how the project designers responded.
- ◆ Describe at least three benefits of these new designs that companies are monitoring to determine whether they should be more widely implemented.
- ◆ Identify at least eight environment-related design elements used in the profiled designs.

Manufacturers’ Sources listed on page 142

Though projects for computer companies lead the new integration of factory and office (these pages, 3Com following), other projects profiled in the following pages are for clients ranging from telecommunications giants to carpet manufacturers.

Project: Silicon Graphics, North Charleston Site, Mountain View, California

Architect: Studios Architecture

Concept: The architect worked with the community so that the site not only houses corporate headquarters and R&D facilities, but also accommodates a public park and cultural center. The four buildings include such amenities as a restaurant, fitness center, and theater. They are configured to create internal courtyards and are connected by glass bridges. The expressive elements unite disparate uses and break down scale.

Intimate courtyards and upper-level bridges make it easy to get around the sprawling 500,000-sq-ft campus.

Project: Fore Systems, Warrendale, Pennsylvania

Architect: Studios Architecture

Concept: A fast-growing startup company that designs and manufactures computer-networking products is building a new headquarters outside Pittsburgh. The 300,000-sq-ft complex of two-story buildings is linked by bridges on a 67-acre wooded site. Building cutouts and sunshade-protected protrusions bring daylight deep into the large floorplates. If growth continues, a master plan allows the company to double the square footage.

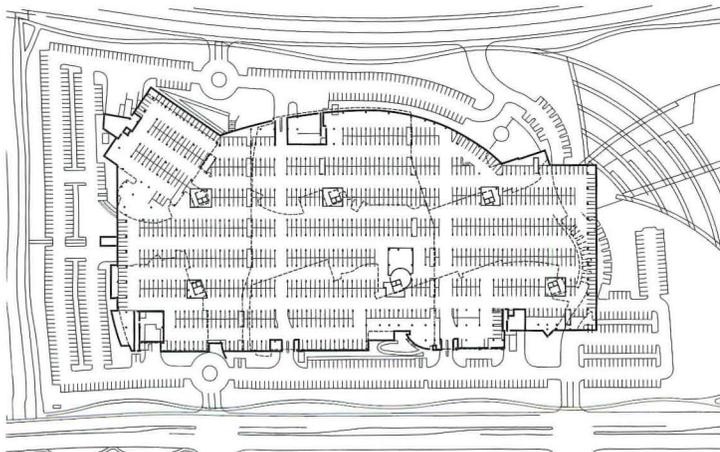
In models, an administration building is in front. Behind, buildings for engineering and manufacturing.



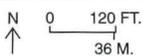
© Joel Avital/Hawkeye Aerial Photography



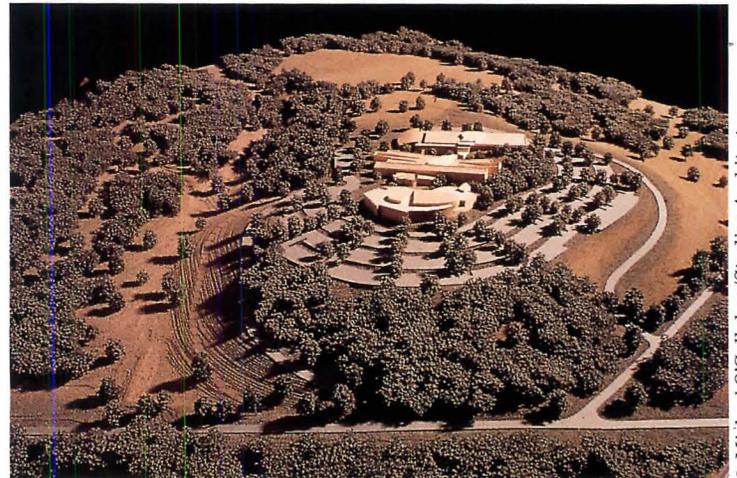
© Michael O'Callahan/Studios Architecture



GARAGE PLAN, NORTH CHARLESTON SITE



Beneath the four buildings, a one-level structure parks 1,000 cars.



© Michael O'Callahan/Studios Architecture

Project: Sun Microsystems,
Menlo Park, California

Architect: Backen Arrigoni & Ross

Concept: A 1-million-sq-ft campus for a computer maker is focused on a residentially scaled and detailed internal street. The imagery reflects the non-corporate style of this young company. The street is a venue for frequently-held outdoor celebrations. Flexible layouts were critical because the company, like many others in the field, often can't know which groups will occupy a building until construction is well underway.

Outdoor spaces are seen as extensions of internal workspaces (below). Site plan allowed buildings to be added as needed.

Project: Hewlett Packard,
Roseville, California

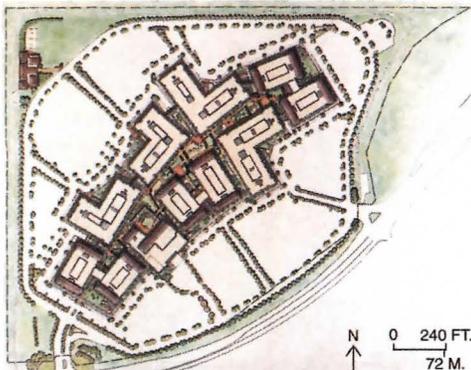
Architect: Bottom Duvivier

Concept: To permit rapid expansion for this maker of computer output devices, the building was conceived and constructed as a kit-of-parts. The owner can add modules of space without disrupting occupied areas. The steel-framed system is used for production areas and offices. When making changes or adding space, the company alters only as much of the modular internal and external bay system as is needed.

Skylit zones between modules (left) define major circulation routes. They are punctuated by planted informal meeting areas. The external panel system (below) is readily removable.

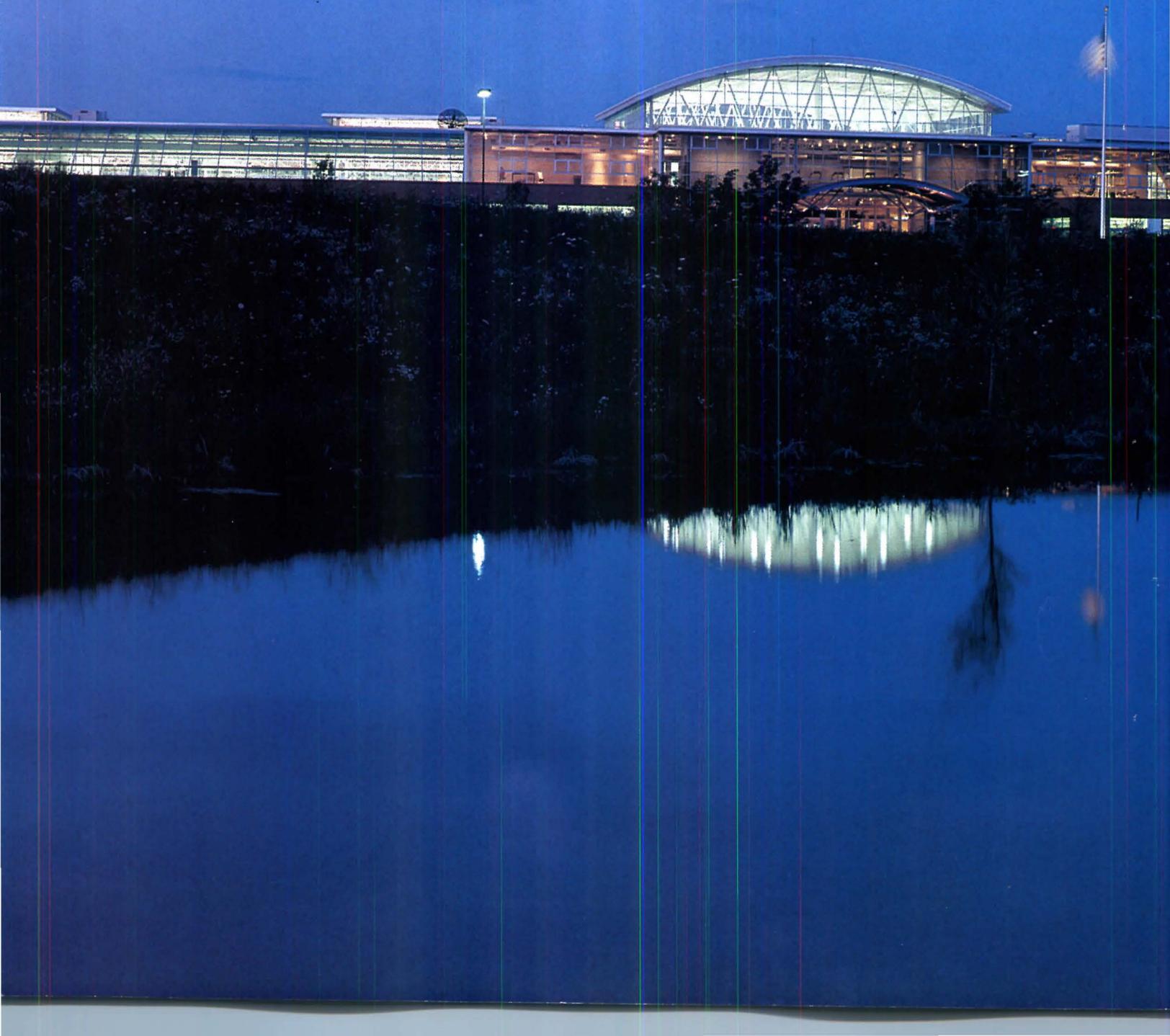


Besides offices, labs, and engineering facilities, Sun built dining areas, gardens, and a fitness center.



The straightforward truss-framed modules accommodate a variety of assembly procedures (left).

Furniture Maker's Sustainable Setting



*An environmental prophet
meets a company's egalitarian
design culture.*

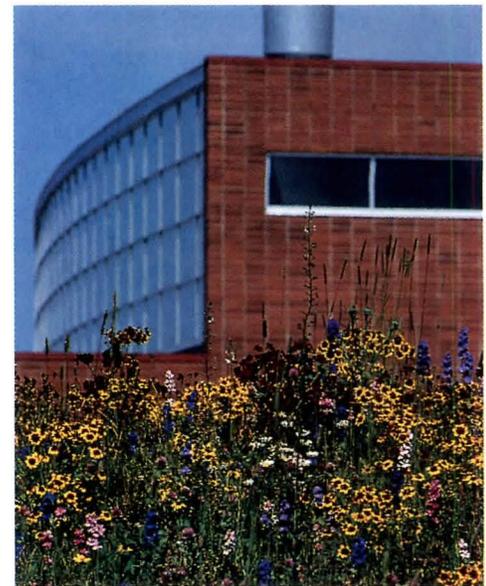
*Miller SQA
Holland, Michigan
William McDonough +
Partners, Architect
Verburg & Associates,
Architect of Record*





© Timothy Hursley photos, except as noted

Landscape architect Pollack Design Associates has created a "living landscape" that evokes nature, but is specifically designed to counter the environmental consequences of the building. Swales, rather than retention ponds (site plan opposite and photos previous pages) help filter stormwater runoff. The central vault announces the building entrance (top and middle left, opposite middle). A meadow of mixed grasses, rather than conventional high-maintenance lawn, extends to the loading-dock (bottom). This is the latest signature building erected in Herman Miller's home region (map opposite).



© Steve Frykholm



Herman Miller Facilities

Map opposite: 1. Meridian 2. Powder Coat Technology—Van Dyke + Verburg (1992) 3. Integrated Metal Technologies 4. Grandville Pavilion—Booth Hansen & Associates (1982); Donovan and Green (mid 80's) 5. Millcare 6. Corporate headquarters—George Nelson (1950's); A. Quincy Jones (1970), CRS (1979); Meyer, Scherer & Rockcastle (late 80's) 7. Midwest Distribution Center—Bede Van Dyke and David Verburg (1989); Miller SQA 8. Holland Chair Plant, CRS (1979) 9. Design Yard—Meyer, Scherer & Rockcastle (1985) 10. Marygold Lodge

By Robert Bruegmann

Stretching along a low ridge on a large landscaped site, the new Miller SQA building looks at first glance like a discreet and tasteful suburban corporate headquarters. The loading docks at the rear of the building, however, reveal that this is not primarily an office building but a production facility housing 600 factory workers and 120 white-collar employees.

Architect William McDonough, known as a prophet of sustainable design, and his team reconciled environmental concerns with the client's integrated vision of marketing, design, and production. The large areas of glass throughout and the generous light-filled break areas consciously attempt to foster interaction between front office and factory floor and provide a high-quality interior environment for everyone. The naturalized prairie and woodland landscape outside further evidences how the sustainable ideal was played out on this project.

To anyone who knows SQA's parent company, furniture-maker Herman Miller of Zeeland, Michigan, the attention to design lavished on a factory will not be surprising. Because Herman Miller sells design, the company has been unusually sensitive to the way its buildings look and function. Over the last few decades it has commissioned buildings from many well-known architects, both for sites near its headquarters in the three-city region of Holland, Grand Rapids, and Muskegon—the historic heart of contract-furniture manufacturing (map right)—and for buildings further afield. Significant recent structures have been designed for the company by Frank Gehry, at Rocklin, California, outside Sacramento [RECORD, January, 1990, pages 108-115]; Scogin Elam & Bray, at Roswell, Georgia; and Nicholas Grimshaw at Chippenham and Bath, England.

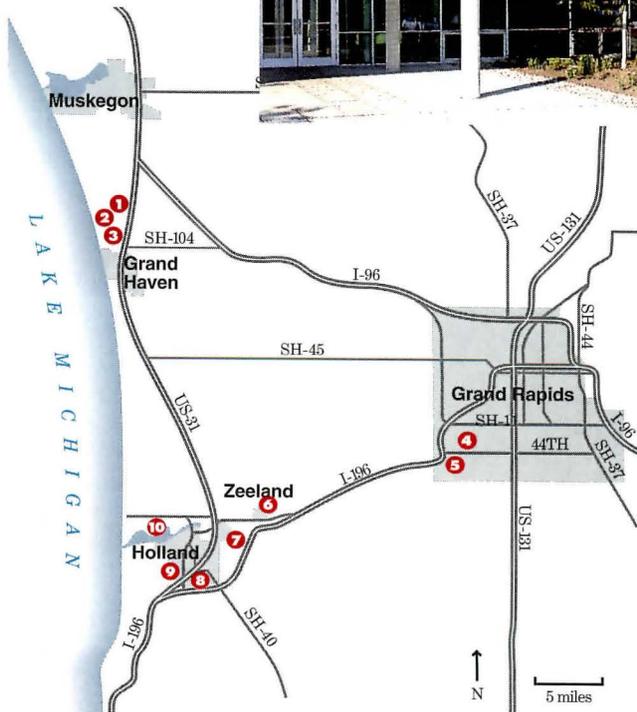
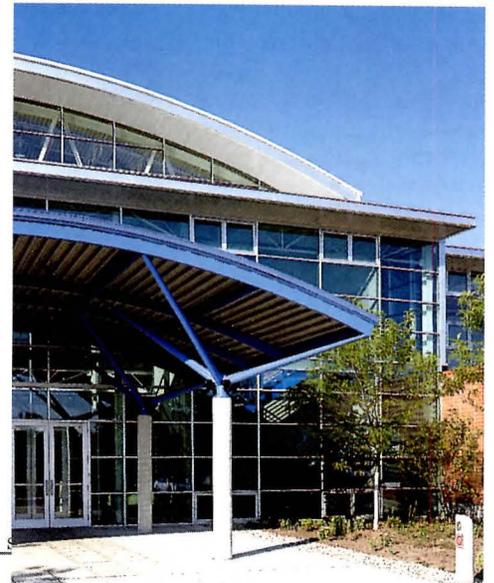
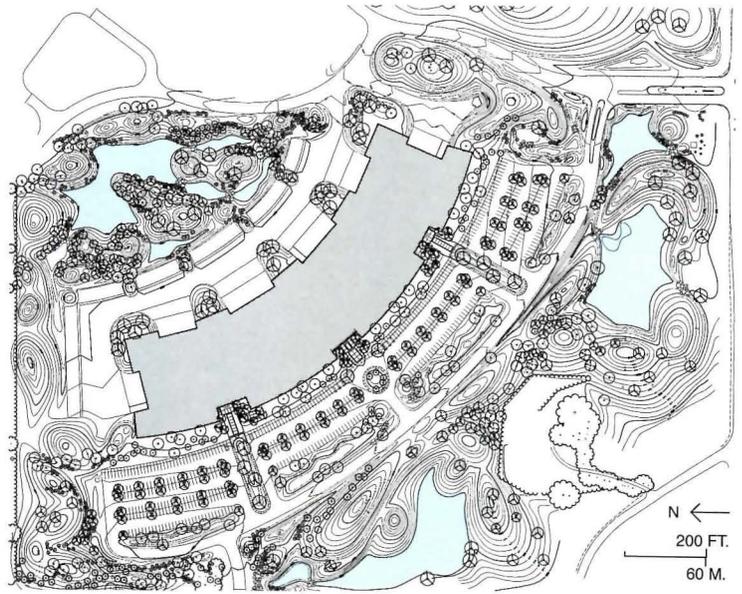
Herman Miller's corporate culture owes much to its western Michigan roots. The area was settled in the 19th century by Dutch Calvinists, a group that values an entrepreneurial outlook and strives for a consensus among equals. For Herman Miller this has meant a strong egalitarian impulse. In 1950, the company adopted the Scanlon plan, based on ideals developed by labor organizer Joe Scanlon, as a blueprint for expanding employee participation in decision making. For the past 15 years, for example, the salary of the Herman Miller CEO has been limited to a fixed multiple of the factory-worker salary.

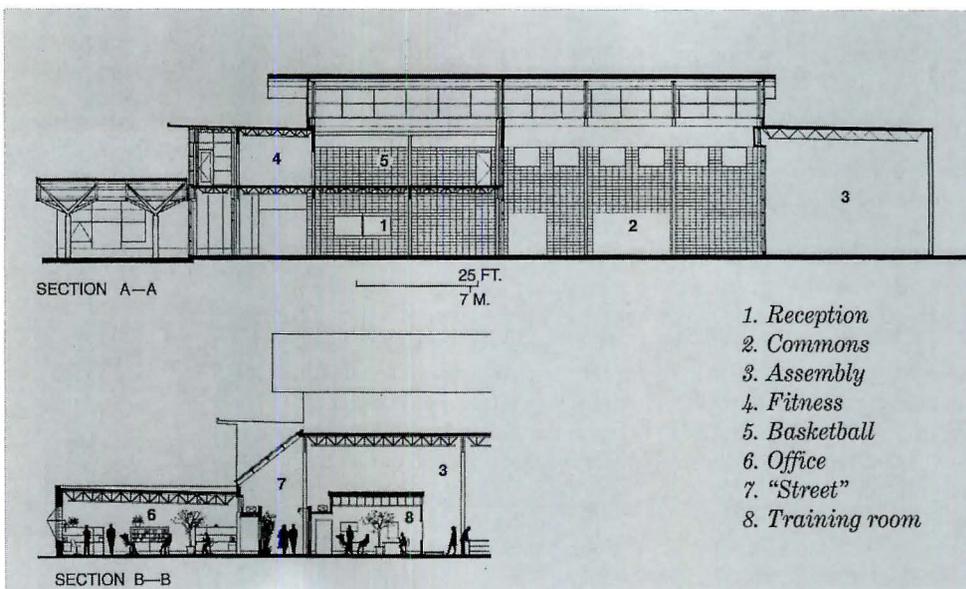
A corporate culture of recycling and sustainability

Proverbial Dutch thrift and dislike of waste had led the company to take a major interest in conservation and recycling long before it was fashionable in most of corporate America. For example, Herman Miller stopped using rosewood, which had been a conspicuous feature of its famous Eames lounge chair, because harvesting the wood contributed to the depletion of tropical hardwood forests. SQA's parent company also has worked hard to reduce the amount of waste it sends to landfills and its use of toxic products in manufacturing.

In fact, the principle motive in founding Miller SQA in 1984 was recycling. First called Tradex, and later renamed Phoenix Designs, then Miller SQA, the subsidiary company was set up to address the problem of how to deal with used yet substantially built Herman Miller furniture when clients wanted new configurations, fabrics, or finishes. Company officials hit upon the idea of letting customers

Robert Bruegmann is professor of architectural history at the University of Illinois at Chicago. Author of numerous books, he has focused recent research on suburban corporate facilities.





trade in their old furniture, then disassembling, reconditioning, reassembling, and reselling it.

In the last half dozen years, however, the business has shifted to include the manufacture of a limited line of new furniture as well. This line is attuned to a marketplace where re-engineering, downsizing, and the demand for quick turnaround are constant. Hence the current company name, SQA, for "Simple, Quick, and Affordable." Miller SQA represents a re-engineering of the company's own sales methods. Using high-powered laptop computers, Miller SQA sales people lay out furniture and punch up specifications in clients' offices. Interactive three-dimensional simulations show clients what the systems will look like. The computers also specify all of the needed parts, calculate the costs, and transmit the completed order back to SQA. This software, together with a network of reliable, dedicated local suppliers and an efficient nationwide distribution system, allows SQA to deliver orders in a matter of days rather than weeks, and minimizes warehouse-space needs.

A design process of consensus-building

The growth of this business made a new facility necessary. While "partnering" is now the rage in the building industry, Herman Miller has long involved key players at an early stage of the design process. Company employees formed the design-team nucleus for Miller SQA's new building. Then came contractor John Keelean of Owen-Ames-Kimball Construction Company, Grand Rapids, whose firm had developed a strong relationship with Herman Miller over several decades. Keelean, along with representatives of the principle subcontractors, helped refine construction costs, then built the structure under a negotiated contract. Finally, the company added several Michigan architects with long experience on Herman Miller buildings, including David VerBurg, president of Holland-based VerBurg and Associates. Miller SQA also retained interior designer Bede VanDyke (once a Herman Miller employee) of VanDyke & Associates, Holland, and landscape architect Peter Pollack, director of design at Ann Arbor-based Pollack Design Associates.

McDonough, head of Charlottesville, Virginia-based William McDonough + Partners and dean of the University of Virginia School of Architecture, was the one team member who had not previously worked with Herman Miller; though he was known to company offi-

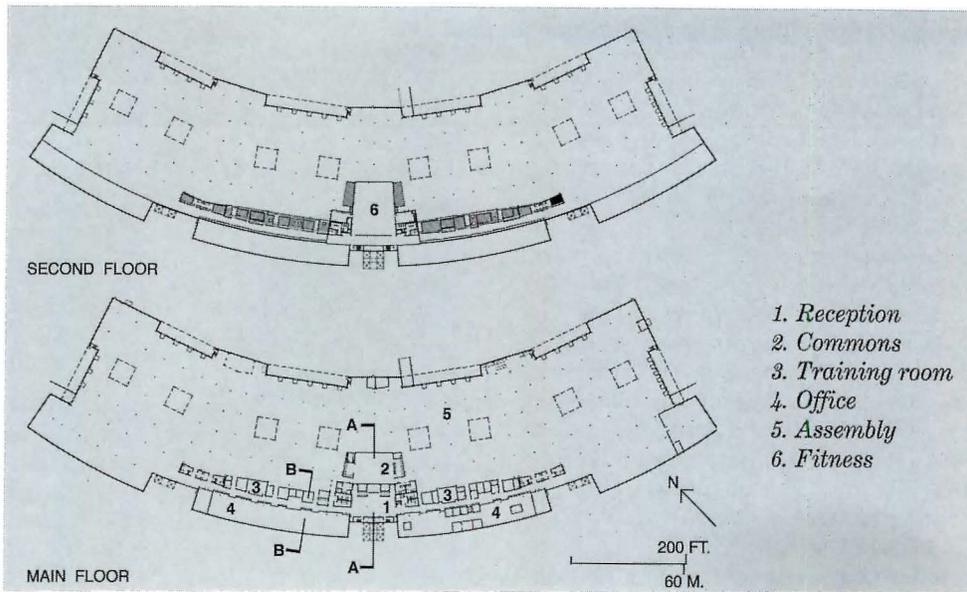
cials through their mutual involvement in environmental organizations. McDonough deeply believes in the redemptive power of design in a world headed for both spiritual and environmental chaos. It is easy to see that this approach might be too messianic for even the best-intentioned businesses.

But the fit, team-members say, was a good one. They found common ground in the depth of each other's beliefs, even when they weren't shared. McDonough believed that he could help move Herman Miller to the next level of sustainability, but he knew the company had to meet its bottom line. For example, McDonough, like other environmental activists, has urged the extension of a sustainability ethic beyond individual buildings to the urban scale, advocating the re-use of existing buildings in already built-up districts. Herman Miller has consistently steered away from big cities and downtown sites. The company's decision to build on a green-field site is not only consistent with its own history and individualistic, entrepreneurial culture, but emblematic of an emerging form of low-cost, very low-density development. Facilities for Herman Miller and its competitors are spread throughout its large home region, oriented to truck access from uncrowded highways rather than to towns. Western Michigan is a fast-growing rust-belt equivalent to the booming I-85 corridor between North Carolina's research triangle and Atlanta.

On site, however, the design-and-build team was receptive to McDonough's approach, and the team did a two-day charette early in the process to "show that we could do an ecologically intelligent building affordably," explains McDonough design partner Chris Hays. Thus, Pollack Design Associates' landscape scheme uses vegetation on the site to filter runoff from parking, and waste-recovery and recycling procedures were used both in construction and in the ongoing manufacturing processes. The research arm of McDonough's firm also consulted on the environmental impacts of specific building materials and practices, finding, for example, that a low-emissivity coated glazing was optimal compared to more elaborate shading strategies.

Design dissolves barriers between factory and office workers

The typical building section unites a low band of offices in front with a high production block at the rear through a skylit main-corridor "street" (following pages). There are few walls or doors: the local code did not require a fire separation. The corridor fosters intermin-



The vaulted roof at the center of the plan not only creates a focal point in Miller SQA's low, glassy bulk, it unites those areas the company sees as key to encouraging staff interaction and team-building. Truss-framed clerestories draw daylight into the dining commons (below) and basketball court (bottom). Likewise, the skylit circulation spine becomes the "street" that unites production and white-collar workers (plans left and sections opposite). It's oriented to catch winter light.

gling of factory and office workers not only through its attractiveness, but because it houses photocopy and conference areas that everyone uses. In office areas, operable windows provide abundant fresh air, daylight, and views. In the production areas, sunlight pours in through skylights and windows, aided by borrowed light from the corridor (following pages). In these areas, fresh-air supply is about six times code requirements.

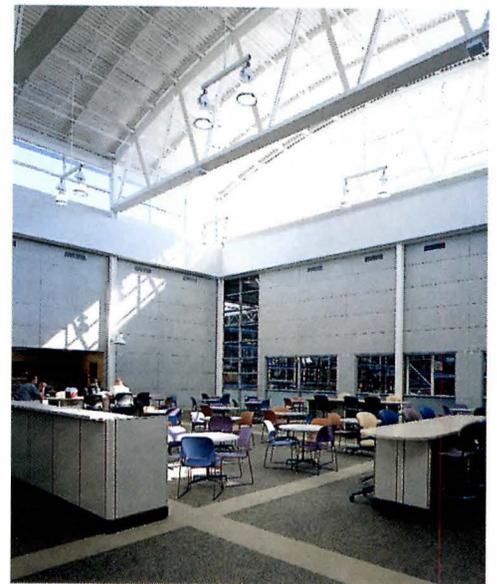
The centrally located cafeteria, fitness center, and informal break areas placed along the corridor also encourage interaction. Indeed, at Miller SQA it is almost impossible for the visitor to distinguish between casually dressed company officers and line workers.

On the outside of the building the designers attempted to synthesize a number of "green" strategies. The entrance road winds through a landscape of prairie grasses, wetlands, man-made swales, and clumps of trees that shield the neighboring subdivision from building lights and the bustle of trucks and minimize landscape-maintenance costs. Near the building, the parking lots are punctuated with trees that will eventually form a cooling canopy over the asphalt.

Facility's environmental impact will undergo evaluation

Almost all of these design elements involved a cost premium. At approximately \$49 per sq ft, the building came in substantially higher than the average production facility in low-cost western Michigan, according to a company spokesperson. Some of this premium will be recouped in energy savings.

More importantly, the daylighting and indoor-air-quality strategies used at Miller SQA have drawn attention because of their potential productivity advantages. Hard data, however, is largely unavailable, so the U.S. Green Buildings Council, a private advocacy group, has persuaded the U.S. Department of Energy to fund a study. It will compare the new building with an addition to the previous facility, and monitor the incidence of sick days, manufacturing errors, and other aspects of productivity. It is the most sophisticated such monitoring of any American building to date, says James Weiss, a scientist with Pacific Northwest Laboratories, Richland, Wash., the organization that will analyze the collected data. Miller SQA is already convinced that retaining valued staff and increasing productivity will, over the building's life, dwarf added construction costs. ■



The attractiveness of the main corridor “street” (below) is key to Miller SQA’s non-hierarchical, collaborative culture. Offices and production areas are visually linked (opposite top right). The minimally heated and ventilated corridor creates a buffer between the air-conditioned offices and production areas.

Credits

Miller SQA

Holland, Michigan

Owner: Herman Miller—Mary Dugan, Ed Nagelkirk, Keith Winn (Herman Miller); Bix Norman, Del Ensing, Bob Enders, Fred Guss (Miller SQA)

Architect: William McDonough + Partners, Architects—William McDonough, partner-in-charge; Chris Hays, design partner; Kevin Burke, Roger Schickedantz, project

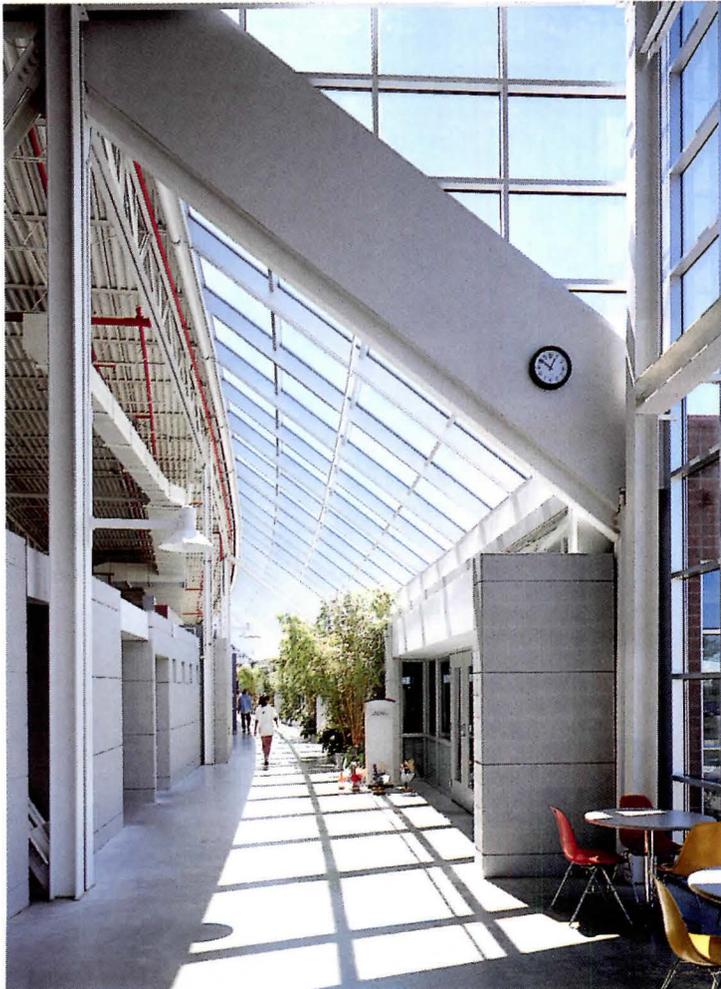
architects; Celia Szabo-Imrey, job captain; Lisa Borgmeier; Alan Bruton, Allison Ewing, Elke Knoess, Nana Itoh, John Quale, design team

Architect of Record: VerBurg & Associates—David VerBurg, president; Craig Slager; James Davis, Michael J. Lubbers, team

Engineers: Thornton-Tomasetti Engineers, Soils and Structures (structural); Quality Air Heating and Cooling (mechanical); Parkway Electric Company (electrical); Shen Milsom & Wilkie (acoustics)

Consultants: Pollack Design Associates (landscape); Van Dyke & Associates (interiors); Environmental Research Group (daylighting/materials analysis); E Source (environmental); Kugler Tillotson Associates (lighting)

General Contractor: Owen-Ames-Kimball



Above: Two views of the “street” that unites manufacturing (left in left photo, right in right photo) and office areas.

Energy conservation techniques include the use of high windows by offices that drive daylight deep into the plan (near right). Sensors dim electric lights when daylight is sufficient. The effect may be boosted if light shelves the company is considering are mounted below the high windows. Lower windows are operable. Using these techniques Miller SQA was able to reduce office air-conditioning loads. Radiant floor heating was installed near windows. Skylights, exterior windows and borrowed light from the "street" bring abundant sun into production areas (bottom).



Clip-Ons Enhance A Factory

A Silicon Valley company upgrades from spec norms, gaining staff-attracting amenities and the flexibility to respond to high-speed technical change.

It's back to the future time in Silicon Valley," says Abe Darwish, vice president, world-wide real estate, at 3Com, a fast-growing company that creates tools for networking computers. Darwish is referring to the recently reincarnated notion of the fully integrated plant, in which raw goods go in one side and a finished product comes out the other. Henry Ford's heroic industrial compound, the River Rouge Plant outside Detroit, has been reborn within the confines of the tilt-up warehouses of the flood plains south of San Francisco. Companies are again looking to architects to make an equivalent to Albert Kahn's industrial monumentality. For 3Com, Studios Architecture has designed a playful, inexpensive, and scaled-down solution.

The buzz-words now making the rounds in Silicon Valley are "concurrent engineering" and "integrated manufacturing." The goal is to bring the people who develop, design, make, and sell products into proximity. Instead of a plant overseas and a headquarters building downtown, companies such as 3Com are putting everyone in one place. This trend has been a boon for architects such as Studios, who have tackled similar challenges for Northern Telecom (following story) and Silicon Graphics [RECORD, May 1996, pages 72-79].

The high-tech company required a facility that balanced flexibility, cost, and esthetics and gave 3Com "an edge as a company," explains Darwish. In the computer business, the rapid pace of technological change means companies may have to switch from office to manufacturing (and vice versa). And they need an "exit strategy"—i.e., the ability to readily lease space if downsizing looms. On the other hand, companies are upgrading from lookalike warehouses and spec office buildings to provide amenities that attract employees in Silicon Valley's highly competitive job market. At 3Com, the metal container for manufacturing bristles with a black-glass-sheathed health club and cafeteria, as well as conference rooms in bright colors.

For 3Com's Building 500, the strategy was self-evident, says project architect Erik Sueberkrop, a Studios principal: "The need for flow-through manufacturing makes the building very simple. We then cloaked and camouflaged the box with people-oriented elements that help break down the scale." Instead of burying the places where people gather inside the building or putting them into a separate building, Studios turned them into "clip-ons," such as the prominent blue staircases positioned to encourage chance encounters.

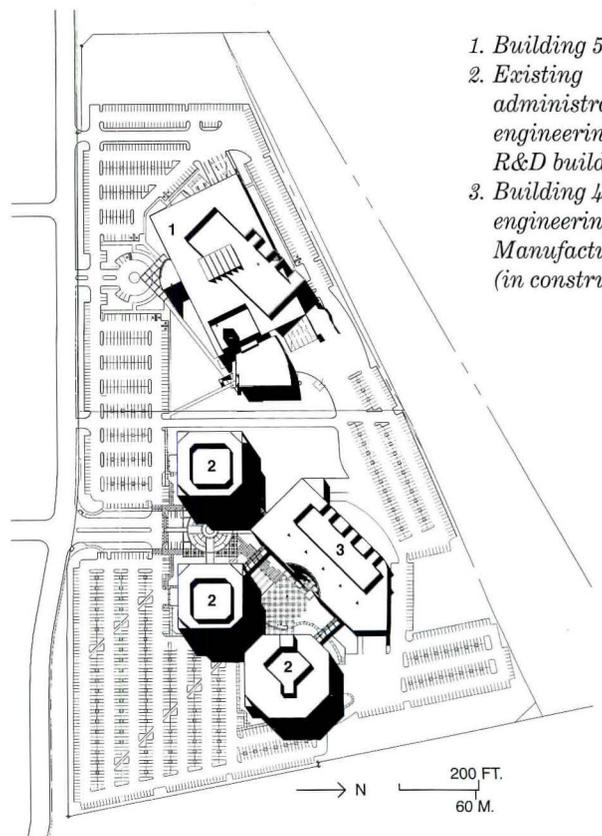
Not incidentally, these geometric fragments disguise the bulky 100,000-sq-ft floor plate (plans, following pages). Some of the materials call attention to uniquely public aspects of the building; others reference elements of the existing spec buildings on the campus. Building 500 is at once a billboard of the welcoming ambience the company creates for staff and the emblem of a scrappy competitor.

Aaron Betsky



© Richard Barnes photos

The main bulk of Building 500 is only visible from the adjacent freeway. It helps unify the collection of 3Com buildings, now nearing 1-million sq ft, into a gateway to Santa Clara.



1. Building 500
2. Existing administration, engineering, and R&D buildings
3. Building 400, engineering/R&D/Manufacturing (in construction)

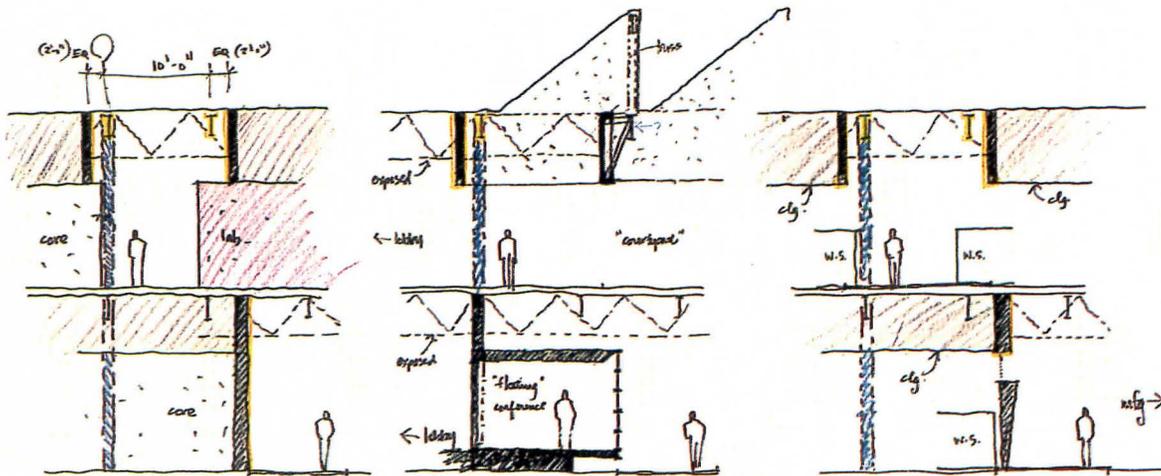
*3Com Building 500
Santa Clara, California
Studios Architecture, Architect*

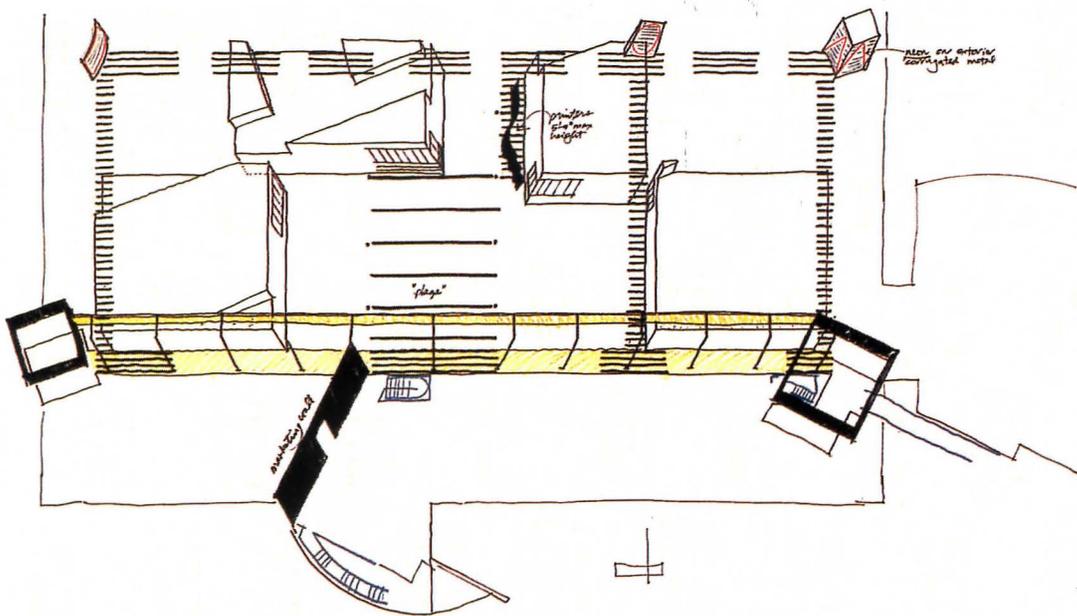


A canopied entry and black-glass cladding distinguish the fitness and training area from the rest of the metal-sided building (above left and top). An entry in striped concrete (right) evokes adjacent buildings.

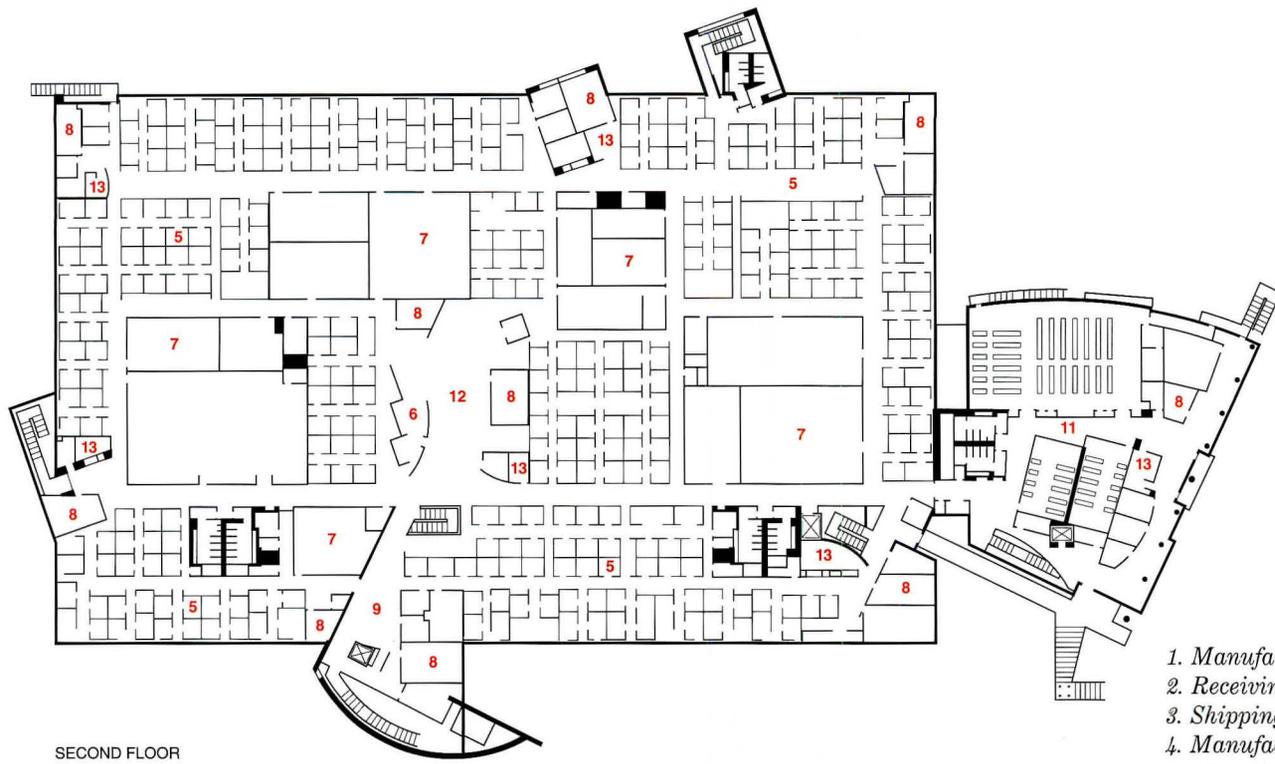


Building codes permit unprotected structure, so trusses and deck are exposed to keep costs down. The lighting, sprinklers, and ductwork are carefully, though not rigorously, fitted in (sketch below and photo above), esthetically uniting office and production areas. North-facing sawtooth skylights bring sun into an internal node of meeting spaces (left). "These are our new loft buildings," says Sueberkrop, referring to the structure's inherent programmatic flexibility—office floors can readily turn into assembly lines.



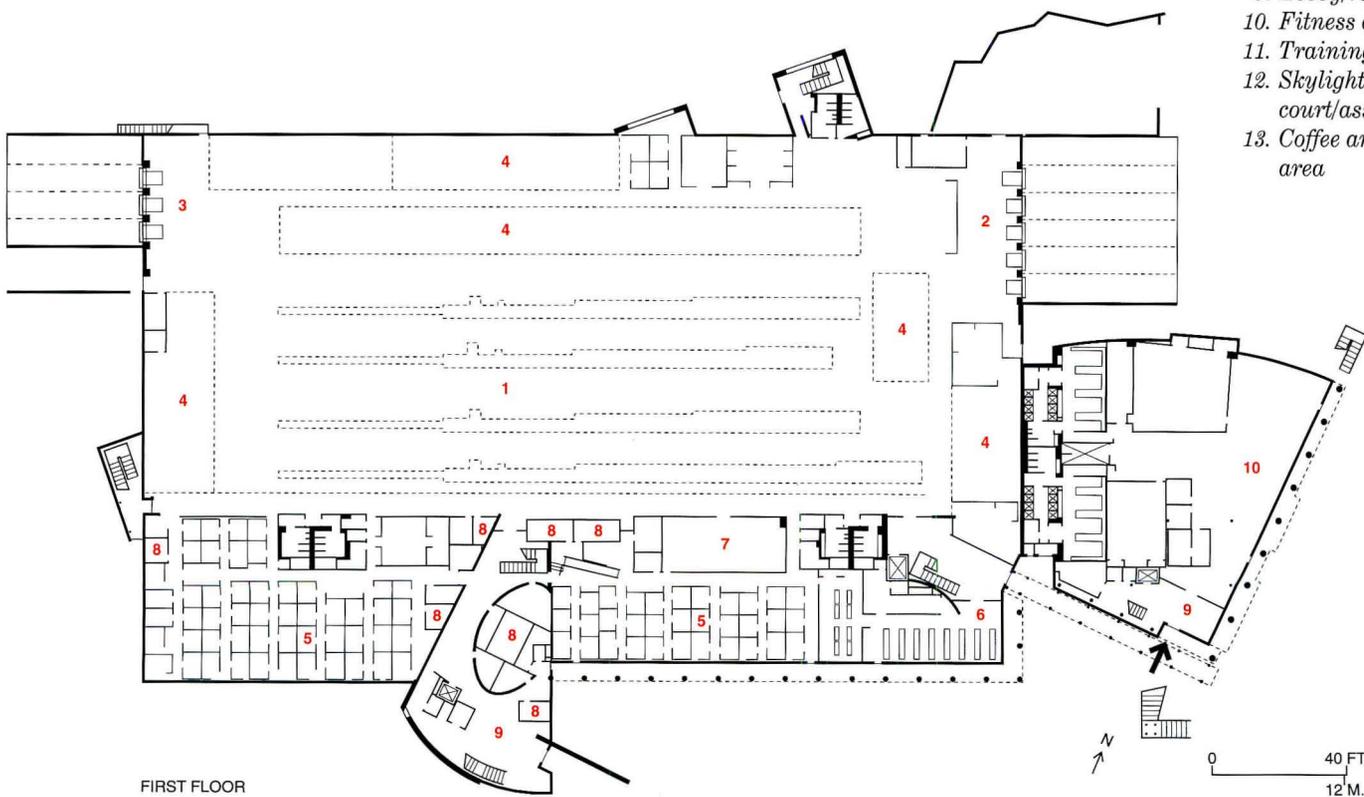


Open, daylit stairs and corridors (above) break down the departmental mentality that the client felt inhibited collaboration. The architect consciously sculpted these “leftover” spaces to draw staff into informal encounters. (Conveniently located coffee bars don’t hurt either.) Since the space must be flexible enough to accommodate various office uses as well as manufacturing, these unique spaces are clipped to the extremities of the box-like volume.

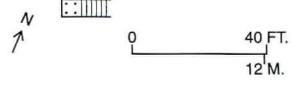


SECOND FLOOR

1. Manufacturing
2. Receiving
3. Shipping
4. Manufacturing support
5. Open office
6. Break area
7. R&D lab
8. Conference
9. Lobby/reception
10. Fitness center
11. Training center
12. Skylight court/assembly area
13. Coffee and copy area



FIRST FLOOR





Companies like 3Com have increasingly turned to architecture as a means of reaching out to customers and potential employees. Only a few years ago, such companies regarded design as a costly frill. 3Com's training center (left) is a retail-like beacon to visitors. The media wall (middle) not only announces what the company is about, it connects the office areas to the manufacturing space at the rear. 3Com needed a fire separation at the manufacturing line, but the type of construction permitted allows glass areas between a conference room and production lines (bottom).



Credits

*3Com Building 500
Santa Clara, California*

Architect: Studios
Architecture—

Erik Sueberkrop, principal-in-charge; Cliff Peterson, project architect; Todd Verwers, Jean Pascal Crouzet, Jason Lee, Peter Van Dine, Shirley Perez, Ian Fleetwood, project team

Engineer: Structural Design
Engineers (structural)

Consultants: Ken Kay
Associates (landscape);
Architecture & Light (lighting);
Paoletti (acoustical)

General Contractor:
Rudolph & Sletten



Boxes With a Twist

A curving spine unites engineering and manufacturing, enlivening three bleak tilt-up warehouses.

They are the ubiquitous bane of Silicon Valley and many other light industrial parks: one-story rectangles with no scale, no presence on the landscape, and no grace. Their tilt-up concrete or “Butler” building facades give no hint of what goes on inside. Luckily, the very blandness of such constructions offers great opportunities for rebirth at the hands of innovative architects.

Northern Telecom, the Canadian-based telecommunications company, wanted to transform its 300,000-sq-ft, tilt-up behemoth in Santa Clara in order to unite the long-separated engineering and manufacturing segments of its corporate family. The company hired Studios Architecture, a firm that has specialized in bringing life, light, and identity to Silicon Valley buildings. The result is a set of boxes with a twist: a bland container that contains the sinuous geometry of a new internal organization, only a hint of which breaks out into the prevailing landscape of sprawl.

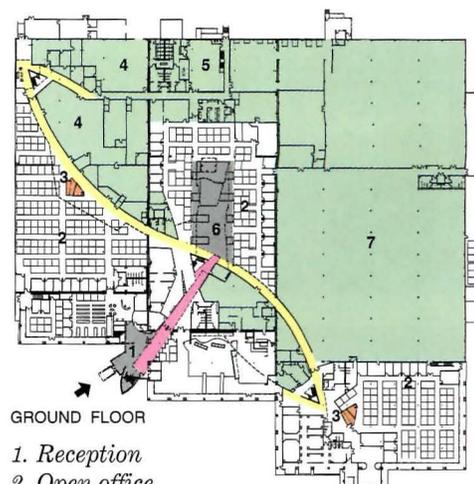
Northern Telecom’s original building was constructed in three phases, starting in 1969. The architect was challenged to integrate these disparate building elements and to find an extra 50,000 sq ft of space for new offices. Studios created the new office space by building a mezzanine into an existing manufacturing volume, and brought light into the offices by way of a new central atrium, also carved from the original building. The architect unified the new expanse of open-office cubicles on both floors with a curving yellow wall (following pages) that helps employees orient themselves in the labyrinth. “Just stick to the wall, and you’ll eventually find everything you need, from bathrooms to labs,” says Studios principal Charles Dilworth.

The yellow wall also provides a sense of whimsy in what is otherwise a relatively undifferentiated interior landscape. Though its shape is expressive, it has a practical derivation. “We had to thread the needle between a whole series of encumbrances of the kind you have even in such a flexible building, including telephone rooms and shear walls,” explains Studios principal Erik Sueberkrop.

There is only one grand moment in this whole building, and that is the atrium. Rather than remaining an empty space, this large room is arranged to allow multiple meetings to take place at the same time. Curving wood walls, exposed structure, and the yellow wall turn the space into an interior version of an urban square, where the true work of the community gets done around cafe tables. Cutting out from this core is the one straight axis, a diagonal that leads to a modest new entrance pavilion. At this location, the new architecture—and culture of Northern Telecom—peeks through the bland exterior of the tilt-up box (opposite), signaling that something unusual is going on inside. Like the promise of a new world of technology, the architecture of Northern Telecom breaks through the old, turning yesterday’s mistakes into an opportunity for reconstruction. *Aaron Betsky*



© Courtesy Northern Telecom



GROUND FLOOR

1. Reception
2. Open office
3. Coffee/copy
4. Lab
5. Gym
6. Atrium
7. Manufacturing

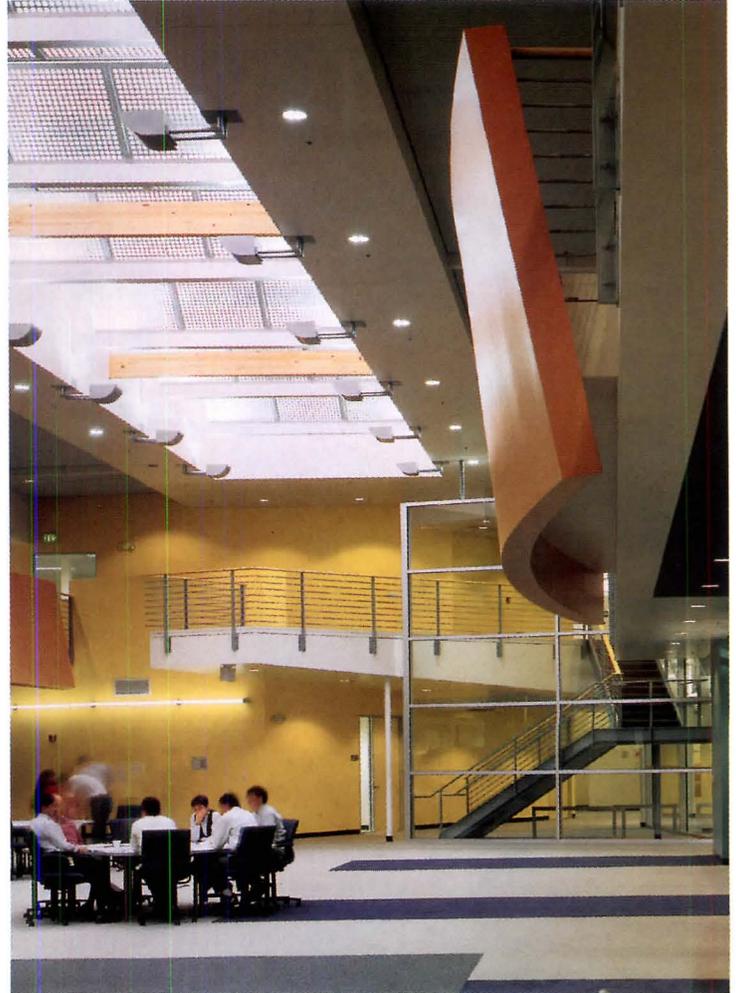
An ungainly assemblage of three tilt-up buildings (top) gets a new face and a new spine to accommodate a sleeker image and greater amenity for a high-tech company. The “double helix” circulation system (plan) implies a “boat” or “fish” shape, which is expressed on the front of the building as a reception tower; identifying Nortel from the nearby highway (opposite).

*Northern Telecom, Mission Park
Santa Clara, California
Studios Architecture, Architect*





1



2



3

Studios unearthed a central gathering space (opposite and 2) from the heart of the old plant and found beauty even in the structure's simple metal trusses. A new entrance stair (1), the

spine (4), and a cafeteria line (3) assist wayfinding.

Credits

Northern Telecom, Mission Park Santa Clara, California



4

Architect: Studios Architecture—Erik Sueberkrop, Charles Dilworth, Alan Tom, Kelly Haeggund, Tom Pinkowski, Colin Walker, Lori Clumb, Helen Kim, Jacek Ostoya, project team

Engineers: C. H. Wells & Associates (structural); Alfa Tech Bouillion, Air Systems (mechanical, electrical, plumbing)

Contractor: E. A. Hathaway



Carpeting Over Old Hierarchies



*A carpet company's integrated design,
showroom, and production line tell
its "quality story."*

*Prince Street
Cartersville, Georgia
Thompson, Ventulett, Stainback &
Associates, Architects*



For Prince Street, a custom-carpet manufacturer, all roads lead to Cartersville, Ga. Formerly housed in three locations in an Atlanta industrial park, this division of Interface Americas corporation needed a facility that mirrored its commitment to change. A new headquarters set in a 23-acre naturalized field beside Georgia Route 61/113 embodies the company's high-minded corporate thinking.

"People make the carpet," says company president Joyce LaValle, when describing the egalitarian environment she oversees. Placing design, showroom, manufacturing, and administration together in the 210,000-sq-ft facility reflects the company's ardent commitment to its employees. How? Apparent hierarchy has been banished from the premises: management and plant workers enter through the showroom, share the same amenities (from conference spaces to toilets), and park in the same lot.

There is a transparency to the plan that encourages employee interaction. Managers and workers wave in passing through a large glazed wall separating offices and mill space. Employees meet informally in a comfortably furnished public reception space that encourages conversation. Sunlight from skylights and an 80-ft-long window wall floods the manufacturing floor—a stark departure from the industrial norm.

This new kind of work setting meant a cultural shift, says LaValle: "It required total buy-in." Some employees were skeptical of management's intentions at first, an attitude that "big sister" was looking over the workforce. Skip Finch, the company's vice president for human resources, underscores how things changed. "It was like a fishbowl. Suddenly, workers could be seen. There was a new sense of honesty and it caused growth . . . more of a partnership attuned to working conditions."

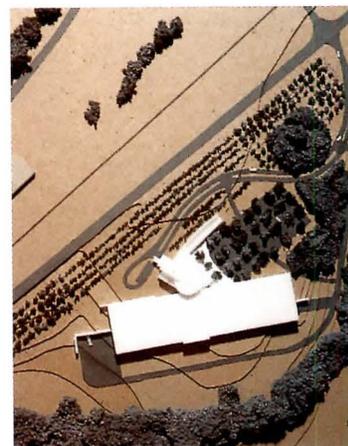
A funded competition, unusual in the manufacturing world, determined the architect. When Atlanta's Thompson, Ventulett, Stainback & Associates was chosen out of a field of four competitors in October 1994, the architect had little time for contemplation. A year later, Prince Street opened, having met its \$5.6-million budget. "There was no premium for doing the right thing," says LaValle.

Bill Halter, the project architect, helped devise a plan with a circular design studio as the "non-rational, dynamic center." The location of the design studio on a mezzanine directly above a 120-ft-diameter custom sample lab permits easy interaction between designers and technicians, and reinforces their team relationship. A showroom that curves around the lab doubles as a gallery. Manufacturing, an "ordered, systematic, linear" process, occupies 170,000 adjacent sq ft.

Building health and sustainability concerns permeate the design. The company regarded the new facility as an indoor-air-quality lab. Materials were tested for offgassing of volatile organic compounds (VOCs), and anti-microbial agents were added to paints, carpets, floor sealers, fabric wall coverings, ventilation-duct liners, and condenser coils. The sustainability regime includes the natural landscape and the manufacturing area, where skylights and special diffusers reduce electrical loads. Windows are protected by sunshades (opposite).

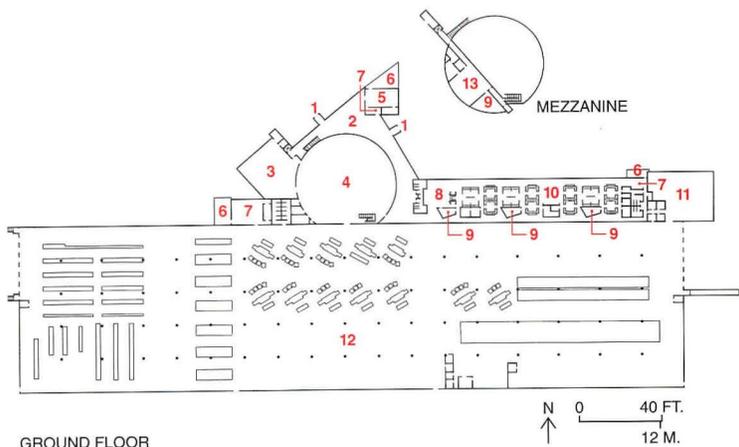
It is too soon to fully quantify the advantages of the design, but the president asserts that the building "has had an impact on our quality story." According to LaValle, the company has met its financial goals, and claims for workman's compensation are down. Plus, the building is attracting attention. "Other corporations are looking at the way we work," says LaValle. *Robert Ivy*

Site design (right) is based on a "zero-negative-impact" concept. Drainage from the roof and parking areas is directed through the landscape and into dry ponds, which allow the water to cool before it enters the natural waterways nearby. Low-maintenance plantings include switch grass and a custom wild-flower mix.



Two similar building entrances (above and opposite middle), used by all employees, are marked by a spire that captures light and directs it into the design studio and showroom. Manufacturing is located at the rear of the building (opposite top). A south-facing, 80-ft-wide window wall that brings daylight into the manufacturing plant (opposite right) is shaded by a series of translucent, diffusing louvers.

© Brian Gassell/TVS & Associates



- 1. Entrance
- 2. Showroom
- 3. Custom samples
- 4. Custom lab
- 5. Multi-purpose
- 6. Terrace
- 7. Lunch room
- 8. "Living room"
- 9. Conference room
- 10. Office
- 11. Standard samples
- 12. Manufacturing
- 13. Design studio

GROUND FLOOR

A glass-enclosed conference room (below left) can be used for formal meetings, but invites casual use. Similarly, the so-called "living room" (bottom left) doubles as a reception area and meeting place. Windows in the second-story design studio, and in the custom sample lab underneath, overlook the manufacturing plant (below), where the samples are made up. The 24-ft-tall, curved showroom (opposite),

which receives abundant daylight through steel-and-glass walls, is a flexible entry space for display, sales, exhibits, and gatherings.



Credits

Prince Street
Cartersville, Georgia
Owner: Prince Street Technologies—Joyce LaValle, president and chief executive officer; The Staubach Company, owner's representative
Architect: Thompson, Ventulett, Stainback & Associates—Ray C. Hoover III, principle of record; William R. Halter, Eugene

Montezinos, Jeffrey Wierenga, Ashley Black, project team
Engineers: Browder & LeGuizamon (structural); Barrett, Woodyard & Associates (mechanical, electrical, plumbing); RBA Group (civil)
Consultants: Hughes, Good, O'Leary & Ryan (landscape)
General Contractor: Weeks Construction Services



Researching Laboratory Trends

As technology changes and dollars for R&D facilities shrink, new strategies for designing labs have emerged in both the public and private sectors.



Carnegie Mellon University's Undergraduate Chemistry Laboratories (1) encourage cross-discipline collaboration by creating an open working environment. Relocatable lab tables replace traditional fixed casework. Exposed overhead utilities maximize system flexibility (2). Utility drops occur only as required at workstations, facilitating future connections, while lowering costs for moving, maintenance, and service. Angled lab benches delineate multiple work zones within a larger space (3). Lab sinks are located at the ends of work stations for greater user access. Safety considerations include separation of student and chemical paths, unobstructed sight lines, and ease of movement around work surfaces and utility drops (4).

1
By Barbara A. Nadel

From California's academic medical centers to New Jersey's pharmaceutical corporate-office parks, a new generation of research laboratories is on the rise. Technology and science, along with competitive market forces and dwindling federal grant money, are driving research facilities toward generic, modular lab spaces with more public amenities. Experts predict the demand for laboratories will remain strong within research and development, academic, and corporate environments.

In mid-1995, an architectural trade magazine that has since ceased publication, sponsored a juried competition for all types and sizes of laboratory projects, both new construction and renovation. Three national lab experts reviewed over 200 submissions. The jurors were: Bruce Carmichael, Sc.D., executive director, facilities development and operations, Yale School of Medicine, New Haven; Steve Copenhagen, CEO, McLellan

Barbara A. Nadel, AIA, is a principal of Barbara Nadel Architect in New York City, specializing in the programming and design of health, correctional, and institutional facilities.

& Copenhagen Inc., Cupertino, Calif.; and Don Raney, AIA, director, architecture, planning and design/real estate services, Hoffmann-La Roche Inc., Nutley, N.J.

According to the judges, only a handful of projects successfully integrated technical parameters, programmatic needs, and inspired design solutions. Overall, however, the substantial number of lab projects from

“Architects who direct lab design without understanding the issues force compromises that impair building performance.”

—Janet Baum, AIA, Health, Education + Research Associates, Inc.

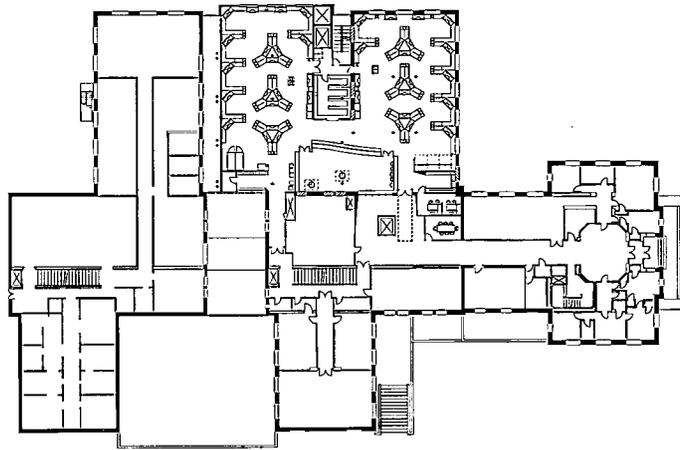
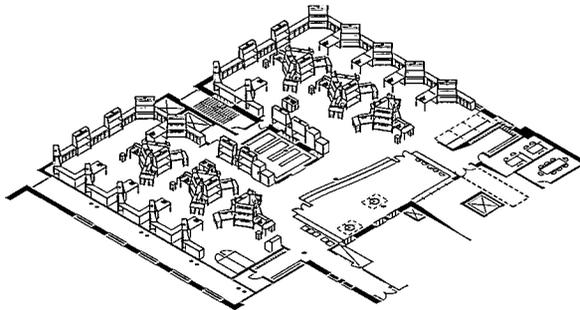
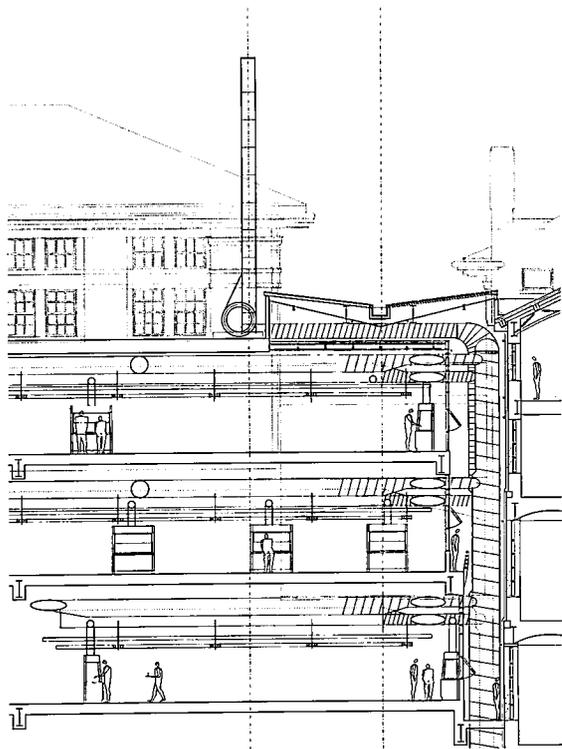
both academia and the corporate arena reflect the wide variety of programs and laboratory types being built in this active market segment.

Academic research

“There's a revitalization of science on campus, with more long-range strategic planning for these very complex facilities,” says veteran lab planner Janet Baum, AIA, principal of St. Louis-based Health, Education + Research Associates, Inc. (HERA).

In the past, as prestigious academic medical centers scrambled to recruit top talent, researchers called the shots, asking for—and often getting—cavernous labs and office areas. Today, as federal medical research money becomes scarcer, organizations justify expenditures by examining occupancy patterns and densities. No longer do researchers have a blank slate or a blank check where facilities are concerned. Benchmarks and data bases now measure sq ft per person and quantify productivity per sq ft.

Occupancy patterns in technical building types change frequently. Lab design must anticipate different types of research and building systems, placing greater burdens on architects to understand the nature of research to be conducted and the related engineering processes. “Architects who direct lab design without adequately understanding the issues force compromises that impair



critical building performance," says Baum.

Yale's research facilities contain standardized lab modules, with carrels at the end of wet benches. "After a while, the labs start to look alike," states Carmichael. "More academic research is genetic and cellular; across multiple disciplines. The nature of this scientific research is driving the design consistency."

Corporate research and development

The highly competitive, market-driven pharmaceutical industry fosters entrepreneurial activity by outsourcing basic research to small start-up labs and universities. These nimble, profit-oriented research incubators develop new products. They need generic lab space designed for flexibility and multi-use applications, with minimal fixed equipment, blank walls, and low fit-up costs.

Although co-locating scientists of different disciplines is difficult due to the nature of fume-hood and mechanical-system requirements, a team-based facility trend is emerging. Chemists have greater hvac needs than biologists; both disciplines need separate labs to guard against cross-contamination. Still, building a single building for each is expensive.

"The trend is toward a small, fragmented group of people managing the R&D process. Discovery yields great promise for biotechnology," says Hoffmann-La Roche's Raney. To further cut costs and boost efficiencies, round-the-clock computerized testing can operate without lab personnel, vacations, or benefits. Within the pharmaceutical industry, the bottom line forces the acceleration of product development and getting new items to market before the competition. One month of sales can pay for an entire facility's project cost. Recruiting and retaining the select, highly-mobile group of top researchers around the country is part of the R&D game. Environmental design and the quality of space are viewed as recruitment tools and employment perks. "University research facilities have raised quality-of-life expectations, through well-designed conferencing facilities, gathering areas, and offices located close to labs, and offering social interaction," Raney adds.

Return on investment

Corporate entities seeking return on investment insist on economic feasibility studies before building new labs. In contrast, government organizations, such as the National Institutes of Health, are subject to congress-

sional oversight, and thus remain acutely sensitive to spending taxpayer money wisely, by not building what one feisty senator terms "gold plated" facilities.

While government agencies and academia do not demand a profit-oriented return on investment, they need their own criteria to assess the value of these facilities. Budgets are increasingly tied to productivity, with grant-dollar production used to determine allowable construction costs per sq ft. While the amount varies by each institution, some use a rule of thumb, applying between \$200 and \$400 of grant money per sq ft as a goal for academic project construction. This rule is not the sole benchmark, but is a growing factor influencing overall space allocations.

Lab retrofits

"The science community is looking at improved environments. Academic research centers want architectural design qualities carried throughout their projects," says Copenhagen. These qualities—logical organization, public amenities, people spaces, design touches in corridors, a pleasant palette of colors and textures—enhance a lab building. When they are not included, purely
Continues on page 147

Laboratory Architecture and Design Projects Voted Most Progressive

In 1995, an architectural magazine sponsored a juried competition for laboratories. Over 200 projects were submitted for judging by three prominent lab experts; 18 projects received awards. The magazine closed in early 1996, before publishing the winning projects. RECORD is pleased to belatedly acknowledge the winners, below. Projects are listed alphabetically, by architectural firm.

Anshen + Allen. Cecil H. and Ida Green Earth Sciences Research Laboratory, Stanford University, Palo Alto, Calif. New earth sciences research labs.

William N. Bernstein and Associates, Architects. Biotechnology Incubator; Audubon Business & Technology Center, Columbia University, New York City. Biotechnology lab modules and offices.

Burt Hill Kosar Rittelmann Associates. Undergraduate Chemistry Laboratories, Carnegie Mellon University, Pittsburgh. Chemistry teaching labs, support spaces.

Centerbrook Architects and Planners. Neuroscience Center, Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y. Research labs, housing, parking garage.

Davis, Brody & Associates, LLP, Architects. Warren Alpert Research Building, Harvard Medical School, Boston. Research labs; animal facility, parking garage.

Ellenzweig Associates, Inc. Joslin Diabetes Center, Boston. Labs, animal facilities and public areas added atop existing building.

Ellerbe Becket Company. Earth Sciences and Materials Engineering Building, University of Minnesota, Minneapolis. Teaching labs, offices.

Garikes Wilson Karlsberger Inc. JMGR/Lyons & Hudson. The J. Bennet Johnston Health and Bioenvironmental Research Building, Tulane University Medical Center, New Orleans. Environmental research labs and offices.

The Hillier Group. Du Pont Merck Pharmaceutical Co. Medicinal Chemistry Building, Wilmington, Del. Research labs, offices, library, public spaces.

Kallman McKinnell & Wood Architects. Bass Center for Molecular Biophysics and Biochemistry, Yale University, New Haven. Research labs, classrooms.

Kling-Lindquist Partnership, Inc. Glaxo Wellcome Research and Development Headquarters, Research Triangle Park, N. C. Research labs, auditorium

Kornberg Associates. Tanabe Research Laboratories, USA, San Diego. Chemistry and biology research labs, vivarium.

MBT Architecture. Biomedical Sciences Research Building, University of Washington School of Medicine; Seattle. Genetic research labs, vivarium, offices.

Payette Associates, Inc. Biotech Research Facility, Biogen, Inc., Cambridge, Mass. Biomedical research labs, offices, auditorium, public areas.

Payette Associates, Inc. Stevenson Chemistry Building, Vanderbilt University; Nashville. Synthetic chemistry research and teaching labs.

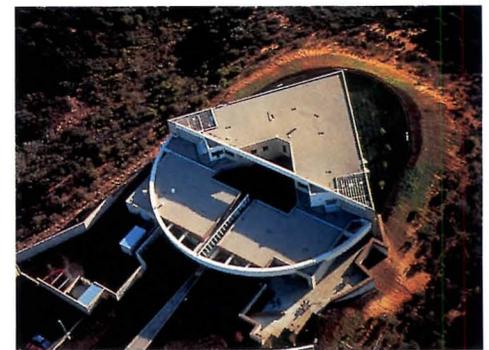
Payette Associates, Inc. Undergraduate Science Center, Washington and Lee University; Lexington, Va. Teaching and research labs, classrooms.

Robbie/Young + Wright Architects Inc. Chemistry and Computer Science Building York University, North York, Ontario, Canada. Chemistry and computer science labs, offices, classrooms.

Zimmer Gunsul Frasca Partnership. Fred Hutchinson Cancer Research Center, Seattle. Biomedical research laboratories, offices.



5



6



7

Biomedical Sciences Research Building *Urban context and outdoor connections remain important design elements for research facilities. The laboratory (5) is sited to complement adjacent buildings and maximize magnificent waterfront views in labs and conferencing areas.*

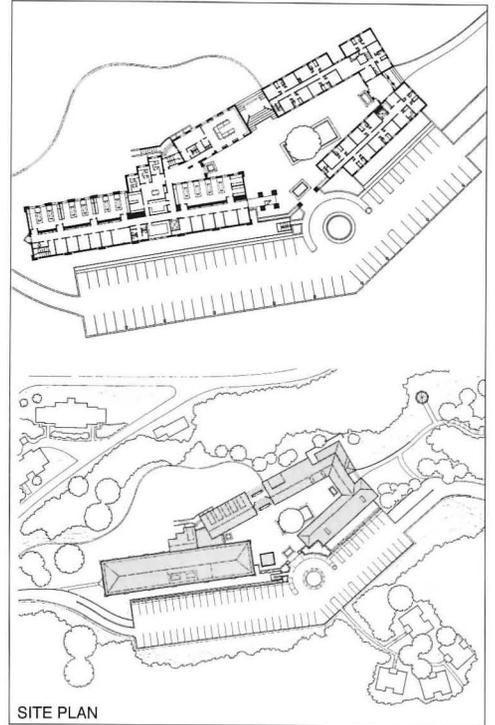
Tanabe Research Laboratories *The lab (6) is a research refuge for talent in the competitive drug-discovery business. Lab views overlook canyons, the ocean, and mountains. To overcome language barriers in the lab's international staff, a corridor (7) concentrates researchers' traffic patterns.*



8

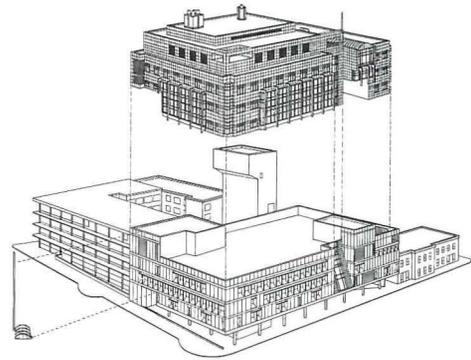


10



SITE PLAN

12



9

Joslin Diabetes Center Research and Clinical Facility Expansion Capacity was doubled by adding three stories and a penthouse atop a 1974 exposed-concrete building on a restricted urban site—while maintaining operations below (8, 9). Expansion space includes labs for 64 researchers, administrators, diabetes patients, and staff from around the world. The design resolves three entrances on two levels, and accommodates an Eye Institute by raising an existing courtyard 12 ft. A new skylit atrium, elevated landscaped courtyard, and renovated lobby provide daylight while transforming the character of the original building.



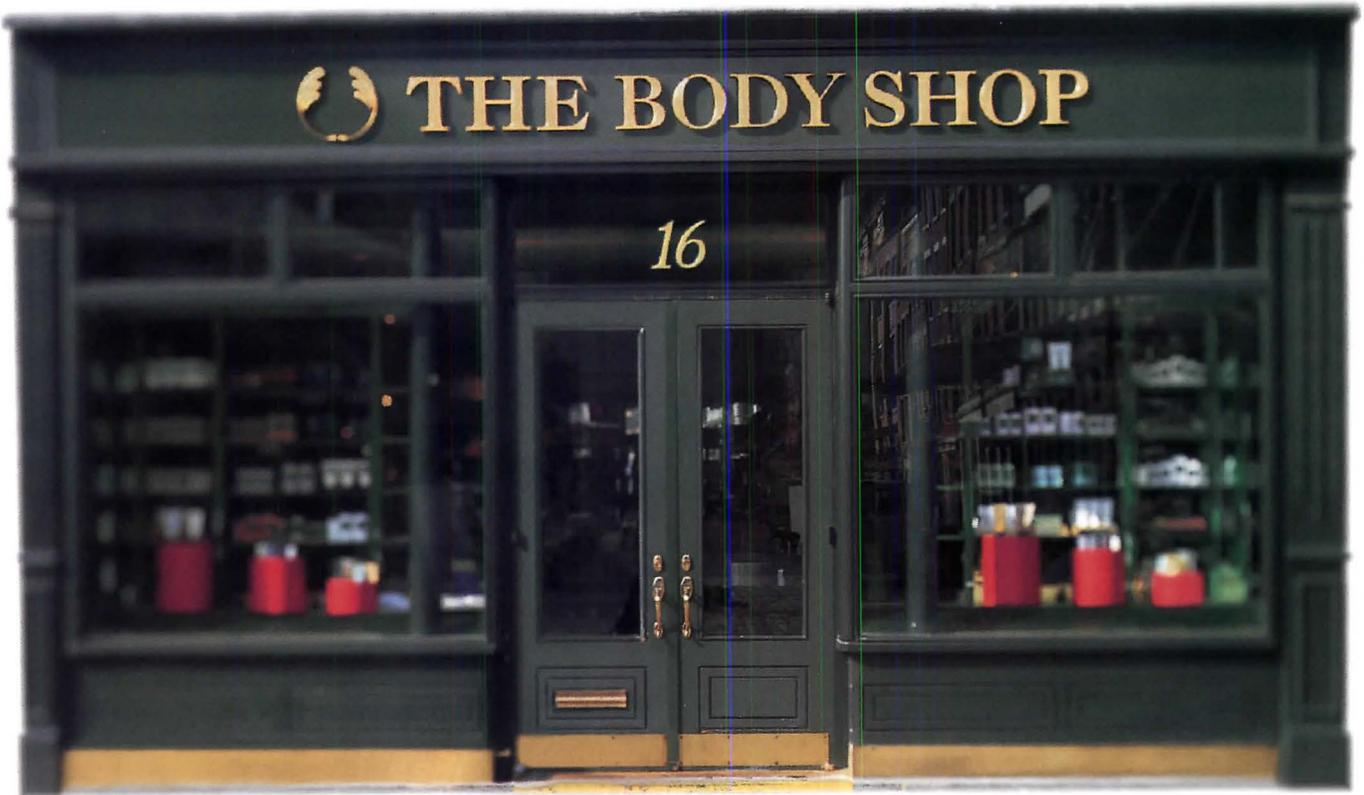
11

Green Earth Sciences Research Laboratory, Stanford University The laboratory is designed as a pavilion (10, 11) with a central portal opening onto a plaza, and serves as a gateway to the north/south axis of the near-west campus. To balance the height limitations, campus-plan plaza requirements, and programmatic criteria, 50 percent of the space is below grade. A submerged plaza courtyard provides daylight to surrounding offices and labs. Partial interstitial space at the concourse level facilitates lab renovations without interrupting researchers in adjacent spaces.



13

Neuroscience Center, Cold Spring Harbor Laboratory Located on a steep hill in a residential neighborhood (12,13), the laboratory overlooks the research campus and Long Island Sound. The structure integrates three stories of labs, 60 guest rooms for visiting scientists, and a 150-car parking garage. Each workspace and lab has a harbor view. Outdoor study areas and public spaces are protected from the noise of a nearby highway. Energy conservation measures balance guest room heating and cooling demands with those in the labs.



IT'S NOT AS EASY AS YOU'D THINK,
GETTING A 3X4 INCH PACKAGE THROUGH
A 6X7 FOOT DOOR.



Walk in to The Body Shop anywhere in the world and there, amidst the Mango Body Butter, Brazil Nut Conditioner, and Banana Shampoo, you'll encounter a well-defined, environmentally-minded business philosophy. One that guides both the way The Body Shop conducts itself, and also the expectations it places on the companies with which it elects to do business.

That is why it can be difficult for many companies to get

through the door at The Body Shop. Whether they're selling ingredients for the latest in aromatherapy or, well, lightbulbs.



But in OSRAM SYLVANIA, The Body Shop found an ideal business partner: One that could supply the lighting to create the desired store environment, and do so with both a product and a philosophy that was in keeping with The Body Shop's well-

known commitment toward environmental responsibility.

PRODUCT REPORTS

Product Reports: new building materials chosen by RECORD editors and a panel of architects. Readers' Choice Awards: our survey identifies preferred products and technical support.

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Conveying Systems 121**

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RECORD's Panel Picks Top Products

RECORD's Product Reports—our take on the most interesting building-material introductions of the current year—returns for its 23rd installment. For the 1996 edition, RECORD recruited a “peer review” panel of design professionals to select those new products deemed most important for our architect, interior design, and specifying readers. We thank the panel for its efforts: reviewing hundreds of press releases, graphics, and technical brochures in a single sitting was pretty gruelling! Thanks also to all those manufacturers who took the time to respond to our request for submissions. Their assistance made it possible for us to offer this snapshot of the building-products industry, circa fall, 1996. Firms wanting to make sure they're on our mailing list to be considered for next year's edition should drop us a note with the name and full address of the appropriate party. Fax: 212/512-4256, or E-mail blatterm@mcgraw-hill.com.

Selection criteria

Manufacturers were asked to submit information on products new to the market. The panel looked for building products they considered innovations, not just line extensions. Some items were chosen because they filled a perceived need in the marketplace. Environmental and life-safety issues were prominent. One or two were editor's picks. But note: publication doesn't imply endorsement.

Some trends among 1996's crop: solar energy seems to be breaking out of its experimental corral (helped by legislation and utility deregulation) and is becoming a cost-effective supplemental energy option that architects should routinely consider. Others: high-pressure laminate flooring, originally European, now has a distinctive American aspect; there are more metal-roofing options; quick-build prison cells meet a burgeoning need. The pages that follow present building products grouped roughly in specification order. But first, we identify our “Top Five”—those products that the panel considered the most innovative and the most newsworthy—of all those they reviewed.—*Joan F. Blatterman*

[Note: The Desktop Directory formerly published by ARCHITECTURAL RECORD will be available in 1997 through McGraw-Hill's Construction Information Group.]



The intrepid panel.

Seated: James von Klemperer is a senior associate partner with Kohn Pedersen Fox Associates. Standing, from left: Raymond Hennig, AIA, CSI, is senior consultant architect for The Sweet's Group, where he advises building-product manufacturers on product information for distribution to architects and specifiers within the annual Sweet's Catalog Files. Bradford Perkins, FAIA, AICP, is president of Perkins Eastman Architects PC, a 140-person firm based in New York City and Pittsburgh. Formerly with

Perkins & Will, he was also the American managing partner of Llewelyn-Davies International.

Robert Schwartz is principal of Robert Schwartz & Associates, a six-member group that provides product-specification and technical consultation services to architectural firms in the New York metropolitan area. Tom Sansone, principal of TAS Design, provides planning and design services for the arts, entertainment, and related fields, with emphasis on highly crafted interior space.

The Top Five

136. Wall-mount faucet

Kohler calls its sleek faucet "Falling Water"—sure to appeal to any architect. And it did: panel members thought having this option could really unclutter sink surfaces. Spout comes in 6-, 9-, and 12-in. lengths; finish options include chrome, brass, and brushed nickel. 414/457-4441. Kohler Co., Kohler, Wis.



136

137. Industrial-style office

Designed by D'Urbino and Lomazzi to be a "rational" approach to office work, a reconfiguration of the Zero display system uses its characteristic open-web support beam to hold work surfaces, storage shelving—even a small round table for little meetings. Pictured: a computer table, with laminated-panel top set on aluminum legs. 401/724-4470. Zero U.S. Corp., Lincoln, R.I.



137

138. Photovoltaic curtain wall

The PowerWall is a standardized way to integrate efficient polycrystalline solar cells—and the necessary inverters and connections—into an otherwise conventional curtain-wall frame. Designed for optimal electric production, the photovoltaic panels are opaque. Installed with regular glazing techniques to become part of the building's weather enclosure, panels meet wind-load, impact, seismic, and air-infiltration tests. 770/449-5555. Kawneer Co., Inc., Norcross, Ga.



138

139. Solar glazing

Pilkington describes Optisol as an architectural photovoltaic glass that can be incorporated easily into facades, spandrels, windows, and sloped glazings. A resin-laminated makeup developed in Europe, Optisol has two panes of glass sandwiching thin-film photovoltaic cells, and allows varying degrees of view-out and light transmission while generating electrical energy. 202/463-4699. Pilkington Solar Int'l., Washington, D.C.



139

140. Dual-function ceiling

An elegant combination of two tasks, the Hi-LR Ultima acoustic panel reflects a high level of incident light, making the ceiling particularly suited for indirect-lighting applications. Its non-fissured surface resists scratches and dirt buildup. Maintained-light-reflectance values can be figured into illuminance calculations for reflected ceiling plans. 800/448-1405. Armstrong World Industries, Lancaster, Pa.



140

Readers' Choice Awards



Readers' Choice Awards are ARCHITECTURAL RECORD's way of recognizing those manufacturers of building products, systems, and materials who make a meaningful contribution to safe and successful architectural projects in this country. We wanted to identify the sources that our readers rely on to furnish competent, good-value products that translate an architectural design or interior scheme into functional, low-maintenance environments.

A survey circulated in the August 1996 issue asked our readers to list their preferences among the building products they worked with, designed for, and specified to meet real-world architectural and interior-design needs. We wanted responses to several types of questions about their experience with building-industry manufacturers, both people and products. The first section of the survey listed 23 product types, presented in specification order. For each of these, from computer tools like CAD software to interior lighting fixtures, the question was the following: Please nominate a single manufacturer whose product best represents—in your opinion—an optimal combination of design/cost/value/service life within this category. The firms that received the most mentions within that category are our winners. In a first ever, we list the recipients of ARCHITECTURAL RECORD's **Readers Choice Awards for 1996:**

CAD software	Autodesk	Architectural glass	PPG Industries
Computer	Gateway 2000	Roofing system	Carlisle SynTec Systems
Practice software	Microsoft	Entrance system	Kawneer Co.
Peripherals	Hewlett-Packard Co.	Residential window	Andersen Windows
Landscape accessory (TIE)	Landscape Forms Forms+Surfaces	Commercial window	Kawneer Co.
Unit masonry	Pittsburgh Corning	Interior finish	USG Interiors
Architectural metalwork	Julius Blum & Co.	Resilient flooring	Armstrong World Industries
Surface options	Wilsonart International	Commercial ceiling	Armstrong World Industries
Engineered wood	TrusJoist MacMillan	Commercial carpet	Mohawk Industries
Exterior cladding	Dryvit Systems	Plumbing fittings	Kohler Co.
Door hardware	Schlage Lock	Light fixture	Lightolier, Inc.

The second part of RECORD's survey asked readers about broader aspects of building-product characteristics, and attempted to call out those manufacturers who supplied architects and designers with a superior level of technical education and sales support.

Trouble Shooter The manufacturer most helpful in solving site-specific, design, or technical problems. Three firms received an equal number of mentions: USG Interiors, Pella Corp., and Dryvit Systems.

Green Architecture The best contribution to green architecture—Homasote Co.

ADA Standards The source of products most useful in meeting ADA access standards—Bobrick Corporation.

Most Interesting New Product This question, The most interesting new product used or heard about recently, attracted too many different mentions to call out a "winner." And many times a product type, not a specific manufacturer, was written on the survey. But looking at the comments proved interesting—some of these will be the trends for 1999's Product Reports! Many citations referenced environmental and life-safety issues, or gave new uses for an "old" material. These quotes will convey the idea: Fireproofing decorative paint / Siding made of fibrous cement / Water-saving flush valves / Lightweight cast concrete / Dry fire-sprinkler systems / Hvac ductwork made of fabric / Solid-plastic toilet partitions / Photovoltaic panels / Engineered-wood beams and joists / Rain-screen EIFS / Foam-filled CMU / Exterior decking made of woodfiber and recycled plastic / Hurricane-proof glass / Autoclaved concrete / All-glass corner windows / Reflective insulation / Fiber-optic lighting.



Light reveals architecture...the TechCenter reveals light.

Our new multi-million dollar TechCenter has been designed to help you become a better user of light. Featuring an extensive array of interactive hands-on exhibits, the TechCenter offers a new way to experience how light and the architectural environment interact. During your visit, you'll gain a greater understanding of lighting technology and design; compare the impact of different lighting on various architectural spaces; plus see how our design, testing and manufacturing facility takes our products from concept to reality. The vision

and knowledge displayed in our TechCenter is also present in every product we make. Which is why the readers of *Architectural Record* have chosen Lightolier as the 1996 Reader's Choice Award Winner in the Interior Lighting Fixture category. To see for yourself how the TechCenter and Lightolier products demonstrate **lighting that makes a difference™**, contact your local Lightolier sales representative.



LIGHTOLIER®

Circle 17 on inquiry card

Readers' Choice Awards *continued*

Our final question on the Readers' Choice ballot asked: *Which manufacturer has the best rep? The individual who made a critical contribution to a project, who helped solve a technical or site problem, or who made your design work?*

Given the geographic range of the responses, this question drew very individual answers, though a few firms were cited more than once, for different representatives (see list, below). But what we found out was how vital these manufacturers' reps are to the success of individual architects, who rely on these building-product experts for the advice and technical support that can make a project work. Listed below, in alphabetical order by the manufacturer, are many of the individual representatives cited on Readers' Choice ballots.

Manufacturer	Representative	Manufacturer	Representative
<i>Acme Brick Co.</i>	Bob Laborde	<i>Marvin Windows & Doors</i>	Jim McAndrew
<i>Advance Lifts, Inc.</i>	Thom Klatt	<i>Marvin Windows & Doors</i>	Bruce Meekins
<i>Alply, Inc.</i>	John Shremp	<i>Marvin Windows & Doors</i>	James E. Pelowski
<i>Andersen Windows</i>	Bob Miembrise	<i>Marvin Windows & Doors</i>	David Morris
<i>Andersen Windows</i>	Dan Redmond	<i>Modernfold, Inc.</i>	Robert Styles
<i>Andersen Windows</i>	Doug George	<i>Nova Seals</i>	Thom Klatt
<i>Architectural Wall Systems</i>	Mike Cunningham	<i>Pacific Polymers, Inc.</i>	Stephan Klaus
<i>The Belden Brick Co.</i>	Steve Harvey	<i>Pella Corp.</i>	Bob Splittgerber
<i>The Belden Brick Co.</i>	Tim Pedkio	<i>Pella Corp.</i>	Alan Rogers
<i>Benjamin Moore & Co.</i>	Bill Farmer	<i>Pella Corp.</i>	Leo Palizza
<i>Birdair, Inc.</i>	Philpots & Assoc.	<i>Pella Corp.</i>	Ned Habdank
<i>Briament</i>	Charlie Miffin	<i>Porter</i>	Mike Elkis
<i>Cold Spring Granite</i>	Dale Schueppenbach	<i>P.P. Altec</i>	Kall Zimmermann
<i>Collins & Aikman</i>	Karen Popucki	<i>Rocky Mountain Prestress</i>	Bill Field
<i>Cooper Lighting</i>	Steve Taylor	<i>S&S Resource Connection</i>	Steven Schultheis
<i>Dal-Tile Corp.</i>	Dick Patrick	<i>Sargent Mfg. Co.</i>	David Lancaster
<i>DesignTex, Inc.</i>	Carolyn Eppler	<i>Schlage Lock Co.</i>	Jeff Loss
<i>Dover Elevator Systems</i>	Steve Hunter	<i>Schuller International</i>	Dan Holland
<i>Dryvit Systems</i>	Dale Serroka	<i>Schuller International</i>	Bob Kobza
<i>Elliptipar, Inc.</i>	Diane Willis	<i>Scott Paint</i>	Lewis Lyons
<i>Essex Industries</i>	Larry Adams	<i>Shaw Industries</i>	Diane Ashby
<i>GAF Materials Corp.</i>	Dario L. Miranda	<i>Shaw Industries</i>	Judith Ward
<i>General Electric Lighting</i>	Lic Huang	<i>Staff Lighting</i>	J.C. Wright Lighting Sales
<i>Glen-Gery Corp.</i>	Don Foster	<i>Summit Tile Co.</i>	Ed Klinges
<i>GRG Technologies, Inc.</i>	Bob Kidd	<i>Sunshine Supply San Diego</i>	Ed Waldman
<i>Hurd Millwork</i>	Paul Emmerich	<i>Tamko Roofing Co.</i>	Bob Sobel
<i>Interface Flooring Systems</i>	Jackie Evans	<i>Tarkett, Inc.</i>	Jim Gaygan
<i>J.M Specialties</i>	Jerry Miwer	<i>Tnemec Co., Inc.</i>	Russ Brown
<i>Kalwall Corp.</i>	Peter Wenn	<i>Trus-Joist MacMillan</i>	Stevenson Lumber
<i>Kawneer Co., Inc.</i>	David Potter	<i>Trus-Joist MacMillan</i>	Enrique Lima
<i>Kawneer Co., Inc.</i>	Greg Carusle	<i>U.S.G. Interiors</i>	Daryl Hickman
<i>LCN Closers</i>	Jeff Loss	<i>U.S.G. Interiors</i>	Richard Smith
<i>Loadmaster Systems</i>	Danny Speigner	<i>U.S.G. Interiors</i>	Keith Johnson
<i>M.A.B. Paints & Coatings</i>	Al Sipe	<i>Weather Shield Mfg., Inc.</i>	Roz Culebra
<i>Marley Floors</i>	C. Brester	<i>Weather Shield Mfg., Inc.</i>	Rob McGregor

- 1. Customize your keyboard with Accelerator keys.
- 2. Toolbar flyouts included.
- 3. Most frequently used toolbar buttons float to the top of the flyout.
- 4. Scroll bars permit easy panning.
- 5. Improved user feedback standard status bar.
- 6. Can turn tilemode on and off at the status bar.
- 7. Updated tablet menu.
- 8. Merge your custom menu into the existing AutoCAD menu with partial menu loading.
- 9. Set a new current layer quickly from layer control feature in the Object Properties Toolbar.
- 10. Freeze, thaw, turn on or off layers quickly from the layer control feature of the Object Properties Toolbar.

- 134. On-line What's New shows overview of new features in Release 13.
- 135. Cue Cards walk you through basic CAD operations.
- 136. CD-ROM installation is faster, easier.
- 137. Multiplatform license includes DOS, Windows 3.1x, Windows NT and Windows 95.
- 138. Typical, Custom or Minimum install options.
- 139. Configuration files are now portable and ASCII.
- 140. No more ACAD.PWD file.
- 141. The ability to turn off the automatic Backup files.
- 142. Improved control over memory management.
- 143. OLE 2.0 with drag and drop allows you to dynamically embed spreadsheets, video clips, Word documents into

- 154. Optimized for 32-bit Windows operating environments, resulting in 20%+ increase in performance over 16-bit Windows 3.1x.
- 155. WHIP driver (High Performance Driver for Windows) increases performance, including near instantaneous redraws.
- 156. Real-time Pan.
- 157. Real-time Zoom.
- 158. Incremental saving of the drawing file.
- 159. Faster regens due to more drawing data stored in memory during working session.
- 160. No regen on Window resize.
- 161. Optimized output on selected Windows system printer drivers.
- 162. Improved HP GL/2 plotting performance on Windows and DOS platforms.

We understand. You may not have the time to read them all. But, suffice it to say that we have added scores of new features to AutoCAD® Release 13 to make your life on the job easier and less labor intensive than ever before.



Case in point: Release 13 was designed for both Windows 95® and Windows NT,™ letting you leverage your knowledge of Windows and giving



you access to the features you use the most. In fact, R13 on Windows 95 and Windows NT lets you work 20% faster than

Have you been asking the question, "Can AutoCAD make my life easier?," we offer 176 yes's.

- 10. Command prompt is now moveable, resizeable and scrollable window.
- 11. Copy the command history to the clipboard.
- 12. AutoCAD has added a search engine to find drawing files.
- 13. Aerial viewer has been improved and is more user friendly.
- 14. Don't have to reload menu with each drawing load.
- 15. Contains a simple to use icon editor.
- 16. Regular and full menus merged.
- 17. Ability to retain Release 12 screen menu and command line output to ease learning transition.
- 18. Full on-line documentation available on CD-ROM.
- 19. Task-oriented documentation.
- 20. Improved on-line Help.
- 21. On-line command reference.
- 22. On-line Tutorial steps through basic features.
- 23. On-line Quick Tour shows AutoCAD's capabilities.

- AutoCAD drawings (or AutoCAD drawings into a Word document).
- 144. AutoCAD SQL Environment (ASE) allows access to data from external database management systems, including SQL2, ODBC 2.0, Informix (DOS), Oracle (Win 3.1/NT).
- 145. Read drawing files created in previous AutoCAD releases.
- 146. Save as a Release 12 drawing file.
- 147. ARX(object-oriented development platform) allows for tighter integration with 3rd party software.
- 148. Broad peripheral support.
- 149. Undo support for external database links and operations.
- 150. Output to STL format.
- 151. Xref and Block support for non-graphic links.
- 152. ASI access to ASE link mechanism.
- 153. ASILISP contains new LISP functions for accessing external databases.

- 163. ADS applications run faster.
- 164. AutoLISP programs run faster.
- 165. Pager included for large drawing memory management.
- 166. Multiple sessions of AutoCAD.
- 167. Windows 95 user interface.
- 168. Support for Long Filenames.
- 169. Supports Universal Naming Convention (UNC) for Files and External References.*
- 170. Supports UNC for configuration files.*
- 171. Uninstall from Windows 95 or NT through the control panel.*
- 172. Email enabled for MAPI compliant programs allows users to attach DWG files to an email.*
- 173. DOS, Windows 3.1x, Windows NT 3.51, Windows 95.
- 174. Windows NT on Alpha Systems.
- 175. UNIX®: Sun® Solaris®, HP-UX®, SGI IRIX,™ IBM-AIX.®
- 176. Ability to generate .DWG files and make your drawings available over the Internet.

if you were working on Windows® 3.1x.

Release 13 also supports AutoCAD Runtime Extension (ARX) applications from developers like KETIV Technologies, Inc., ARCHIBUS, Inc., and Softdesk, Inc. These next generation tools use the object-oriented database in R13 to provide you with a seamless and associative design environment. Plus, R13 has Internet support, so now you can view, send, and share design content over the Internet.



So look into award-winning AutoCAD Release 13 software. Hundreds of thousands are already enjoying its 176 new features. How many more reasons do you need?



Autodesk®



Design Office Equipment

CAD Software • Management Software • Peripherals • Drafting Desks

141. International software

Allplan FT for Windows is the first specifically North American product from a major European developer. It takes the building design from early sketches through massing studies and modeling, to layout and detailing, to quantity takeoffs, production documentation, presentation graphics, and animation. Object oriented, Allplan FT works with building elements, such as walls, windows, roofs, and doors. Available in 10 different language versions; price: \$4,995. Call 800/479-0735. Nemetschek Systems, Inc., Mill Valley, Calif.

142. Rendering program

Artilantis Render delivers fast raytracing, procedural shading, and texture mapping. Includes more than 100 shaders. User can add own pictures of materials, people, and backgrounds. Adjusts lights and camera angles in real time. Operates with Windows '95, Windows NT, and Mac OS, and designed to complement ArchiCAD, ZOOM, and other programs that export 3D DXF files. 415/703-9777. Graphisoft U. S., Inc., San Francisco.

143. ADA software

For guidance through the maze of ADA regulations, ADA Design Assistant integrates with Softdesk's Auto-Architect to extract all available information from a building design and measure it against critical ADA requirements. For example, doors are checked for clearances and obstructions by recognizing building components and warning of insufficient clearance situations; ramp layouts are aided by a slope calculator. 205/972-9101. Softdesk, Inc., Henniker, N. H.



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144. Scheduling software

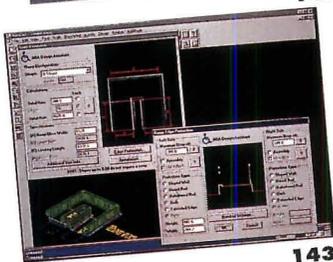
FastTrack Schedule creates and updates Gantt chart schedules rapidly. It outlines and summarizes projects with unlimited sub-levels. Tracks projects' scheduled, revised, and actual dates; activities link graphically to show dependencies. Price: \$299. Call 703/450-1980. AEC Software, Inc., Sterling, Va.

145. Architectural furniture

The Computer-Aided Design Workstation Bend Top, from Haworth's new Crossings office collection, comes with extra-wide, wing-like arms to accommodate CAD peripherals and digitizer pads. Designed for the specific needs of CAD users, the workstation top adjusts in proximity to the monitor, the keyboard, and the height of the work station. 616/393-4293. Haworth, Inc., Holland, Mich.



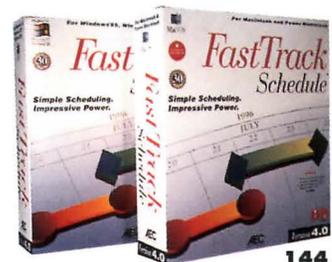
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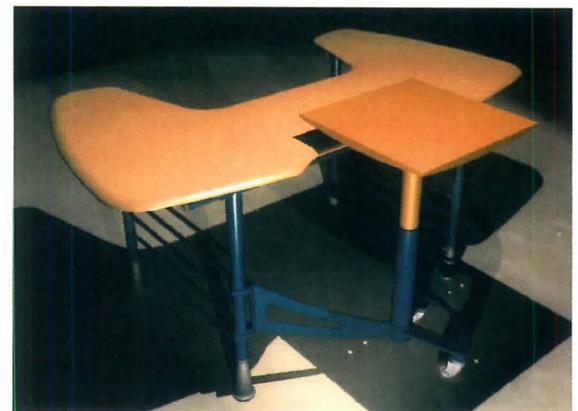
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146. Adjustable CAD station

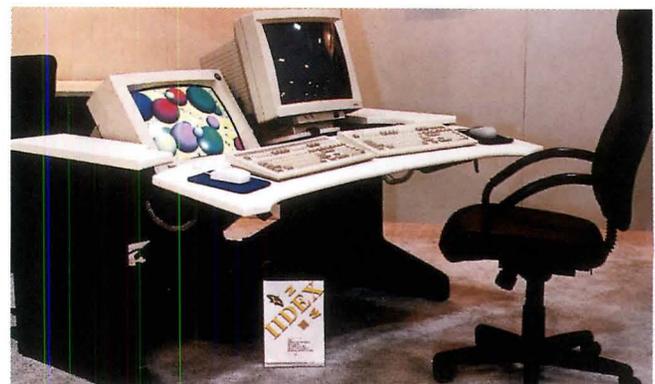
Designed to help reduce the risk of computer-associated health problems, the Proactive computer work station makes the keyboard pad/work station and monitor fully and effortlessly adjustable. Designed to permit constant fine-tuning of the spatial relationship between the "Ergonomic Triangle": the eyes, the keyboard, and the monitor screen. Adjustments are made at a touch, without motors, cranks, or gas cylinders. Optional keyboard pads accommodate oversize and digitizer applications. Can be retrofitted into popular furniture systems. 215/766-8545. Ergogenic Technology, Inc., Pipersville, Pa.



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145



146

147. Lighting visualization

The Lightscape Visualization System, a "next generation" lighting and visualization software tool for Windows NT and SGI systems, accurately simulates the behavior and physical properties of lights and materials, delivering unusual scenes of realism and real-time interactivity. Lightscape is compatible with a wide range of 3D modeling and animation packages. 800/343-0073. Lightscape Technologies, Inc., San Jose, Calif.

148. Construction software

FLATLAND 5.0 adapts basic AutoCAD to create architectural construction documents. Features automated wall, door, and window routines, a standardized AIA-compliant layering system, hundreds of standard architectural systems in two-dimensional block form, and features to help cut through production drafting. Includes all standard steel shapes, lumber sizes, bar joists, concrete plank, and metal expansion-joint assemblies. 800/247-2031. Ashcraft Architectural Computer Graphics, Fort Ann, N. Y.

149. Illustration software

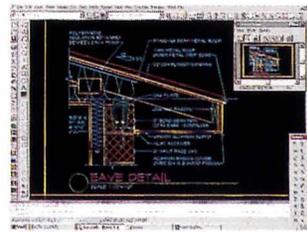
WildTools 2.0, a plug-in for PowerCADD, adds over 125 tools and menu commands. The squiggle command produces rough, sketchy-type images. The fillet tool will fillet anything to anything. Door and window tools offer broad options. The scissors, knife, freehand knife, wall trim, trim with object, multi-trim, line break, and nibble tools cut, trim or extend objects. Said to bring to Macintosh equipment capabilities previously available only on other platforms. 910/299-4843. Engineered Software, Greensboro, N. C.

150. Graphic tablet

The NewSketch 1212HR is a high resolution, 12- by 12-in. graphic tablet that translates x-y dimensional data into readable format and transfers it to a computer. Resolution up to 2,540 LPI. Compatible with Summagraphics MM series, Migrogrid, Mouse Systems, and Microsoft. Utility programs can improve applications in Windows and DOS. Has four-button puck; a 16-button model is optional. 800/456-7593. Kye International Corp., Ontario, Calif.

151. Inkjet plotters

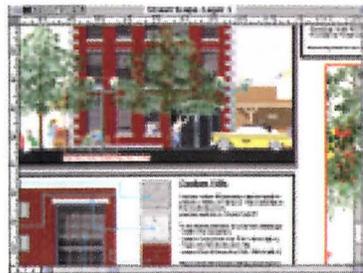
An inkjet plotter, the TechJET Designer 720e can produce monochrome images at 720- by 720-dpi and color drawings at 360- by 360-dpi on both cut-sheet and roll-feed media; memory can be upgraded to 36 megabytes. Four monochrome plot modes offered. Interchangeable monochrome and color-capable plot head-ink cartridge systems snap in easily. Plotter will work with all popular computers and CAD-system software. D-size: \$2,495; E-size: \$2,995. Call 800/932-1212. CalComp, Inc., Anaheim, Calif.



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151



147

Landscape Accessories

Site Furniture and Amenities • Paving • Exterior Lighting • Fences and Gates

152. Subtle landscape fixture

The Coronado 720 metal-halide exterior light has a mounting stem with a locking mechanism that makes for easy adjustment and aiming. Versatile mounting options include ground, tree, and other surfaces, and permit up- and downlighting, floor and pathway illumination, and spot and accent lighting. Made of a corrosion-resistant aluminum alloy with stainless-steel hardware; finishes include black, bronze, white, and verde. 818/991-2211. Lumière Design & Manufacturing, Inc., Westlake Village, Calif.

153. Exterior lighting

The Universe Collection offers four distinct families of fixtures that range from small wall brackets to pedestrian-scaled, pole-mounted luminaires (ALLO 502 is shown), to larger, high-wattage fixtures suitable for streetscapes. All fixtures are made from chromate-primed castings of A356 aluminum that has low copper and iron content to resist corrosion. 714/994-2700. Architectural Area Lighting, La Mirada, Calif.

154. Wright or Mission style

The Prairie luminaire comes in two sizes (roofs either 16- or 24-in. square) for outdoor, post-top mounting. The shade has a stylized tree motif reminiscent of Frank Lloyd Wright designs, particularly when white-acrylic lenses are used. Lamping options include HID and fluorescent sources; photocell control optional. 847/588-3400. Sternberg Vintage Lighting, Niles, Ill.



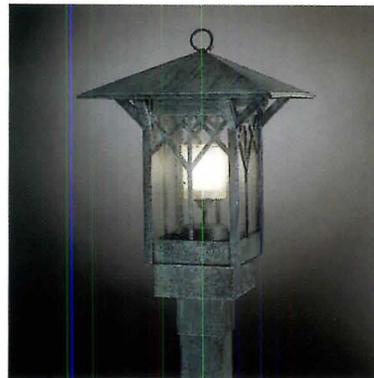
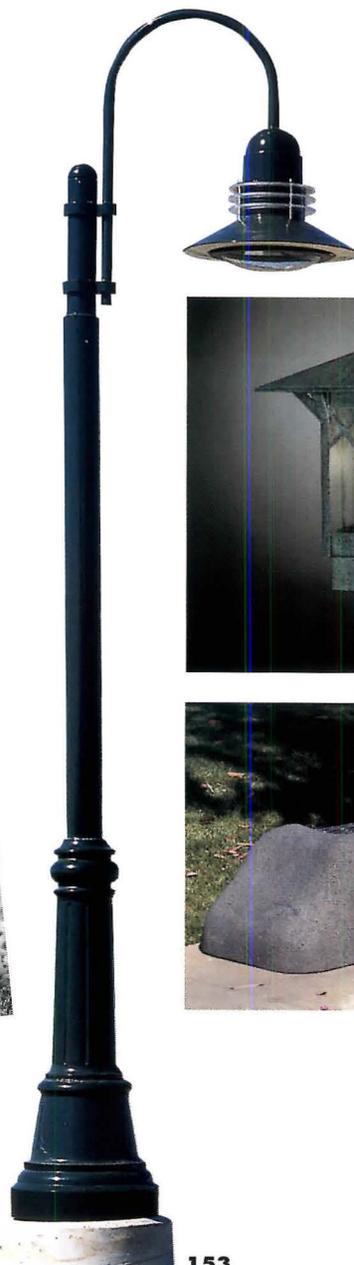
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155. Architectural steel fencing

Omega has expanded its manufacturing capabilities to let it collaborate with designers and customize individual "Eurodesign" fence systems incorporating their unusual mesh pattern. Pictured: an enclosure for a retail store with a custom logo insert. Other applications include pedestrian bridges, bicycle paths, parking garages, sports fields, amusement parks, and medium-security detention centers. Fences designed for durability and low maintenance. 800/836-6342. Omega Fence Systems, Inc., Laval, Que, Canada.

156. Bench seating

Designed to defy vandals and the elements, Gibraltar Series benches also provide comfortable seating. Wire-grid seats made of electropolished stainless or powdercoated steel are 72-in. long to span sculptural concrete support elements. Concrete bench ends and connecting splices may be specified in two shapes and four colors; there are 16 choices of wire colors. 800/451-0410. Forms + Surfaces, Santa Barbara, Calif.



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157. In-pavement lights

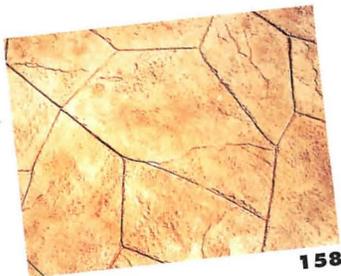
Designed for applications where lighting is used to mark walkway, patio, and courtyard perimeters, the Fiberscape Paver System is mounted flush with a paving surface. Fixture heads are fitted to plastic fiber-optic tubing and illuminated by a remote HID or halogen light source. No electrical current is needed at the fixture; all equipment is UL listed for wet-location use. 800/327-7877. Fiberstars, Inc., Fremont, Calif.

158. Concrete paving

Random Slate is the latest in the Bomanite line of colored, textured, and imprinted, cast-in-place architectural concrete paving. The pattern consists of angular-shaped stones in rough dimensions of 18 to 36 in. The design of the tooling is said to make it difficult to find repetition in the imprinted slate pattern. Appropriate for large residential, commercial, and municipal projects. 209/673-2411. Bomanite Corporation, Madera, Calif.



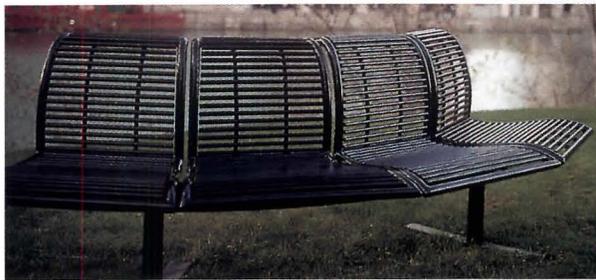
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159. Park furniture

Presidio seating and matching litter receptacles are designed to be attractive and durable in unsecured public places. Made with solid-metal rods welded to tubular steel frames, seating may be ordered in any combination of straight or curved units, with or without backs and arms. Litter receptacles are large, 41-gallon units. All pieces are finished in standard Pangard II colors. 800/521-2546. Landscape Forms, Inc., Kalamazoo, Mich.



159

160. Automatic gate system

The VertiGate makes the best use of tight spaces or hillside sites; it does not need a slide track or room for gate swing or retraction. Powered by 12-volt battery or photovoltaic panels, the barrier lifts up and folds away in nine seconds. Equipment and controls are concealed in masonry pilasters; an electronic safety device stops gate descent when an obstruction is detected. Made of steel and aluminum, gates come in three models for light, medium, and heavy service. 888/428-3787. VertiGate, Fontana, Calif.



160

161. Interactive fountain

Made by the German firm Kusser Granitwerke, inventors of the Kugel fountain, the Floating Disc Fountain is a granite sculpture that nestles in a precisely cut base stone. Propelled solely by a low-pressure water source pumped from beneath the sculpture, the Disc floats and spins on a thin film of water. In turn, the slowly spinning disc may support a sculpture of almost any shape or size. 800/919-0800. Red Hogan Enterprises Inc., Tampa, Fla.



161

162. Exterior lanterns

The Quadro line of exterior lanterns offers multiple housing variations with two sizes. The Quadrolisk has a lattice pole construction. The larger Quadro 1, pictured, is designed to light traffic routes, public spaces, commercial centers, and business parks. Quadro 2, a pedestrian-scaled luminaire, is for single- or double-pole mounting and wall applications. 800/735-8927. Selux Corporation, Highland, N. Y.



162

When
You Specify EIFS,
Specify the Right
Dryvit System for
Your Project's
Needs.



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Concrete • Metal • Lumber • Engineered Wood • Plastic Fabrications • Expansion Control

163. Patterned cover plate

A new decorative option for Wabo aluminum expansion-joint cover plates lets these necessities blend into or complement interior surfaces. Wabografix coatings come in eight standard patterns which simulate the look of granite, marble, and terrazzo, with a finish gloss that mimics the surrounding surface. Custom patterns may be ordered. Pattern will resist heavy foot traffic and cleaning. 904/996-6000. Harris Specialty Chemicals, Inc., Jacksonville, Fla.

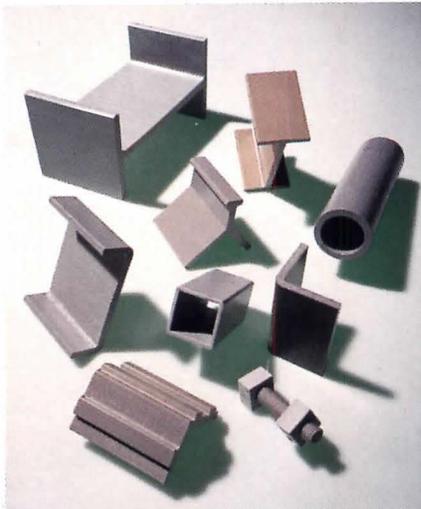
164. FRP structural shapes

Standard Chemshape structural shapes include I-beams, wide-flange beams, square and round tubes, square and round bars, flat sheets, channels, angles, concrete embedment angles, toe plates, and threaded rods and nuts. Thermal and electrical nonconductors, shapes are high in strength and corrosion resistant, and can replace stainless steel in corrosive applications. 800/345-5636. Chemgrate Corporation, Woodinville, Wash.



© Mort Trueter

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165. Brickwork support

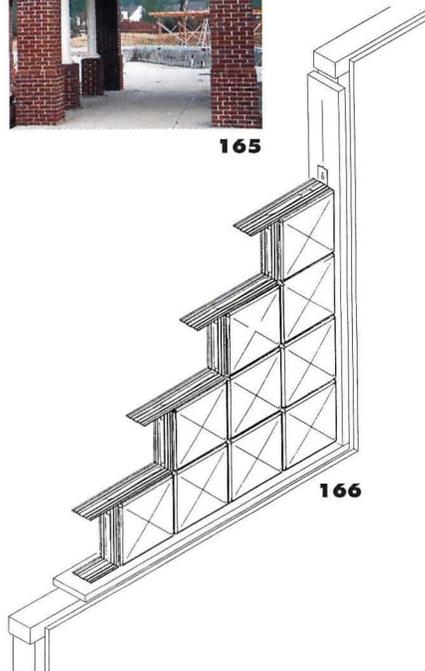
Lintel system conceals steel support for brickwork over flat, curved, or pointed openings. A steel spine spans the opening, and horseshoe plates hang on the spine at every third brick joint. Steel stitching rods inserted through the horseshoe plates and the brick cores tie the brick and the support system together; permits wide spans. 800/323-6896. Halfen Anchoring Systems, Converse, Tex.

166. Mortarless glass block

Weck is marketing three extruded-metal BlokUp systems said to speed installation of any size glass-block wall. One permits off-site assembly of window-like panels; another connectable-radius method creates curved block walls. The drawing illustrates a frameless design, with anchor clips that allow for unobstructed installations within an opening. System components include slotted aluminum framing, anchors, and separation strips, as well as silicone sealants. 815/356-8440. Glashauss, Inc., Crystal Lake, Ill.



165



166

167. Cast-in-place stone wall

Stone-Crete formwork creates deep-relief "stone" walls using 2- by 6-ft urethane panels mounted on traditional concrete-wall forms. Different rock and stone types (River Rock is shown) can be shaded appropriate colors. Suggested for highway barriers and retention walls as well as residential applications. 800/752-4626. Increte Systems, Inc., Tampa.

168. Posts and columns

A load-bearing steel pipe is at the center of Fypon high-density polymer columns, posts, and balustrades. In classic and contemporary designs for exterior or interior use, columns can support loads up to 12,000 lb. Posts come in three styles, and can be ordered in 8-ft heights, primed and ready for a finish coat. 800/537-5349. Fypon, Stewartstown, Pa.



167



168

169. Colorful rail treatment

Brass railings, pedestrian-control standards, and retail and restaurant accessories can be specified with any of 12 very decorative Tattoo designs. Created in-the-round by a unique computer-directed, three-dimensional painting process, the finish is as durable as customary architectural metal finishes. Job-specific designs can be ordered. 800/662-9595. Brass Smith, Inc., Denver.

170. Engineered-wood columns

Made up with glue-laminated wood, Versa-Lam 220 columns are designed to be stronger than conventional lumber at lighter weight. According to the manufacturer, the columns remain straight and true, without twisting, warping, bowing, or cracking. Columns come 48-ft long, in dimensional sizes from 3-1/2 by 3-1/2 in. to 7 by 7 in. 800/232-0788. Boise Cascade Engineered Wood, Boise, Idaho.

171. Veneered heavy timber

Clear Douglas fir veneers applied to glulam timber produce what appears to be a tight-grain, solid sawn timber. Ideal for decorative roof trusses, arches, beams runs, and columns. Broad range of size and length available. 360/676-5658. The G.R. Plume Company, Bellingham, Wash.

172. Glulam made "simple"

A new structural classification grade has been developed to make specifying glued laminated timbers easier. Termed Grade 24F-1.8E, beams and headers can be produced using Douglas fir, southern pine, Hem-Fir, SPF, and other species. Members have proper camber for floor beam-, roof beam-, and header applications, and fit traditional 2- by 4- and 2- by 6-ft framing. Architectural appearance allows use in both exposed and concealed applications. 206/565-6600. APA—The Engineered Wood Association, Tacoma, Wash.

173. Concrete stain

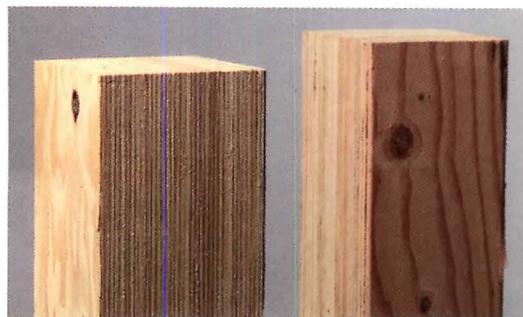
Lithochrome Chemstain creates permanent variegated or translucent color effects on concrete surfaces. Stains react chemically with surface of concrete, replicating the random shadings of natural stone or the patina of age. Recommended for exterior hardscapes, interior floors and walls, and artificial rock and water features. Chemstain comes premixed and ready to use in antique amber, copper patina, dark walnut, faded terracotta, fern green, and weathered bronze colorations. 800/800-9900. L. M. Scofield Company, Los Angeles.

174. Decorative laminates

For use on countertops, casegoods, and other interior surfaces, Fiber Series plastic laminates are nature-inspired designs influenced by the pronounced textures found on recycled papers and wood pulps. Available in oatmeal, curry, wheat, thyme, and coriander colorations. Sample program offered to design professionals. 800/746-6483. Pionite Decorative Laminates, Auburn, Me.



169



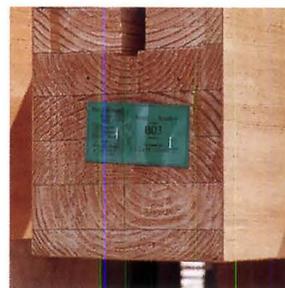
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174



"CASTELITE WAS THE CLEAR CHOICE..."

for Christ United Methodist Church, Plano, Texas

"It offers so many positives. A big cost savings, ease of erection and the folks at Castelite have been very easy to work with."

Architect, Bruce Woody
Hatfield Halcomb Architects

"Castelite Steel is great to work with. It requires less bracing and it's light weight makes it easy to put up. We'll use it again."

Erector, James Rowan
Mr. Steel, Inc.

"We were looking at another type of steel product, but the increased strength of the deeper Castelite members meant that fewer beams could be used. Structural engineering did not suffer and the mechanical engineer still had space for air ducts and wiring."

Engineer, K. S. "Raj" Rajagopalan
Mullen and Powell TechniStructures

The word is out. For stiff floors and attractive roof structures, Castelite™ Beams are a great choice. If you'd like to find out more about this new, cost-effective solution for your next construction project, give us a call at 800-775-4611.

"Product quality was good with timely delivery and solid engineering support."

Fabricator, Tommy Reeves
Alpha Industries

castelite
steel products

A Chaparral Steel Company

175. FR structural decking

Firestall roof decking is a nailable, UL Class A, fire-rated decking with a face ply of Homasote NCFR. Designed for use as a structural, load-bearing decking in residential and commercial buildings requiring a fire-resistive decking, it can be applied over either steel or wood framing, or a steel deck. Insulation, shingles, or other finish roofing is nailed to the Firestall. Test data available. 800/257-9491. Homasote Co., West Trenton, N.J.

176. Glass-plank stair treads

A prefabricated plank, 91R glass and steel panels have small joints between thin (1- and 1 1/2-in thick) composite-glass pavers that permit maximum flow of light. Units can be used as decklights, stairtreads, skybridges, and translucent, vertical walls. Planks weigh about 24 lb psf, and can support 100 to 150 lb psf. 800/358-3888. Circle Redmont, Inc., Melbourne, Fla.

177. Rim board

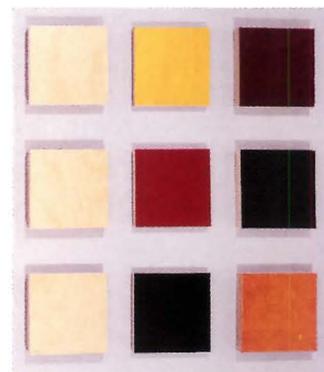
An engineered lumber, FiberStrong Rim Board is made in depths suited to finish-floor systems constructed with Georgia-Pacific's Wood I beam joists. Available in depths from 9 1/4 to 16 in. and 1 1/8 in.-thick, boards may be used as both rim board and starter joists, eliminating the need for blocking panels and squash blocks at the ends of I-joists. Edge and end sealing ensures dimensional stability. 800/284-5347. Georgia-Pacific Corp., Atlanta.

178. Birch plywood

Made of Finnish birch and marketed in six bright colors as Fin Color Ply, plywood paneling is now offered with a clear, translucent phenolic finish that allows the natural graining to show through. Finished and smooth on both sides, panels have good chemical and wear resistance, and are suitable for cabinetry, furniture, and interior paneling. 310/396-9991. Finland Color Plywood Corp., Venice, Calif.

179. Composite columns

PolyStone columns and balustrades, made of reinforced polyester resins, are inexpensive and durable. Recommended for pergolas, porches, arbors, and other exterior application near water or in areas of extreme weather conditions, columns are fire, and impact, resistant. Material can replicate the crisp detailing of classic capital styles. 910/763-7600. Chadsworth 1.800-COLUMNS, Historic Wilmington, N. C.

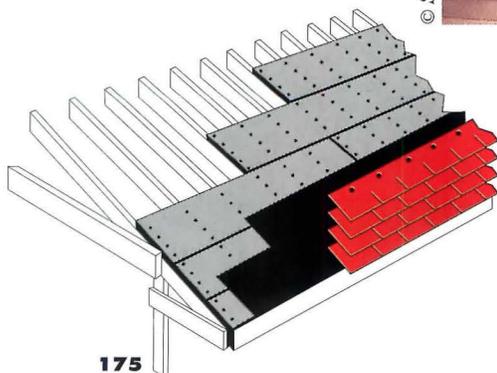


178



© Steve Elmore.

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179

Roofing • Cladding Panels • Siding • Insulation Materials • Unit Skylights

180. Egress roof window

Intended for within-reach installations such as attic spaces and lofts, Model GPL roof window is large enough, and opens wide enough—a full 45 degrees—to meet alternative means of egress standards under many codes. Glazing options include heat-strengthened laminated glass; the wood frame comes prefinished with a clear topcoat. Architectural manual offered. 800/283-2831. Velux-America, Inc., Greenwood, S.C.

181. Improved underlayment

Layfast SBS TU 35 is an upgrade on standard #30/#40 roofing felt. Made with more flexible SBS-modified asphalt and reinforced with fiberglass instead of recycled paper, the material is said to improve the long-term waterproof performance of nailable tile, slate, shingles, and other steep-slope roofings. Tested to exceed ASTM D226 for Type II underlayment. Samples: 800/621-9281. MB Technology, Fresno, Calif.

182. Fascia and coping

VersiTrim roof-edge treatments can be specified in aluminum or steel, in a range of architectural finishes to meet exact job performance and appearance requirements. Said to provide maximum wind-uplift protection, some elements have a “non-penetrating” attachment system that eliminates leak points associated with metal fasteners. Line includes fascia, anchor bars, scuppers, and snap-on straight and radius copings. 800/992-7663. Versico, Inc., Akron, Ohio.

183. Exterior trims

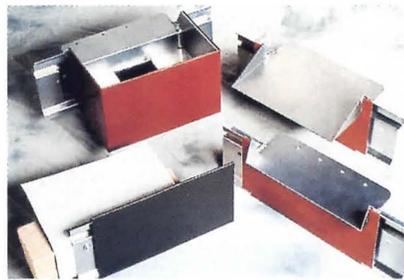
Heartland’s matte-finish accessories work with many exterior materials—wood, fiber cement, and hardboard—as well as vinyl siding. The profiles pictured are intended to give a traditional brick-mold look around windows and doors; corner posts come in a new, 20-ft length. 601/728-6261. Heartland Building Products, Memphis, Tenn.

184. Light-weight precast

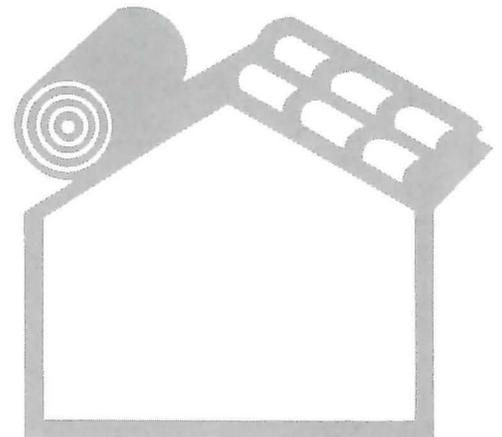
The Slenderwall panel is said to achieve the strength and rigidity of standard precast concrete panels in a 2-in. thickness. The proprietary panels take up less space in transit; at 28 lbs psf, their lighter weight imposes less load on a structure. Panels are attached to galvanized-steel framework with a “flexible” epoxy-coated connecting anchor designed to compensate for normal building movement and meet current seismic design considerations. Bullnose edges can be cast into the panel itself; face options include aggregate, thin brick, and tile. 540/439-3266. Smith-Midland Corp., Midland, Va.

185. Ceramic-slate roof tile

A fired-clay roofing said to be impervious to moisture and freeze-thaw damage, Celedon Ceramic Slate resembles natural slate. Available in five colorations (Montpelier Green is shown), the interlocking product has the same density as this maker’s premium clay roof tile but is lighter in weight and lower in cost. Unit dimensions: 10 7/8 by 16-in. Nominal thickness: 3/4-in. Product manual and installation video are available without charge to architects. 800/699-9988. CertainTeed/Celadon, New Lexington, Ohio.



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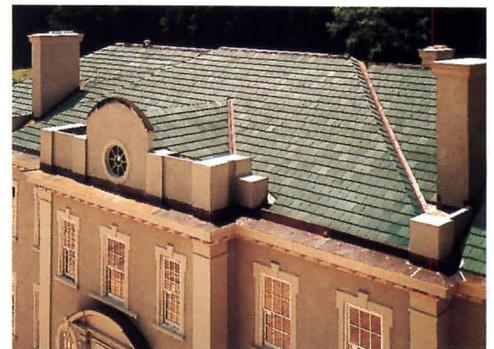
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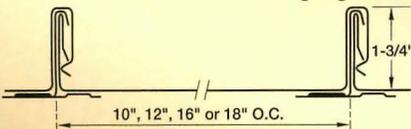
SNAP-CLAD Panels feature a 1-3/4" leg height and a continuous interlock for improved structural performance and wind resistance. A concealed fastener clip system has been designed to allow for thermal expansion/contraction while providing excellent hold-down strength.

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NEW

Circle 23 on inquiry card



Dental Offices of Manassas
Architect: Robert Loveless
General Contractor: Rector Construction
Roofing Contractor: GRC Roofing Inc.
Color: Forest Green
Profile: 24 ga. SNAP-CLAD

186. Roofing/cladding metal

Viromet and Virotin are strong, ductile, and weldable architectural metals developed to provide excellent corrosion resistance while meeting specific environmental standards. A stainless steel (Viromet) or carbon steel (Virotin) substrate coated with a proprietary zinc/tin alloy, the new products detail like Terne metal. Viromet will weather untreated to a gray or light bronze color. Virotin is intended to be painted right after installation. Suitable for roofing and cladding, metals are also available preformed as accessories such as cleats and scuppers. 800/624-6906. Follansbee Steel, Follansbee, W.Va.

187. Precast-wall insulation

ITP Building Insulation offers white polypropylene wrapped semi-rigid fiberglass boards with pvc extrusions designed to hold the insulation in place against precast wall panels. With an R-value of 10, the insulation provides both thermal and acoustic benefits; the white face improves light reflectivity for construction workers on already-enclosed floors. 800/654-3103. Schuller Corp., Denver.

188. Ventilation for roof decks

The Iso-Vent combines insulation and shingle substrate ventilation in one product. The polyisocyanurate foam board lays flat against the roof decking; channels in the upper side remain clear under the nailable plywood or OSB roof substrate, carrying air from soffit to ridge vents. 800/343-1285. NRG Barriers, Portland, Me.

189. Radius cedar panels

A new configuration of Number 1 vertical grain Western Red cedar, 4-ft-long siding panels can be used on exterior walls for either inside or outside curves down to a 3-ft radius. Shingles match the texture and butline of this maker's standard 8-ft multi-course panels. [Residence shown designed by Myrvang Architects.] 800/521-9523. Cedar Valley Shingle Systems, Hollister, Calif.

190. Fiber-cement roof panel

A "moderate price" fiber-cement roofing, 48-in.-long Quantum panels are colored throughout, cast in profiles that mimic cedar shakes and natural slate patterns. Material is described as walkable and wind- and hail-resistant, and has a Class A fire rating; weighs 325 lbs. per square. 800/347-3373. Re-Con Building Products, Sumas, Wash.

191. Low-gloss roofing metal

A new Pac-Clad product, 26-gauge steel panels have a full Kynar 500/Hylar 5000 finish applied in a low gloss/low sheen formulation to minimize the appearance of oil canning. Intended for applications that require a superior in-use esthetic, roofing comes in the Colonial Red pictured, as well as Slate Gray, Forest Green, and Matte Black. 800/323-1960. Petersen Aluminum, Elk Grove Village, Ill.

192. Snow/ice dam

An aluminum guard fastens to the standing seam of metal roofing panels without restricting thermal movement, and can retain up to 2,000 lbs. of unmelted snow and ice. Snow Dams can be ordered to fit any seam type and panel width, painted to match the roof.



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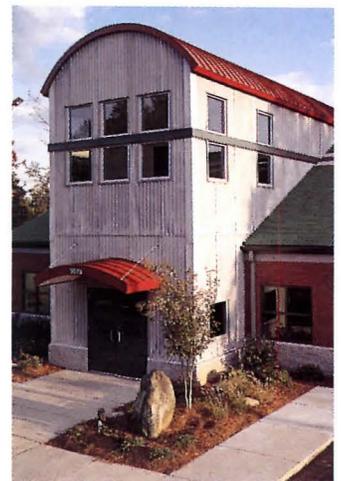
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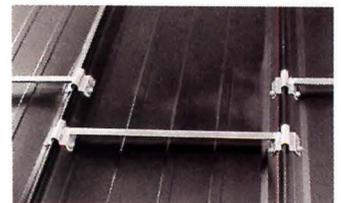
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Circle 24 on inquiry card

Architectural Doors • Locksets • Fire-Protective Doors • Smoke & Fire Gaskets

193. Heavy-duty mortise locks

For upscale offices, stores, condominiums, retail shops, and hotels, the L-Mediterranean extra-heavy-duty lockset has a mechanism of dichromated steel for strength, long wear, and corrosion resistance. Exposed trim is solid brass, in bright brass, Ultima, and bright chrome finishes. Lever options: Merano (shown), Asti, and Avanti. 415/467-1100. Schlage Lock Company, San Francisco.

194. Smoke-control door

The Ceco Smoke Tech system is designed for openings requiring smoke control, such as room-to-corridor, cross-corridor, elevator lobby, pressurized or non-pressurized stair enclosures, and areas of refuge. Doors are made of 18- or 16-gauge rolled steel with UL or WH labels of 20 minutes to three hours. Gaskets (illustrated) are concealed on the tested and rated frames. Sidelites and transoms are available. 615/661-5030. Ceco Door Products, Brentwood, Tenn.

195. Aluminum fire door

Fire-rated doors and sidelites are now available in aluminum, glazed with wireless SuperLite I fire- and safety-rated glass. A 20-minute, 3- by 9-ft door can have a vision light up to 2,422 sq in. Doors accept standard weight hinges, and mortise or cylinder locksets; the bottom rail adjusts. 800/272-7226. Ragland Manufacturing Co., Houston.

196. Acoustical door

For TV and recording studios, product-test facilities, and high-noise reduction applications without space for sound locks, the Dual Mode door provides extremely high sound-transmission loss performance up to STC 64. The 5-in.-thick door weighs 375 lb, operating on cam-lift hinges. 718/931-8000. Industrial Acoustics Company, Inc., Bronx, N. Y.

197. Fire-door safety feature

The M105A annunciator sounds an alarm and flashes a warning signal when an automatic closing overhead-coiling fire-door is about to drop. For use with the M58A-Model G releasing device, the new alarm insures occupant safety when fire doors are being tested, as required by fire codes. The device may be activated by smoke or heat detectors, fire alarms, or other signals. 800/233-8366. Cornell Iron Works, Inc., Mountaintop, Pa.

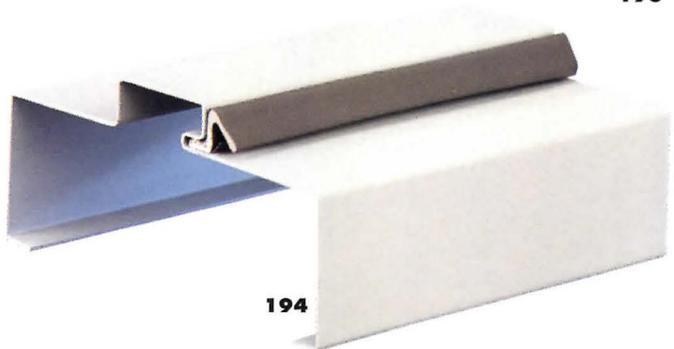
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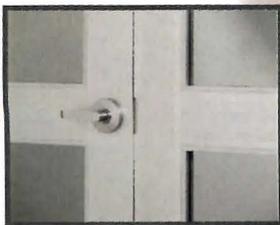


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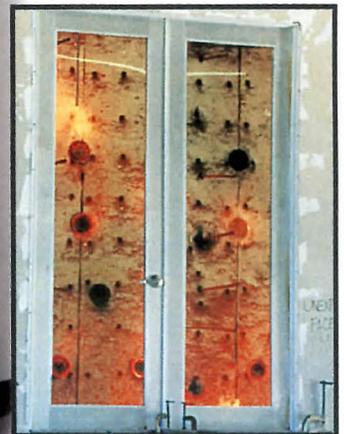
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198. Deadbolt lockset

TwinBolt provides double-locking security at the push of a button. A lower unit (knob or lever) is linked to an automatic deadbolt. On the inside, a standard lock and deadbolt are activated by a push of the button; on the outside, a single key unlocks both latches at once. The lock has an adjustable chassis to fit different lock/deadbolt placements. Meets ADA accessibility requirements. 414/444-2800. Master Lock Company, Milwaukee.



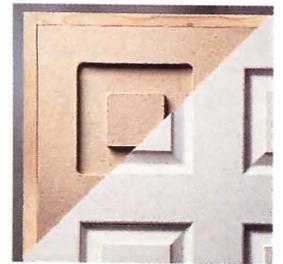
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199. Fire and smoke seals

Meeting new fire-door tests, Soft Puff intumescent, fire-door gasketing expands evenly in all directions on exposure to heat, filling even the smallest spaces and blocking flames, smoke, and toxic gases. Controlled expansion will not force open a door; if a door is opened for escape, expansion continues when the door is closed again. The material can be mortised directly into door edges and/or frames, or designed into gasketing systems for new or retrofit applications. 800/635-5335. Zero International, Bronx, N. Y.

200. Interior door core

A new residential option, the CraftCore door has a wood-fiber core; though lighter than conventional particle board, it is said to replicate the heft, sound-deadening properties, and easy-swing features of a solid-pine door. 800/446-1694. CraftMaster, Chicago.



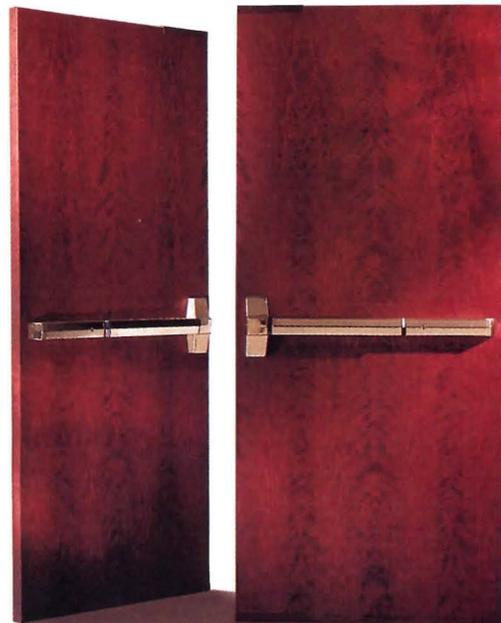
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201. Fire-rated doors

Weyerhaeuser says it offers the first 90-minute, fire-rated doors that eliminate metal edges at the meeting stiles and conceal the vertical rod, letting architects match fire-rated doors to the appearance of other doors on a floor. Incorporating Yale's 7140 WCD exit device, pairs are available with fire ratings of 20-, 45-, 60-, and 90- minutes. 800/869-3667. Weyerhaeuser Door Division, Marshfield, Wis.



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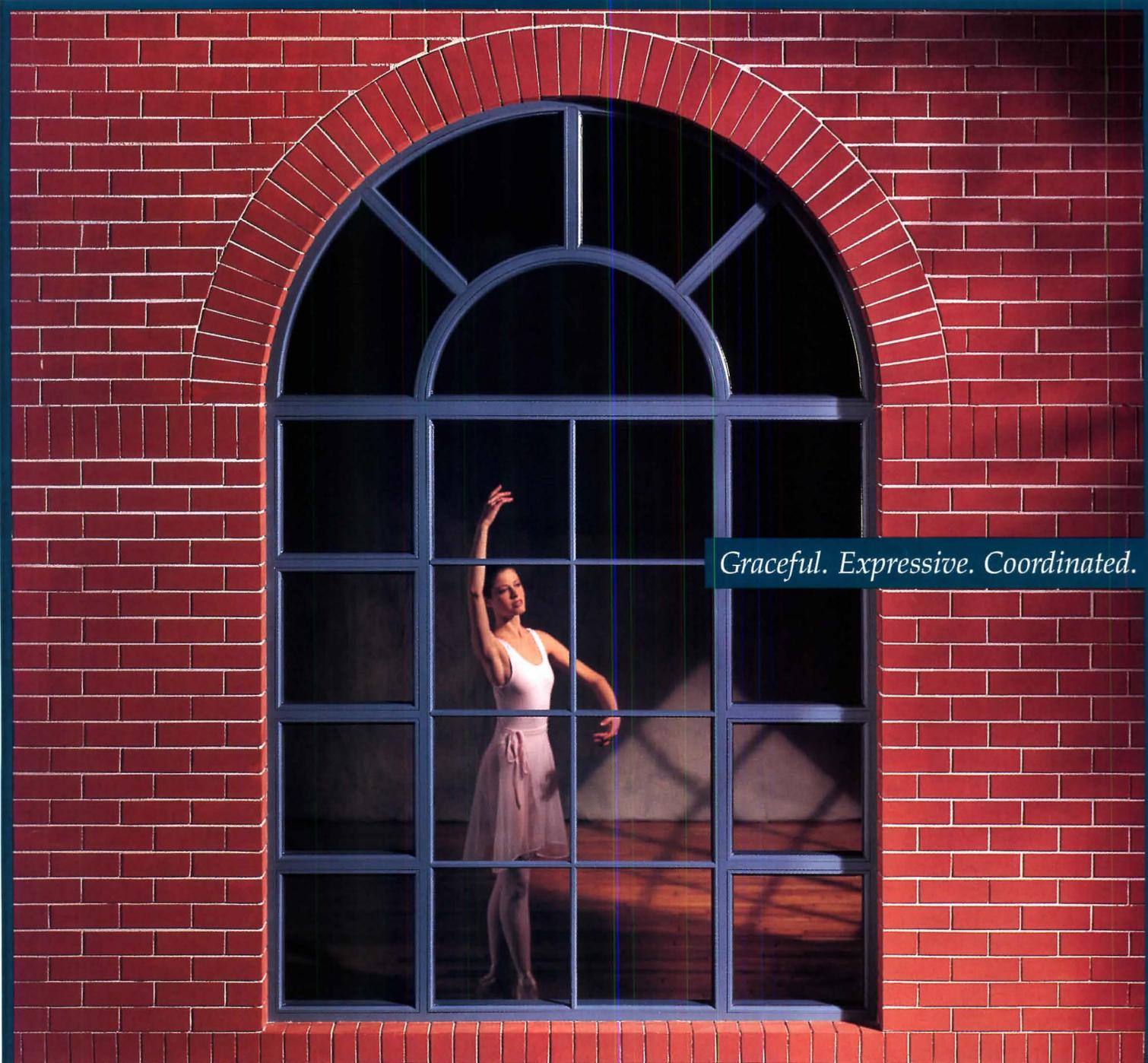
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202. Fire-rated floor access

The Type FR floor door, tested and approved by UL Laboratories in accordance with ASTM E119, preserves the fire rating of a floor system by containing flames and limiting heat transmission to upper floors for two hours. A recessed cover will accept various flooring materials, letting the door blend with its surroundings. 203/934-6363. The Bilco Company, New Haven, Conn.



202



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203. Privacy glass

Now commercially available for interior or exterior use, privacy glass changes from frosted to clear at the flip of a switch. A film of electrically sensitive liquid crystals between sheets of glass is wired to standard current. Switch on: crystals line up and create a clear glass. Off: crystals return to a random, unaligned state, and the glass appears frosted. Glazing comes green, gray, bronze, or clear. 507/451-9555. Viracon, Owatonna, Minn.

204. Operable storefront

From Germany, the Solarlux SL50 aluminum system can create a complete storefront with folding doors, windows, matching entrance doors, transoms, and sidelights. Units are available opening either inward or outward; heights to 9 ft are possible. Maker says that air- and water-infiltration and security-performance criteria meet applicable codes; the flush sill is designed for wheelchair access. Powder-coat colors, anodized finishes, and divided-light styles are offered. 800/873-5673. Nana Wall Systems, Inc., Mill Valley, Calif.

205. Folding glass wall

Aluminum-framed Mirage installations appear to be a progression of windows, yet the wall opens easily, accordion style, to give a 92-percent unobstructed opening to outdoors. For use enclosing porches, balconies, swimming pools, restaurants, and storefronts, there are 14 sizes, in widths to 20 ft. 800/447-4938. Skytech Systems, Bloomsburg, Pa.

206. Super-insulating unit

A new option comes pre-glazed in an insulated aluminum frame. Less expensive than existing four-element high-performance glass, the three-part design (two glass lights with a suspended clear spectrally selective film) offers R-Values up to R5. 403/451-4000. Visionwall Technologies, Edmonton, Alberta.

207. Slide-aside entrance

One of several "Phantom Wall" configurations, the PW-90 exterior mall slider permits occasional passage of large objects through a pedestrian entrance. Useful for casinos, shopping malls, automobile showrooms, restaurants, and other retail applications, the entire glazed area slides to the side for easy access for deliveries. 214/551-6162. Vistawall Architectural Products, Terrell, Tex.

208. Gasketed curtain wall

Developed in England, EFCO's Series 5800 Don Reynolds assembly incorporates the structure of a conventional curtain wall or sloped-glazing system while offering a unique gasketed face. The gaskets, available in a wide range of colors and profiles, add a design element to their weatherproofing function. Series 5800 can be used in many different applications, including punched or ribbon openings and slope glazing. 800/221-4169. EFCO Corporation, Monett, Mo.



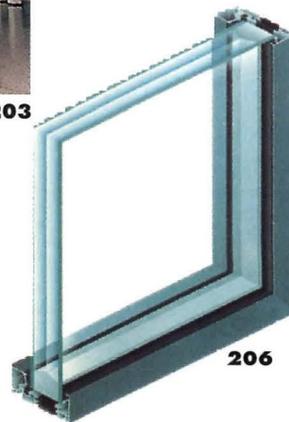
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208

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209. Free-formed ceiling

Described as a non-modular solution for smooth, flowing runs of gently curved or undulating ceilings, the Aluma-Vault comes in a range of panel configurations, colors, and finish options. The architect needs only to specify a radius for the curves, and quarter-vaults, domes, barrel vaults, and wave-like shapes are made to fit. Panels come in sizes of up to 4- by 10-ft; may be backed with sound-absorbing material. 800/747-8954. Gordon, Inc., Shreveport, La.

210. FRG moldings/light covers

Made of fireproof, fiberglass-reinforced gypsum, cornice and cove moldings are available in 10 sculptured patterns that coordinate with USG acoustical ceiling panels. Moldings come in 8-ft lengths, in a choice of smooth white or any of 24 standard colors. 800/950-3839. USG Interiors, Chicago.

211. Healthcare floor

BioSpec is a new, homogeneous sheet-vinyl floor developed specifically for the stain- (and germ) resistance appropriate to hospital operating theaters, clean rooms, and other demanding applications. Heat-welding or chemical sealing creates a seamless floor. Available in 30 colors, including low-contrast patterns that call attention to dropped objects. Sample chip program: 609/339-5941. Mannington Commercial, Salem, N.J.

212. Medieval esthetic

A time-worn look from Cisa Ceramiche, Le Rocche floor tiles are made in a blend of soft gray and ochre colorations, with distressed edges and mottled effects. Suitable for heavy-traffic floors, the Italian tiles come in four field-tile shapes, both plain colors or with a subtle 13th-century decoration, as well as more-boldly colored insets and corners. For U.S. sources: 212/980-1500. The Italian Tile Center, New York City.

213. "Marble" ceramics

A new floor tile for residential and light-commercial use, Marble Classics is said to closely replicate the veining and shading of natural, polished marble. Tile is made in 12- and 16-in. squares, 4- by 12-in. insets, and a coordinating, rectangular wall tile. Sample boards show all five colorways. 800/496-TILE. Inter-ceramic, USA, Garland, Tex.



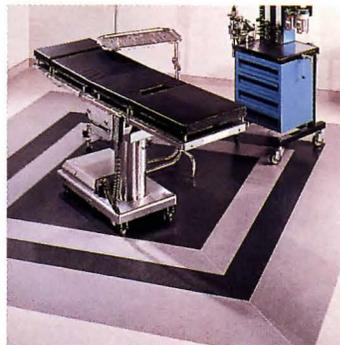
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214. Customized rubber floor

Determined to add more value and decorative options to their line of institutional flooring and accessories, Johnsonite now offers architects and interior designers the opportunity to create project-specific colorways in marble-pattern rubber tiles and stair coverings. The Prima customized floor lets the specifier choose a single background color, plus up to three additional integrated "veining" colors from a total of 29 colors. These colors are picked up as solid-tone accent tile, wall base, transitions, corner guards, and other trim. 800/899-8916. Johnsonite, Chagrin Falls, Ohio.

215. Laminate flooring

Anticipating substantial growth in laminate flooring products, Formica Corporation is placing its trademark on a line of 25 patterns created specifically for the American market. Unlike European styles, Formica's floor will have longer plank lengths and a matte, not glossy, finish. Pictured are sandstone and wood-grain designs from the initial flooring collection, intended for residential and light-commercial spaces. Tongue-and-groove laminate strips glued to each other, and installed as a "floating" floor over any level subfloor. Moisture- and heat-resistant, laminate is suitable for kitchen and bath spaces as well as other residential interiors. Samples: 800/FORMICA. Formica Corp., Cincinnati.

216. Water-based multicolors

Both Polomyx and Zolotone multicolor paint systems are now available in an environmentally benign, low-VOC formulation said to be as durable and colorful as the solvent-based product. 800/773-1667. Surface Protection Industries International, North Billerica, Mass.

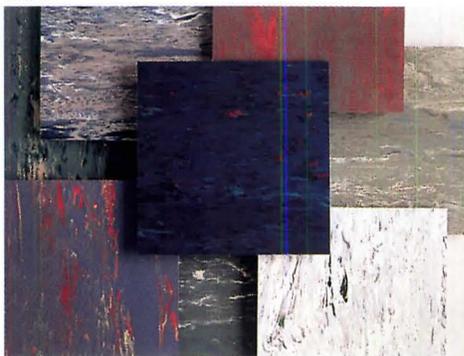
217. Low-odor semi-gloss

A minimal-odor enamel rugged enough for institutional settings, HealthSpec is said to reduce maintenance costs by permitting painting during normal business hours, with no need to evacuate building sections, even in hospitals. Available as both egg-shell and semi-gloss enamels, HealthSpec should give one-coat coverage on walls, trim, doors, railings, and cabinets in healthcare, school, and other heavy-use, occupied environments. The Sherwin-Williams Company, Cleveland.

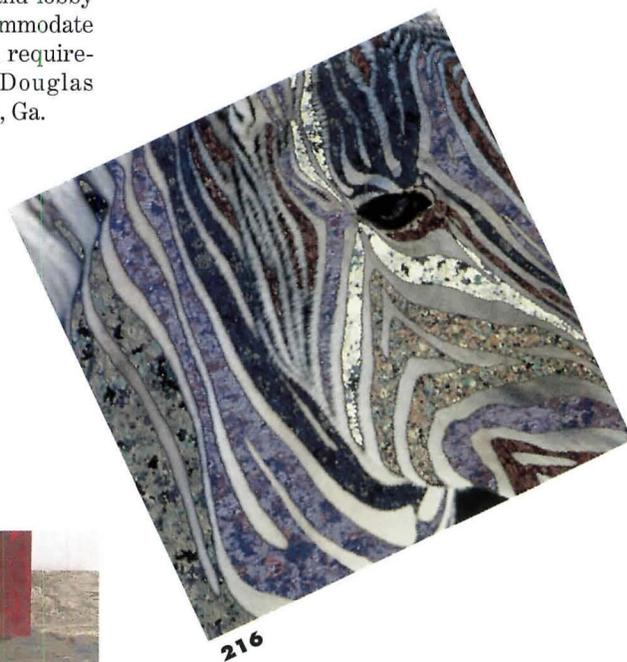
218. Long-span metal ceiling

A new ceiling-panel option, Luxalon comes in lengths up to 19 ft, providing a sleeker, uninterrupted appearance to longer spans. Individual planks are wider, with a choice of a beveled- or reveal-edge treatment. Luxalon ceilings come in any of over 50 colors, and permit four suspension configurations (carrier, lay-on, clip-in, and wide C-grid). Ceilings are said to improve the acoustic performance of airports, retail malls, and lobby spaces; installation system will accommodate lighting-fixture and sprinkler-head requirements. 800/366-4327. Hunter Douglas Architectural Products, Inc., Duluth, Ga.

214



215



216



218



217

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Circle 28 on inquiry card

219. Tufted-pattern broadloom

The textured-loop pattern used for Lees' Bottega carpeting was made using their proprietary, full-repeat-scroll tufting equipment, a technology said to create carpeting with combinations of pattern, color, and texture not possible before. Constructed with 30-oz, yarn-dyed Antron nylon, Bottega broadloom comes with Unibond moisture-resistant backing. Bottega offers 21 running-line colors, in 12-ft widths for office, retail, and other commercial applications. 800/523-5647. Lees, A Division of Burlington Industries, Inc., Greensboro, N.C.

220. Architectural coating

Described as a "second generation" fluorocarbon, Megaflon is a chemical-cure, high-performance coating for aluminum, steel, concrete, glass, and plastic—including older fluorocarbon surfaces. Offered in both coil-coat (baked-on) and ambient-temperature formulations for site application, finish comes in bright, vivid colors and a range of glosses. Said to maintain color intensity and gloss levels for decades, Megaflon meets AAMA 605.2. 860/274-5857. Keeler & Long, Watertown, Conn.

221. Acrylic-latex finish

A water-based, VOC-compliant multicolor finish for heavy-use commercial and institutional interiors, Aquafleck offers dozens of colorways incorporating distinctive pigment flecks that give the finish a three-dimensional, textured appearance. Wall treatment is "virtually odorless" and quick drying for application without disrupting occupants. Swatch cards: 800/225-1141. California Products Corp., Cambridge, Mass.

222. Three-dimensional ceiling

A standardized approach to creating custom suspended ceilings, the Curvatura system consists of 36 grid segments that can be combined in "an infinite" number of designs. The spaces between the curved grids are filled with flexible panels in perforated or plain metal, woven wire mesh, or translucent fiberglass-reinforced plastic, conformed to the grid with hold-down tabs. A design kit provides templates, component manuals, and computer software to help the architect and interior designer create custom ceilings. 800/950-3839. USG Interiors, Chicago.

223. Laminate planks and tiles

A decorative, durable flooring for kitchens, home offices, and other heavy-use residential spaces, Wilsonart laminate comes in patterns and shapes said to demonstrate the design flexibility of the product. As an essentially photographic process, high-pressure laminate can replicate the appearance of natural materials such as maple, cherry, and oak wood, or the colorations and veining of marble, granite, and terrazzo. These designs can be enhanced and abstracted to create looks unattainable with other materials. Wilsonart offers laminate flooring in plank and tile formats, with interlocking edges for floating-floor installation. 800/433-3222. Wilsonart International, Temple, Tex.



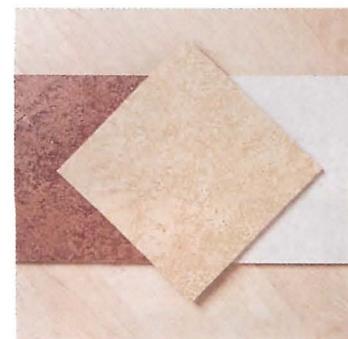
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220



222



223

Signage • Library & Storage Equipment • Residential Equipment • Toilet & Bath Accessories • Demountable Partitions • Security & Vault Equipment • Waste Chutes & Collectors • Merchandising & Display

224. Recyclables collection

Described as a cost-effective, multi-container recycling system, The Hi-Rise replaces obsolete trash compactors in mid- and high-rise buildings, and can be installed in new buildings. It automatically compacts up to 900 lbs of trash, and adapts to future sorting requirements. The user pushes the button keyed to the material being discarded—plastic, glass, paper, garbage—and the basement turntable revolves to receive it. 305/624-9222. Hi-Rise Recycling Systems, Inc., Miami.

225. Multi-function walls

Complex design and performance criteria—heavy-weight shelving, plumbing runs, and power distribution—were incorporated into Twin Wall partitions used in a biomedical laboratory (Nottingham Architects). The wall system was able to accommodate custom elements such as windows and impermeable wall/floor joints within a flexible partition that permits ready reconfiguration. 800/990-9255. Dowercraft Corp., Falconer, N.Y.

226. Concealed vaults

These vaults are not only secure—they are hidden. Using a proprietary opening mechanism, which makes the safes virtually invisible, burglar-proof enclosures the size of walk-in closets—up to 11 by 14 ft—can be concealed within a home. The firm's motto: If they can't find it, they can't steal it. Installed prices depend on size of safe and location of project, but might be \$15,000 for a 4- by 4- by 8-ft vault. 901/685-1500. Custom Security, Memphis, Tenn.

227. Life-safety package

The Life Safety Net 2000 is an all-in-one fire-protection, security, and hvac-control package. The digital electronic technology used is said to make the control and signal cabinet easy to install and customize, and to reduce its in-place costs in most types of buildings. Meets all appropriate codes, including the New York City Fire Department's. 718/899-6100. Firecom, Inc., Woodside, N.Y.

228. Ceiling-hung partition

Skyfold is an automatic, vertically folding acoustical partition that stores in the ceiling. Individual rigid panels are independent of the motorized pantograph, weigh only about 50 lbs, and can be replaced if damaged. Loading is evenly distributed, and needs no special structure. The system achieves an STC rating of 48 without floor track or seals. Installation pictured by Rounthwaite, Dick & Hadley, Architects. 514/457-4767. Skyfold Div., Railtech Ltd., Baie d'Urfé, Que., Canada.

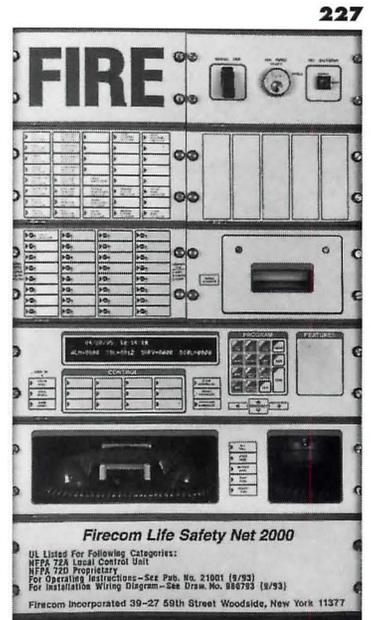


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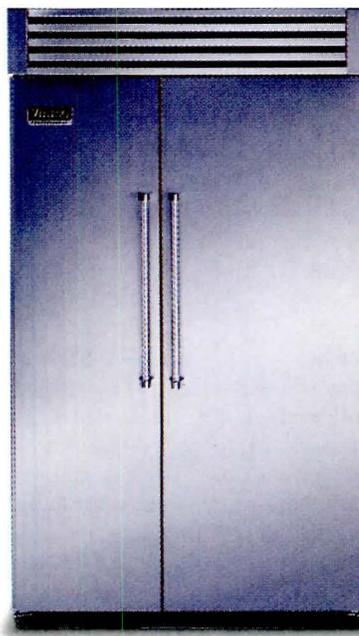


227



228

Now there's no question
which refrigerator goes best
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For the ultimate Viking kitchen, you can even add our new wine cooler or undercounter ice machine.

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229. Merchandising display

Designed for in-store display walls and kiosks, System A is based on a recessed carrier which holds the merchandise racks in place by a simple push fit. No twisting or turning is necessary to keep the display straight and level. Distinctive shelf elements and hooks are designed for clothes, hanging items, sports equipment, and shoes. 910/889-2322. Häfele America Co., Archdale, N.C.

230. No more turn crank

A new control option for high-density mobile storage systems like those used in libraries and back-office facilities, Power Assist is operated by a DC motor. The device is said to offer fully automated, easy-to-direct electro-mechanical operation and safety features at a price comparable to mechanical-assist storage systems. 800/492-3434. Spacesaver Corp., Fort Atkinson, Wis.

231. Double-bent shower

The Neo Solution is described as a stock solution to a custom-surround design problem. Tempered-glass door has a 27-in.-wide clear opening, yet fits into a standard 42-in. angled-corner base. Glass-to-glass hinges and "invisible" vinyl profiles are said to give a floating, all-glass effect. 800/348-8080. Duschqueen, Inc., Wyckoff, N.J.

232. Recognition displays

Donor acknowledgement plaques and memorial walls can be designed with micro V-cut lettering in crystal clear glass. Wallach etching and glass-cutting techniques permit a dramatic, legible display in materials appropriate to the site. A new donor wall mounting system holds interchangeable, stacking blades of V-cut glass sandwiched between two sheets of crystal, and is said to be easy to update and revise. 707/527-1205. The Wallach Glass Studio, Santa Rosa, Calif.

233. High-design cabinetry

Designed by Ferrari stylist Pininfarina and incorporating automotive techniques such as mold-injected polyfoam parts, Snaidero's Ola kitchen features an integral stainless-steel cooktop (by Franke) and built-in lighting. Cabinetry comes in bright lacquer colors like Racing Red, Solar Yellow, and Northern Sea Blue (pictured). 310/516-8499. Snaidero, Los Angeles.

234. Restroom accessories

Made in 13 colors of Hewi's dense nylon material, new 485 accessories have a canted base for mounting on walls and partitions. Items such as soap dispensers are designed for one-hand operation. 717/293-1313. Hewi, Inc., Lancaster, Pa.



229

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231

233

232

234

Furnishings

Floormats • Window Treatments • Office Systems • Upholstery & Other Fabrics • Seating

235. Pull-up chair

Brian Kane designed this rugged stacking chair specifically to take advantage of Xorel fabric's response to heat: He was able to "shrink-wrap" the upholstery over the molded-urethane shell. Intended for abuse-prone settings, including restaurants, the chair has a cold-rolled steel base. The fabric itself is flame-retardant, color-fast, puncture-proof, very abrasion-resistant, and won't support the growth of bacteria, staph, or fungus. The Xorel upholstery used on the chair has a liquid-proof backing, and can be cleaned by wiping with hot water. Built to last at about \$550. Call 800/727-6770. Carnegie, Rockville Centre, N. Y.



235

239. Terrace seating

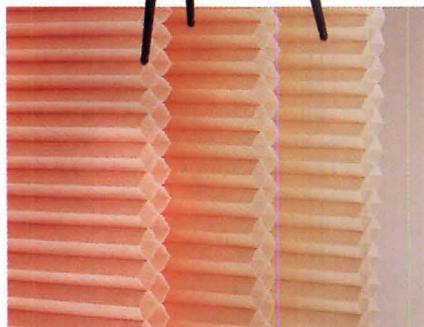
The Catena chair is designed for heavy-duty outdoor use, such as patio restaurants and corporate courtyards. Made of aluminum and stainless steel to be light weight and corrosion resistant, the chairs are finished with a powder-coat system said to resist chipping, peeling, and fading. Chairs can be stacked up to six high; matching tables and aluminum sunshades are available. 800/521-2546. Landscape Forms, Inc., Kalamazoo, Mich.

240. Unobtrusive matting

Enhance 850 walk-off matting, made from a combination of fine-denier nylon and olefin cut-pile, is said to remove, hold, and hide dirt and water tracked into lobby spaces from shoes. Intended for entrances and other floors where carpet had been used, the Enhance product is said to look and seam like broadloom, but with a random, soil-concealing pattern. Most standard sizes can accommodate a logo. 800/852-9722. 3M Commercial Care Division, St. Paul, Minn.

236. Fire-rated cellular shade

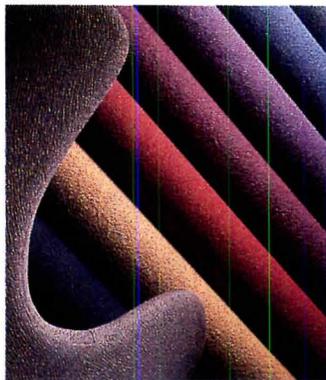
For commercial applications requiring a soft fabric window treatment, the Graber Crystal-Pleat Facets cellular shades offer privacy as well as thermal and acoustical control. Of the six colors available, white provides a .25 shading coefficient, a 3.30 R-value, and an NRC acoustical rating of .60. The flame-retardant fabric meets the requirement of the NFPA 701 Small Scale test. 800/327-9798. Springs Window Fashions, Montgomery, Pa.



236

237. Upholstery fabric

Because of its combination of yarns, Triton Stretch fabric is claimed to keep task seating cooler and more comfortable. It is woven from Climatex, a mix of wool, polyester, and ramie that is said to work together to remove heat and moisture from a seating platform's "hot spots." Abrasion tested to 51,000 double rubs, upholstery comes in 13 colors. 800/727-6770. Carnegie, Rockville Centre, N. Y.



237

238. Light-filtering roller shade

A new window treatment designed specifically for contract installations, roller shades are made with flame-retardant, Sheerweave vinyl-coated fiberglass / polyester fabric in a range of openness configurations from 5 to 30 percent. Other materials in the 53-option contract line include Pima, a semi-opaque woven cotton in 12 colors, and four room-darkening vinyl materials laminated to fiberglass. Aluminum fascia panel and brackets come in white, bronze, and ivory; the clutch mechanism is worked by a beaded-metal chain. Swatch program: 800/937-7895. Hunter Douglas Window Fashions, Upper Saddle River, N. J.



238



239



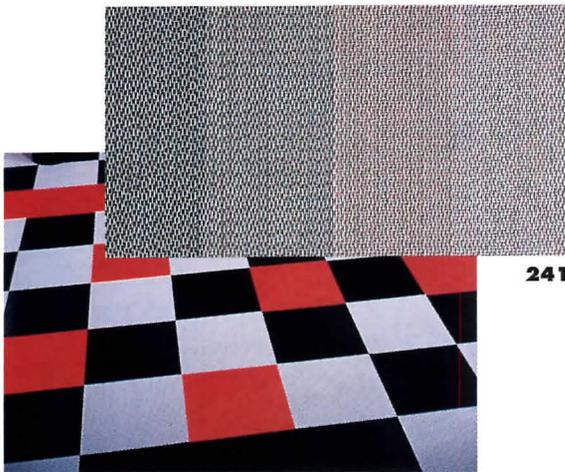
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241. Fabric wall covering

The fire-retardant, vinyl-coated polyester warp and fill yarns of Animation wall-covering fabric are fused at high temperatures to achieve greater dimensional stability. It can be used for wrapped and acoustical panels as well as stretched wall applications. Ten standard colors and custom colors available. Cleanable with vacuum or a brush and detergent or bleach solution. 212/343-4009. The Knoll Group, New York.

242. Polypropylene floor tiles

Kiwi interlocking floor tiles provide a quickly installed, non-slip surface for either long-term or temporary use on any flat surface outdoors or indoors. Particularly suited for car dealerships, the decorative tiles snap together to create a floor surface that can carry even cars and small trucks. Not damaged or stained by most chemicals, oil, grease, brake fluid, or battery acid, 13-in. square tiles come in seven colors. 707/935-3690. Kiwi Tile, Inc. Sonoma, Calif.



241

242

243. Versatile Italian

Storm is the newest design from Carlo Bartoli for the Italian manufacturer Segis, an extension of his Breeze indoor/outdoor furniture line. A lightweight stackable chair made with a steel frame and molded polypropylene shell in any of 11 colors, Storm can be specified with arms as well as a fold-down table attachment. A 32-page catalog illustrates the full range of Segis seating. 305/960-1100. Loewenstein, Pompano Beach, Fla.

244. African influenced

Designer Orlando Diaz-Azcuy says his 1996 furniture collection, intended to mark ten years of work with North Carolina manufacturer HBF, was inspired by the dramatic landscape and tribal arts of Africa. The line includes upholstered seating and lounge groups, as well as occasional pieces, such as the slender-legged Kenya tables, pictured. 704/328-2064. Hickory Business Furniture, Hickory, N. C.



244

245. Wood contract furniture

Moser's Windward collection represents a new thrust by this maker of mortise-and-tenon residential furnishings to meet the specification and production requirements of the contract marketplace. The initial range, intended for library and corporate use, offers 33 variations of occasional and meeting tables, sectionals, casegoods, and lounge seating. The use of interchangeable design elements is said to increase manufacturing efficiency and allow competitive pricing. 800/708-9710. Thos. Moser Cabinetmakers, Auburn, Me.

246. Systems furniture

The Arrio line of height-adjustable desks, mobile tables, screens, storage, and technology support is designed to improve the electronic connectivity of freestanding units in open-plan offices. Lay-in cabling is said to make wiring easy to install and reroute. Options include Work Rails that attach to desks. 800/851-1196. Herman Miller, Inc., Zeeland, Mich.



245



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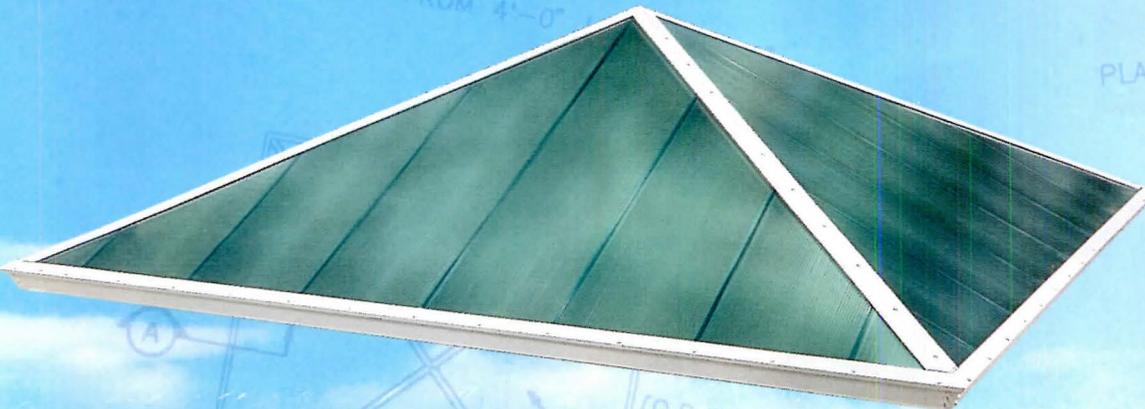
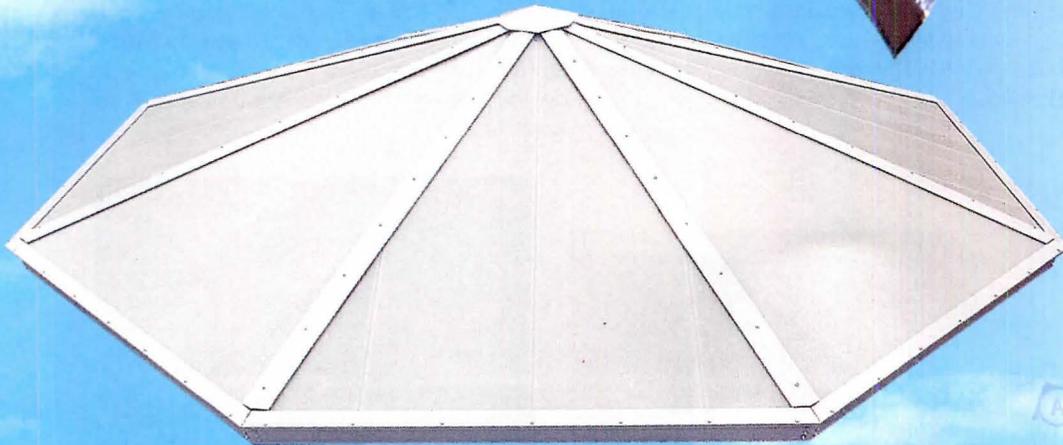
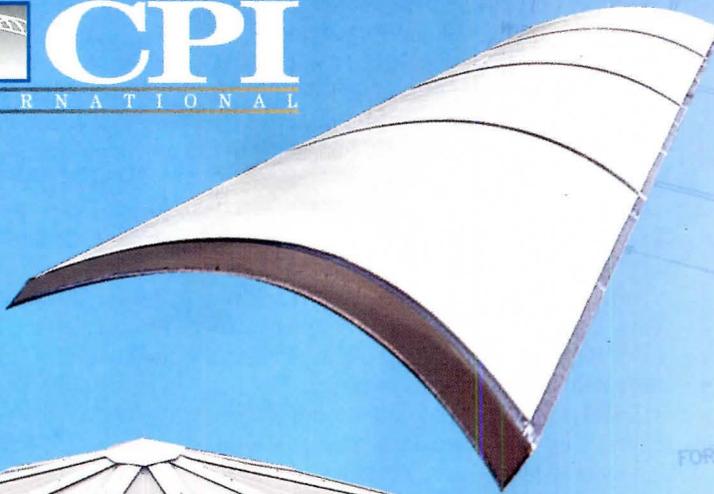
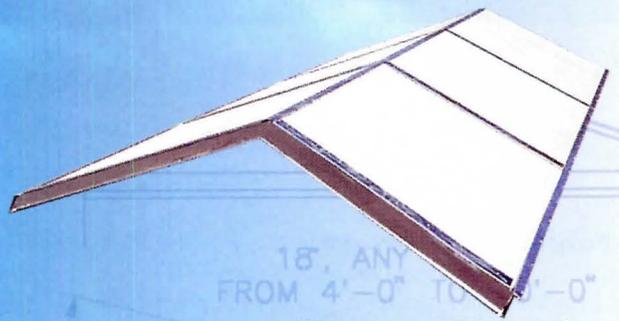


246

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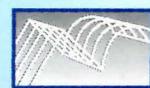


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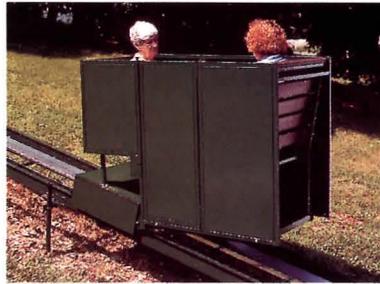
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247. Precast prison dormitories

Re-designed to provide larger, column-free spaces, the new Maxi-Dorm is a precast-concrete, multiple-occupancy prison cell designed for speedy erection. Units can be designed, manufactured, erected, and ready for occupants in weeks. Cells are stackable, easily relocated, and quickly configured for permanent installation. Walls are insulated, and finished in epoxy. Watch units being placed for a Massachusetts prison: oldcastle-precast.com (Web page). 215/257-8081. Rotondo Precast, Oldcastle Precast East, Inc., Telford, Pa.

248. Giving people a lift

Hill/Climbers travel up and down steep outdoor grades leading to garden, beach, street, or garage. Lifts can go from flat terrain to a 45-deg angle as far as 250 ft. There are two sizes: one 29 in. wide, with two facing seats (pictured); a larger, 50-in.-wide unit will accommodate a wheelchair. Both have a 700-lb capacity. 717/234-8065. Inclinator Company of America, Harrisburg, Pa.



248



249

249. Roof isolation curb

The Model ESR sound- and vibration-control curb, with either steel-spring (shown) or air-spring isolators, is described as easy to adjust to field conditions such as weight distribution, variable roof pitches, and obtruding ductwork. For hvac and other rooftop equipment of almost any size, curbs meet 1 g seismic and 200 mph wind-restraint requirements. 614/889-0480. Kinetics Noise Control, Inc., Dublin, Ohio.



250

250. Materials-handling helper

The Smartwaiter, a new Auton motorized lift system, raises and lowers goods, packages, laundry, and food at an efficient speed from floor to floor in institutions and private homes. Used by small artisan shops such as furniture makers, lifts are said to be invaluable as a saver of time, steps, and energy. Reduces the likelihood of damage to goods and equipment moving from floor to floor. Rack and pinion drive provides a smooth, wobble-free operation. 805/257-9282. Auton Company, Valencia, Calif.

251. Hardwood conservatories

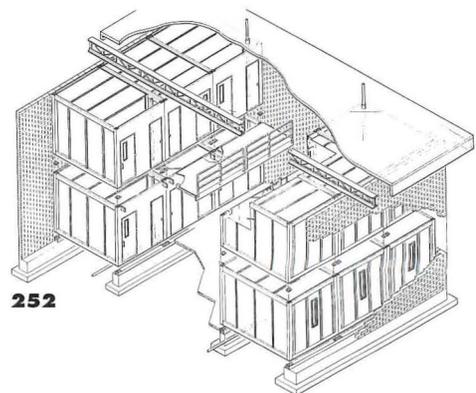
Developed in England, modular conservatory kits are said to be easily assembled by a do-it-yourselfer or a professional installer. All units come with safety tempered insulating glass, a triple-wall polycarbonate roof, and double opening French doors. Designed for harsh weather and American snow loads, units meet most local codes. Three styles: Victorian (illustrated), Windsor, and Georgian. 800/963-8700. Hartford Conservatories, Inc., Woburn, Mass.



251

252. Modular jail cells

Factory-produced, steel-framed cells arrive on site preplumbed, prewired, furnished, equipped, insulated, and factory-finished with a baked-on polymer. Load-bearing steel walls can be bolted together four-high and will support a roof, serve as an exterior wall of a new facility, or become an addition. Lightweight units can be installed on slabs or as a retrofit within an existing structure, regardless of age. Made in sizes of from 60- to 107-sq ft, cells can be customized to meet any level of security. 201/893-0500. Mark Solutions, Inc., Bloomfield, N. J.



252



247

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253. Totally self-contained

The Omega Supergrif is truly sleek—but you might have to post how-to-use instructions above it. Water flow from cold through tepid to hot is controlled by moving the integrated curved handle mounted on top of the faucet itself. Designed by Spanish architect Inés Jackson, faucet comes in basin mixer, tub/shower, and bidet configurations; finish options include chrome, anthracite, white, and gold. 800/969-0339. Opella, Inc., Marietta, Ga.

254. Sensor-operated faucet

Sloan's new Optima Plus EBF-85 uses a fiber-optic cable to transmit an infrared beam from the battery-powered control unit, mounted unobtrusively below the counter, to the faucet. Electronics are moisture proof, and allow some installation flexibility; water flow is controlled automatically by two-year-life C batteries. An audible signal indicates a low-power state. 847/671-4300. Sloan Valve Co., Franklin Park, Ill.

255. Totally compliant

A new multiuser washbasin configuration, the Express lavatory requires only one set of plumbing connections. Washbowls and shelf are made of impact-resistant Terreon, a granite-look solid-surface material available in gray, blue, bone, green, and red. Design allows for wheelchair maneuverability, and meets all ADA, ANSI, and UFAS access requirements. Layout options at www.bradleycorp.com (Web page). 414/251-6000. Bradley Corp., Menomonee Falls, Wis.



253



255



256



257

256. Pressure-balance valve

Gerber says its new shower valve, which neutralizes sudden changes in water temperature to prevent scald injuries, is also built to resist the wear and deterioration caused by hard water conditions. Loop-style handles meet ADA ease of use requirements; corrosion-resistant fittings are available in models for kitchen, tub, and shower. Gerber Plumbing Fixtures Corp., Chicago.

257. Cleaner hvac systems

Designed with compact housings to fit commercial and institutional hvac systems, ultraviolet light sources are said to solve difficult indoor air-quality problems by sterilizing air, killing microorganisms such as flu and cold viruses, as well as mold and mold products. These new UVC emitter tubes are said to use less power more efficiently than previous models. 310/467-8484. Steril-Aire USA, Inc., Cerritos, Calif.

258. Snow-melt system

A new exterior snow and ice melt system uses Raupex cross-linked polyethylene tubing to circulate a heated glycol mixture beneath pavement, walkways, even helicopter landing pads. Tubing resists repeated bending, solvents, and acids. Cost of system is offset by savings in snow removal, liability exposure, and reduction in salt damage. 703/777-5255. Rehaus, Inc., Leesburg, Va.



258

Ambient & Task Fixtures • Light Sources • Special Luminaires • Controls • Wiring

259. Multichromatic sconce

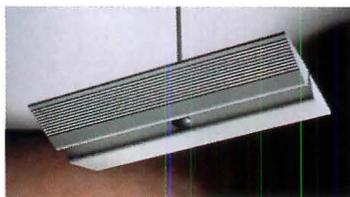
The Rainbow sconce features dichroic, spectral-glass lenses that reflect vivid bands of green, magenta, blue, and yellow light; a centralized wash of white light provides focused illumination. Comes with a PAR16 Halogen 65-W lamp. Cast-aluminum housing comes black or polished. 800/223-0726. Lightolier, Inc., Fall River, Mass.



259

260. Computer-area lighting

Futura indirect fixtures represent a new direction for Luxo, long known as a source for direct task lighting. Luminaire styles include this stem-mounted ceiling light, illuminated by a 55W CFL. Futura fixtures have a spectral-metal reflector said to provide uniform uplighting without glare or veiling reflections on computer screens. The line offers a range of mounting options. Clear polycarbonate lens cover protects lamps from dust and damage. 914/937-4433. Luxo Corporation, Port Chester, N. Y.



260

261. Prismatic-glass sconce

Like other fixtures in Philippe Starck's Romeo lighting line, his Babe W sconce has a light-catching industrial-glass shade. Stem and bracket are brushed aluminum; a light-diffusing globe shields the 1v halogen lamp. Glass shade also comes in cobalt blue; pendant and chandelier versions available. 800/939-3567. FLOS USA, Huntington Station, N. Y.



261

262. Cool display lighting

LSI's fiber-optic system is designed for museum and retail environments where heat- and UV-sensitive objects are displayed, and for tight architectural spaces such as these niches holding costly handbags. Installations comprise a remote metal-halide or tungsten-halogen light source, bundles of light-carrying, optical-glass fibers, and lighting instruments (lightbars and fixtures). 800/999-9574. Lighting Services, Inc., Stony Point, N. Y.



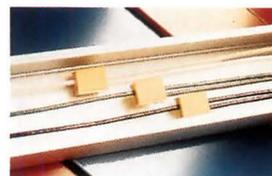
262

263. Self-ballast metal halide

Introduced as a working model in 1996, this 22W Rebel is the first metal-halide lamp to contain a miniaturized integrated ballast. Part of the MasterColor, color-stabilized line, it will work as a direct replacement for several 60- and 90-W PAR 38 halogen lamps, but will have a 9,000-hr rated life. 800/631-1259. Philips Lighting, Somerset, N. J.



263



264

264. Prewired raceway

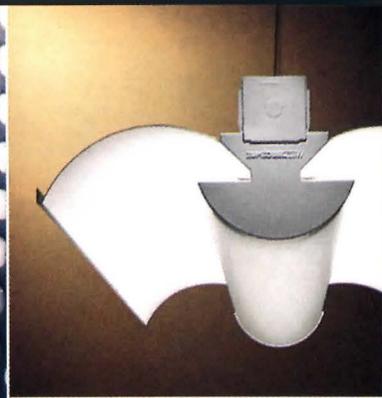
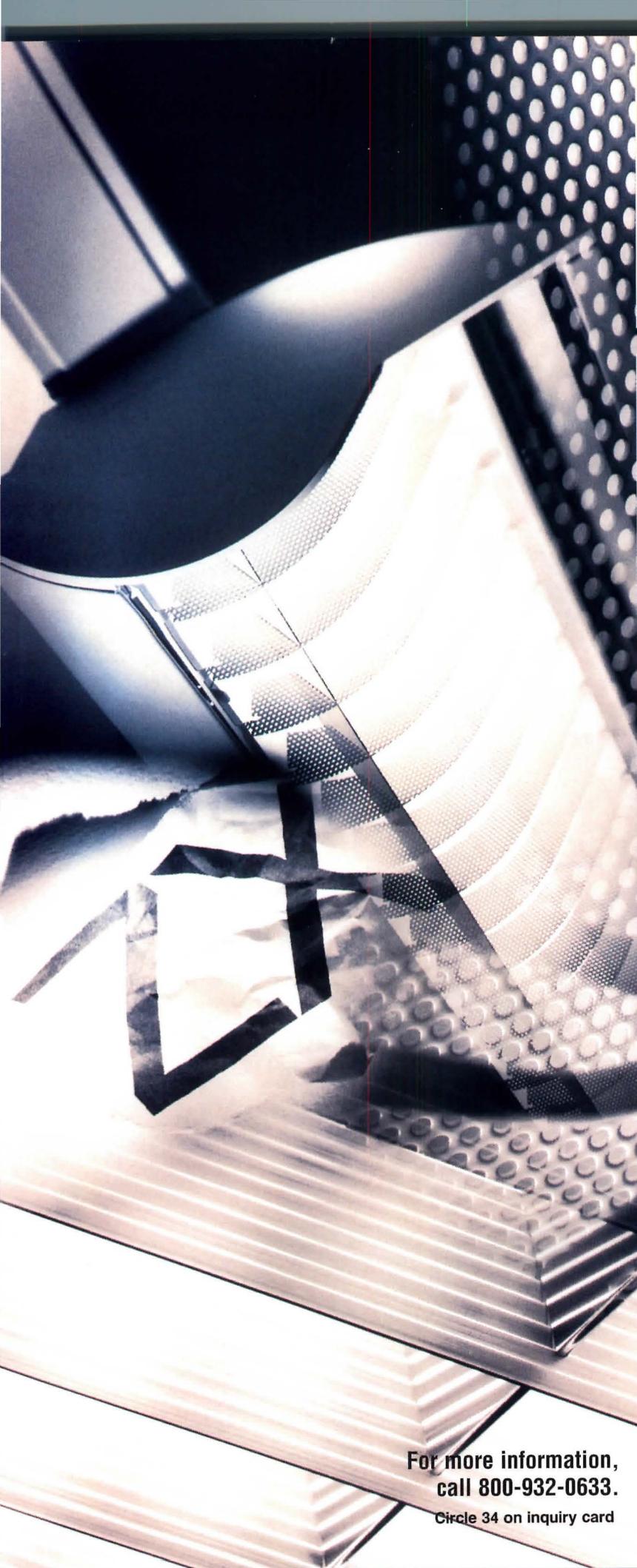
Wiremold's Isoduct aluminum raceway system comes factory wired and cut to specified, job-site lengths. Raceway covers are cut in 12-in. lengths for flexibility in adding outlets and circuits. Said to be easy to install; electricians simply connect the feeds. Available in single- and multi-compartment profiles. Standard finish is a corrosion-resistant architectural anodized; powder-coat colors may be ordered. 860/523-3646. The Wiremold Company, West Hartford, Conn.

265. Indirect pendant lighting

Litedisc Legacy, a nonlinear, indirect pendant, has a light efficiency of 76 net effective lumens per Watt. Available in 29-, 35-, and 41-in. diameters, the luminaire can be mounted within 24 in. of the ceiling. Lamping is three to six T5 fluorescent lamps, depending on fixture size. Bowl-shaped diffusers are acrylic; standard finishes are polished chrome or polished brass, with custom finishes available. 800/732-5213. LAM Lighting Systems, Santa Ana, Calif.

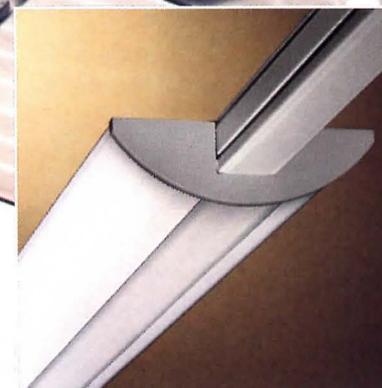
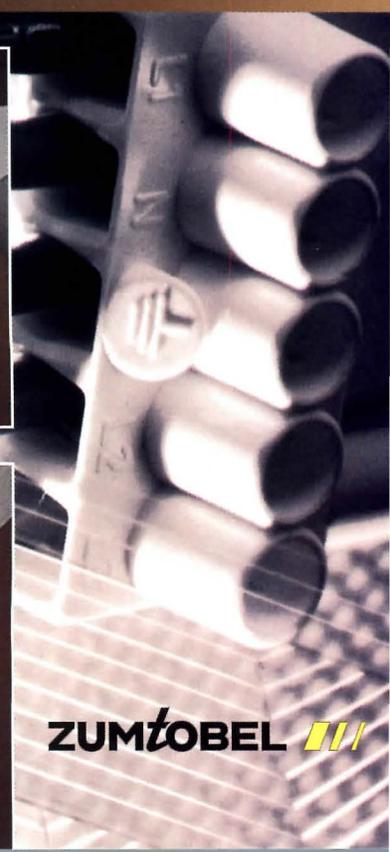
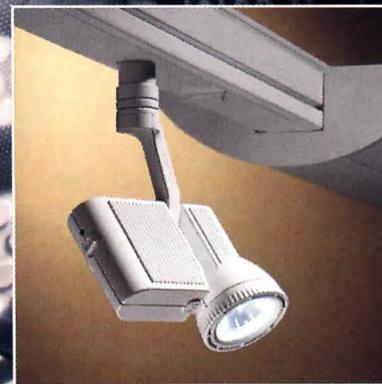


265



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266. Trunk-mounted series

The ZX Flexible Lighting System includes two attractive, but not intrusive, luminaires suitable for modern office and retail spaces. NRL gives asymmetrical wall-wash lighting; the ID-S0 (inset) is one of several indirect/direct options with solid or perforated steel sides and an opal acrylic center panel. All luminaires snap onto a powering trunk only 2-in. deep. Catalog demonstrates all fixture options: 800/932-0633. Zumtobel Staff Lighting, Highland, N. Y.

267. Halogen lighting

Tru-Aim Titan MR-16 halogen lamps should produce constant color quality over the rated lamp life—with no color shift or degradation, according to the manufacturer. The reflector has a hard, titanium-oxide coating that ensures constant white color, and uses a capsule that virtually eliminates UV rays. 508/750-2225. Osram Sylvania Inc., Danvers, Mass.

268. Recessed HID pull down

Designed for one ceramic-arc MH-35W or 70W PAR30L lamp, Juno's 8-in. recessed spot can rotate over 350 deg, and can aim to 90 deg vertically. Prewired with a 60Hz ballast; mounting frame is 17 3/4-in. long by 11 1/2-in. wide. Black baffle and white trim. 847/827-9880. Juno Lighting, Inc., Des Plaines, Ill.

269. Personal light control

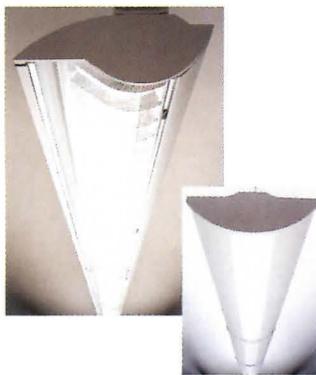
The Spacer light-control device can dim or switch incandescent or halogen lighting from anywhere in a room via infrared wireless remote control aimed at a wallbox dimmer. Can recall a preset light level, offers power-failure memory, and has a 10-second fade-to-off. Easy to install for single-pole or multi-location dimming. Useful for homes, offices, and restaurants; up to nine dimmers work on the same circuit. Lutron also makes remote-dimming systems for open-office fluorescent lighting. 610/282-3800. Lutron Electronics Co., Inc., Coopersburg, Pa.

270. Occupancy sensors

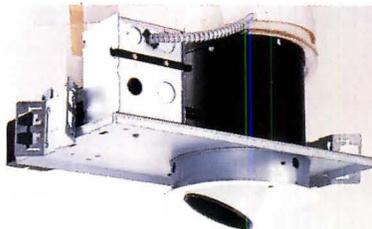
More responsive than infrared, two ultrasonic ceiling occupancy sensors offer directional monitoring or omnidirectional sensing. The 6878-1W senses occupancy in a 180-deg field, covering 1,000 sq ft, while a larger unit, 6878-2W, covers about 2,000 sq ft over 360 deg. An ambient-light override option keeps lights off when daylight is sufficient. Suitable for work-area cubicles, rest rooms, or partitioned spaces. 800/323-8920. Leviton Manufacturing Co., Inc., Little Neck, N. Y.

271. Cantilevered desk light

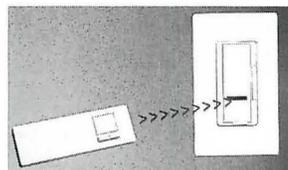
The Sonoma task light has a parabolic louvre to reduce glare off work surfaces and VDTs by directing light evenly. An 18-W CFL offers 10,000 hours of life, high lumen output, and a warm, 4100K color temperature; the light goes on at a finger touch. The counterbalanced arm is 34-in. long; an electronic ballast fits in the base. Finish options: black, silver, black marble, and wood grain. 847/520-1060. Waldmann Lighting Co., Wheeling, Ill. ■



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Readers using this index will find buildings entered in two ways: by architect's name and by building type.

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 Holbrook, Dana — “Is There a Quiet Place in the Alternative Office?” — No., pp. 54-57.
 Horst, Terrill & Karst, archt, Stecklein & Brungardt, associated archt — Tomanek Hall, Fort Hays State University, Hays, Kan. — July, BTS, pp. 92-93. Horton-Lees Lighting Design Inc., lighting dsgr; ELS/Elbasani & Logan Architects, archt — Eastridge Mall, San Jose, Calif. — May RL, pp. 24-25.
 Hoskin, John — “Building Boom Clouded by Oversupply and Traffic Congestion” — July, PR, p. 19.
 Hotels and Motels: Costa Rica Marriott, San Jose, Costa Rica — Zürcher Arquitectos, S. A., archt, Spillis Candela & Partners, Inc., associated archt — Oct. BTS, pp. 102-105. Hotel explora, Patagonia, Chile — Germán del Sol & José Cruz O. Arquitectos, archt — Oct., BTS, pp. 108-109. Hotel Mansfield, New York — Pasanella + Klein/Stolzman + Berg Architects, archt — Oct. BTS, pp. 106-107. “Hotels Are Back, but...” — Oct. BTS, p. 98. Hyatt Regency Hotel, Fukuoko, Japan — Michael Graves, archt, Fukuoko Jisho Company, Ltd., associate archt — Oct., BTS, pp. 99-101.
 Houses: Barnes House, Nanaimo, B. C. — Patkau Architects, archt — Apr. BTS, pp. 114-117. Bridge House Retreat, Olive Bridge, N. Y. — Peter Gluck and Partners, archt — Apr. BTS, pp. 84-89. Burnette Studio/House, Sunnyslope, Ariz. — Wendell Burnette, archt — “House Hovers Over Desert” — by Aaron Betsky — Apr. BTS, pp. 94-101. Capistrano Beach Glass House, Orange County, Calif. — Rob Wellington Quigley, archt — Apr. BTS, pp. 106-113. House in Toronto, Toronto — Shim-Sutcliffe, archt — Sept. BTS, pp. 104-107. Island House: Tikamaya, Decatur Island, Wash. — Miller/Hull Partnership, archt — Apr., BTS,

- pp. 80-83. Lott House and guest house, Houston, Tex. — Carlos Jimenez Architecture Studio, archt — Apr. BTS, pp. 90-93. Stremmel House, Reno, Nev. — Mack Architects, archt, Leo Parker, archt of record — Apr. BTS, pp. 70-79. Rural house for an artist and a writer, Nova Scotia — Richard Gluckman Architects, archt — Apr. BTS, pp. 102-105.
- Housing & Apartments: Gateway Gardens, Jakarta, Indonesia — Timothy Seow Group, archt — July, PR, p. 3. Homan Square, Chicago — Nagle Hartray Danker Kagan McKay Architects/Planners, archt — Jan. BTS, pp. 88-91. Los Esteros Apartments, San Jose, Calif. — Fisher-Friedman Associates, archt — Jan. BTS, p. 94-95. "Making Affordable Projects Work" — by H. Jane Lehman — Jan. BTS, pp. 86-87. Pusan Dang-gam Housing, Pusan, South Korea — Hak Sik Son, archt — July, PR, p. 3. SRO Residence, Brooklyn, N. Y. — Architrope, archt — Jan. BTS, pp. 92-93. Suzhou Garden Villas, Suzhou, China — Wong Chen Associates, archt, Suzhou Architectural Design, associate archt/engineer — July, PR, pp. 34-37.
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- IBI Group, archt — Fleetwood Civic Center, Surrey, B. C. — June BTS, p. 103.
- Ichniowski, Tom — "Courthouse Design: Growth Field Forms a Sure Market" — Mar. BTS, p. 98. "Upward Momentum for Infrastructure" — Nov., pp. 39,127.
- Illuminative Design Collaborative, lighting dsgr; John Lum Architecture, archt — Dr. Jimmy Fong Optometry, San Francisco — "Eyewear Shops Show Architect's Double Vision" — by Nayana Currimbhoy — Aug. RL, pp. 20-21
- Indicators: See *The Profession*.
- Industrial Buildings: Fore Systems, Warrendale, Pa. — Studios Architecture, archt — Dec. BTS, p. 23. Hewlett Packard, Roseville, Calif. — Bottom Duvivier, archt — Dec. BTS, p. 24. Miller SQA, Holland, Mich. — William McDonough + Partners, archt — "Furniture Maker's Sustainable Set" — by Robert Brueggemann — Dec. BTS, pp. 26-33. Northern Telecom, Santa Clara, Calif. — Studios Architecture, archt — "Boxes With a Twist" — by Aaron Betsky — Dec. BTS, pp. 40-43. Prince Street, Cartersville, Ga. — Thompson, Ventulett, Stainback & Associates, archt — Dec. BTS, pp. 44-49. Silicon Graphics Entry Site, Mountain View, Calif. — Studios Architecture, archt — "Agile Architecture" — by Aaron Betsky — May, pp. 72-79. Silicon Graphics, North Charleston Site, Mountain View, Calif. — Studios Architecture, archt — Dec. BTS, p. 23. Sto Regional Depot, Hamburg, Germany — Michael Wilford and Partners, archt, Rüdiger Franke, site supervising archt — Aug., pp. 102-107. Sun Microsystems, Menlo Park, Calif. — Backen Arrigoni & Ross, archt — Dec. BTS, p. 23. 3Com Building 500, Santa Clara, Calif. — Studios Architecture, archt — "Clip-Ons Enhance a Factory" — by Aaron Betsky — Dec. BTS, pp. 34-39. UWest, Morton Groves, Ill. — Valerio Dewalt Train Associates, archt — Sept. BTS, pp. 98-101.
- Interface Engineering, lighting dsgr; Thomas Hacker and Associates, archt — Saint Mary's Cathedral of the Immaculate Conception, Portland, Ore. — "Divine Inspiration" — by Nayana Currimbhoy — Aug. RL, pp. 24-25.
- Interiors: Bus Wellness Center, Santa Monica, Calif. — Steven Ehrlich Architects, archt — Sept. BTS, pp. 102-103. Clark Atlanta University Art Gallery, Atlanta — Scogin Elam and Bray Architects, Inc., archt — Sept. BTS, pp. 78-79. f/X Network Corporate Headquarters, Los Angeles — Fernau & Hartman Architects, archt — "Baywatch or Workplace?" — by Aaron Betsky — Sept. BTS, pp. 72-77. House in Toronto, Toronto — Shim-Sutcliffe, archt — Sept. BTS, pp. 104-107. Science, Industry and Business Library, The New York Public Library, New York — Gwathmey Siegel & Associates Architects, archt — Sept. BTS, pp. 84-91. Don and Sylvia Shaw Salon & Spa, Dunwoody, Ga. — Scogin Elam and Bray Architects, archt — Sept. BTS, pp. 80-83. UWest, Morton Groves, Ill. — Valerio Dewalt Train Associates, archt — Sept. BTS, pp. 98-101.
- Ivy, Robert, new editor in chief of *Architectural Record* — Nov., p. 11
- J**
- Jackaway, Adam — "Brighter Buildings for Great Britain" — Nov. RL, pp. 28-31.
- Jankowski, Wanda — "Sculpting Nightscapes Out of the Darkness" — Nov. RL, pp. 22-23.
- Jimenez, Carlos, Architecture Studio, archt — Lott House and guest house, Houston, Tex. — Apr. BTS, pp. 90-93
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- Kent, Cheryl — "Kleihues Defies Skepticism to Create Chicago Landmark" — Museum of Contemporary Art, Chicago — Josef P. Kleihues, Inc., archt, A. Epstein and Sons International, Inc., associate archt/engineer — Aug., pp. 80-87. "Medical Campus Gets a Meeting Place" — Eric P. Newman Education Center, Washington University, St. Louis, Mo. — Cannon, Architect, archt — Nov., pp. 94-97. "Softening Brutalism: Is Anything Lost?" — Aug., pp. 21-22.
- Kidd, Phillip E. — "Economy Won't Impede Growth" — Nov., p. 38.
- Killefer Flammang Purtil Architects, archt — Mid-Valley Regional Library, Los Angeles — June BTS, p. 102.
- Kim, Jinai — "Foreign Competition Sparks Debate" — July, PR, p. 8.
- Kitchens and Baths: See *The Profession*.
- Kleihues, Josef P., archt, A. Epstein and Sons International, associate archt/engineer — Museum of Contemporary Art, Chicago — "Kleihues Defies Skepticism to Create Chicago Landmark" — by Cheryl Kent — Aug., pp. 80-87.
- Klein Dytham Architects, archt — Video Sento, Tokyo — July, PR, p. 2.
- Kohn Pedersen Fox Associates, archt — Rodin Museum at Samsung Plaza, Seoul, South Korea — July, PR, p. 2.
- Koning Eizenberg Architecture, archt — Gilmore Bank, Los Angeles — Feb. BTS, pp. 72-75; Sepulveda Recreation Center Gymnasium, Los Angeles — June BTS, pp. 78-81.
- Korea Architects and Leonard Parker Associates, archt — Taegu Trade and Product Exhibition Center, Taegu, South Korea — July, PR, p. 2.
- Koretz, Barry, Associates, archt of record, Desgrippes Gobé & Associates, archt — The Rockport Store, New York City, May BTS mpp. 112-113.
- KZF Incorporated, archt and engineer; Michael Graves Architect, associated archt, Smith, Hinchman & Grylls, associated archt and engineer — Engineering Research Center, Cincinnati University, Cincinnati — July, BTS, pp. 86-91.
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- Lake/Flato Architects, archt — Great Northwest Branch Library, San Antonio, Tex. — "A Warehouse for Books" — by Gerald Moorhead — June BTS, pp. 68-73.
- Lapidus, Morris — "Lapidus Laughs Last" — by Beth Dunlop — Sept. BTS, pp. 92-97.
- Lay, Rodney E., & Associates, naval archt, Randy Burkett Lighting Design, lighting dsgr — American Queen, Mississippi River — "Capturing the Romance of River Boats" — by Nayana Currimbhoy — Aug. RL, pp. 18-19.
- Leers Weinzapfel Associates, archt, Chisholm Washington Associates, assoc archt — Robert White Youth Development Center, Boston — June BTS, pp. 88-91.
- Legorreta, Ricardo, masterplanner — National Center for the Arts, Mexico City — Mar. 78-79.
- Legorreta Arquitectos, archt — Central Services Building and Research Tower; National Center for the Arts, Mexico City — Mar., pp. 80-81. School of Visual Arts, National Center for the Arts, Mexico City — Mar., pp. 82-83.
- Lehman, H. Jane — "Making Affordable Projects Work" — Jan., BTS, pp. 86-87.
- Levinson, Nancy — "Fitting Harmony" — Forrester-Bowld Music Center, Phillips Exeter Academy, Exeter, N. H. — William Rawn Associates, Architects, Inc., archt — May, pp. 80-85. "Harvard Hub Takes on New Aura" — Memorial Hall restoration and renovation, Harvard University, Cambridge, Mass. — Venturi Scott Brown & Associates, archt, Brunner/Cott & Associates, associated archt, Robert G. Neiley, Architects, restoration archt — July, BTS, pp. 94-99.
- Libraries: Clayton Community Library, Clayton, Calif. — Simon Martin-Vegue Winkelstein Moris, archt — June BTS, pp. 74-77. Great Northwest Branch Library, San Antonio, Tex. — Lake/Flato Architects, archt — "A Warehouse for Books" — by Gerald Moorhead — June BTS, pp. 68-73. Mid-Valley Regional Library, Los Angeles — Killefer Flammang Purtil Architects, archt — June BTS, p. 102. Ross-University Hills Branch Library, Denver — Michael Brendle Architects, archt — June BTS, pp. 92-95. Science, Industry and Industry Library, The New York Public Library — Gwathmey Siegel & Associates Architects, archt — Sept. BTS, pp. 84-91.
- Light Source, lighting dsgr; John Lum Architecture, archt — Urban Eyes Optometry, San Francisco — "Eyewear Shops Show Architect's Double Vision" — by Nayana Currimbhoy — Aug. RL, pp. 22-23.
- Lighting: American Queen, Mississippi River — Rodney E. Lay & Associates, naval archt, Randy Burkett Lighting Design, lighting dsgr — "Cap-

turing the Romance of River Boats" — by Nayana Currimbhoy — Aug. RL, pp. 18-19. "Brighter Buildings for Great Britain" — by Adam Jackaway — Nov. RL, pp. 28-31. Centennial Olympic Park, Atlanta — "Light Games at the Olympics" — by Nayana Currimbhoy — Nov. RL, pp. 18-21. Coronado Shopping Mall, Albuquerque, N. M. — Brett Kratzer/Charles Aenlle/FRCH Architects, archt, Craig A. Roeder Associates, Inc., lighting dsgnr — by Nayana Currimbhoy — May RL, pp. 26-27. Eastridge Mall, San Jose, Calif — ELS/Elbasanai & Logan Architects, archt, Horton-Lees Lighting Design Inc., lighting dsgnr — May RL, pp. 24-25. The Edge Cafe, Colgate University, Hamilton, N. Y. — Einhorn Yaffee Prescott, Architecture and Engineering, archt and lighting dsgnr — "Lighting Lets the Mood Swing" — by Nayana Currimbhoy — Aug. RL, pp. 16-17. Fong, Dr. Jimmy, Optometry, San Francisco — John Lum Architecture, archt, Illumination Design Collaborative, lighting dsgnr — "Eyewear Shops Show Architect's Double Vision" — by Nayana Currimbhoy — Aug. RL, pp. 20-21. Ford Centre for the Performing Arts, Vancouver, British Columbia — Moshe Safdie Associates Ltd., archt, Suzanne Powadiuk Designs, architectural lighting dsgnr, Jules Fisher/Joshua Dachs Associates, Inc., theatrical lighting dsgnr — "A Theatrical Metaphor in Lights" — by Nayana Currimbhoy — Nov. RL, pp. 24-27. The Ionica Building, Cambridge, England — R.H. Partnership, archt, Cambridge Architectural Research Ltd., daylighting dsgnr — "Brighter Buildings for Great Britain" — by Adam Jackaway — Nov. RL, pp. 30-31. Jordan Hall, New England Conservatory of Music, Boston — Ann Beha Associates, archt, Charles Cosler Theatre Design, lighting dsgnr — Feb. RL, pp. 24-25. One Market Street Plaza, San Francisco — Cesar Pelli & Associates Architects, archt, Patri-Burlage-Merker, associate archt, Cline Bettridge Bernstein Lighting Design, lighting dsgnr — May RL, pp. 30-33. Padre Sierra Parish Church, Camarillo, Calif. — Albert C. Martin & Associates, archt, Architectural Lighting Design, lighting dsgnr — Feb. RL, pp. 14-17. Planet Hollywood, Walt Disney World, Orlando, Calif. — Rockwell Group, archt, Focus Lighting and Rockwell Group, lighting dsgnr — "Where Nostalgia Meets Sci-Fi" — by Nayana Currimbhoy — Feb. RL, pp. 18-23. PowerGen Headquarters, Coventry England — Bennetts Associates, archt — "Brighter Buildings for Great Britain" — by Adam Jackaway — Nov. RL, pp. 28-29. Saint Mary's Cathedral of the Immaculate Conception, Portland, Ore. — Thomas Hacker and Associates, archt, Interface Engineering, lighting dsgnr — "Divine Inspiration" — by Nayana Currimbhoy — Aug. RL, pp. 24-25. "Sculpting Nightscapes Out of the Darkness" — Wanda Jankowski — Nov. RL, pp. 22-23. Second Street Relighting, Phoenix, Ariz. — Freedman Tung & Bottomley, urban planner; Luminae Souter Lighting Design, lighting dsgnr — May RL, pp. 28-29. Urban Eyes Optometry, San Francisco — John Lum Architecture, archt, Light Source, lighting dsgnr — "Eyewear Shops Show Architect's Double Vision" — by Nayana Currimbhoy — Aug. RL, pp. 22-23.

Lighting Book Reviews: See *Book Reviews*.

Lighting Business: "Lighting Business Sparkles in '96" — by Lee Waldron — May RL, pp. 14,38. Lighting Editorials [by Charles Linn]: "Blinded by the Light? Me?" — Feb. RL, p. 13. "Good Lighting a Key Component of Renewal for Public and Private Spaces" — May RL, p. 23. Lighting Products: See *The Profession*. Lighting Regulations: "Utility Regulation: The Uncertain Future" — by Lindsay Audin — Feb. RL, p. 9. Lighting Specifications: "Bid Packages, Knockoffs, the the Theft of Intellectual Property" — by Bruce Thompson — Nov. RL, pp. 9-12. Lighting Technology: "Low-Tech Dimmers Meet Fluorescent" — by Lindsay Audin — Aug. RL, pp. 10,28. Liu, Eva — "Sluggish Economy and Relations With China Cloud Forecasts" — July, PR, p. 8. Luis & Associates and Perkins & Will, archt — AMA Tower, Manila — July, PR, p. 2. Lum, John, Architecture, archt, Illumination Design Collaborative, lighting dsgnr — Dr. Jimmy Fong Optometry, San Francisco; Light Source, lighting dsgnr — Urban Eyes Optometry, San Francisco — "Eyewear Shops Show Architect's Double Vision" — by Nayana Currimbhoy — Aug. RL, pp. 20-23. Luminae Souter Lighting Design, lighting dsgnr, Tung Freedman & Bottomley, urban planning — Second Street Relighting, Phoenix, Ariz. — May RL, pp. 28-29.

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MacCormac Jamieson Prichard, archt — Garden Quadrangle, St. John's College, Oxford, England — "History Lesson" — by Hugh Aldersey-Williams — Mar., pp. 92-97. Mack Architects, archt, Leo Parker, archt of record — Stremmel House, Reno, Nev. — Apr. BTS, pp. 72-79. Maki and Associates, archt — Tokyo Church of Christ, Tokyo — "A Quiet Sanctuary by the Highway" — by Naomi R. Pollock. Malin, Nadav — "Some Old and Some New Sick-Building Culprits" — Feb., pp. 36-39. "Quiet Progress in Managing Environmental Toxins" — Sept., pp. 48-51. Maltzan, Michael, Architecture, archt — Mark Taper Center/Inner-City Arts, Los Angeles — Feb., BTS, pp. 78-83. Marchetto, Dean, & Associates, archt — Tonnelle Avenue Firehouse, North Bergen, N. J. — June BTS, p. 103. Martin, Albert C., & Associates, archt, Architectural Lighting Design, lighting dsgnr — Padre Sierra Parish Church, Camarillo, Calif. — Feb. RL, pp. 14-17. Associate archt/engineer, Moshe Safdie and Associates, archt — Skirball Cultural Center, Los Angeles — Aug., pp. 94-101. McDonough, William, + Partners, archt — Miller SQA, Holland, Mich. — "Furniture Maker's Sustainable Setting" — by Robert Bruegmann — Dec. BTS, pp. 26-33. McNeece, Ltd.; MET Studios, designers — Queen Elizabeth 2, Southampton, England — Feb., BTS, pp. 98-99. MET Studios; McNeece, Ltd., designers — Queen Elizabeth 2, Southampton, England — Feb., BTS, pp. 98-99.

Miller/Hull Partnership, archt — Island House: Tikamaya, Decatur Island, Wash. — Apr. BTS, pp. 80-83. Archt — Olympic College Shelton, Shelton, Wash. — "A True Community College" — by Sheri Olson — Nov., pp. 90-93. Mockbee, Samuel — Mar., p. 74. Moore/Anderrson Architects, archt, Olson Sundberg Architects, associate archt — Washington State History Museum, Tacoma, Wash. — Oct., pp. 70-77. Moorhead, Gerald — "A Warehouse for Books" — Great Northwest Branch Library, San Antonio, Tex. — Lake/Flato Architects, archt — June BTS, pp. 68-73. Moreno, Elena Marcheso — "Coping With Threats From Bombs to Break-Ins" — Mar., pp. 44-45,111. "EIFS: Detailing That Weathers Better" — Nov., pp. 42-43. "The Market's Buying Green" — Jan., pp. 24-29. Morphosis, archt — Salick Health Care, Los Angeles — Feb., BTS, pp. 62-65. Murray, Robert, and Kermit Baker — "Two Crystal Balls" — June, pp. 36-39. Museums: Clark Atlanta University Art Gallery, Atlanta — Scogin Elam and Bray Architects, Inc., archt — Sept. BTS, pp. 78-79. Logan Anthropology Museum, Beloit College, Beloit, Wisc. — Dagit-Saylor Architects, archt — Feb. BTS, pp. 98-99. Museum of Contemporary Art, Chicago — Josef P. Kleihues, Inc., archt, A. Epstein and Sons International, Inc., associate archt/engineer — "Kleihues Defies Skepticism to Create Chicago Landmark" — by Cheryl Kent — Aug., pp. 80-87. Museum of Contemporary Art, San Diego, La Jolla, Calif., renovation and expansion — Venturi, Scott Brown & Associates, archt, David Raphael Singer, associate archt — Aug., pp. 88-93. Rodin Museum at Samsung Plaza, Seoul, South Korea — Kohn Pedersen Fox Associates, archt — July, PR, p. 2. Skirball Cultural Center, Los Angeles — Moshe Safdie and Associates, archt, Albert C. Martin and Associates, associate archt/engineer — Aug., pp. 94-101. Washington State History Museum, Tacoma, Wash. — Moore/Anderrson Architects, archt, Olson Sundberg Architects, associate archt — Oct., pp. 70-77. The Wolfsonian, Miami Beach, Fla. — Mark Hampton, archt — Feb. BTS, pp. 86-91.

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Nadel Architects, archt — Union Rescue Mission, Los Angeles — Nov. BTS, pp. 112-113. Nadel, Barbara A. — "Health-Care Prognosis: Change" — June, pp. 43,114. "Prison Design: Elusive Opportunities in a Big Field" — Mar. BTS, p. 99. Nagle Hartray Danker Kagan McKay Architects/Planners, archt — Homan Square, Chicago — Jan. BTS, pp. 88-91. NBBJ, archt — Key Arena, Seattle, Wash. — Feb., pp. 42-47. Neiley, Robert G., Architects, restoration archt, Venturi Scott Brown & Associates, archt, Brunner/Cott & Associates, associated archt — Memorial Hall restoration and renovation, Harvard University, Cambridge Mass. — "Harvard Hub Takes on New Aura" — by Nancy Levinson — July, BTS, pp. 94-99.

- Neumann/Smith Associates, archt — Kent County Correctional Facility, Grand Rapids, Mich. — Mar. BTS, pp. 104-107.
- Novitski, B. J. — "Merging Virtual Technologies Change the Rules of Collaboration" — Oct., pp. 46-51. "The Web Takes Off" — pp. 48-51.
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- Office Buildings, High Rise: AMA Tower, Manila — Perkins & Will and Luis & Associates, archt — July, PR, p. 2. MegaWorld Place, Manila — Skidmore, Owings & Merrill, archt — July, PR, p. 3. NTT Shinjuku Head Office Building, Tokyo — Cesar Pelli & Associates, archt, Yamashita Sekkei, archt of record — "Pushing the Envelope" — by Naomi Pollock — July, PR, pp. 30-33. Olympia Plaza, Hong Kong — Wong Tung & Partners, archt — July, PR, p. 3. Suntec City, Singapore — Tsao & McKown, archt, DP Architects, archt of record — May, pp. 86-95. TNB Corporate Tower, Kuala Lumpur, Malaysia — RTKL Associates and GDP Architects, archt — July, PR, p. 3.
- Odle, McGuire & Shook Corp., archt — Showers Center, Bloomington, Ind. — Feb. BTS, pp. 92-95.
- Office Buildings, Low Rise: Celebration Place, Celebration, Fla. — Aldo Rossi/Studio di Architettura, archt, Smallwood, Reynolds, Stewart, Stewart & Associates, assoc archt — Jan., pp. 56-63. f/X Networks Corporate Headquarters, Los Angeles — Fernau & Hartman Architects, archt — "Baywatch or Workplace" — by Aaron Betsky — Sept. BTS, pp. 72-77. Gilmore Bank, Los Angeles — Koning Eizenberg Architecture, archt — Feb., BTS, pp. 72-75. The Ionica Building, Cambridge, England — RH Partnership, archt, Cambridge Architectural Research Ltd., daylighting dsgnr — "Brighter Buildings for Great Britain" — by Adam Jackaway — Nov. RL, pp. 30-31. Korea Development Bank, Seoul, South Korea — DMJM/Keating and Hee-Rim Architects, archt — July, PR, p. 3. National Minority AIDS Council Headquarters, Washington, D. C. — CORE, archt — Feb. BTS, pp. 96-97. PowerGen Building, Coventry, England — Bennetts Associates, archt — "Brighter Buildings for Great Britain" — by Adam Jackaway — Nov. RL, pp. 28-29. Showers Center, Bloomington, Ind. — The Odle McGuire & Shook Corp., archt — Feb., BTS, pp. 92-95.
- Office Buildings, Mid Rise: Beijing American Center, Beijing — Rafael Viñoly Architects, archt — July, PR, p. 2.
- Office Practice: See *The Profession*.
- Olson, Sheri — "Balancing the Equation" (family leave) — Mar., pp. 24-27. "Fees: Wider Service Scope Promises Profits" — July, pp. 44-46. "Structure Both Revealed and Concealed" (wood details) — May, pp. 40-45. "A True Community College" — Olympic College Shelton, Shelton, Wash. — The Miller/Hull Partnership, archt — Nov., pp. 90-93.
- Offices: "Is There a Quiet Place in the Alternative Office?" — by Dana Holbrook — Nov., pp. 54-57.
- Olson Sundberg Architects, associate archt, Moore/Anderrson Architects, archt — Washington State History Museum, Tacoma, Wash. — Oct., pp. 70-77.
- Opinion: "The Boldness Gap: Why America Is Falling Behind Other Countries" — by Robert Campbell — Nov., pp. 76-79.
- Orlando Alonso Architects, archt of record, Hardy Holzman Pfeiffer Associates, archt — Exxon Service Station, Lake Buena Vista, Fla. — Oct., pp. 94-97.
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- Pacific Rim section, July, PR pp. 1-37 (between pp. 108-148).
- "Beating the Clock: Rapid Construction in Asia" — by Katherine Kai-sun Chia — pp. 26-27.
- Australia/New Zealand: "Bumpy Road to Recovery Includes Some Highs" — p. 17.
- China: Beijing American Center, Beijing — Rafael Viñoly Architect, archt — p. 2. "Uncertain Politics Don't Stop Foreign-Trained Architects From Returning Home" — by Greg Hall — p. 5.
- Hong Kong: "The Chinese Are Coming! The Chinese Are Coming! Will It Make Any Difference?" — by Zofia Rybowski and John Seel — p. 23. Olympia Plaza — Wong Tung & Partners, archt — July, PR, p. 3. Suzhou Garden Villas, Suzhou — Wong Chen Associates, archt, Suzhou Architectural Design, associate archt/engineer — pp. 34-37.
- Indonesia: "Deregulation and Infrastructure Investment Drive Economic Transformation" — by Nigel Simmonds — p. 7. Gateway Gardens, Jakarta — Timothy Seow Group, archt — p. 3.
- Japan: "Economy Shows Signs of Life as Public Building Leads the Way" — by Naomi Pollock — p. 24. NTT Shinjuku Head Office Building, Tokyo — Cesar Pelli & Associates, archt, Yamashita Sekkei, archt of record — "Pushing the Envelope" — by Naomi Pollock — July, PR, pp. 30-33. Video Sento, Tokyo — Klein Dytham Architects, archt — July, PR, p. 2.
- Malaysia: "High-Rise Office and Infrastructure Projects Fuel Building Boom" — by Robert Powell — p. 15. TNB Corporate Tower, Kuala Lumpur — RTKL Associates and GDP Architects, archt — p. 3.
- Philippines: AMA Tower, Manila — Perkins & Will and Luis & Associates, archt — p. 2. MegaWorld Place, Manila — Skidmore, Owings & Merrill, archt — p. 3. "Political Stability and Economic Reform Provide Platform for Major Development" — by Zofia Rybowski and John Seel — p. 10.
- Singapore: "Housing Remains Strong in Both Private and Public Sectors" — by Carol Clark — p. 10.
- South Korea: "Foreign Competition Sparks Debate" — by Jinai Kim — p. 8. Korea Development Bank, Seoul — DMJM/Keating and Hee-Rim Architects, archt — p. 3. Pusan Dong-gam Housing, Pusan — Hak Sik Son, archt — p. 3. Rodin Museum at Samsung Plaza, Seoul — Kohn, Pedersen Fox Associates, archt — p. 2. Taegu Trade and Product Exhibition Center, Taegu — Leonard Parker Associates and Korea Architects, archt — p. 2.
- Taiwan: Sluggish Economy and Relations With China Cloud Forecasts" — by Eva Liu — p. 8.
- Paradigm, associate archt, Skidmore, Owings & Merrill, Chicago, archt — Washington University Psychology Building, Saint Louis, Mo. — July, BTS, pp. 84-85.
- Thailand: "Building Boom Overclouded by Oversupply and Traffic Congestion" — by John Hoskin — p. 19.
- Vietnam: "Not Yet a Tiger, But Ready to Grow" p. 17.
- Parker, Leo, archt of record, Mack Architects, archt — Stremmel House, Reno, Nev. — Apr. BTS, pp. 72-79.
- Parker, Leonard, Associates and Korea Architects, archt — Taegu Trade and Product Exhibition Center, Taegu, South Korea — July, PR, p. 2.
- Parking Structures: Cinema and Parking Complex, National Center for the Arts, Mexico City — Sordo Madaleno Arquitectos, archt — Mar., p. 91.
- Parks: Centennial Olympic Park, Atlanta — "Light Games at the Olympics" — by Nayana Currimbhoy — Nov. RL, pp. 18-21. One Market Street Plaza, San Francisco — Cesar Pelli & Associates, archt, Patri-Burlage-Merker, associate archt, Cline Bettridge Bernstein Lighting Design, lighting dsgnr — May RL, pp. 30-33.
- Pasanella + Klein/Stolzman + Berg Architects, archt — Mansfield Hotel, New York — Oct. BTS, pp. 106-107.
- Patkau Architects, archt — Barnes House, Nanaimo, B. C. — Apr. BTS, pp. 114-117.
- Parti-Burlage-Merker, associate archt, Cesar Pelli & Associates, archt, Cline Bettridge Bernstein Lighting Design, lighting dsgnr — One Market Street Plaza, San Francisco — May RL, pp. 30-33.
- Pelli, Cesar, & Associates, archt, Yamashita Sekkei, archt of record, NTT Shinjuku Head Office Building, Tokyo — "Pushing the Envelope" — by Naomi Pollock — July, PR, pp. 30-33. Patri-Burlage-Merker, associate archt, Cline Bettridge Bernstein Lighting Design, lighting dsgnr — One Market Street Plaza, San Francisco — May RL, pp. 30-33.
- Pepchinski, Mary — "Crystal Palace for Reborn Trade Center" — Neue Messe Leipzig, Leipzig, Germany — von Gerkan, Marg and Partner, archt — Nov., pp. 80-89.
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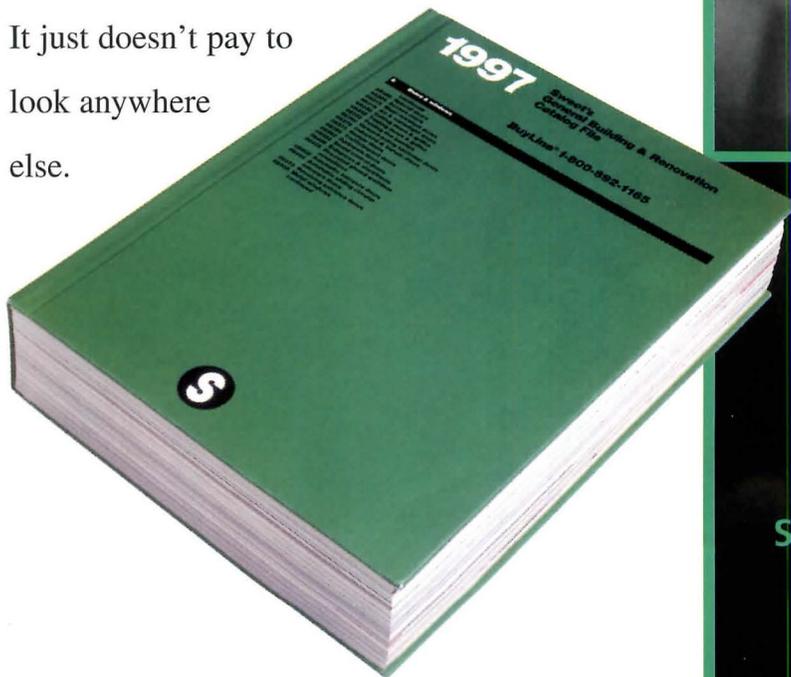
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- Veltman, Ruard, Thomas Tretheway, Steven Durden, archt — Yancey Chapel, Hale County, Ala. — Mar., pp. 75-77.
- Venturi, Scott Brown & Associates, archt, Brunner/Cott & Associates, associated archt, Robert G. Neiley, Architects, restoration archt —
- Memorial Hall restoration and renovation, Harvard University, Cambridge, Mass. — "Harvard Hub Takes on New Aura" — by Nancy Levinson — July, BTS, pp. 94-99. David Raphael Singer, associate archt — Museum of Contemporary Art, San Diego, La Jolla, Calif., renovation and expansion — Aug., pp. 88-93.
- Viñoly, Rafael, Architects, archt — Beijing American Center, Beijing, China — July, PR, p. 2
- von Gerkan, Marg and Partner, archt — Neue Messe Leipzig, Leipzig, Germany — Crystal Palace for Reborn Trade Center" — by Mary Pepchinski — Nov., pp. 80-89.
- W**
- Waldron, Lee — "Lighting Business Sparkles in '96" — May RL, pp. 14,38.
- Wilford, Michael, and Partners, archt, Rüdiger Franke, site supervising archt — Sto Regional Depot, Hamburg, Germany — Aug., pp.102-107.
- Wong Chen Associates, archt, Suzhou Architectural Design, associate archt/engineer — Suzhou Garden Villas, Suzhou, China — July, PR, pp. 34-37.
- Wong Tung & Partners, archt — Olympia Plaza, Hong Kong — July, PR, p. 3.
- Wood Details: See *The Profession*.
- X - Y - Z**
- Yamashita Sekkei, archt of record, Cesar Pelli & Associates, archt — HTT Shinjuku Head Office Building, Tokyo — "Pushing the Envelope" — by Naomi Pollock — July, PR, pp. 30-33.
- Zürcher Arquitectos, S. A., archt, Spillis Candela & Partners, Inc., associated archt — Costa Rica Marriott, San Jose, Costa Rica — Oct. BTS, pp. 102-105. ■

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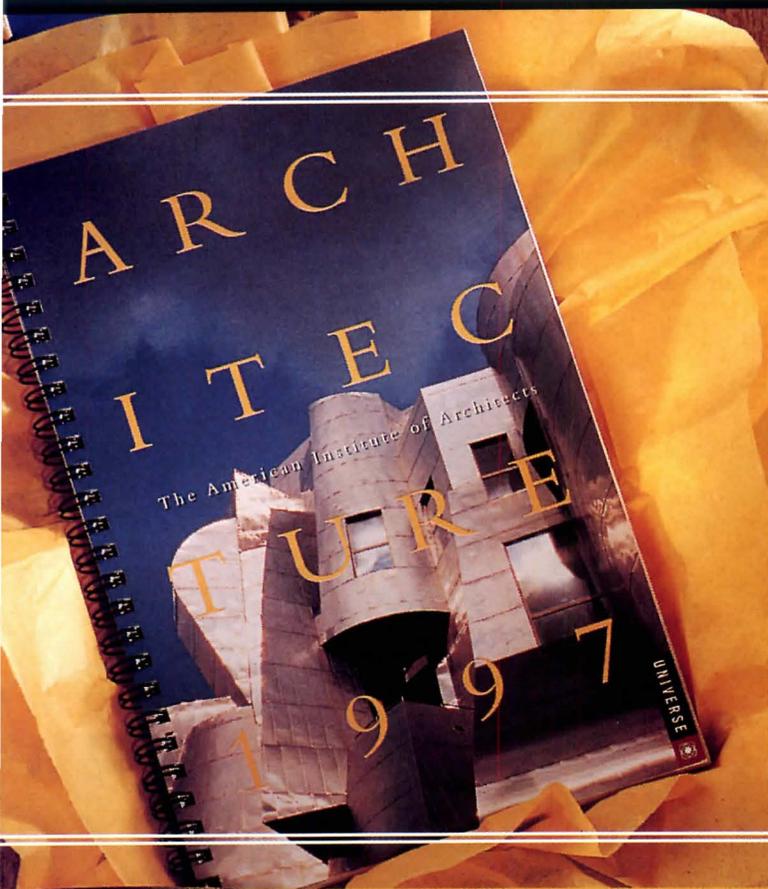
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Manufacturers' Sources

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

Pages 26-33

Miller/SQA Building, Holland, Mich.
William McDonough+Partners, Architects
Curtain wall and windows: Vistawall Architectural Products. Glazing: Viracon. Ballasted-membrane roof: Carlisle SynTec System. Mechanically fastened roof: Sarnafil. Brick: Glen-Gery. Interior doors: Steelcraft; Oshtemo Hill, Inc. (wood doors). Locksets: Corbin-Russwin. Hinges: Stanley. Closers: Norton. Exits: Von Duprin. Cabinet hardware: Häfele. Carpeting: Interface. Acoustic ceiling and suspension grid: Armstrong World

Industries. Paints: American Formulating & Mfg.; Benjamin Moore & Co. (Pristine). Tile: Summitville Tile. Furnishings (throughout): SQA; Herman Miller. Upholstery: Deepa. Interior lighting: Lithuania (factory); Zumtobel (office space). Downlighting: Lightolier, Inc. Exterior luminaires: McGraw-Edison. Occupancy-activated light controls: Watt-Stopper.

Pages 34-39

3Com Building 500
Santa Clara, Calif.
Studios Architecture, Architect
Profiled-metal cladding: Robertson/Ceco. Curtain wall: Walters & Wolf. EIFS: Dryvit Systems, Inc. Glazing: PPG Industries, Glass Group. Fire-control doors: Cookson. Special doors: Openings, Inc. (Total Door). Acoustical ceiling: Armstrong World

Industries. Grid: Chicago Metallic. Laminate surfaces: Abet-Laminati. Locksets: Schlage. Closers: Norton. Conductive resilient flooring: Forbo Industries, Inc. Carpeting: Prince Street. Office panel system: Teknion (Transit System). Indirect lighting: Peerless Lighting.

Pages 40-43

Northern Telecom Mission Park Facility, Santa Clara, Calif.
Studios Architecture, Architect
Entry curtain wall: Walters & Wolf Glass. Cladding at entry: Metallic paint over EIFS. Aluminum windows and entrance: The Kawneer Co. (Trifab II 400). Glazing: PPG Industries, Glass Group. (Graylite, Solarbronze). Labeled glass: Technical Glass Products (Firelite). Barrel-vault skylights: O'Keeffe's. Interior railings: custom by architects. Special doors: Openings, Inc. (Total Door). Overhead coiling doors: Cookson Door Co. Locksets: Schlage Lock Co. Hinges: McKinney. Closers: LCN. Acoustical ceilings: Capaul (Vinylrock); Armstrong World Industries (Second Look II). Grid: Chicago Metallic. Corrugated-metal panel ceiling: Alpro Acoustics. Atrium paneling: Decoustics. Integral-color plaster: Area Code. Laminate surfaces; Nevamar. Office furniture: Steelcase; Herman Miller. Indirect lighting: Peerless Lighting.

Pages 44-49

Prince Street, Cartersville, Ga.
Thompson, Ventulett, Stainback & Associates, Architect
Yellow and blue brick: Boral Brick; Endicott Clay. Aluminum storefronts and entrance: Vistawall Architectural Products. Translucent corrugated fiberglass panels: Resolite. EPDM roof: Firestone Building Products. Roof-edge coping: MM systems. Glazing: PPG Industries, Glass Group. Dome and vault skylights: Naturalite/EPI Skylight Systems. Locksets and butt hinges: PDQ Industries, Inc. Pulls and cabinet hardware: Forms+Surfaces. Grid and acoustic ceilings: Armstrong World Industries. Custom cabinetry: Pixie Caseworks. Opaque stains: Porter Paint. Linoleum flooring: Forbo Industries, Inc. Carpeting: Prince Street. Lounge seating: Archipelago. Standing lamps: Artemide, Inc. Conference seating: Herman Miller (Burdick). Sconces: custom by architect. Direct/indirect lighting fixtures: Finelite.

Addendum

The point-supported glazing system designed for the Leipzig Trade Fair Center, Leipzig, Germany [RECORD, November 1996, pgs 80-89] was fabricated by MERO Raumstruktur, and is available in the United States from MERO Structures, Inc., Germantown, Wis.

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and developer-built residential units, and three sessions of plan-review workshops targeted toward builders to help them work more effectively with architects. Call 800/368-5242.

Through February 16

An exhibition at New York City's Metropolitan Museum of Art surveys the career of Charles Rennie Mackintosh, with 250 works that include photos and drawings of his buildings, furniture, textiles, and the reassembled Ladies' Luncheon Room from Miss Cranston's Ingram Street Tea Rooms. Call 212/535-7710.

Through February 23

"An American Embassy in Berlin" examines the recent competition for the American Embassy in the German capital. Models and drawings by all semi-finalists as well as the winners, Moore Ruble Yudell and Gruen Associates, are shown at the National Building Museum, Washington, D.C. Call 202/272-2448 or fax 202/272-2564.

March 6-8

Six PIAs (Professional Interest Areas) and the AIA risk-management committee is cosponsoring a conference, The Client Connection, at the Westin Tabor Center in Denver. It is endorsed by the AIA Denver, AIA Colorado, and the AIA Denver Design-build Committee. The conference will focus on ways architects can better serve their clients in over 30 seminars, workshops, and programs on design-build, construction and risk management, alternative futures in the profession, and information technology and communications. For information, call 202/626-7482.

March 19-21

WestWeek 97 will celebrate European furniture and interior design with major sponsors and keynote speakers from Italy, France, and Spain. Call Ann Videriksen at 310/657-0800 or fax 310/652-8576 for information.

Competitions

◆ Submissions to the biannual Rudy Bruner Award for Excellence in Urban Environment are

due December 13. First-prize winner receives \$50,000; honorariums of \$1,000 go to each of four additional finalists. Contact Bruner/Cott & Associates for an application or more information at 130 Prospect St., Cambridge, Massachusetts 02139; phone 617/492-8400 or fax 617/876-4002.

◆ The Gypsum Association is holding an Excellence in Gypsum Board Design and Construction competition; entries are due December 31. Top awards of \$3,000 go to each of the winning teams in non-residential and residential construction using gypsum board. Call 202/289-5440.

◆ The town of Vail, Colorado, is holding a juried competition for the design, renovation, and integration of a public-art project in a centrally located plaza. Project budget is \$300,000. Deadline for submissions is January 6. Call 970/479-8900 for details.

◆ Entries to the Spectrum International Design Competition, sponsored by the Tile Promotion Board, are due by January 31. Designers, architects, ceramic-tile manufacturers, and others who have influenced the use of ceramic tile are eligible to enter. There is a grand prize of \$2,500 for the most outstanding project, first prizes of \$1,500, and awards of merit of \$1,000 in residential and commercial categories. Call 800/495-5900 or fax 561/743-3160.

◆ The Little Bighorn Battlefield National Monument Advisory Committee is sponsoring a competition to design a monument in commemoration of the Indians who fought to preserve their land. The deadline for submissions is January 13. The first prize is \$50,000 and two other prizes are \$15,000 and \$5,000 each. The jury includes Arthur Amiotte, artist; Paul Hutton, historian; Richard Pohl, landscape architect; Kevin Red Star, artist; and Dennis Sun Rhodes, architect. To register, send a check for \$25 to Southwest Parks and Monument Association, Indian Memorial Design Competition, National Parks Service, IMFRRM.SSOO, P.O.B. 25287, Denver,

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The Crystal Palace succeeds where it was intended to—in the pages of a magazine and the abstract mindset of conceptualized technological expression—outside the day-to-day drudgery of the long-term consequences of reality. Contrast this (as RECORD did) with the next building in the issue—a small-budget academic building by Miller/Hull. It is quietly ingenious with an unperforated roof and even some insulation against the weather.

If “sustainability” means weak, if small budgets make for “compromised” buildings (as Campbell’s words are applied to these projects) then perhaps guilty as charged is the verdict. But there is one reality we should think about: If a structure does not keep the weather out, is it a building or sculpture?

Duo Dickinson

Madison, Connecticut

Robert Campbell’s article was one of the more thought-provoking pieces of architectural journalism I have read in some time. I now look at American architects quite differently than I used to.

Many of the well-known and influential archi-

itects in this country during the first half of this century were not, in spirit, American. Walter Gropius and Mies van der Rohe matured in a very different architectural climate. Both were in their 50s when they arrived here, hardly blank slates. No matter this country’s impact on them, they had a far greater impact on this country and the world. The influence from abroad continued through others such as Richard Neutra and Rudolf Schindler. While we debated styles, the Europeans debated how best to give form to the new world.

I am not ignoring Frank Lloyd Wright, who was America’s greatest architect. Schindler and Neutra worked for Wright and it shows in their work. But Wright was agrarian while the Europeans were urban. Wright’s work was filled with new ideas and forms; that is what got the attention of the Europeans. In the end, however, it was not Wright who taught the world how to redefine architecture. It was the Europeans.

By the early 1960s, some of their influence began to fade. Form began to lose its

newness. Robert Venturi admired the early modernists, but saw the revolution was over. Perhaps Louis Kahn took over the title of *the* American architect after the death of Wright. The presence of the Europeans here would continue to be felt however. The question we really need to ask is not what happened to American architecture, but, rather, what is *American* about American architecture?

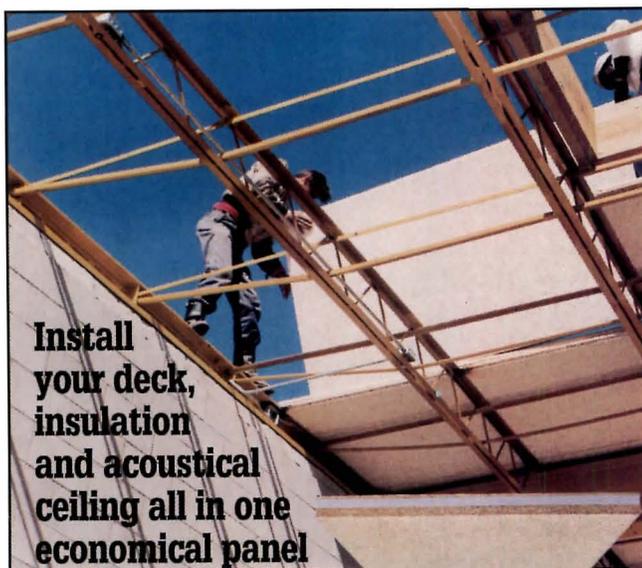
Frank L. Irte

Charlotte, North Carolina

Charles Moore goes on

I enjoyed Robert Ivy’s review of Moore-Anderson’s Washington State History Museum in Tacoma (RECORD, October 1996, pages 70-77). One comment stated: “Washington State History Museum can claim to be Charles Moore’s last project.” Now I am sure that you will soon hear from everyone that has an unbuilt Charles Moore project who believes theirs will be the last.

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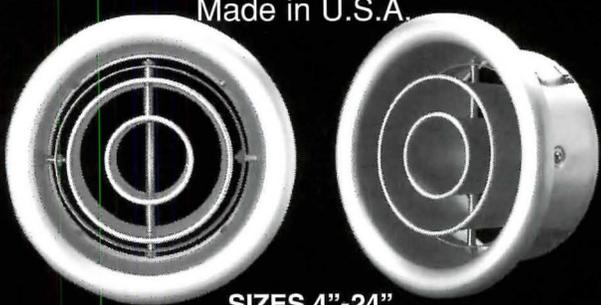
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nately Charles Moore died before we could obtain financing. Now it appears we will get our home built. So perhaps in the not-too-distant future, RECORD will have the opportunity to feature another last Charles Moore project built with an impossibly small budget and inexpensive materials, but delightful details and a festive air.

*Gary and Linda Citron
Pasadena, CA 91106*

Bad will in Peru

My first reaction to your two-page photo of the new U.S. Peruvian Embassy was "My god, what an ugly building." The following pages only reinforced that initial impression, as the details are devoid of grace and human scale.

If the current embassy guidelines say "Forget architecture as goodwill ambassador" and instead give the message "Keep out," it is not just a sad reflection of our times, it is a slap in the face to all who work for peace and cooperation among nations. This enormous ugly box towers like King Kong over the surrounding community, effectively destroying it. How would we react if another country built such a monster in one of our neighborhoods? Even with high security requirements, more sensitive solutions are certainly possible. It sounds like the architect tried, but was forced by the client agency into this simplistic solution. A single firm can only do so much. What is the AIA doing to help the FBO see that an embassy can be beautiful and respond to the scale of its context while still being secure?

I am ashamed that this building stands in another nation's capital and can only imagine how much damage it does to the positive feelings the inhabitants may have had about us.
*Cynthia Richardson, AIA
Richardson Architecture & Planning
Anacortes, WA 98221*

Note: ARCHITECTURAL RECORD may edit letters for errors, style, and length, taking care not to change meaning.

Calendar continued from page 143

Colorado 80226-0287. For information, call Barbara-Suttee at 800/969-2830 or send an e-mail to Barbara_Suttee@nps.gov.

◆ for an international two-stage competition to design the Oklahoma City Memorial is due by February 10. The new structure will stand on the site of the worst terrorist attack on U.S. soil—the bombing of the Alfred P. Murrah Federal Building on April 19, 1995.

Also included are a visitor center, which may be housed in an adjacent existing building. To register, send a letter requesting competition materials and a check for \$25 to International Design Competition, Oklahoma City Memorial Foundation, 420 North Robinson Avenue, Oklahoma City, Oklahoma 73102. Call 405/748-748-0515 locally or 800/491-3822 elsewhere.

◆ Entries for the 1997 DuPont Benedictus Awards for Innovation in Architectural Laminated Glass are due March 3. The competition is sponsored by DuPont, the AIA, and the Association of Collegiate Schools of Architecture, and is supported by the International Union of Architects. This year's jury is comprised of Hugh Newell Jacobson, FAIA; Patricia Patkau, RAIC; and Christian de Portzamparc. Winners from around the world who demonstrate "significant" uses of laminated glass will be announced at the AIA Convention in New Orleans, May 16-18. For information, write Joanna Hanes-Lahr, 1100 New York Avenue, N.W., Washington D.C. 20005; call 202/393-5247; or send e-mail to haneslahr@mcimail.com.

◆ The Village of Plainfield, Illinois together with Plainfield Partners Commercial, Ltd., and the township Park District are holding a one-stage competition for the design of a 300-acre town center to be located directly across the Du Page River from the historic downtown. Registration costs \$90 and closes March 30. Entries are due May 1. Prizes are \$10,000, first, \$5,000, second, and \$2,500, third. To register, send check or money order to Plainfield Design Competition, Village of Plainfield, 32145 West Lincoln Highway, Plainfield, Illinois 60544. For information, call 815/436-7093.

◆ Entries are due on April 1 in the one-stage International Design Competition for the Development of David's Island located in Long Island Sound. The sponsor is the College of New Rochelle. Registration before January 15 costs \$35 and \$50 thereafter. Jurors include Diana Agrest, Diana Balmori, Deborah Dietsch, Laurie Hawkinson, Michael Manfredi, and Bradford Perkins. Prizes totaling \$5,000 will be distributed among the winners whose entries will be exhibited at the New Rochelle Castle Gallery. For a competition brief, call the gallery at 914/654-5423.

Omission

The rendering of Anshen+Allen's Shanghai tower design [RECORD, October 1996, page 17] should have been attributed to Robert Watts Illustrator.

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St. Louis Gateway Arch,
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NEW ORLEANS

Continued from page 51

functional, stark environments result. The challenge for laboratory designers today is to provide "maximum durability and flexibility at minimum cost, with an eye towards how those facilities can support growth and change," notes William Bernstein, MRAIC, AIA, principal of New York City-based William N. Bernstein & Associates.

On many campuses, outdated, unsafe science buildings remain on-line well beyond their useful lives. However, lab buildings designed over 30 years ago are being renovated to reflect current programmatic, functional, and esthetic needs. Old labs are increasingly decommissioned as technical spaces and are converted to soft-support areas. Additions or adjacent freestanding new buildings can accommodate new spaces, offering more intense utility and engineering needs. Older buildings become backfill, housing basic benchtop research and computer labs.

Role of computers

"The speed of science is faster than ever, with more data, computers, more time on-line, and robotics doing repetitive functions. The dollars per square foot spent per person in laboratory research facilities is increasing in many organizations," observes Copenhagen. From a safety standpoint, researchers prefer keeping people out of lab environments and in clean, non-contaminated spaces.

Computers and instrumentation are playing larger roles in research. On-line access to data, science journals, and even experiments means researchers spend less time in libraries and labs hunched over notebooks and more time at computerized, ergonomically-designed office work stations. This shift translates into enhanced office environments built at far lower cost than would be possible by placing desks and office space within high-cost lab areas. Wet labs and desk bench space are decreasing, while lab-support and instrument-room space is increasing.

Planning trends

Meeting spaces and break rooms on each floor are no longer considered amenities, but integral functions in both corporate and academic lab facilities. Commercial labs foster intellectual exchange among investigators by providing parklike settings, waterfront views, and indoor atriums to encourage social interaction and cross-fertilization of ideas. Five to six years ago, researchers asked for more power and data connections. Today, these features are integral to new facilities. Continued emphasis on cellular and genetic

research will not drive any immediate design changes. Other lab design trends include: centralizing core support facilities, such as glasswashing, in one building location; centralizing common equipment storage rooms on each floor; and evaluating high-tech equipment utilization, so researchers share big-ticket items like electron microscopes.

Getting more by renovating

While fewer government research grants and less federal funding is available for new construction, some money is more readily available for swing-space, phasing, and renovation projects. Yale University, for example,

recently considered building a new 200,000 sq ft, \$70-million lab facility versus retrofitting 20,000 sq ft of existing space with new mechanical systems for \$7 million. The less-costly option won out.

"Renovated space is still functional, though not as flexible as new construction," Carmichael admits. Available land, project size, complexity, and rising costs will lead to more renovation. Alternatively, academic institutions can raise capital through fundraising, restructuring operations, and incurring debt, through tax-exempt bonds. ■

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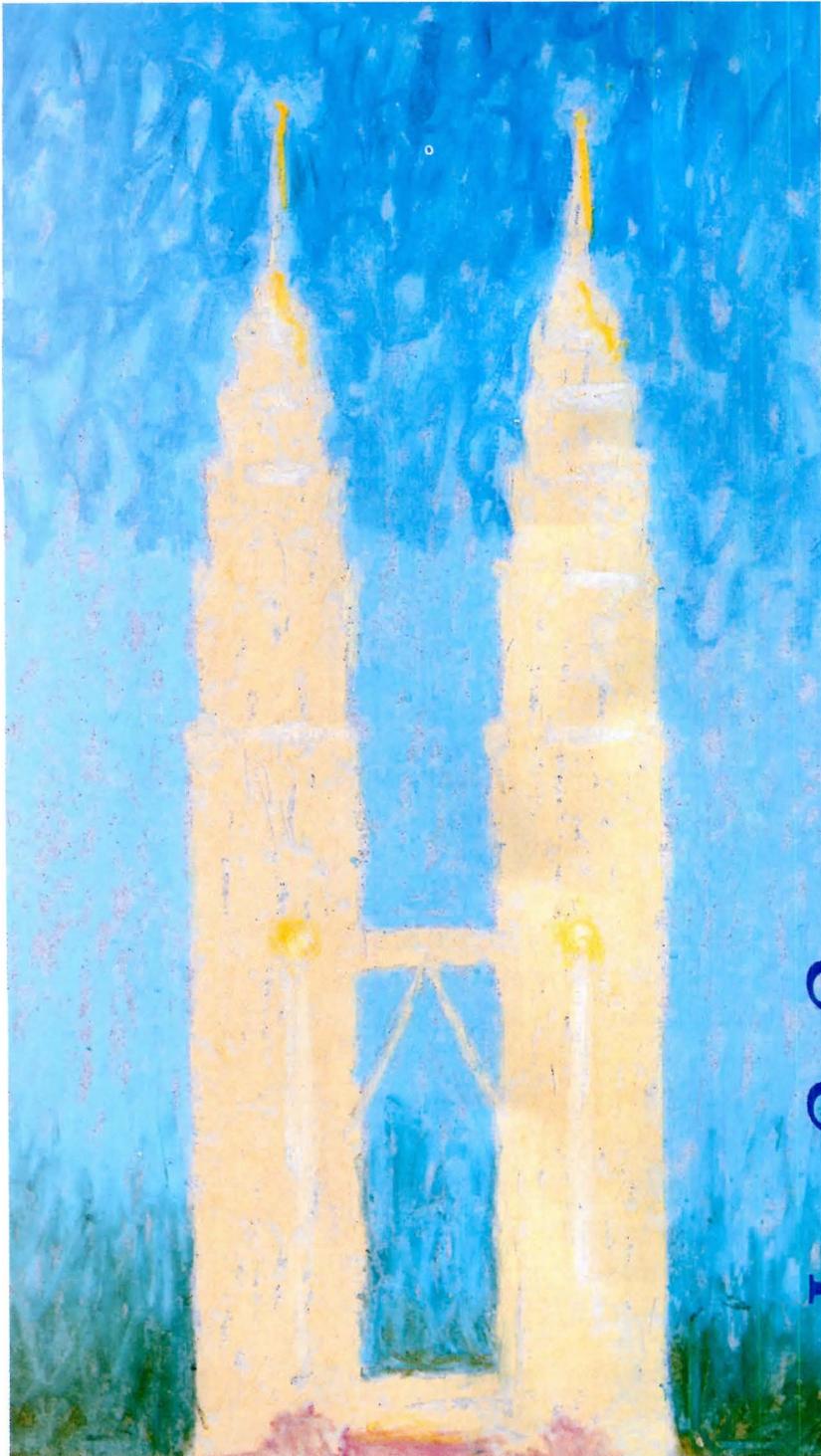


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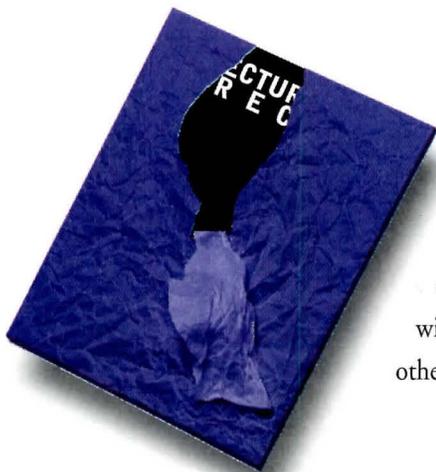
in Malaysia.

Sketch by Cesar Pelli,
Petronas Twin Towers,
Kuala Lumpur, Malaysia
Designed by Cesar Pelli & Associates



ARCHITECTURAL RECORD

January marks the high-visibility debut of a dynamic new design and exciting new features.



Even more than ever, *Architectural Record* provides an integrated editorial mix that is compelling and essential reading. The most widely read magazine for architects, owners and other members of the design team.

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ARCHITECTURAL RECORD

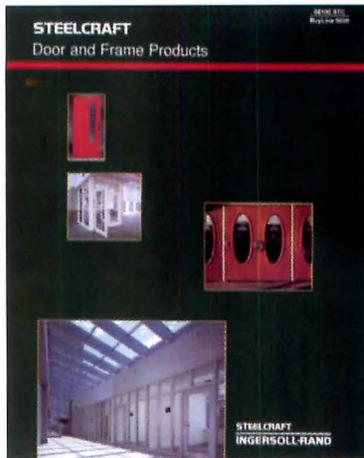
McGraw-Hill Construction Information Group

CATALOG PREVIEW '97

To Advertise Call: 1-800-544-7929
Fax: 212-512-2074

SteelCraft Product Guide #613

The Steelcraft Product Guide is designed with the architect, and design community in mind. Product specifiers can find basic door and frame specifications in a special chart. We have included a "Relative Cost Chart" that shows the cost comparison between various Steelcraft products. We include Steelcraft product specifications; fire label charts; door and frame selection charts; handling charts; and information service list.

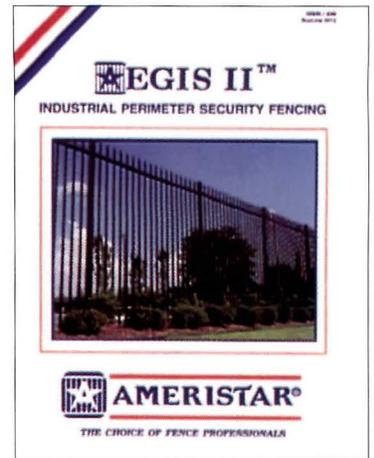


Steelcraft

Circle 51 on Inquiry card

EGIS II™

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



Circle 52 on Inquiry card

TOTAL DOOR® SYSTEMS by OPENINGS®

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



OPENINGS

Circle 53 on Inquiry card

Chadsworth's 1.800.Columns

A unique 44-page color "Idea Book" featuring an exciting collection of column projects from Classic to Contemporary for interior and exteriors. "Idea Book" Portfolio also includes Columns Product Portfolio. All this for just \$10 plus \$3 p/h from the column company selected #1 by Professional Builders readers. Product Portfolio \$5. Wood fiberglass, Polyester, E.P.S. & Stone, Round square, octagonal with plain or fluted shafts. Job site delivery, worldwide shipping, competitive prices. 1-800-COLUMNS. 1-800-265-8667.

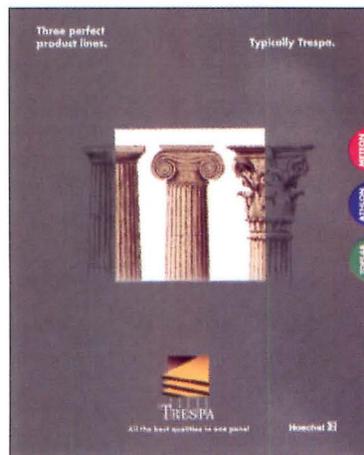


Chadsworth's

Circle 54 on Inquiry card

Trespa® Solid Composite Panels Three Product Lines

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



Hoechst Celanese Corp.

Circle 55 on Inquiry card

Concrete Waterproofing by Crystallization

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



Xypex Chemical Co.

Circle 56 on Inquiry card

CATALOG PREVIEW '97

Introducing The New Alpha Collection

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



Surface Design

Circle 57 on Inquiry card

Decorative, Thin-Film Intumescent Fireproofing

Now certified for beams and columns for ratings up to 2 hours! A/D Firefilm permits the designer to use the appearance of exposed steel with the steel fully protected from fire. It is applied as a thin-film coating 0.4 to 3 mm (0.02 to 0.12 in.) thick. During a fire A/D Firefilm expands to form a meringue-like layer up to 100 mm thick, which insulates the steel from the fire. The top-coat is available in a wide choice of colours. A/D Fire Protection Systems, Inc. 416-292-2361.

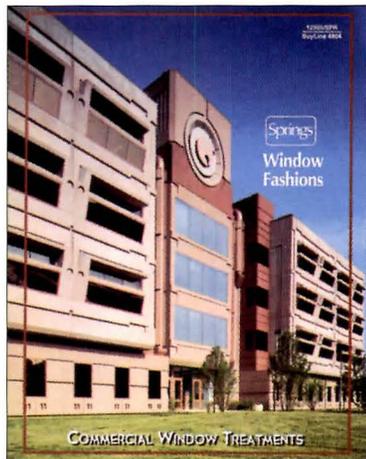


A/D Fire Protection

Circle 58 on Inquiry card

Commercial Window Treatments

Springs Windows Fashions manufactures Bali, Graber and Nanik window treatments for commercial applications. Products include horizontals, verticals, pleated/cellular shades and drapery hardware. Now available, fire retardant cellular shade fabric for our Graber CrystalPleat shades. Architects and specification writers, call Spacefax (800-327-9798) for answers to technical questions or specification sheets.

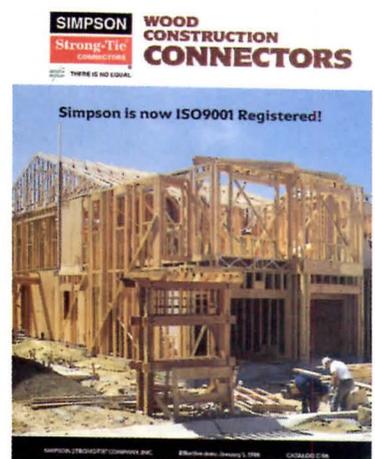


Springs Window

Circle 59 on Inquiry card

12 New Products Featured in 1997 Catalog

12 new products are introduced in Strong-Tie's '97 catalog, Wood Construction Connectors. A necessary reference for structural engineers, building officials, and architects, the catalog includes updated specifications, load charts, application drawings, and building code acceptance - plus information on holdown anchorage design, and available custom hanger options. ISO9001 Registered. For a copy of the 1997 catalog (C-97), write Simpson Strong-Tie Company, PO Box 10789, Pleasanton, CA 94588



Simpson Strong-Tie

Circle 60 on Inquiry card

Accessible Lavatory Insulation

A full color catalog will explain the different Handy-Shield safety covers offered for the new or retrofit projects that need to comply with the American Disabilities Act. The specific use, sample specifications, drawings and color choice are all summarized in this easy to understand catalog.



Plumberex

Circle 61 on Inquiry card

New Fireplace Tested as a Wall Furnace

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

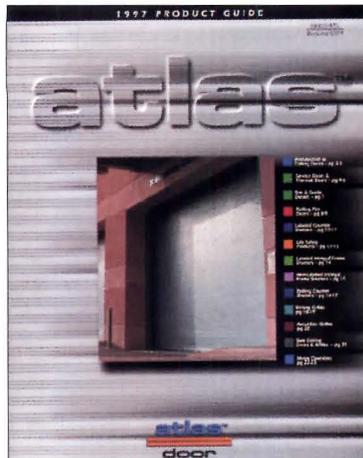


Heat-N-Glo

Circle 62 on Inquiry card

**1997 Atlas™
 Product Catalog**

Atlas Door's new, 24-page product catalog has been completely redesigned and is available for distribution. All products are color and icon coded for easy reference including: rolling service doors, thermal doors, fire & life safety doors, counter shutters, grilles, and motor operators. General and specific design considerations are addressed including ASCE-7 wind load compliance. Contact Tim Rudd @ 800-282-2260, ext. 3566.

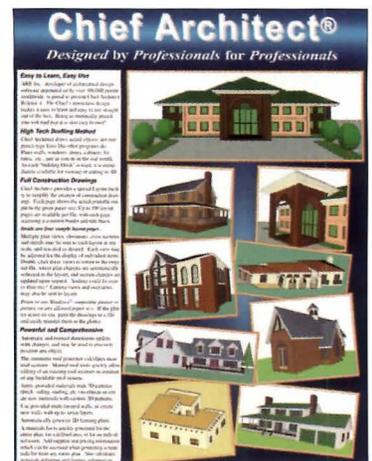


Atlas Door Corporation

Circle 63 on Inquiry card

**Advanced Relational
 Technology, Inc.**

Chief Architect proves that top quality architectural software can be easy to learn. Straight out of the box, Chief simplifies the process of creating full working drawings. Over 300,000 people worldwide prefer ART's architectural software with its full 3-D capabilities. Advanced Relational Technology, Inc. 3731 N. Ramsey Road, Suite 150, Coeur d'Alene, ID 83814. Phone: (800) 482-4433, Fax (208) 664-1316 E-mail: artchief@chiefarch.com - WWW: www.chiefarch.com



ART

Circle 64 on Inquiry card

**Raymond Enkeboll
 Designs ©1996**

Crafts an extensive array of Architectural elements carved in solid woods. 104 pg. Color Product Catalog, shows a selection of capitols, corbels, moldings, onlays, panels, etc. Stocked in Maple and Red Oak, available for immediate delivery. Spiral Bound catalog \$20, Special binder version \$30. Visa & MC welcome. Complimentary brochure available. Raymond Enkeboll Designs 16506 Avalon Blvd. AR12, Carson, CA 90746. Phone: (310) 532-1400 Fax: (310) 532-2042



Raymond Enkeboll

Circle 65 on Inquiry card

**IBM CATIA/CADAM
 Solutions**

Let IBM's CATIA/CADAM AEC Plant Solutions (CCPlant) streamline your plant design, construction, and operation processes. CCPlant provides plant owners, operators, engineering and construction firms access to engineering and design data across their businesses. For more information about CCPlant call 1-800-395-3339 or e-mail us at: peravage@vnet.ibm.com

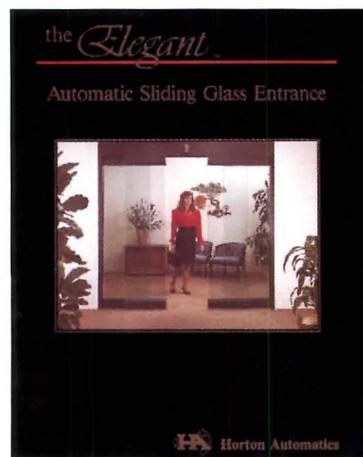


IBM

Circle 66 on Inquiry card

Door Operators

Horton Automatic EasyAccess™ Series 7000 and Series 4000 LE Automatic Swing Door Operators make complying with Americans With Disabilities Act "Easy" and "Accomplishable". These automatic swing door operators can be installed to most existing doors and require no structural modifications. Installation of either operator helps create an affordably priced, barrier-free entrance. **Automatic operation with a push of a button.**

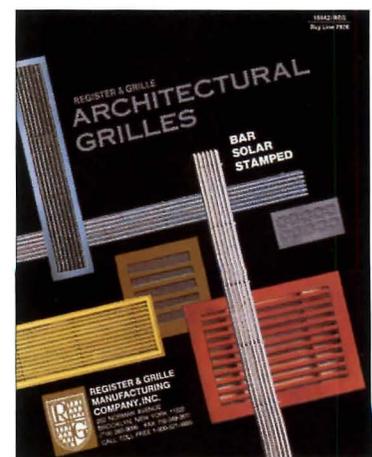


Horton Automatics

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Decorative Grilles

Unusual effects emerge when our grilles are designed for area effects. Versatility is the theme. R&G offers architects & interior designers many ways to express the changing forms of metal with the integrity of R&G's architectural grilles. Custom or standard finishes are available plus any grille can be made in matching color to blend with your decor. 202 Norman Avenue, Brooklyn, NY 11222. 800-521-4895, Fax 718-349-2611



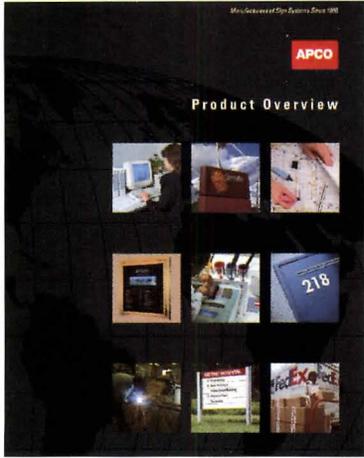
Register & Grille Mfg., Co.

Circle 68 on Inquiry card

CATALOG PREVIEW '97

Architectural Signage

As an industry leader for 30 years, APCO understands the importance of a building's signage in creating a favorable and lasting impression. The company offers a diverse product line designed to meet architects' specific needs -- from interior and exterior sign systems, to displays, directories, signmaking software, and ADA compliant signs. APCO Graphics, Inc. 388 Grant Street, SE, Atlanta, GA 30312. Phone:-(404)688-9000 Fax: (800)329-2726.



APCO

Circle 69 on Inquiry card

Graffiti Proof Panels

Mapes Industries manufactures a complete line of architectural panels with a graffiti proof finish of porcelain enamel. The panels are available in both porcelain on aluminum or steel in a wide variety of colors. The panel applications include window replacement, curtain wall, soffit and ceiling projects. The panels are an ideal solution for high traffic/abuse areas such as schools and institutional buildings. For a free sample to test, please call toll free - 800-228-2391 or fax 800-737-6756.



Mapes Industries, Inc.

Circle 70 on Inquiry card

Rubber Flooring for the 21st Century

Dodge-Regupol Inc. (DRI) emerged as the world leader in recycled rubber products technology while developing a full range of recycled rubber flooring for both commercial and sports applications. DRI's commercial line of rubber flooring, dist. by Gerbert Ltd, delivers exceptional resilience and durability, exceeds ADA req. for slip-resistance and meets designer's objectives for colorful and aesthetically pleasing interior and exterior surfacing at a lower cost than conventional rubber flooring. 1-888-359-5466.

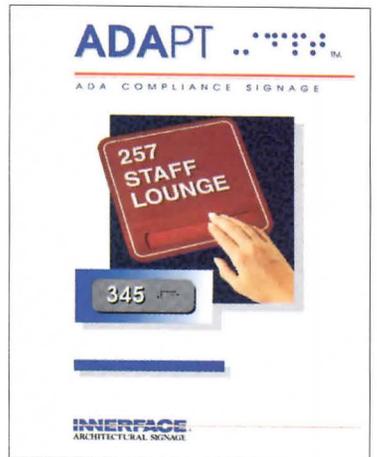


Dodge Regupol

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ADA Compliance Signage

INNERFACE makes it easier for you to meet the Americans With Disabilities Act (ADA) signage standards, INNERFACE offers (1) A variety of compliance signage, (2) National distribution (3) Solid 25 year history and (4) Economical, attractive, & highly functional interior and exterior signage. INNERFACE also offers a complete line of interior signage. For free literature, Please call (800) 445-4796.

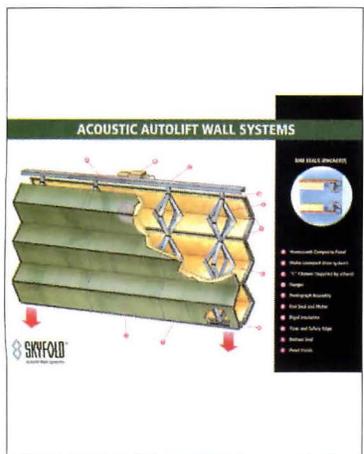


Innerface

Circle 72 on Inquiry card

Skyfold Auto-Lift Wall Systems

Skyfold is a unique, vertically folding acoustical partition that neatly stores in the ceiling when not in use. Skyfold doesn't take up valuable floor space for storage pockets. In the down position, it's a two sided, hard, rigid wall with an STC rating of 48. Skyfold is fully automatic and doesn't require manual operation. Changes in the room or hall configuration can be achieved with a simple turn of a key. T.(514) 457-4767, F.(514) 457-7111. Skyfold div. of Ralltech Ltd. 325 Lee Ave., Baie d'Urfe (Montreal), Quebec H9X 3S3.

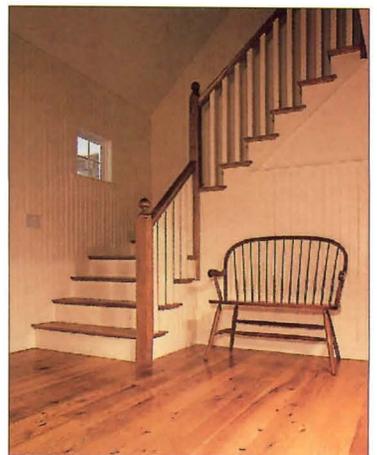


Skyfold

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Reclaimed, Remilled. Remarkable

Vintage Lumber Co., Inc. has been manufacturing exceptional antique T&G plank flooring since 1973. Our extensive selection, consistent quality, on time delivery, and technical expertise is unequalled in the industry. For more info call 800-499-7859 or fax 301-845-6475. P.O. Box 104, Woodsboro, MD 21798



Vintage Lumber

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Wood Windows and Doors

For 75 years, Zeluck has served both architects and custom builders with architectural wood windows and doors unparalleled for flexibility, quality and service. Zeluck offers a wide selection of glass and hardware, and timber from responsibly managed forests. Our triple hungs, European casements, tilt & turns, copper clad, bent units, bi-folding doors, lift-sliding doors and French doors are but a portion of our product line. Whether a custom home, hotel, institution or historical project, we can make your fantasy a reality. For a free catalog, call 800-233-0101 or 718-251-8060.

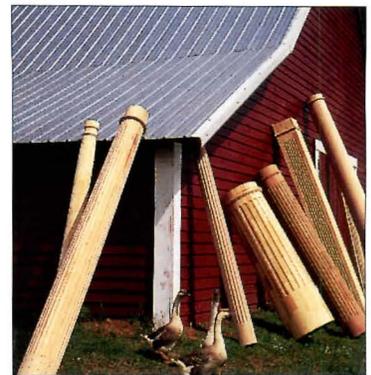


Zeluck Architectural Windows & Doors

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Worthington Group

Research and development has allowed Worthington Group to fill builders' needs with leading products in each category. Products are statically chosen for endurance, precision, ease of installation and price. Columns, Balustrading, Mantels, Moulding, Turnposts, Pediments, Medallions and more. Call for our catalog. Job site delivery and technical support a phone call away. Call 1-800-872-1608.

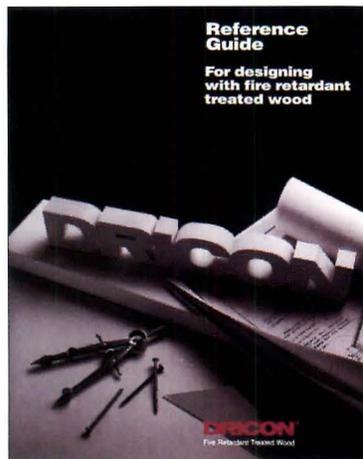


Worthington Group

Circle 76 on Inquiry card

FRT Wood & Building Codes

"Reference Guide for designing with fire retardant treated wood" outlines code-compliant applications of FRT wood. This includes the National, Standard, Uniform, and CABO codes. The guide also covers design properties, test standards, identification, and specification, and describes the Dricon® brand. Hickson Corp. 1955 Lake Park Dr., Suite 250, Smyrna, GA 30080. Tel 404-362-3970

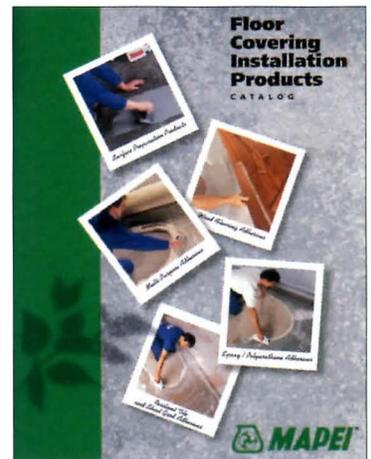


Hickson Corp.

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Mapei Corporation USA

Count on MAPEI to provide you with ECO products that are technologically advanced, solvent-free and really work. The new Floor covering Installation Products Catalog features a complete line of solvent-free floorcovering adhesives for vinyl, carpet and hardwood installations. For more information contact MAPEI's Customer Service at 1-800-42-MAPEI or visit our Web Site at <http://www.mapei.com>.

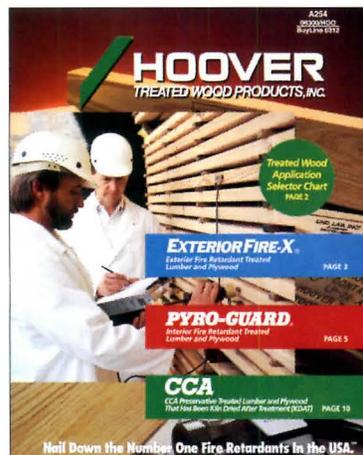


Mapei Corp.

Circle 78 on Inquiry card

Fire Retardants and Preservatives

New 12-page Sweet's catalog features Pyro-Guard® interior type fire retardant lumber and plywood for roof systems and other interior structural uses; Exterior Fire-X® FRT lumber and plywood for decks, balconies, siding and other exterior uses; and CCA/KDAT preservative treated lumber and plywood that's Kiln Dried After Treatment, from Hoover Treated Wood Products Inc. the USA's largest producer of fire retardant treated wood.



Hoover, Inc.

Circle 79 on Inquiry card

Catalog of Roofing Publications & Audiovisuals

The National Roofing Contractors Association has more than 90 roofing-related products, including the 1,858-page NRCA Roofing and Waterproofing Manual-Fourth Edition and the NRCA Construction Details on CD-ROM in .DWG and .DFX formats. For a free catalog, contact NRCA Marketing Services, 10255 W. Higgins Road, Suite 600, Rosemont, IL 60018, (800) 323-9545.



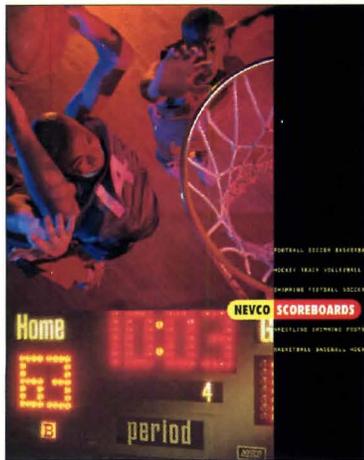
National Roofing

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CATALOG PREVIEW '97

Scoreboards

Nevco Scoreboard Company has been manufacturing scoreboards for sports for over 60 years. The latest Nevco scoreboard features are: UL Listed, CSA Certified, 5 Year Guarantee, the universal MPC-4 control and 1/10th second timing. Call 800-851-4040 or fax (618) 664-0398 for a free catalog.



Nevco Scoreboard Co.

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The Opening Glass Wall

Expand space with indoor/outdoor areas. Increase business with large, inviting entrances. The Opening Glass Wall, the exterior folding French door system, makes openings up to twenty feet wide possible, while offering an engineered system with excellent weathertightness, high security, ease of operation, and quality wood or aluminum framed construction. Ideal for both residential and commercial applications. Call 1-800-873-5673. Fax 415-383-0312.

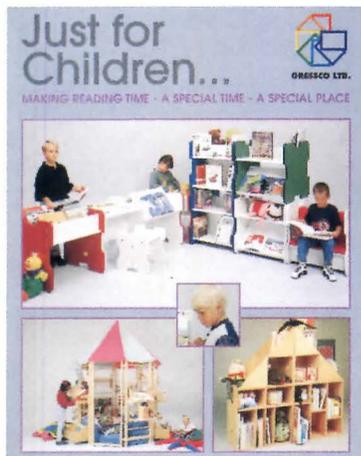


Nana Wall Systems, Inc.

Circle 82 on Inquiry card

Special Areas "Just for Children"

GRESSCO, Ltd. introduces a new catalog, "Just for Children..." featuring KinderSystem, KOG, Modula S®, Verona Shelving, and Giant Animal Floor Cushions to help you plan and create the environment children will love. Also a full line catalog of library displayers and media storage units is available. Call GRESSCO for your FREE catalog 800/345-3480. Find us on line at <http://www.gressco.com>.

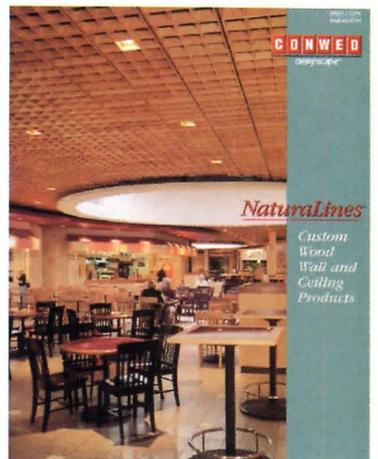


Gressco, Ltd.

Circle 83 on Inquiry card

Conwed Naturalines™ Wood Wall & Ceiling Panels

Conwed's Naturalines custom wood wall and ceiling products enhance any design with the warmth and beauty of natural wood. Utilizing expert craftsmanship, linear, louver, cellular, and coffer styles are available as design solutions for schools, medical centers, offices, restaurants and banks. Conwed Designscape, 1205 Worden Avenue E, Ladysmith, WI 54848, 800-932-2383. Fax 800-833-4798.



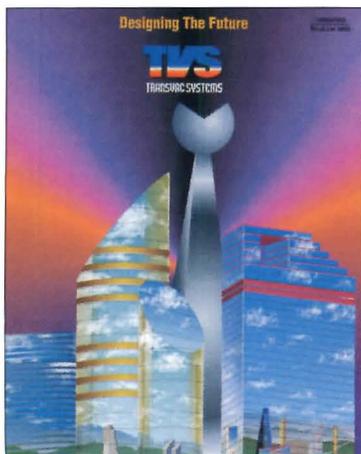
Conwed Designscape

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AUTOMATED VACUUM TRANSPORT SYSTEMS

Waste and/or Soiled Linen

- Perfect for large hospitals and similar buildings that serve thousands of people
- Improve the building environment, management, and maintenance
- Full-vacuum and gravity/vacuum technology
- Custom design each system to building specifications

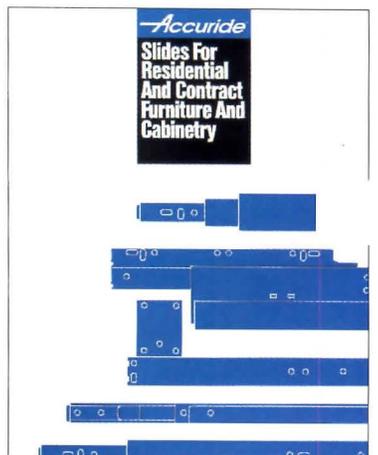


TRANSVAC SYSTEM INC.

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Enhance the Quality of Casework

Accuride offers a variety of superior slides-perfect for lab casework, residential and office drawers. Architectural support available includes suggested specification wording, specification representatives and a complete binder of slides for drawers, specialty applications and retracting pocket doors. Request your free catalog. For more information: (310) 903-0200.

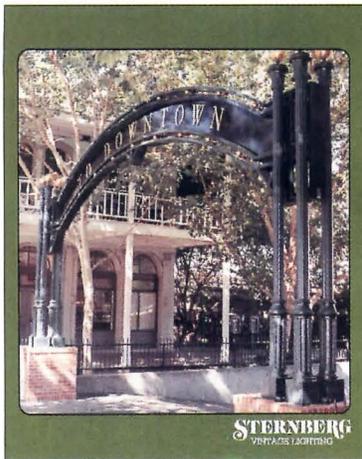


Accuride

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Ornamental Poles

When do Sternberg decorative poles do more than hold up light fixtures? When they hold traffic signals, entrance archways, street signs and, of course, banners. This new 4-color brochure shows a wide variety of uses for ornamental poles and vintage street lighting, including cobra heads with a difference. Send for this brochure plus our 72-page, 4-color catalog today. Sternberg Vintage Lighting, 7401 Oak Park Ave., Niles, IL 60714, Tel. 847-588-3400, Fax 847-588-3440.



Sternberg

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McKinnon & Harris, Inc.

Offers an electric collection of classically-inspired wrought iron and aluminum garden furniture for the American landscape. Handcrafted at their Virginia ironworks and powder coated for year-round exterior use. Stately garden furniture of exceptional design and craftsmanship. Shown: the McNeill Arm Chairs and Scroll-Footed Table with Adams Top. Catalogue available (804) 358-2385.

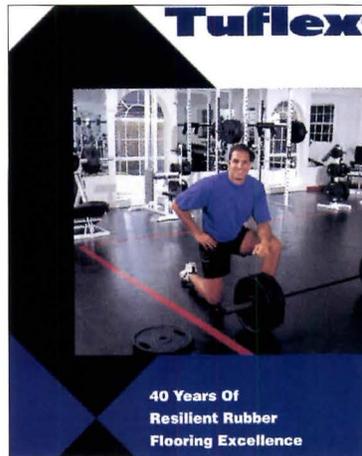


McKinnon & Harris, Inc.

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Tufflex Rubber Flooring

Highest quality rubber flooring manufactured in 3/8"-thick, 27" square tiles and 21 contemporary designs. Ideally suited for areas exposed to weights, heavy machinery, golf spikes, ice blades or other significant wear and tear. Life span as long as 10-15+ years. Highly resilient and durable, virtually impervious to pitting, excellent traction, comfortable under foot, easy maintenance, epoxy-bonded to the sub-floor to form a seamless, sanitary surface. Call 800-543-0390.

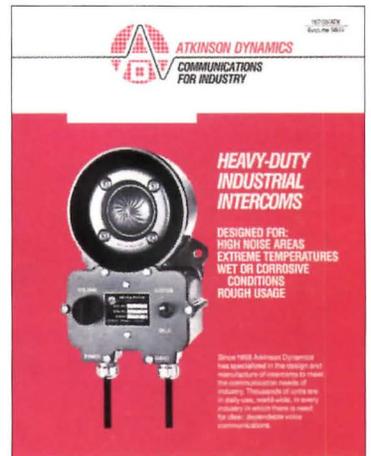


Tufflex Rubber Flooring

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Rugged Intercom Indoors or Out

ADCO intercoms give CLEAR voice communication despite outside interference in noisy work area. No bleed or popping/cracking noises. Easily installed. Capabilities include: splicing into existing systems, selective switching systems and much more. TAILORED TO YOUR SITE'S NEEDS. Works in temps ranging from MINUS 50 degrees F. to PLUS 150 degrees F. Pick-up is extremely sensitive. ATKINSON DYNAMICS, 405 ECCLES AVE., SOUTH SAN FRANCISCO, CA 94080-1964. TELE:415/583-9845, FAX: 415/876-0111.



Atkinson Dynamics

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For labs & clean-rooms New Dowcraft TwinWall

Twin Wall is custom-designed for scientific research and hi-tech manufacturing facilities. Clean lines, durable finishes, optional filler cores permit Twin Wall to perform in categories to Class 10. Acoustical rating: STC 41 up. Self-supporting steel walls shipped ready to install. Heights up to 16 ft. Send for new brochure. Dowcraft Corporation.

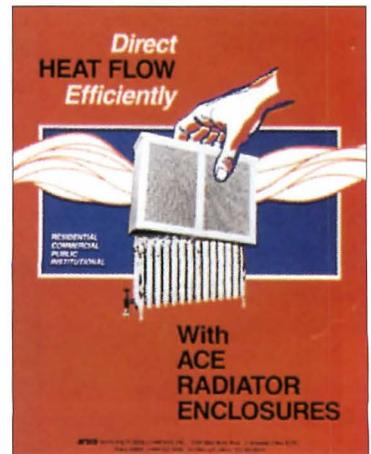


Dowcraft Corporation

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Arasco Mfg. Company

Manufacturers of custom metal cabinetry specializing in: Radiator enclosures for steam & hot water systems. Fin tube (baseboard) heating replacement covers. Fan coil replacement covers. Bookcases & shelving for schools. In business since 1934 serving residential, commercial public & institutional building owners & renovators. For a free brochure 1-800-543-7040.



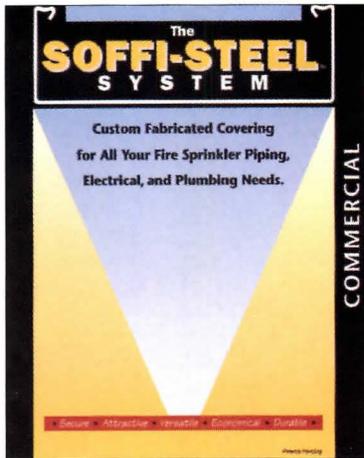
Arasco Mfg. Company

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Soffi-Steel™ System

The SOFFI-STEEL™ SYSTEM IS AVAILABLE FOR COMMERCIAL AND INSTITUTIONAL APPLICATIONS. A pre-fabricated, rugged, snap-on soffit with an attractive appearance and quick, clean installation. Commercial Soffi-Steel for hospitals, dormitories, apartments, etc., and the Institutional Soffi-Steel system for jails and prisons. Custom sizes, shapes, and finishes. GRICE ENGINEERING, Inc., P.O. Box 8037, Janesville, WI 53547-8037. Toll-free #: 800-800-3213 / Fax #: 608-757-1452.

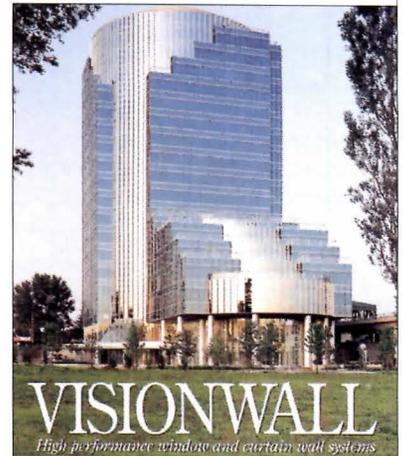


GRICE ENGINEERING, INC.

Circle 93 on Inquiry card

High Performance Window & Curtain Wall Systems

With its new 3-Element glazing unit and frame, Visionwall Technologies Inc. now offers high performance windows with insulation values from R3 to R7. As with the original system, this new product line features low shading coefficients, superior condensation resistance and excellent sound attenuation. Visionwall® systems are custom engineered and are available in window, curtain wall and sloped glazing configurations. To find out how Visionwall can be used in your design, call 1-403-451-4000 Ext. 234.

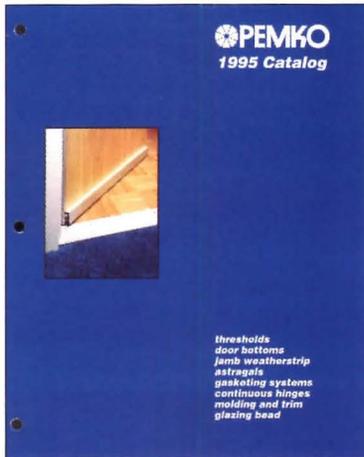


Visionwall Tech.

Circle 94 on Inquiry card

Thresholds/Weatherstripping / Continuous Hinges

Pemko's 1995 full-line catalog illustrates many fire labeled, smoke labeled, barrier-free access, sound tested, and custom fabricated threshold and weatherstripping products. New products include: patented ADA compliant ramp thresholds, PemkoHinge™ - patented continuous geared aluminum hinges, low-closing-force reversible automatic door bottoms, nylon brush weatherstripping, and locking astragals.



PEMKO

Circle 95 on Inquiry card

New Nystrom Architectural Catalog

Nystrom Products Company has released the latest version of its architectural catalog. The easy to read format makes this the ideal desktop reference for specification information on access doors, floor hatches, and roof hatches. This catalog covers the use of all these products in fire rated applications. For additional information contact Nystrom direct at 1-800-547-2635.



Nystrom Products Co.

Circle 96 on Inquiry card

Senergy's New Aurora Stone Finish

The Senergy Division of Harris Specialty Chemicals, Inc. introduces Aurora Stone Finish for EIFS, stucco and masonry. Aurora Stone Finish replicates the appearance of granite or marble, and is available in twelve standard colors. Acrylic-based Aurora Stone Finish is spray-applied, and is also suitable for interior applications.

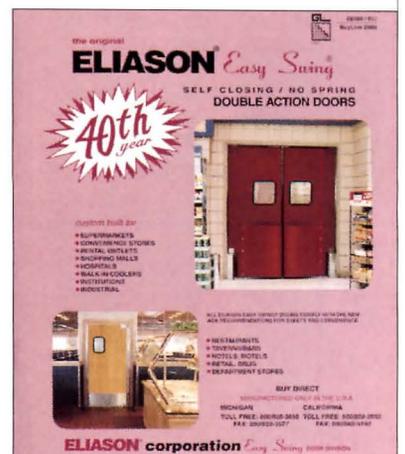


Senergy

Circle 97 on Inquiry card

Double Action Doors

Eliason has announced the availability of a new 1997 Easy Swing Door Price/Spec catalog. Doors are illustrated in full color with complete specifications and application data. Easy opening and safe, gentle, automatic time delay closing are features desirable in busy retail outlets. Doors are sold direct and the bound catalog is sent at no charge. Eliason Corporation P.O. Box 2128, Kalamazoo, MI 49003 TEL: 800-828-3655 - FAX: 800-828-3577.

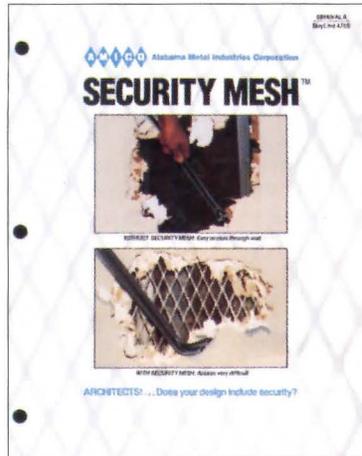


Eliason Corporation

Circle 98 on Inquiry card

Amico Security Mesh™

SECURITY MESH is designed to act as a penetration barrier behind plaster or drywall finishes in either walls or ceilings. It is made by simultaneously cutting and stretching a solid sheet of steel...making Security Mesh one continuous sheet that will not unravel at the strands. Wherever security is critical...SECURITY MESH is your answer. Contact AMICO at 1-800-366-2642.



Amico

Circle 99 on Inquiry card

The Xotel Chair 1996 IIDA Award Winner

Brian Kane developed a method of shrink-wrapping Xorel fabric over a injection molded, ridged urethane shell. The Xotel Chair offers comfort, high traffic durability, and self healing, cleanable upholstery. \$550 list. For a brochure and local representative: 800-727-6770.



Carnegie

Circle 100 on Inquiry card

W&W Sales Ltd.

NT Normbau Nylon Railing Systems by W&W come in standard and custom designs to suit virtually any application. They're easy to clean, sanitary and never need repainting. NT Normbau rails are available in sixteen beautiful colors. Round, friendly shape complies with all ADA requirements. All system components are connected internally ensuring a neat, safe and secure installation.

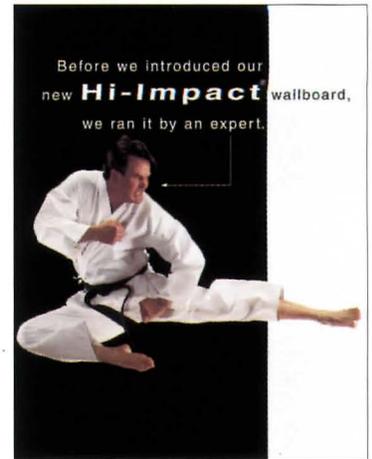


W&W Sales Ltd.

Circle 101 on Inquiry card

National Gypsum Hi-Impact Wallboard™

Gold Bond®'s new 5/8" Fire-Shield Hi-Impact gypsum wallboard provides institutions and high traffic, high abuse areas with an unbreakable wall installation. Bonded with General Electric's Lexan® polycarbonate film in three different thicknesses, Hi-Impact gypsum wallboard provides the degree of impact/penetration resistance needed. For more information, access our Internet home page at <http://www.national-gypsum.com>.

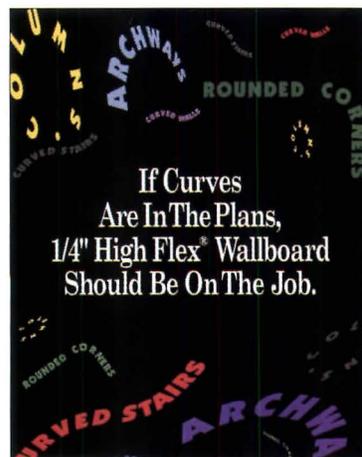


National Gypsum

Circle 102 on Inquiry card

National Gypsum Flexible Wallboard

New Gold Bond® 1/4" High Flex gypsum wallboard saves you time and money on the curves. For tight radius construction such as curved walls, stairways, arches and columns, High Flex eliminates the usual on-the-job scoring, wetting and plaster finishing of standard drywall. Now you can access our Internet home page at <http://www.national-gypsum.com>.

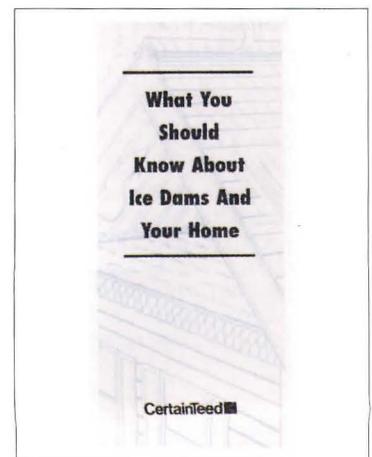


National Gypsum

Circle 103 on Inquiry card

CertainTeed

CertainTeed offers a new Consumer Brochure on Ice Dams and other Attic Problems. "What you should know about Ice Dams and Your Home" from CertainTeed explains what an Ice dam is and the damage it can cause to attics, sidewalks and ceilings. Also offers tips on avoiding water seepage under a home's roof deck. In the attic and in the interior at the home. To receive a copy or product specs on any of CertainTeed's roofing, insulation or ventilation products, call 1-800-233-8990.



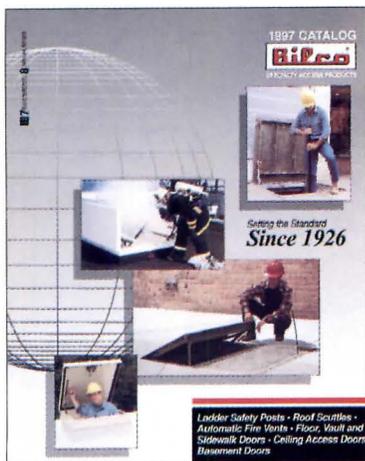
CertainTeed

Circle 104 on Inquiry card

CATALOG PREVIEW '97

Bilco 1997 Catalog

Bilco Company announces the availability of its full 1997 catalog featuring roof scuttles, fire vents, floor, vault and sidewalk doors and the LadderUp (R) safety post. This 24-page catalog also features the company's new fire rated floor door and new Odor Resistant floor/vault door. Catalog is complete with cross sectional details and architectural specifications on all products.



The Bilco Company

Circle 105 on Inquiry card

Peerless Jumbo® Mounts

The Jumbo® TV Wall and Ceiling Mounts feature adjustable height, width, tilt and swivel. The adjustable bottom mounting plate allows the fine-tuning of gravity in relation to the degree of tilt, while top clamps provide add'l stability. Constructed of heavy gauge steel with durable epoxy finish, the mounts are available in several sizes to accommodate 13" to 42" screens and 125 lb. to 300 lb. weight loads. All models are UL listed and CSA certified. Several models are OSHPD approved. Optional VCR attachments and tamper-resistant security fasteners available.

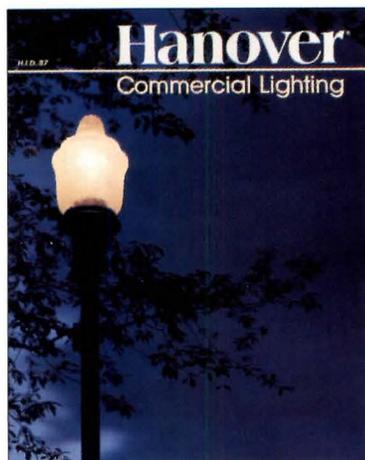


Peerless Industries

Circle 106 on Inquiry card

Hanover Lantern Commercial Lighting

Hanover Lantern designs & manufactures high quality heavy duty cast titanium/aluminum commercial grade decorative lighting fixtures, poles & accessories. A selection of design styles, light source options, light distribution systems, mounting options, computer generated photometric data plus a custom design service are available to the architect or engineer. 470 High St. Hanover PA 17331. Phone (717) 632-6464, Fax (717) 632-5039.

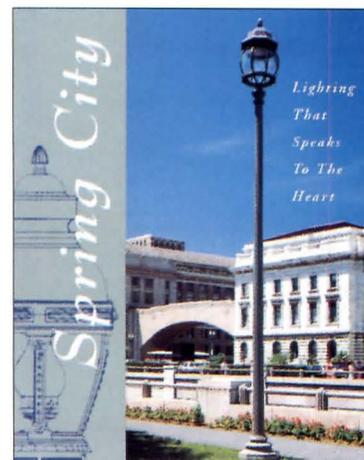


Hanover Lantern

Circle 107 on Inquiry card

Widest Selection of Outdoor Lighting

Cast iron is universally acknowledged to be the best material for outdoor lighting standards: beautiful, durable, and virtually maintenance-free. Spring City's full-color, 8-page catalog shows traditional cast iron lighting posts, bollards, traffic control pieces, and more from the country's widest selection. Spring City Electrical Manufacturing Company, Spring City, PA



Spring City Electrical

Circle 108 on Inquiry card

Porcelain Signage The Jewel of Signs

This timeless sign medium combines classic beauty with incredible durability. Precise mixtures of glass and oxides are fused to a steel base to form a color fast sign panel with unsurpassed longevity and vandal resistance. Explore our exclusive finishes, design and color options. Discover Enameltec Value. We create the spirit or your design. Enameltec 800-663-8543.

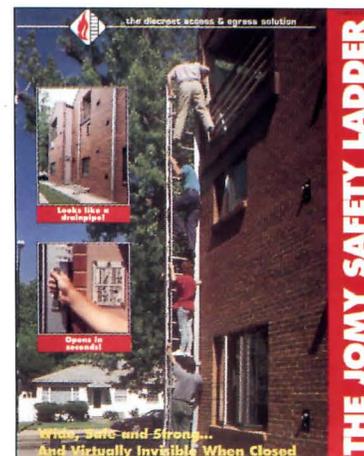


Enameltec

Circle 109 on Inquiry card

The Discrete Access & Egress Solution

Security requirements, space constraints and aesthetic considerations are a few of the problem-solving applications for the JOMY Safety Ladder. The ladder's discrete appearance makes it an ideal solution for access and egress requirements. The ladder looks like a drainpipe when closed, but opens to a heavy-duty ladder with slip-resistant rungs and a safety rail. Jomy Safety Ladder Co., 1728 18th St., Ste.201, Boulder, CO 80302. Phone 800-255-2591.



Jomy Safety Ladder

Circle 110 on Inquiry card

Unlimited access to innovative designs

Specifically designed to withstand the rigors of public use, Garaventa Stair-Lift is ideal for a variety of indoor and outdoor applications. With thousands of lifts installed around the world, Garaventa is the number one choice in stairway access. Call for your free information package today. 1-800-663-6556



Garaventa

Circle 111 on Inquiry card

LAV-GUARD™ Undersink Protective Pipe Covers

Lav-Guard™ insulation kits by TRUEBRO, Inc. thoroughly cover waste and supply lines under accessible lavatories. Universally sized for new construction or retrofit, our kits are engineered for rugged durability from antimicrobial vinyl. The Lav-Guard™ kits are aesthetically pleasing and comply with ADA regulations.

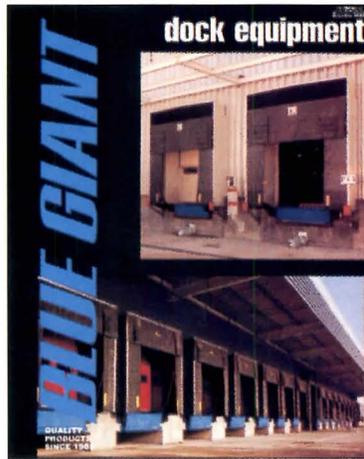


Truebro, Inc.

Circle 112 on Inquiry card

Blue Giant Dock Equipment

The dock equip. brochure from Blue Giant incorporates architectural specifications with typical application descriptions and detailed feature photos. Location photos show the many and varied types of loading dock equip. mfgd. by Blue Giant and installed around the globe. Blue Giant USA Corp. Gary Whitten 204 Industrial Park Dr., Pell City, AL 35125 T. (205) 884-1500 F. (205) 884-1504 Canada Ltd. Ken Malczyk 85 Heart Lake Rd S., Brampton, Ontario L6W 3K2, Can. T. (905) 457-3900 F. (905) 457-2313. Europe Ltd. Keith Day POB 35, Pershore WR10 2YR, England. T. (01386) 555804 F. (01386) 555803.



Blue Giant

Circle 113 on Inquiry card

Rubber & Vinyl Stair & Floor Systems

Choose the best safety application for your stairs and floors. Recent government safety regulations have brought many of our products to the forefront such as fire safety, grit strip, visually impaired and glo strip stair systems. Matching entry flooring including disco, low disc, square, diamond, fluff cord and traffic tiles are displayed with related accessories. To request copies, contact Bob Segers, Musson Rubber Co., P.O. Box 7038, Akron, OH 44306. 1-800-321-2381. FAX 1-330-773-3254.



Musson Rubber Co.

Circle 114 on Inquiry card

Discover American Frame

For 23 years, American Frame has offered quality picture frames at a low cost. Our catalog showcases custom-cut metal and wood frames and mats. We have a variety of services to suit your needs; which includes providing do-it-yourself frame kits for individual projects to providing framing for large projects. To order our catalog or to learn more about our framing services call 800-537-0944



American Frame

Circle 115 on Inquiry card

Hunter Douglas '97 Sweet's Catalog

Hunter Douglas' new 1997 Sweet's Catalog presents a broad and enhanced product line that offers increasingly versatile design applications to architects and designers. Each section contains application information, CAD drawings, and color installation photos. Call 1-800-366-4327.



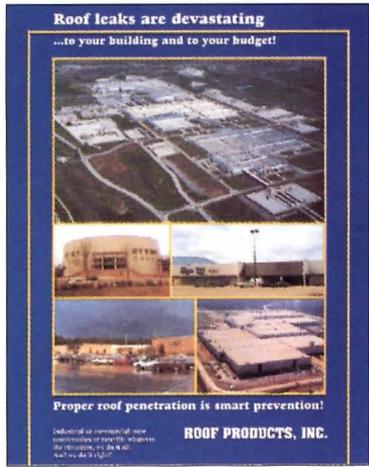
Hunter Douglas

Circle 116 on Inquiry card

CATALOG PREVIEW '97

Roof Penetration for New & Retrofit

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

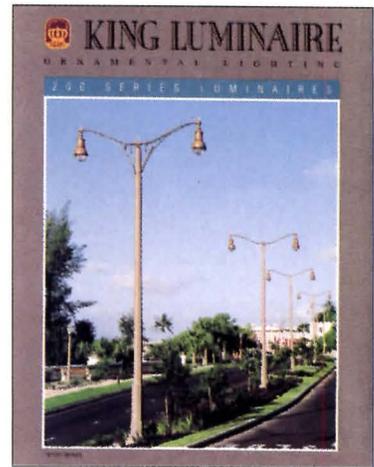


Roof Products, Inc.

Circle 117 on Inquiry card

Fixtures & Poles

King Luminaire combines the great photometrics you need with the quality and appearance your project must have. Engineered to provide maximum lighting performance with minimal long term maintenance. King luminaire fixtures and poles offer versatility, quality and a long, long service life. We specialize in buyer satisfaction. Call us at 1-800-268-7809.

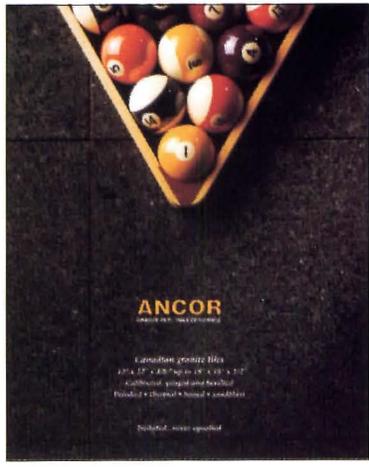


King Luminaire Co. Inc.

Circle 118 on Inquiry card

Anchor Granite Tile

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

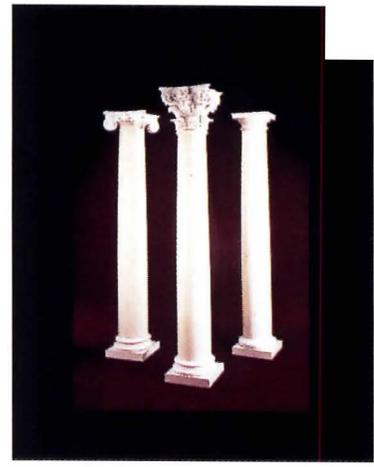


Ancor Granite Tile

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Classic Columns by Melton Classics

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



Melton Classics

Circle 120 on Inquiry card

New Casement Window from H Window

The H Window Casement features an aluminum exterior, wood interior and the ability to rotate 180° for easy cleaning. It's available with total choice of exterior colors, interior finishes, and wood species. Typical casement are inherently weak, due to the lower hinge and handle mechanism supporting all the window weight. The unique patented H Window hinge hangs the majority of weight from the top hinge guide, allowing for larger windows. H Window Co. 1324 East Oakwood Dr., Monticello, MN 55362.

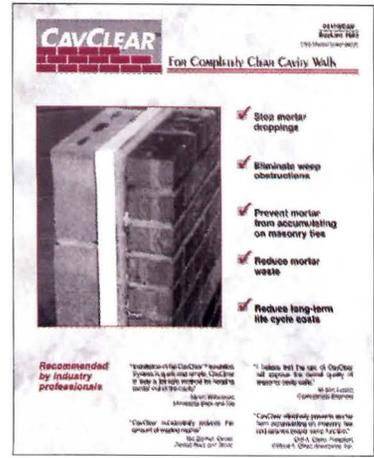


H-Window

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Innovative Solutions to Masonry Problems

New products offer design solutions for cavity wall problems. CavClear™ products assure top quality by preventing mortar accumulations in the air space. Moisture migrates freely to unobstructed weeps. Adjustable masonry ties are protected from mortar droppings. A clear air space results in proper movement isolation, reduced cracking and improved long-term performance of the building system. Ensure a clear cavity by specifying CavClear. Call us toll free at (888) 436-2620.

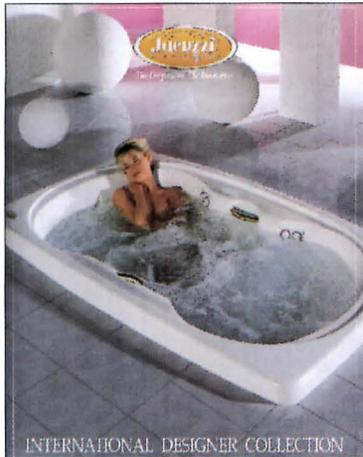


CavClear/Archavations

Circle 122 on Inquiry card

Jacuzzi Whirlpool Bath

Jacuzzi Whirlpool Bath - Presents The 1996 International Designer Collection of whirlpool baths, faucetry and The J-Dream™ Family of shower systems. This full-color catalog features beautifully styled products, integrating the most innovative luxury features. For more information please call 1-800-678-6889. Catalog free of charge.

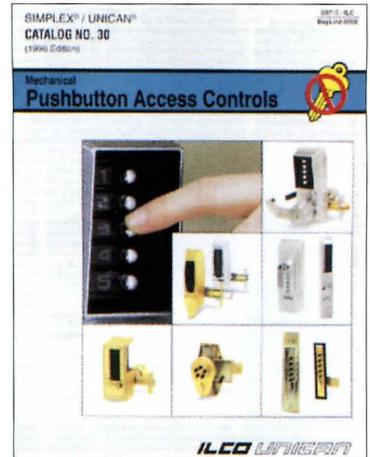


Jacuzzi Whirlpool Bath

Circle 123 on Inquiry card

Over One Million Locks in Use Worldwide

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Unican/Simplex Access

Circle 124 on Inquiry card

Floating Stones Fountains

The highly polished granite sphere gently rotates on a thin layer of water. Water pumped up from below at 10 to 12 psi is all that is required to begin the ball's rotation. The fountains made to order, are available in a wide range of materials and colors. Quarry Line, Inc. Ph. 847-808-0477 Fax 847-808-0482

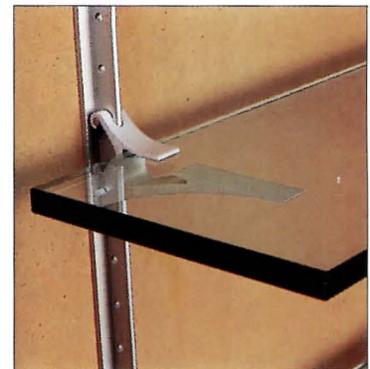


Quarry Line, Inc.

Circle 125 on Inquiry card

Parallel Design

"Ellen's brackets", an anodized-aluminum shelving system designed by M. Ali Tayar, provides an elegant alternative to existing bracket-and-track systems. Cantilevered brackets come in two sizes, for shelves 3/4 or 3/8-in. thick and 10-in. deep. Wall-mounted tracks permit 1 1/2-in. adjustment of wood, glass or plexiglass shelves. For more info phone Parallel Design (212) 989-4959/ Fax (212) 989-4977.

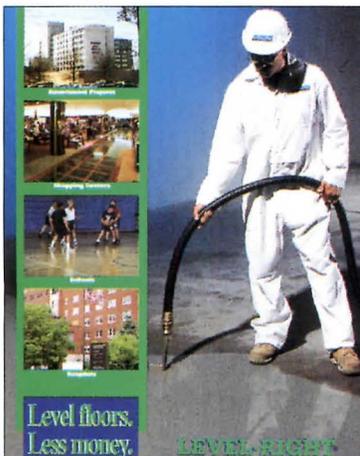


Parallel Design

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Level-Right® Self-Leveling Floor Underlayment

Ideal for large projects or small repair jobs, Level-Right® goes down quickly, cleanly and cost-effectively. It's poured over irregular or weather-damaged concrete; worn ceramic tile, terrazo or adhesives; transforming the original surface into one that's smooth, level, and perfect for floor coverings. In 2-4 hours, Level-Right provides a temporary wear surface. Call Maxxon Corp. 1-800-356-7887 or fax 612-478-2431



Maxxon Corp.

Circle 127 on Inquiry card

Light Signaling Systems

Light-Call provides simple signaling for retirement home nurse-call. Clinic-Call is designed for Medical offices to track People and Room Status for maximum efficiency. Court-Call is a duress alarm system with hidden buttons to call Marshals to trouble areas. Digital technology keeps wiring to a 2 twisted pair network. Call 1-800-813-1080 today!



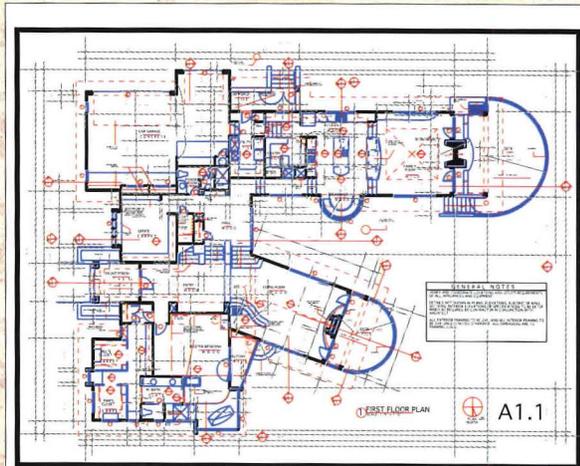
Tech Works

Circle 128 on Inquiry card

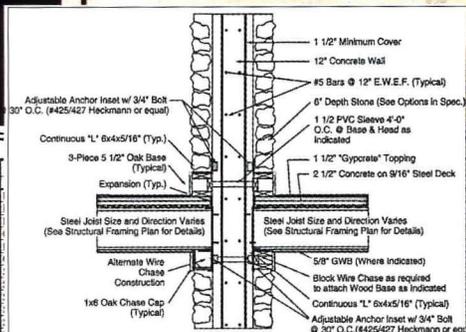
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*Image 1



*Images 2

SCHEDULE		Qty	Unit	Price	Total
101	1x4 wd	1	wd	1.00	1.00
102	1x4 wd	1	wd	1.00	1.00
103	1x4 wd	1	wd	1.00	1.00
104	1x4 wd	1	wd	1.00	1.00
105	1x4 wd	1	wd	1.00	1.00
106	1x4 wd	1	wd	1.00	1.00
107	1x4 wd	1	wd	1.00	1.00
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123	1x4 wd	1	wd	1.00	1.00

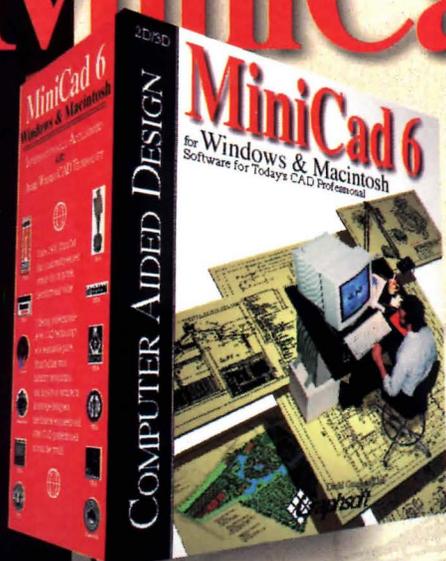
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Charles Perrygo
Senior Systems Engineer
Swales and Associates, Inc.



*Image 3

MiniCad 6



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In Canada call PaXar at **1-800-260-0905** For Academic pricing call 1-800-531-3227

*Image 1 - Courtesy of Francois Levy, Dick Clark Architects, Austin, TX
*Image 2 - Courtesy of Cameron Lacy, DCL Architects, Wayne, PA
*Image 3 - Courtesy of David Brunke, Herring & Trowbridge Architects, Herndon, VA

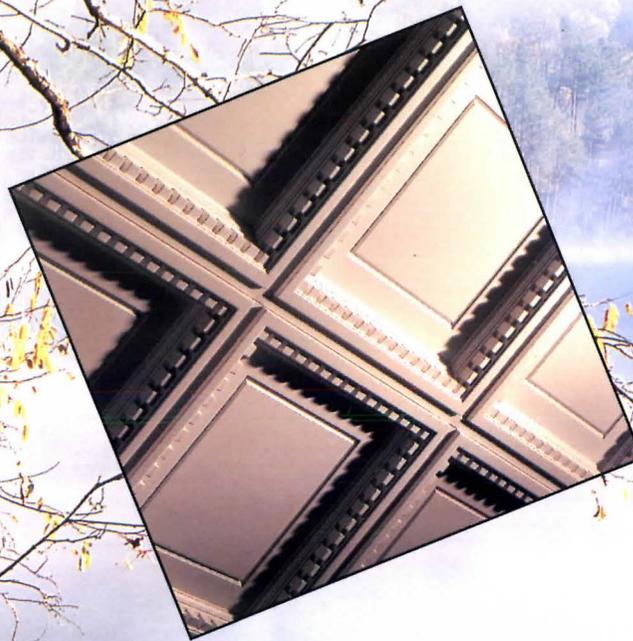
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First in a series of landscape photographs by Gary Irving. For a poster, call (800)950-3859. Posters available only while supplies last.

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