

Focus on Education 1995

Why Brookline, Mass., Almost Didn't Get Its Impressive Lincoln Elementary School

Ideas into Energy: One Day in the Life of a 21st Century Solar Lab in Golden, Colo.

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- 28 **BRIGHT LIGHTS, BIG CASEGOODS**
Tuohy's Chicago Collection, designed by Brian Kane, is all it's been stacked up to be.
- 30 **WASTE-NOT!**
Born of soybeans and newsprint, Environ by Phenix™ Biocomposites spins proverbial straw into solid surfacing gold.
- 32 **A CURE FOR STORAGE BLUES**
What's in storage for health care from Dattel's Byrum System may be a lot more than health care professionals normally expect.

DESIGN

- 34 **LOUDER, PLEASE**
Who would believe that one of Denver's hottest new spots is the Ross-Cherry Creek Library, with an outrageous design by Michael Brendle Architects?
- 38 **CONSPICUOUS NON-CONSUMPTION**
The National Renewable Energy Laboratory's Solar Energy Research Facility in Golden, Colo., is energized in more ways than one by a powerful design from Anderson DeBartolo Pan.
- 42 **DELICATE HEARTS, ROBUST DESIGN**
For a look at a first-rate facility for little hearts with big problems, visit the Sol Goldman Children's Heart Center at Columbia-Presbyterian Medical Center, New York, designed by Architecture + Furniture.
- 47 **IT'S NOT SO ELEMENTARY**
Getting America's new and existing elementary schools to make the grade still depends on what the nation wants its children to learn—something designers cannot take for granted.
- 50 **HOWLING SUCCESS**
Rancho Cucamonga, Calif., has many small but important reasons to be wild about award-winning Coyote Canyon Elementary School, designed by Wolff/Lang/Christopher Architects.

- 54 **CLASS ACTION**
Brookline, Mass., didn't know if it wanted the William H. Lincoln Elementary School until its school board and Graham Gund Architects taught it some important civic lessons.
- 60 **BRAIN GAIN**
Students are burning up the science curriculum at the Niles West High School in Skokie, Ill.—and the new Science Wing by O'Donnell Wicklund Pigozzi and Peterson just might be the cause.
- 64 **TOP THIS**
The best secondary school in America could be Stuyvesant High School in New York City, designed by Cooper, Robertson & Partners and Gruzen Samton Steinglass.
- 70 **NORTHERN EXPOSURE**
The Canadian design industry shows why it's ready to take on a brave new market—the world.

BUSINESS

- 76 **CAN YOU MANAGE?**
What project managers are doing to growing numbers of today's design projects depends on whom you ask.

TECHNOLOGY

- 78 **THE INCREDIBLE SHRINKING FLUORESCENT**
Contract Design sheds a little light on the modest history, growing applications and brilliant future of compact fluorescent lighting.

DEPARTMENTS

- 8 EDITORIAL
- 12 TRENDS
- 20 MARKETPLACE
- 80 BOOKSHELF
- 81 CLASSIFIEDS
- 83 AD INDEX
- 83 PRODUCT INDEX
- 84 PERSONALITIES

Cover Photo: Entrance to the children's section at the Ross-Cherry Creek Library, Denver. Photo by Elizabeth Gill Lui.

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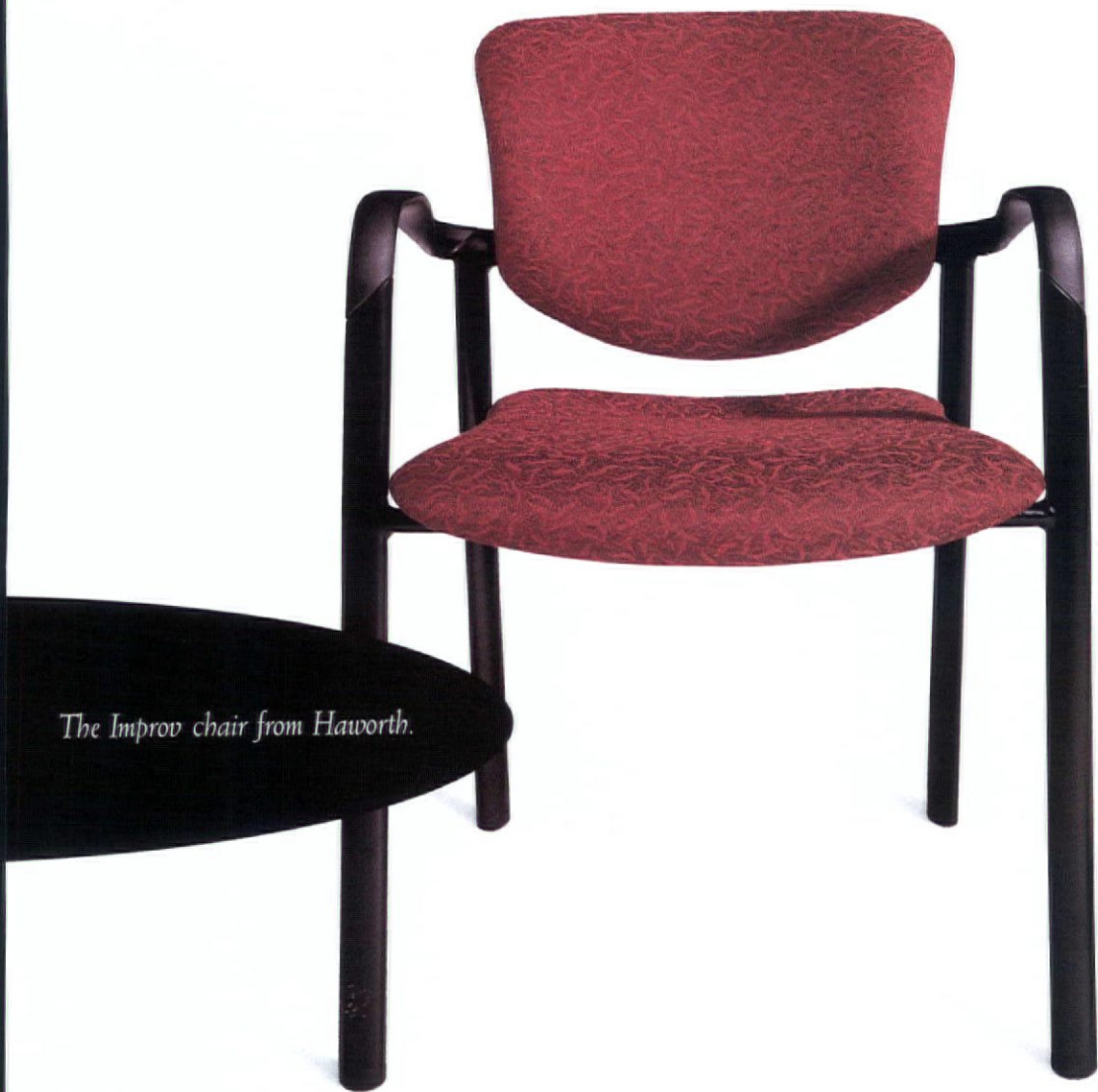


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Too Nice for You

Did you or didn't you? Just say you can't remember—if you happen to be an architect or interior designer who might have specified brass, marble or mahogany for corporate projects in the 1980s. Honesty could cost you your next job if corporate America has its way. The nation has swung from one emotional extreme, the ostentatious Me decade of the 1980s, to another, the dour Practical decade of the 1990s, and the view from the offices where much of the American work force toils on the eve of the 21st century is rife with its symbols. Businesses are so anxious to display their lack of conspicuous consumption that they are even taking perverse joy in making the office look leaner and meaner than it is. They could be making a serious mistake.

As design firms across the nation have observed in recent years, office installations, a mainstay of the design profession, are increasingly focusing on frugality as their preeminent virtue. Saving money is certainly not wrong per se, especially in hard times. However, the kind of thrift being honored by too many organizations may be a false economy—one that too quickly makes assumptions about the man-made environment that should be tested at the very least before they are so blindly obeyed.

Corporate America seems to have forgotten that there are more ways than one to raise the productivity of scarce resources—human, spatial, energy and material—in an office. It is easy enough to accomplish it in the short run through what basically amounts to fear. Simply start taking everything away that could possibly suggest that the occupants of an office are valued for anything beyond the actual moments they perform profitable work.

IBM, a \$64.052-billion (1994 revenues) giant beset by the loss of leadership, revenues and confidence in the computer industry it once defined, could well typify this approach. Not only has it reduced its payroll throughout the world, it has pared away the heart of the new facilities it erects to house the survivors. In relinquishing such symbols of a repudiated heritage as its headquarters in Armonk, designed by Skidmore, Owings

& Merrill and Pei Cobb Freed in a more generous era, and its distinguished corporate art collection, started by Thomas Watson Sr. in 1937, Big Blue is rolling out facilities like its Cranford, N.J., office, where 220 shared sales and service desks house 700 employees in a sea of identical, low-height cubicles.

Of course there is another approach, based on a long-term philosophy: enabling white-collar employees to work smarter by rethinking the entire nature of their work and the resources they need to do the job faster, cheaper and better. This doesn't automatically mean that office environments should cost much less to build—or look as if they do. Nothing is taken for granted in this time-consuming and more challenging alternative to squeezing more effort out of frightened employees.

Apple Computer, having completed one of the best years in its history in 1994 with revenues of \$9.552 billion, provides an interesting contrast to Big Blue. Having outgrown the garage at the home of one of its founders where it toiled just 19 years ago, it has not forgotten the virtues of the garage as an inexpensive yet stimulating place. Accordingly, when Apple constructs work environments such as its 856,000-sq. ft. R&D Campus in Cupertino, Calif., or any of the many much smaller sites it maintains

around the world, it challenges architects and interior designers to stretch their minds as well as their budgets. Thus, the spaces that talented design firms such as Hellmuth, Obata & Kassabaum, Gensler and Associates, Studios Architecture, Holey Associates and Backen Arrigoni & Ross develop for Apple are stimulating places to work despite their modest budgets.

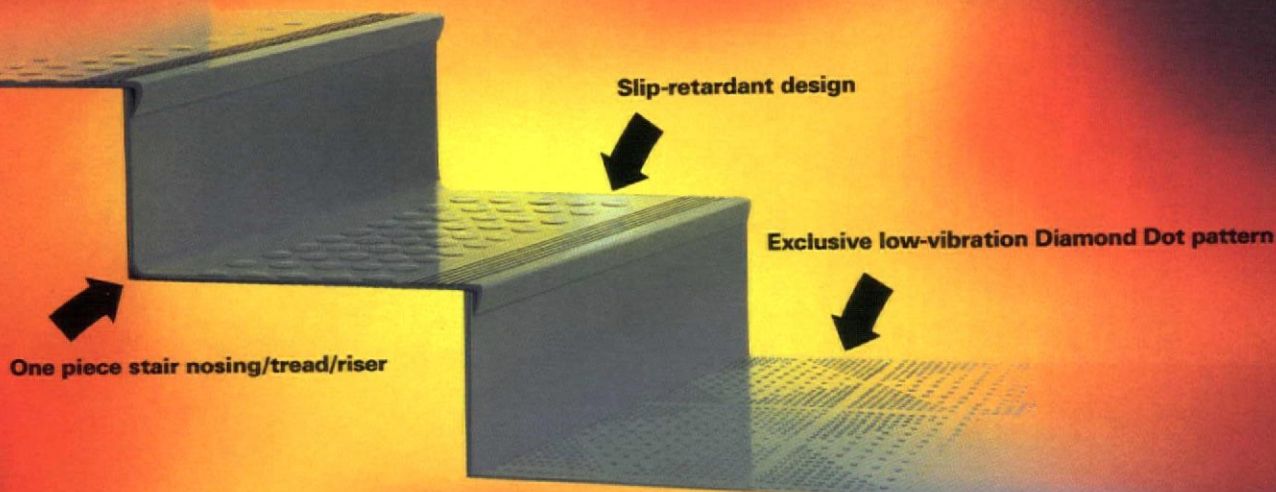
How strange that so many businesses are failing to seize the power of good design to influence institutional behavior when leaders of retailing, restaurants and hotels have made the discovery into a formula for success. If designers can demonstrate that this same power can be put to use in offices, corporate America might actually get what it thinks it's paying for: faster, cheaper and yes, better work. ☺



Roger Yee

Roger Yee
Editor-in-Chief

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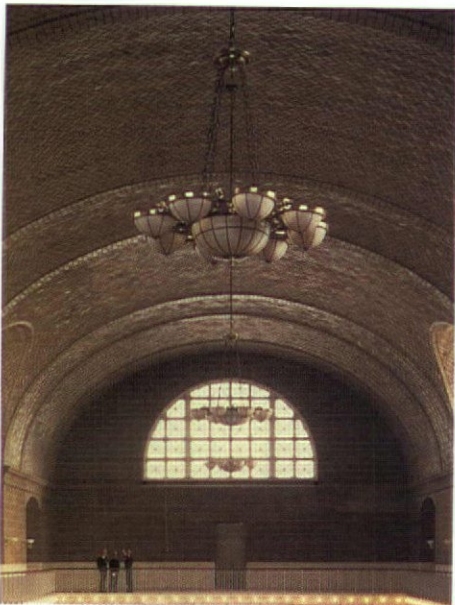
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Firm of the Year

Washington, D.C. - The American Institute of Architects 1995 Architecture Firm Award, the highest honor the AIA can confer on a firm, was awarded to New York-based Beyer Blinder Belle, Architects & Planners, a leader in historic preservation and urban/neighborhood revitalization.

The honor is awarded annually to a firm that has produced distinguished architecture for at least 10 years. The award will be presented during the AIA national convention, May 5-8 in Atlanta. The jury that selected the recipient was chaired by Cesar Pelli, FAIA, New Haven, Conn.



The New York firm of Beyer Blinder Belle has been awarded the AIA's top honor, the 1995 Architecture Firm Award, for its work on such projects as the renovation of the Ellis Island Museum of Immigration, New York (above).

Beyer Blinder Belle has worked for housing and community planning groups since the 60's, while realizing that technical knowledge of preservation must be incorporated within the daily routine of architectural services rather than through outside consultants.

Recent award-winning projects include the Ellis Island Museum of Immigration, Grand Central Terminal, the restoration of the Henri Bendel Store in the Rizzoli and Coty buildings, the New York State Thruway travel plazas and the Denver Performing Arts Complex.

Keep the Home Fires Burning

LaGrange, Ga. - Much like phoenix rising from its ashes, Milliken & Company, the LaGrange, Ga carpeting giant, began rebuilding February 4 after the January 31 fire that dev-

astated the Live Oak/Milstar Complex. Billed as the largest industrial fire to date, the inferno destroyed a dyeing, finishing and distribution center for carpet tile and broadloom carpet and displaced 700 workers.

Milliken reassigned over 600 of these workers and scrambled to alert and reassure all 2,000 customers that might be affected by the fire. Despite five weeks of destroyed inventory, Milliken promised to meet delivery deadlines for critical needs. To keep that promise they are shipping carpet back and forth to their Wigan, England, dyeing and finishing plant. To further reinforce confidence in the company's ability, in the midst of the crisis Milliken introduced *affinity*, a line of 18-in. modular carpet tiles with international design flavor.

According to LaGrange fire chief Chris Smith, the fire originated in the manufacturing area of the plant located in the northeast corner of the building. A flash fire occurred when leaking oil ignited. Although the sprinkler system activated, the intensity of the fire caused damage to structural roof members. Collapse of the roof above the area of origin severely damaged the sprinkler system, allowing the fire to spread quickly. No injuries or fatalities occurred.

Strategic Allies

Grand Rapids, Mich. - If you have ever travelled on business and know what it's like to enter a hotel room and realize it wasn't suited for business people, you are sure to welcome the news. Marriott Lodging, AT&T and Steelcase Inc. have joined forces in researching, developing and bringing to the market products and services designed to help business travelers be more effective, productive and comfortable while away from the office.

Increasingly, the boundaries between work and leisure locations are fuzzing. People are using airplanes, restaurants and their homes as places of business. The alliance between the three companies stems from this understanding. "Room That Works" is a newly created work station developed by the alliance for Marriott full-service hotels. The room features a large console table and mobile writing desk, two power outlets and a PC modem jack mounted in the console top, a moveable task light and an ergonomically adjustable chair. The "Room That Works" debuted recently at the new Philadelphia Marriott and will total more than 4,000 rooms in 15 U.S. and international markets by year-end.

The three companies are still exploring other technological additions such as in-room teleconferencing, specialized data and information access. All research for the Marriott, AT&T, Steelcase alliance was conducted by ConsumerMetrics of Atlanta, which interviewed 333 frequent business travelers who took six trips in the past 12 months.

Green Lights

Washington, D.C. - Corporations, environmental groups, electric utilities and the government have come together to join the U.S. Environmental Protection Agency's Green Lights Program in encouraging the use of energy efficient lighting that reduces pollution.

Energy efficient lighting can reduce lighting electricity demands by over 50 percent, thereby decreasing the amount of burnt fuel. It is estimated that every kilowatt-hour of electricity saved prevents the emission of 1.5 pounds of carbon dioxide, 5.8 grams of sulfur dioxide and 2.5 grams of nitrogen oxides. It also helps reduce mining and transporting power plant fuel and wastes, especially since lighting accounts for 20-25 percent of all electricity sold in the U.S.

Of course, not everything is altruistic. By investing in efficient lighting, participants can save 50 percent or more on their lighting bills.

The program works by requesting members to sign a Memorandum of Understanding with the EPA, in which members agree to survey 100 percent of their facilities. Within five years of signing up, participants must upgrade 90 percent of upgradable square footage without compromising lighting quality. Participants then agree to appoint an implementation manager to oversee the program's progress and to report to the EPA annually.

For more information contact: Manager, Green Lights, U.S. EPA (6202J), Washington, D.C. 20460, or call 202- 775-6650.

Refuse Reused

Miami, Fla. - Don't throw away those milk cartons—they could become the next trend in furniture design. The Arango Design Foundation of Miami invites designers, manufacturers, schools of design and the general public to submit nominations for a curated exhibition of everyday products created with recycled and reused materials. The show, *Refuse*, will open at the Center for the Fine Arts in Miami in April 1996 before touring the museum circuit.

Refuse will display any combination imaginable, such as luggage made from inner tubes, stationery from obsolete maps, pencils from newsprint and furniture from yogurt containers. Prominent designers like Frank Gehry, Philippe Starck and Michele de Lucchi will be represented in the show, as well as unknowns from 20 countries. "This exhibition will demonstrate that industrial design can create useful, beautiful objects to make a real impact on recycling," says curator Judith Arango.

Financial support for the exhibition has come from the Graham, Nathan Cummings and Threshold Foundations and the Florida Arts Council. Call (305) 662-9181 for entry or exhibition information. Deadline for entries is November 1, 1995.



Fortunately, none of our assets were lost.

This February, we watched our Live Oak/Milstar carpet plant go up in flames.

Not one of the 180 Milliken Carpet associates inside was lost or injured — the ultimate tribute to quick thinking and constant safety training.

Elsewhere, other associates plunged into tracking orders, reassigning carpet production to other Milliken plants (even to other countries), and reassigning over 95% of the 690 Live Oak associates to other Milliken posts. Another tribute to quick thinking and commitment to people.

But perhaps our most heartfelt tribute goes to our customers. We've built strong partnerships over the years. But we never imagined the outpouring of confidence and cooperation that came after the fire.

We've learned a very important lesson through this. Factories can be rebuilt.

But the Milliken spirit is irreplaceable.



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Commissions and Awards

The deadline for the **Healthcare Environment Award Competition** is August 1, 1995. Contact Debra Levin at The Center for Health Design, (510) 370-0345.

Entries are being accepted for the **1995 Gold Key Awards for Excellence in Hospitality Design**, sponsored by *Hospitality Design* and *Lodging Magazine*. Entry deadline is June 30, 1995. Call (914) 421-3315.

Ewing Cole Cherry Brott, Philadelphia, will design a reuse plan for the Defense Personnel Supply Center in South Philadelphia.

The **International Contemporary Furniture Fair (ICFF)** has announced the Editors Awards Committee: Roger Yee, *Contract Design*; Marian McEvoy, *Elle Decor*; Judith Cushman, *Home Accents Today*; Young Mi Kim, *Home International*; Chee Pearlman, *I.D. Magazine*; Mayer Rus, *Interior Design*; M.J. Madigan, *Interiors*; Susan Szenasy, *Metropolis*; Arlene Hirst, *Metropolitan Home*. The ICFF will be held May 20-23 at the Javits Convention Center, New York.

LIMINALITY, Washington, D.C., will design the interiors for the relocation of the law firm Noto & Oswald, Washington, D.C.

Tufts University, Cambridge, Mass., has selected **Architectural Resources Cambridge Inc.**, to design a laboratory and classroom complex.

Allan Dehar Associates, New Haven, Conn., has been selected by the State of Connecticut to design a new Biology Building and addition to the Physics Building for the Storrs Campus of the University of Connecticut.

The renovation of the Radisson Hotel and Suites Chicago will be led by the **Gettys Group**, a Chicago-based architectural firm.

Swiss Bank Corporation, Stamford, Conn. has selected the New York office of **Skidmore, Owings and Merrill** to design a new complex.

Hellmuth, Obata & Kassabaum Sports Facilities Group, New York, has received two 1995 American Institute of Architects Honor Awards for projects including Hong Kong Stadium in Hong Kong and Jacobs Field in Cleveland.

Hastings & Chivetta and **Louis R. Saur & Associates** of St. Louis have received a national citation from the American Association of Architects and The American Association of School Administrators for the design of the Okemos Senior High School in Okemos, Mich. **Louis R. Saur & Associates** will design a new 90,000-sq. ft.

center for plant research at the Missouri Botanical Garden Research Facility, St. Louis, and a 90,000-sq. ft. middle school for the Investigative Learning Center, St. Louis.

RKT&B, New York, has been selected by the New York City Board of Education to design the School for the Physical City.

Henry Cobb, FAIA, founding principal of Pei Cobb Freed & Partners and former chairman of the Department of Architecture at the Harvard Graduate School to Design, has received the ACSA/AIA 1995 Topaz Medallion for Excellence in Architectural Education.

People in the News

Hellmuth, Obata & Kassabaum, Houston, has named **Pamela Delamaide Light, IIDA** as associate and studio director for corporate interiors and **Kathleen McManamon** as vice president, director of marketing.

Janis Mones has been named principal of Boston-based CBI/Childs Bertman Tseckares Inc.

Deborah Steel has been appointed vice president, marketing and design for KnollTextiles, New York.

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For information on exhibiting, call 312/527-7685.

TRENDS

Cambridge, Mass.-based firm ADD Inc., has named **Larry Grossman**, AIA and **Frederick Kramer**, AIA principals.

Gensler and Associates/Architects has named new vice presidents: **Marty Borko**, **Madeline Burke-Vigeland**, **Katrina Kostic**, **Patric O'Malley**, **Cynthia Sherrill**, **Norma Spreeman** and **Douglas Zucker**.

Norman Rosenfeld of Norman Rosenfeld Architects, New York, has been named a Fellow of the American Institute of Architects.

The Industrial Designers Society of America mourns the loss of **Brooks Stevens**, FIDSA, one of the original Charter Fellows of the Society of Industrial Designers, SID.

Karen Norkus has been promoted to corporate supervisor of marketing programs at American Seating, Grand Rapids, Mich.

The Weihe Partnership, Architects and Planners, Washington, D.C., has promoted **Alan Cooper**, AIA, IIDA, to director of design for space planning and interior design.

David Fawcett, **Clarence Mamuyac** and **D. Jamie Rusin** were named senior associates at ELS/Elbasani & Logan Architects, Berkeley, Calif. The Environments Group, Chicago, has

named **Cary Johnson**, IIDA, as principal and director of project services.

Charlotte Hoes has been named director of marketing for contract furnishing at the Merchandise Mart Properties, Chicago.

Farrington Design Group, Atlanta, has announced additions to the firm: **Lourdes Bestard**, designer; **Kathy Maschke**, marketing manager; **David McAdams**, project manager; **Susan McPhearson**, designer; and **Allison Synder**, designer. **Fred Zrinscak, Jr.** has been appointed to senior associate.

Raymond Blesener, FARA was elected president of the Society of American Registered Architects for 1995. **Lombard, Ill.**

John Kaliski, Southern California Institute of Architecture instructor in Los Angeles, has been named one of "America's most promising leaders age 40 and under" by *Time Magazine*.

Business Briefs

Walker-Group/CNI architecture studio will open a St. Louis office to be headed by **Michael Mindlin** and **David Suttle**, located at 7777 Bonhomme, Ste. 1400, St. Louis, MO 63105.

IU & Lewis Design, New York, is a new partnership formed by **Carolyn IU**, AIA and **Neville Lewis**, FIIDA.

Swanke Hayden Connell Architects has relocated to the Puck Building, 295 Lafayette Street, New York.

Houston-based **SJKB** has expanded with an office in Dallas, SJKB/Croft.

Milliken, Grand Rapids, Mich., has allied with commercial textile distributor **C.F. Stinson**, Troy, Mich. Milliken Fabric is registered for the ISO 9000 Series Standards for quality management and assurance.

Griswold, Heckel & Kelly Associates, Chicago, has acquired **Duvall/Hendricks** with offices in Baltimore, Maryland and Washington, D.C.

The **Callison Partnership**, Seattle, has changed its name to **Callison Architecture**.

Coming Events

May 5-8: The American Institute of Architects Annual National Convention and AIA Expo95; *Revisioning: Seeing Ourselves as Collaborative Leaders*; Georgia World Congress Center, Atlanta; (800) 305-7737.

May 14-16: Spring International Conference, sponsored by Color Marketing Group; Dallas; (703) 329-8500.

May 20-23: International Contemporary Furniture Fair (ICFF); Jacob Javits Convention Center, N.Y.; (800)-272-SHOW.

May 20-24: 76th Annual Restaurant Hotel Motel Show; McCormick Place, Chicago; (312) 853-2548.

May 25-27: Salon International Du Design D'Intérieur de Montréal (SIDIM); Place Bonaventure, Montreal; (514) 273-4030.

June 7-9: LightFair International; McCormick Place, Chicago; (800) 856-0327.

June 8-11: International Design Conference In Aspen; New Business: Redefining the Idea of Design; To register call (303) 925-2257.

June 12-14: NeoCon '95 and The Buildings Show™; The Merchandise Mart at World Trade Center, Chicago; (800) 677-6278.

August 18-19: Designfest; Orange County Convention Center, Orlando, Florida; Contact IIDA North Florida Chapter, (407) 896-4399.

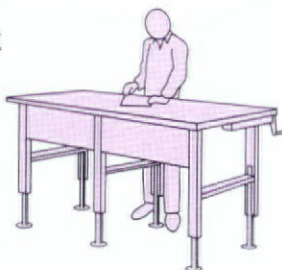
September 17-20: World Workplace '95 Consortium; Miami Beach, Fla.; (713) 62-WORLD.

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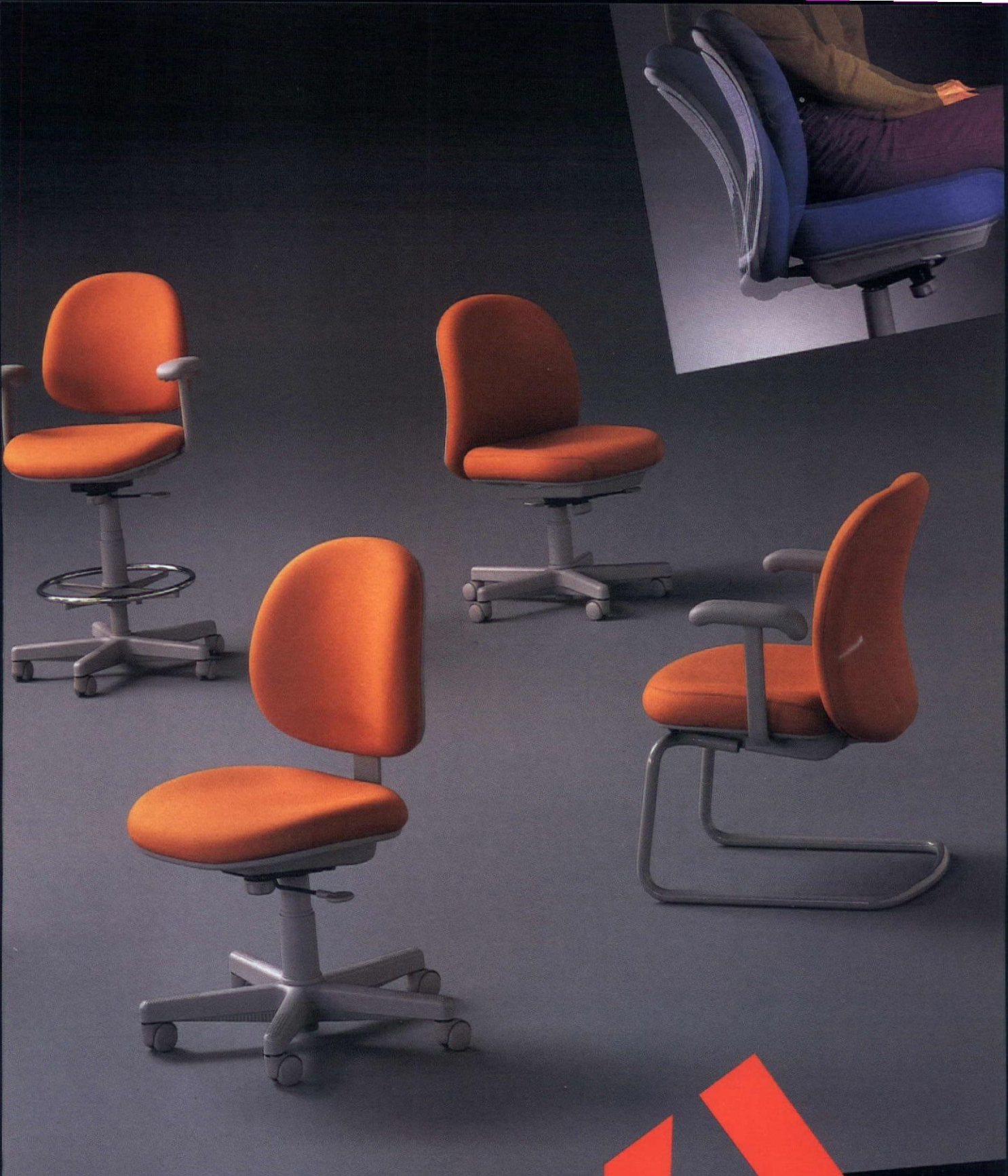
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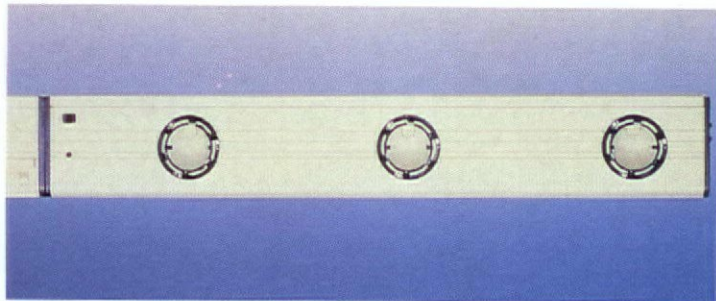


Improving Your Quality of Life

MARKETPLACE

Lincs, the under-cabinet lighting system introduced by Alkco, is a modular, plug-together unit for workstations, reception desks, countertops and display cases. Standard sizes range from 9-in. to 48-in. long. Lincs is offered in a choice of wattage and lenses.

Circle No. 232



The Beta Lighting Bi-Level System is designed to use less energy with lower levels of lumination when no activity is sensed, and higher levels of brightness when there is greater activity. The light remains at full intensity as long as there is motion present, and once it ceases, the light drops to a conservation mode allowing for safety, comfort, conservation and an excellent return on investment.

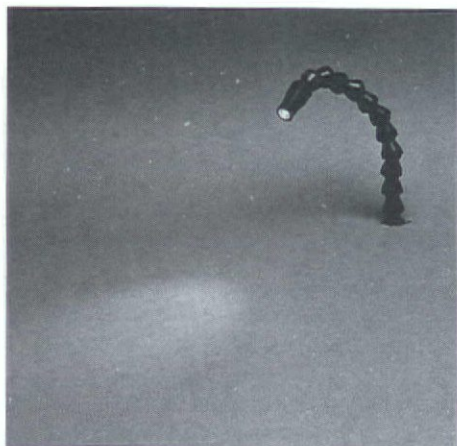
Circle No. 228



WELCOME TO LIGHTFAIR '95

Leviton's Scene Select lighting controls allow lighting specialists to design lighting scenes with user-specified brightness levels. The ability to simultaneously control the brightness level of independent sources allows for custom tailoring of the lighting system. Lighting design can also be programmed.

Circle No. 225

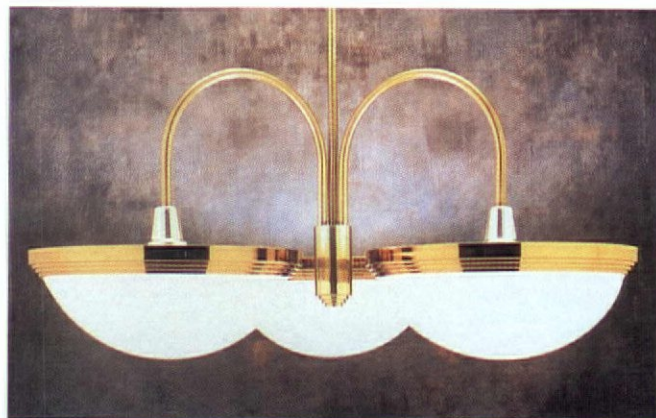
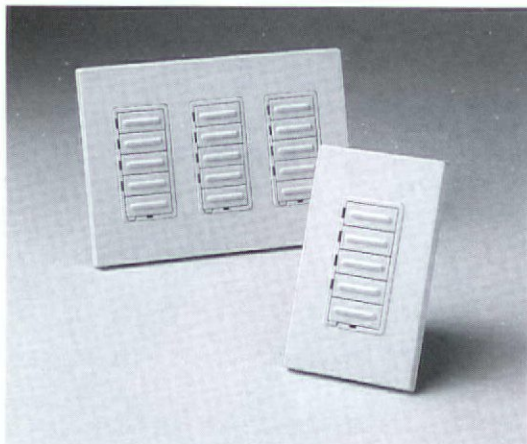


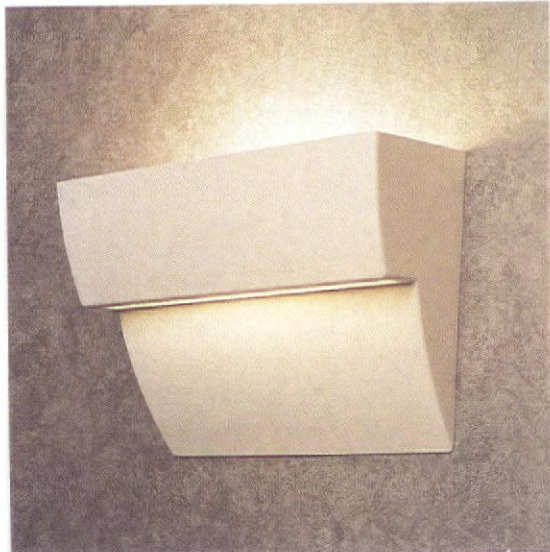
Fibertwist, from Fiberstars, is perfect for spot lighting applications in gardens, pools, spas or walkways. The unit consists of Fiberstars' FiberSpots, which are hair-thin fiber optic strands inside an opaque outer tubing. The fixture can rotate 360 degrees.

Circle No. 224

The Imperial Series, introduced by LAM, is composed of nonlinear, ceiling-suspended pendant and cluster fixtures and wall sconces. These low-wattage, high-output compact fluorescent light fixtures can be arranged in either triangular or square patterns inside the perimeter of the unit's diffuser.

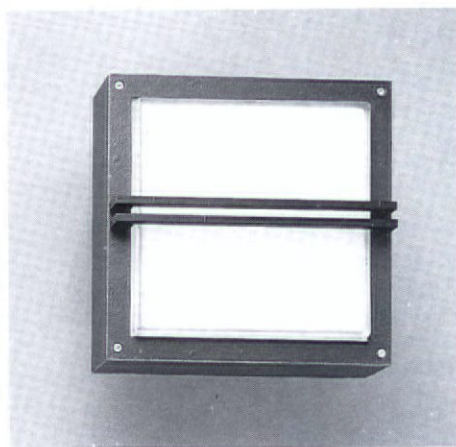
Circle No. 229





Phaces, a series of low-profile wall sconces from SPI Lighting, is ADA-compliant and comes in a variety of styles such as scoops, quarter-spheres, triangles, arcs and wedges. Materials like metal, acrylic and alabaster can be combined with brass, chrome, aluminum and acrylic with varied trimmings.

Circle No. 227



Sterner Lighting Systems Incorporated introduces die-cast aluminum Metric Wall Sconces. They are offered in 15 facades and lamping options with a range of finishes for both interiors and exteriors. All wall sconces meet ADA requirements and are U.L. wet location listed.

Circle No. 226

Lightolier introduces Sof-Tech™, a series of adjustable line-voltage track lighting fixtures available in enclosed or open-back versions. Lightolier's Cool-Grip Aiming System melds a heat-resistant, silicone rubber ring to the lamp head's outer front surface. This scratch-resistant ring surrounds the fixture providing it with a grip when the unit is hot.

Circle No. 231



VISA Lighting introduces the Biax Pendant series. The Biax Pendant series combines high-efficiency optics with a classic design. The pendants are offered in three, six, or nine 39-watt biax lampings with a choice of 30-in., 36-in. or 42-in. diameters.

Circle No. 233

LIGHTEN UP



The classic design of the S-1 Series from TSAO+CLS with its metallic-lacquered, hand-applied finishes can be used for walls, tables or floors. Each model accommodates either a standard-watt incandescent A lamp or an energy efficient PL-13-watt compact fluorescent.

Circle No. 230



MARKETPLACE

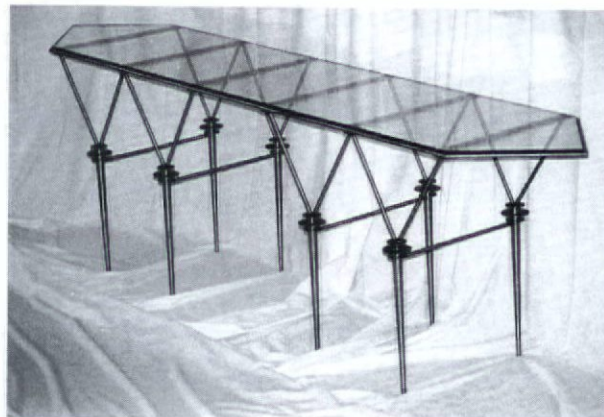


← Domain panel system fabric from Maharam possesses a texture that is equally attractive close up and from a distance. The surface detail and subtle patterns make it exceptional and the judges agree as Domain won a 1994 APEX Award.

Circle No. 234

Metal pieces created by Maria Marra Designs include a range of furnishings from tables to mirrors. Each piece is handcrafted in the form of simple geometric figures in a variety of finishes. Custom options are available.

↓ Circle No. 236



← The Duomo Rollabouts by Nucraft were designed by Bill Schacht to move around the room. The Rollabouts cater to either a presentation format or a food and beverage center. The presentation Rollabout features a retractable keyboard surface, cord management and flip-up auxiliary work surfaces. The server Rollabout offers heat-and-scuff-resistant laminate and plenty of storage.

Circle No. 235



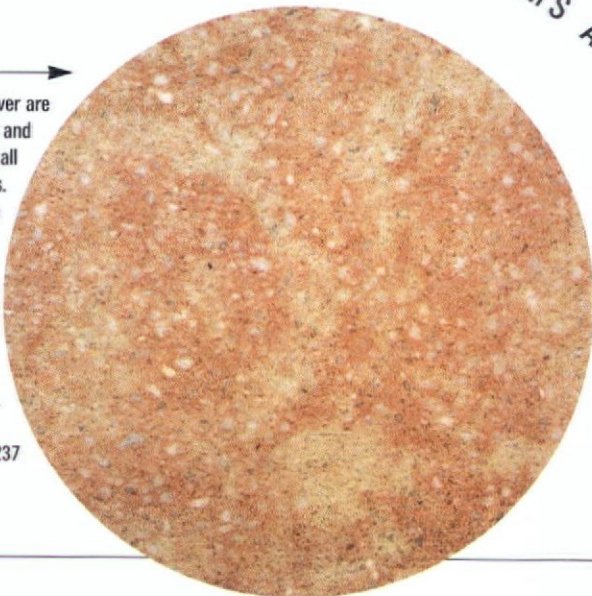
← Peter Pepper Products introduces this free-standing magazine rack with seven pockets on both the front and back for ample storage capacities. The product is compact, occupying only 1-1/2-sq.-ft. of floor space and is available in six wood finishes or 27 colors.

Circle No. 238

DESIGN BLOOMS ANEW

→ Marble floors by Rover are available in tiles, slabs and cut-to-size pieces for all interior applications. Petra Veneta, available in a variety of shades such as California Sunset, is Rover's exclusive product offering and exhibits uniformity rarely available in natural stone.

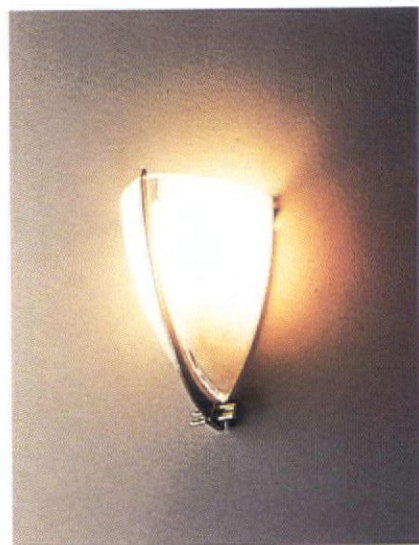
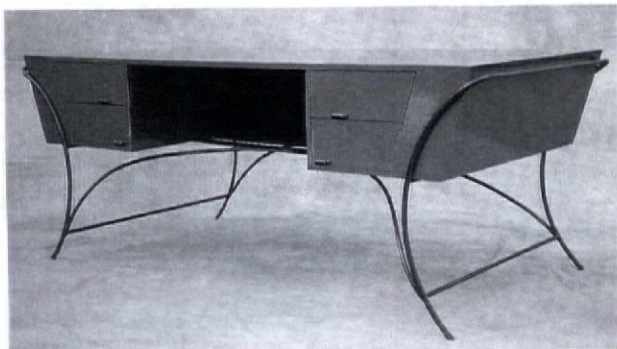
Circle No. 237



MARKETPLACE

El Señor bureau presented by Arc Age is a functional desk for a fine delivery or reception room. The functional upper portion is juxtaposed by whimsical lower legs and is available in an array of finishes. The bureau is part of the 12-piece El Señor Collection.

Circle No. 239



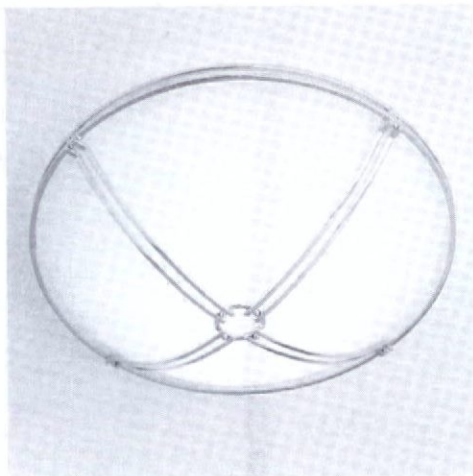
Designed by Ernesto Gismondi, Artemide introduces the Vesta wall fixture, a unique wall mount luminaire providing diffused incandescent or energy saving fluorescent light. The diffuser is molded in white sanded glass with clear sanded detail. The diffuser support is made of silver gray lacquered steel with polished brass fasteners.

Circle No. 240

Boyd Lighting introduces its Paramount Collection, created by Doyle Crosby.

The flush ceiling fixture features a hand-slumped, satin-etched glass bowl that softly diffuses light and minimizes lamp imaging. Hand-polished brass or chrome traces the elegantly curved bowl.

Circle No. 241



SPRING ARRIVALS



Garden Gate and Mid March, are the latest patterns from the Tea Garden

Collection presented by

Brentano. Garden Gate, left, suggest the visual play between geometry and organic accents in a cotton/rayon blend. Mid March, right, is constructed in 100% Trevira FR and depicts weeping branches yielding to the weight of the flowers.

Circle No. 243

The Eclipse Table Collection is offered in a variety of standard and custom sizes, shapes and finishes from Charles McMurray Designs. The unique polished stainless steel leg, with its elegant arm support, allows the top to float on a plane above the leg while only partially revealing the leg.

Circle No. 242



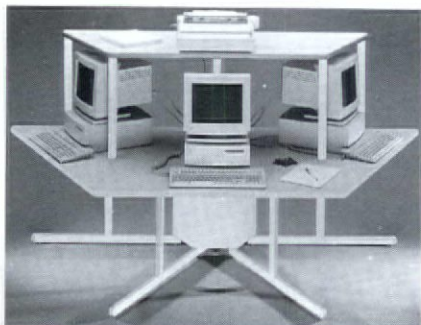
Computer Support Furniture

The U. S. economy reached a crossroads of sorts in 1982 when it spent as much for computers and other information technology as it did for industrial machinery, and information technology's share of the capital equipment dollar has continued to outdistance that of industrial machinery since then. What once was a timely argument—whether managers would place computers boldly on their desks or discreetly hidden inside them—is a moot point now. Computers are so basic to today's business that they are visible at almost every work station in every workplace. Here are some ways that furniture can make computers easier or at least less stressful to use.

BRETFORD

Bretford's Connections youth-height computer lab table is used to create Work Centers and Instruction Centers that are perfect for primary grade students. Connections Work Centers are designed for a child's reaching ability and is available in varying heights. Connections Instruction Centers hold up to three microcomputer systems and can be configured into a six-station cluster by placing two tables back-to-back.

Circle No. 201



EXECUTIVE OFFICE CONCEPTS

Magellan, from Executive Office Concepts, comes in a variety of hardwoods and veneers in a choice of hand finishes, trim colors and decorative inlays. The casegoods are available in rectangular or batwing shapes. Both include an optional overhead storage unit with self-closing swinging doors and a choice of concealed task or track lighting.

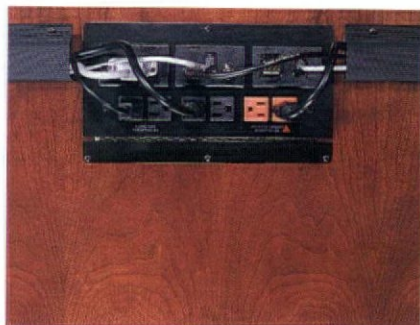
Circle No. 203



DAR/RAN FURNITURE INDUSTRIES

Dar/Ran Furniture Industries introduces Data-Flex™, a communications harness that combines electrical, telephone, fax and computer hook-ups in one unit. Data-Flex™ is offered fully installed on new products or it may be ordered separately for retro-fitting. A selection of more than 90 modular, snap-in connectors is available to fit specific computer applications.

Circle No. 202



FLEX-Y-PLAN

The Adjusta Surface from Flex-Y-Plan comfortably positions keyboard, mouse and reference documents for seated and standing use. Mechanical spring-assisted design ensures smooth height and tilt adjustments. The product comes with a 10-year warranty and has passed ANSI/BIFMA testing standards.

Circle No. 204



FORMINCO

Forminco's Height Adjustable Desk features a desktop with a wide range of height adjustments that can be locked into place with a single lever mechanism. The computer CPU storage shelf stays parallel with the desktop surface as the height adjusts. The desk comes with a retractable keyboard tray.

Circle No. 205



GUNLOCKE

Gunlocke offers computer support furniture for effective computer station management with traditional and contemporary styles that complement every Gunlocke casegood. Products include an optional gallery, mobile and stationary models, a pull-out keyboard shelf and the option of a 36-in. or 42-in. size. All options are available in standard Gunlocke finishes.

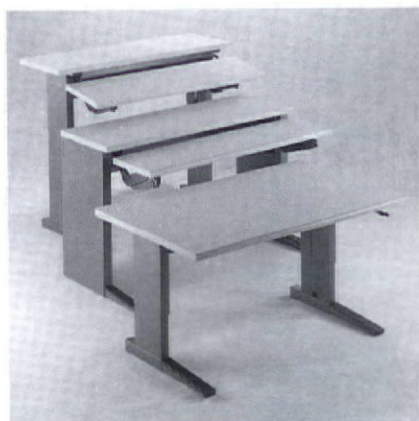
Circle No. 206



HASKELL

System One™ Workplaces, a freestanding workstation system, is comprised of table and desk group units. The table group units feature a c-leg design, one-quarter-height back panels and an integral wire trough. Three-quarter and full-height back panels are available. The desk group units feature a panel end and are available with three-quarter or full-height back panels. Both include wire access ports for easy power distribution.

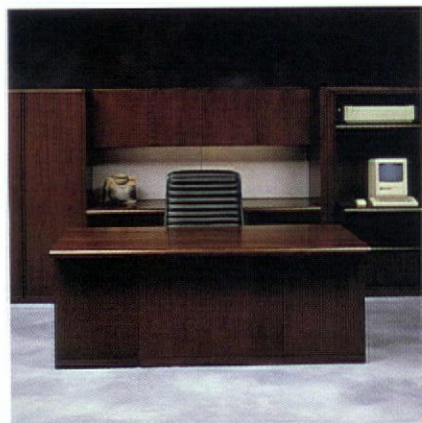
Circle No. 207



KINETICS, A HAWORTH COMPANY

Kinetics, a Haworth Company, offers the 440 Series Computer Training Table. Trays allow computer monitors to be recessed into the tabletop, grommets facilitate cable routing through the work surface and vertical storage units store computer hardware under the surface. Height adjustment and convenient electrical access, plug strip and power modules beneath the surface are also available.

Circle No. 208



HERMAN MILLER

The Flex-Edge™ input platform from Herman Miller offers 15 inches of height adjustment to accommodate a keyboard plus mouse, track ball or digitizer pad. Curbed safety edges prevent pinch points with adjacent work surfaces during adjustment. The angle of the platform can be adjusted from 15 degrees forward to 9 degrees backward.

Circle No. 209



JG FURNITURE SYSTEMS

JG Furniture Systems offers continuous-curved CRT operational workstations along with conferencing worksurfaces which, when used in combination with IOP beltline power panels, are capable of supporting all technical requirements of the modern office.

Circle No. 210



KI

KI's adjustable WorkZone is designed with increased flexibility to accommodate varying office environments. All adjustments meet or exceed ANSI/HFS 100-1988 and ADA requirements. WorkZone is designed to coordinate with standard-size system panels, featuring seven widths and two depths with single and dual surfaces.

Circle No. 211



KNOLL

KnollStudio launches Propeller, a new line of training and conference tables developed by architect and industrial designer, Emanuela Frattini. Table legs can be specified with glides or casters to allow tables to slide over carpeting or a bare floor. Color coded parts and instruction stickers make the product easy to assemble with no hardware needed. Tables can be selected in varying shapes and sizes.

Circle No. 212



LUI

Word Data System from LUI is provided in a range of computer desk sizes and configurations including retractable keyboard tray, printer tables, storage cabinets and overhead units. The system is offered in a choice of laminates and colors. Matching self-edges or coordinating bumper edges are also available.

Circle No. 213



MAYLINE

The VariTask Apex adjustable computer support table from Mayline is designed to fit any application from rectilinear to corner configurations. The table is available in sizes ranging from 36-in. to 60-in. wide, in a variety of paint and laminate combinations for single or dual work surfaces. Tops are constructed of particle board covered with a high pressure laminate in either a t-molded or waterfall edge.

Circle No. 214



METRO FURNITURE

Template from Metro Furniture accommodates technology with power and data access provided at the desktop to the perimeter. Wires are directed horizontally underneath the work surface and vertically through overhead bin supports, or into a corner channel to a floor monument. Stand-up heights, mobile pedestals, auxiliary work carts and docking tables extend the work surface.

Circle No. 215



NOVA

Nova's 85 series classroom setting and multimedia podium kit includes a laminate workstation that positions the computer monitor at a 35- to 40-degree angle below the work surface, thereby reducing computer related stress injuries. The computer, components and wires are housed entirely within the unit. The multimedia podium unit features adjustable shelves for storage.

Circle No. 216



PLEION

Pleion's line of adjustable keyboard surfaces in straight and corner configurations integrate with the company's line of open plan panels and modular furniture components. The surfaces are available in 24- and 30-in. depths and standard widths. The forward and back lateral adjustment range is 14 inches, allowing the keyboard to be pulled forward for use or stored below the surface.

Circle No. 217



ROSEMOUNT

The Velocity™ System from Rosemount Office Systems is a panel-free system designed to quickly respond to a changing office environment. All worksurfaces and upper storage units are height adjustable. Removable interior legs eliminate any under work surface obstacles. Privacy inserts are available in tackable, acoustic, vision, marker board and accessory board options.

Circle No. 218



STEELCASE

Steelcase's Series 9000®, Avenir® and Elective Elements® offer adjustable work, split and keyboard surfaces for panel-mounted and single corner surfaces. The new sit-stand, height adjustable workstation features a keyboard that can be adjusted and a monitor stand that offers an additional six inches above and five inches below the keyboard surface.

Circle No. 219



GEIGER BRICKEL

The Petri System from Geiger Brickel is designed by Manfred Petri to be used in private or open-plan offices. The system can be assembled into modular, free-standing desks and storage units or as a completely self-contained workstation. A full line of natural wood species and finishes are available.

Circle No. 220



HOWE

The Tutor Track System from Howe is lightweight and easily moved for training, seminar and meeting room environments. The Tutor system accommodates computer and audio-visual use through flexible wire/cable management. All tables connect and fold up when not in use.

Circle No. 221



RUBBERMAID

The Aspira™ Series by Rubbermaid is both attractive and functional with its Resinite™ construction that gives it a modern look that's built to last. Aspira™ offers flexibility with hidden cable channels and accessory sockets. A height adjustable underdesk keyboard platform uses space beneath the work surface for keyboard storage.

Circle No. 222



Bright Lights, Big Casegoods

Tuohy's Chicago Collection, designed by Brian Kane, is all it's been stacked up to be

By Linda Burnett

Contemporary Tradition: Lighting towers combine with the rich grain of wood in Chicago to create a new space (top). Casegoods can be configured minimally or completely. A leaf can be lifted to transform a work desk into a conference table

Back panels and kneehole panels are optional. By eliminating the back panel (above), Tuohy has lightened up the furniture's presence while allowing it a symmetrical efficiency with classic shelving.

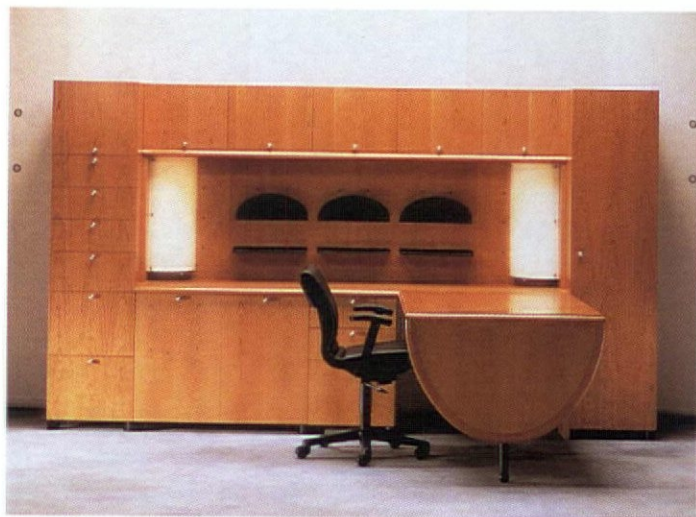
Your office or your home? When Tuohy teamed up with industrial designer Brian Kane to design a new collection of casegoods and lounge furniture, it wasn't just anticipating a selling season, it was planning a change in climate. One look at the Chicago Collection can have a client wishing he were furnishing his home instead of his office. Tuohy's newest collection manages to be simultaneously functional, attractive, affordable, sophisticated, flexible, complete, contemporary and traditional.

The design brief for Chicago developed out of Tuohy's observations of the wood casegoods available in the market. "Tuohy wanted something different to pull out of the basic brown box that most case goods look like," says Kane. "Something had to happen aesthetically to differentiate this line while retaining a bang for the buck," adds Bernard Tuohy, vice president of Tuohy. To separate Chicago from the herd, Tuohy strove for the highest level of modularity possible. The result was a series of individual pieces that stand alone or combine to form a comprehensive unit.

One way Tuohy and Kane achieved a high level of modularity was by removing the back panels to allow major casegoods components to be more freely connected or reconfigured. The idea of using Chicago for both open plan work stations and furniture for private offices was considered appropriate for the target market of executives and their administrative assistants. "It can be pared down to accommodate space and suit a common area, or it can be built up for an executive office—using the same palette," notes Tuohy.

"You can use Chicago to build pieces of architectural furniture," asserts Kane. "Before, casegoods were flat and solid. There was no sense of architecture. I wanted to lighten that up and give each component its own integrity while stacking them to create a unique unit."

Kane did lighten up the furniture literally by incorporating lighting fixtures into the framework. "We added ambient lighting to warm it up and further the sense of architecture," he points out. The units also avoid the look of heavy massing by resting on feet rather than plinths.



Another important feature is the juxtaposition of traditional drop-leaf wood tops with industrial steel hardware. The drop-leaf is reminiscent of residential detailing while the steel brings forth a slick contemporary aesthetic. Incorporating steel into the product was significant for Tuohy because it has always been a wood manufacturer, but the company embraced Kane's use of contrasting materials to play a traditional sensibility against a contemporary one.

Necessity proved to be the mother of invention when clients wanted scaled down furniture to conserve space, be attractively priced and include pieces with multiple functions. As a result, a Chicago work station can be seen as a work in progress rather than a finite piece of furniture. The stacked tower, for instance, has drawers on one side and a garment closet on the other. A work station expands into a conferencing area by lifting the leaf.

Paying this kind of attention to customers has created both a new aesthetic and greater manufactur-

ing efficiency for Tuohy. Modularity, compact dimensions and multiple functions have reduced the number of components, shrunk the size of pieces to be transported, simplified shipping procedures and cut unnecessary expenses. In fact, Chicago has cost 15% less than what it costs to make standard Tuohy products.

Such devotion to pragmatism positions Chicago aggressively in the middle of the market as a cost-effective product. Customers are also delighted to find such inspired features as the lounge chair's drop leaf, which transforms into an end table to reduce the need to buy an additional table. "This is the essence of good industrial design," asserts Tuohy.

He could also observe that the strategy broadens the product's appeal. With the Chicago Collection's timely aesthetics, flexibility and functionality, interior designers could conceivably choose this furniture first and design the space to suit. But form doesn't follow furniture—yet. ☺

Circle No. 245



The best design begins with the best fiber.

Monsanto presents the prestigious 1994 Doc Award to Scott Himmel and Darcy Bonner of Himmel/Bonner Architects, Chicago, for the innovative interior of **Playboy Enterprises'** New York publishing offices. The winning designers created a custom carpet, now Masland Carpet Mills' "Bombay," and used "Le Triomphe" and "Classic" from Prince Street — all with Monsanto **Ultron® VIP nylon** — to create a high-end yet durable look. And balance **tradition** with Playboy's **forward** image.

Choose Ultron® VIP carpet fiber for your next project. And you could be a **winner**, too.

Monsanto
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Fibers

Circle 14 on reader service card

For details about the 1995 Doc Awards, contact Monsanto, The Chemical Group, A Unit of Monsanto Company, 1-800-543-5377 or 1-404-951-7600. Winning designers shown below: Darcy Bonner (seated) and Scott Himmel.



The limits of newspaper and soyflour are in the designer's mind when working with Environ. The material, which comes in a variety of colors, can be worked into furniture (right), architectural details (below) and anywhere else hardwood or solid surfacing might go.



all newspapers that are never recycled.) Since the company sits in the middle of soybean country in Mankato, Minn., it looked to that industry for a glue substitute. A grant from the Soybean Association helped research along.

Development was proceeding toward a particle board substitute when someone decided to throw some dye in the mix. The resulting product retained a distinct

pattern with depth of field, distinctive color definition and pattern diversity. All color samples in the early days included yellowish flecks called "golden wheat," but a breakthrough in the soy paste eliminated that characteristic so Environ could be made in solid colors. "We can even do custom colors," says Roos. Various finishes and topcoats are applied depending on intended end use.

All these properties make for a durable, flexible and attractive product that can tug at a designer's and a client's environmentally-sensitive heartstrings. To date, the pull is working. Environ can now be found on tables made by KI, while the Boston architecture firm of Elkus Manfredi has specified it as a counter top for two HMV Record Stores (as well as proposed it for HMV's new international prototype design) and Wal-Mart is considering it for transaction counters.

Roos reports that by far Environ's biggest use is in awards and plaques. He also says that Phenix™ is testing the material for use as wall paneling, wainscoting, elevator panels, vanities, kitchen counters and floors. "My office is floored with it right now," he reveals.

New uses for Environ will undoubtedly appear with time. For now, designers and their clients may learn of the product by surfing the many databases that feature environmentally friendly products and companies. To ensure a spot on these lists, Phenix™ made certain its manufacturing processes are as clean and green as its product. The company uses water-based solvents, bans formaldehyde and finds viable uses for waste products like dust and saw trimmings.

Environ has also opened the eyes of people around the world who are interested in using agricultural products in a new way. "I get three to five calls a week from people who want to experiment with coconut, hemp, wheat and other products," says Roos. "It really is exciting."

So check your trash for ideas. Or better yet, turn the whole project over to the nearest 11-year-old to work out on an Environ-topped table. ☺

Waste— Not!

Born of soybeans
and newsprint,
Environ by Phenix™
Biocomposites spins
proverbial straw into
solid surfacing gold

By Amy Milshtein

Maybe there was nothing good on TV. Or she didn't have any homework that night. Or it was raining. Or she was just plain bored. No one really knows why an 11-year-old girl from Minnesota decided to coat some old newspapers with plain Elmer's Glue and stick the concoction in her mother's microwave. But designers should be glad she did, because what she created gave birth to Environ, a natural, durable solid surfacing material from Phenix™ Biocomposites.

True, the flat, solid board that the daughter of a contractor pulled out of the oven is a far cry from the product available today. But it did spark the imagination of the people at Rho Delta, an environmentally sensitive R&D group, and got them thinking about the impact newspaper production has on our forests. (The Environmental Defense Fund estimates that every week half a million trees are used to create the two-thirds of

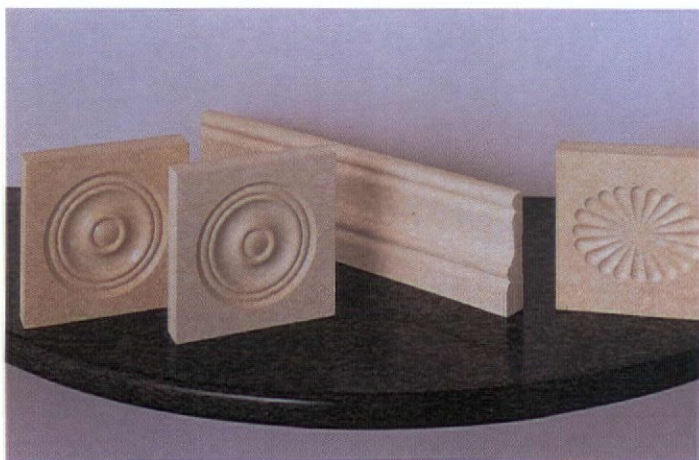
particle geometry much like granite yet boasted many properties found in hardwood. In a word, Environ was born.

There is much to like in Environ, starting with the 40% by weight made from recycled newsprint. The newsprint is not de-inked, eliminating the production of harmful dioxins usually associated with the de-inking process. Another 40% comes from a monolithic, bio-based resin made from soybean flour, an underused byproduct of soybean oil manufacturing. The remaining 20% includes colorants and proprietary ingredients.

What can designers do with Environ? Phenix™ Biocomposites technical director Ken Roos says, "Cut it, drill it, route it, mill it, lathe it and glue it just like wood. In fact, traditional woodworking tools can be used, eliminating the need for special equipment." Like solid surfacing, Environ is homogeneous through and through, so any scratches or burns can be sanded down and refinished.

Unlike solid surfacing, however, Environ can be glued to wood. The two materials work well together due to a similar expansion coefficient, so complex marquetry is no problem. The product is half the weight of granite, yet denser than hardwood. It possesses high strength and stiffness but no adverse creep, meaning it won't sag under its own weight over time—and costs 30-35% less than solid surfacing or about the same as exotic hardwood.

And it looks good too. Like natural stone, the material fea-



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A Cure for Storage Blues

What's in storage for health care from Datel's Byrum System may be a lot more than health care professionals normally expect

By Linda Burnett

Let's get organized: Pull-out pharmaceutical storage and dispensing cabinets combine with modular units (above) for maximum flexibility in Datel's Byrum System. Units can be interchanged and reconfigured.

With all the hoopla about HMOs, no one can predict what direction health care will take in the United States. But observing the behind-the-scenes action in a hospital can offer more than an eyeful. The readiness with which a nurse can identify supply figures, the mobility of vital storage units and the correct labeling of medication storage are just a few of the

a line of carts and the development of a storage system company with a keen sensitivity to the opinions and needs of health care professionals. Rising demand for a product like the Byrum System in the 1990s simply reflects an idea whose time has come. "Health care is in a state of profound change," says Bill Payne, president of Datel. "We must build and design prod-



telling signs. As a medicine cabinet can reveal the secrets of its owner, a storage system can bare the soul of a hospital. When today's problematic symptoms show up in supply, efficiency, sterility and organization, Datel Medical Storage Systems' Byrum System is increasingly likely to be prescribed as a cure.

What makes these wall and mobile units so vital is their ability to fit more into each cubic inch than almost any other product of its kind. The system reduces linear storage by 30-50%, thereby creating more room for equipment—a growing requirement for health care facilities. While typical storage options offer simple, adjustable shelving, Datel has appropriated the system of "adjustable modularity" that transforms air space into product space from Byrum, a manufacturer in Denmark. "With an ordinary shelf, the product doesn't use the full space top to bottom," says Robert Nykamp, vice president of marketing for Datel. "There are always gaps because products come in different heights."

The story behind Datel says it all. The company was founded in 1986 by a nurse who recognized the need for a cart to store heart catheters. Her awareness led to

ucts based on a lot of input from health care providers."

More than a casegoods line, however, Byrum functions as an intermodal storage and transportation network for health care supplies. The storage carts are designed to roll up to the cabinets to replace one tray with another, which a user can simply lift to remove. The cabinets are available in open or closed versions with a pass-through design that separates clean and dirty areas, with the less expensive metal frame storage unit being used where security and sterility are less important.

Practical considerations are anticipated at every moment in the product's use. For example, unlike permanent casework, the system can constantly be reconfigured, and trays, baskets, dividers and organizers are interchangeable. All pieces can be cleaned as well through a cart wash under a highly pressurized water spray. The aluminum T-Mold around component doors and cabinet fronts helps resist the wear and tear of high volume use by causing objects to hit the molding rather than the casework. And rubber gaskets seal cabinet doors to simultaneously reduce noise and block out dust and particles.

Typical units are also replete with ingenious design details that reflect a profound understanding of health care's daily operations. The gravity feed, for instance, is an inclined shelf module that has long been used for stock rotation in pharmacies but not previously applied to general storage. Stock rotation is important for medications that become useless or dangerous when they expire.

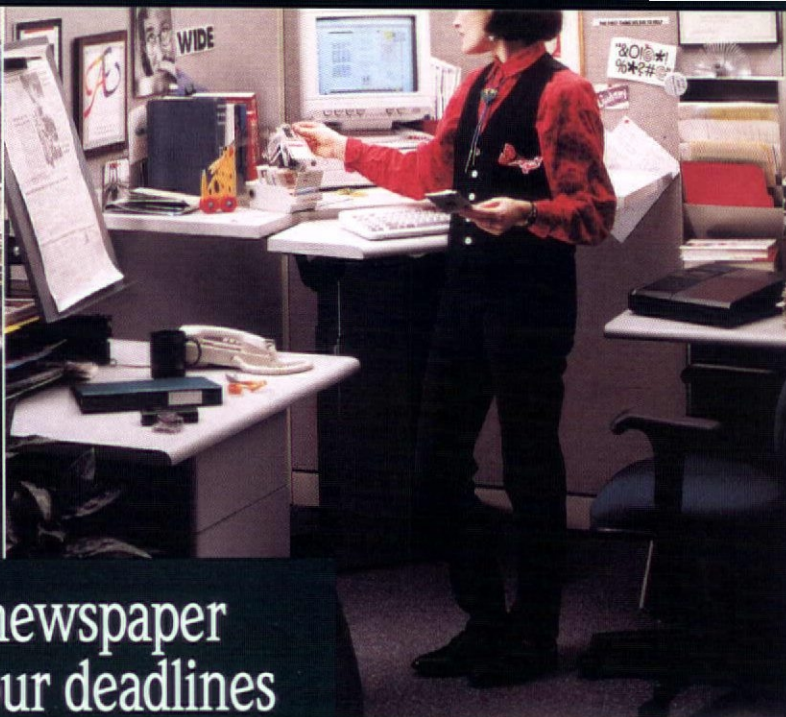
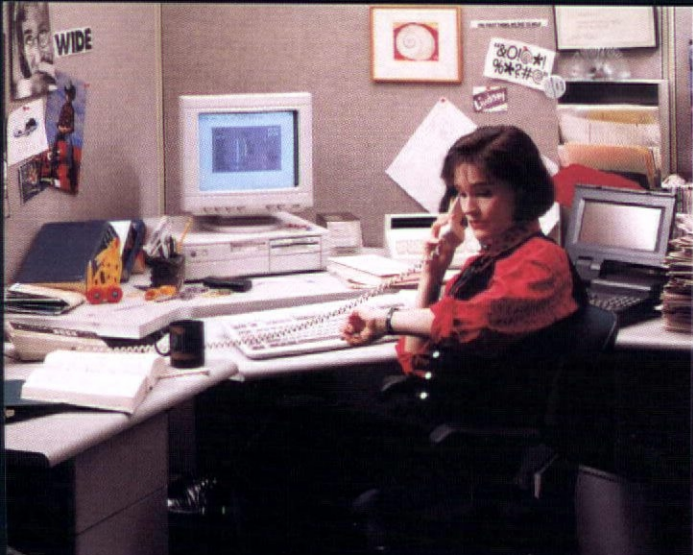
"Hospitals end up throwing away a large amount of expired stock," says Nykamp. "But this kind of storage aids the end user in using the older stock first."

If the Byrum System resembles Denmark's beloved Lego® toy blocks in a variety of ways, the association is no accident. Modulex, a signage company and division of Lego, designed the Lego-like lettering components that snap into place directly on Byrum handle brackets to make identification quicker and easier. Inventory efficiency too is boosted with the use of plastic, credit card-sized holders of bar-coded labels from low or out of stock items, which are clipped onto trays, baskets and shelves to alert supply personnel so nurses don't have to worry about hoarding supplies.

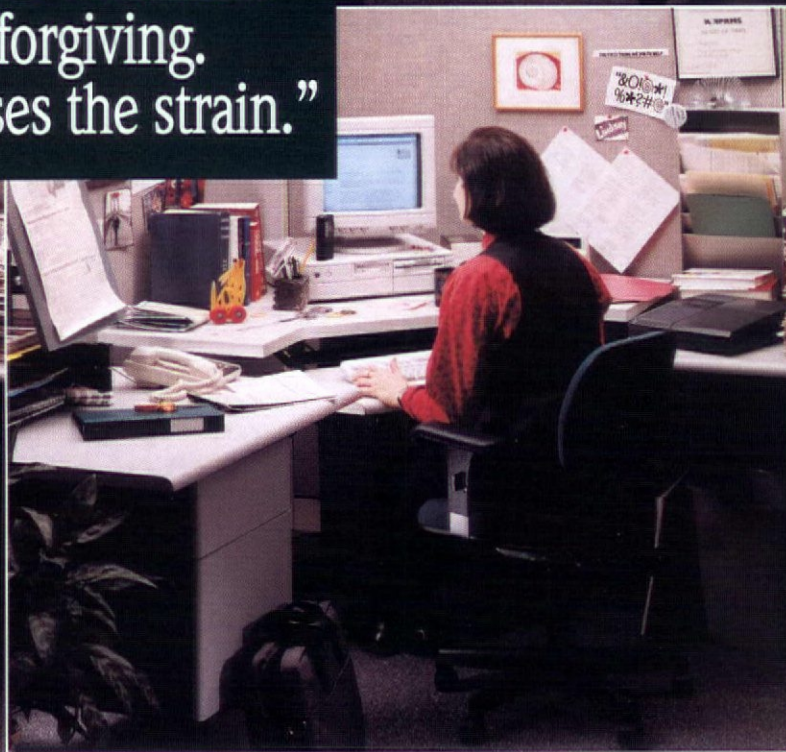
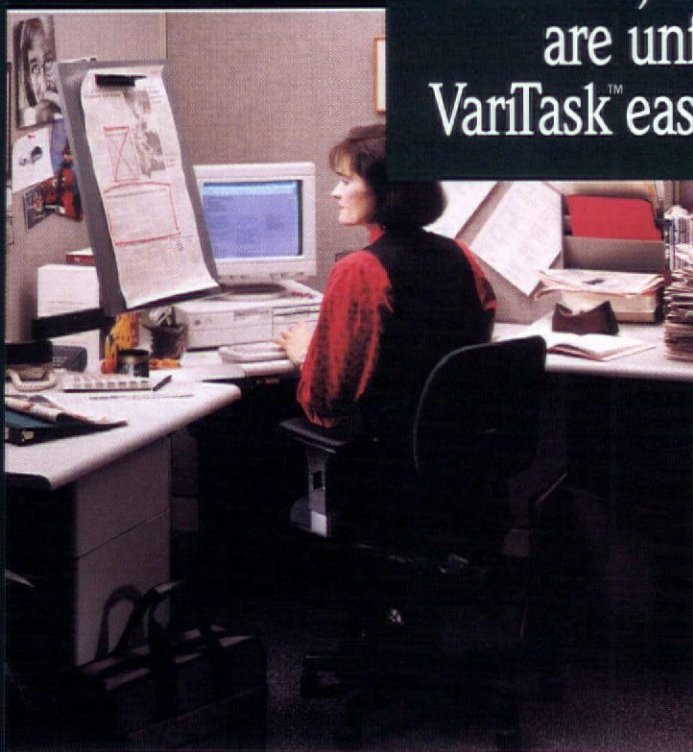
Although the Byrum System, originally conceived some 15 years ago for use in Western Europe and the Far East, is new to the United States, it has already been well received by such health care institutions as the Cleveland Clinic and Stanford University Medical Center. The U.S. medical profession clearly needs more effective storage systems that put everything at the finger tips, and Datel's product seems to hold great promise as an answer to its needs. Says Nykamp, "The response from most users has been, 'Where have you been all our lives?'"

Perhaps Datel might consider sending some Byrum System components to Congress and the Clinton administration for some hands-on experience before they attempt to tackle the nation's health care problems once again. It's not too late. ☺

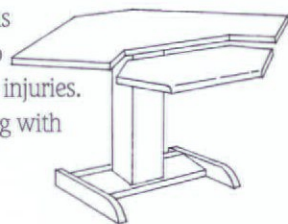
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Louder, Please

Who would believe that one of Denver's hottest new spots with the younger set is the Ross-Cherry Creek Library, with an outrageous design by Michael Brendle Architects?

By Amy Milshtein



On your knees: The entrance to the children's library (opposite) in the Ross-Cherry Creek Library designed by architect Michael Brendle includes a triangular tunnel for kids to crawl through. Others must walk around the form. As library officials found out when they redesigned this facility, it pays to advertise. Since revamping and erecting the bright, geometric forms that the architect calls a "shopkeeper's sign" (above) circulation has doubled.

Going to the library is tough for kids. No talking, whispering, yelling, jumping, running or squirming allowed. Sure, books hold appeal to the average five-year-old, but a stifling atmosphere may suck the joy out of what could otherwise become a lifelong passion. Enter the Ross-Cherry Creek Library in Denver. Here children are enticed to raise a ruckus while adults benefit too, thanks to a lively renovation by Michael Brendle Architects.

Raising a ruckus in a library? "This is not a 'Shhhhhh' kind of place," explains Evelyn Connor, the City of Denver's director of branch libraries. "We want all 22 of Denver's branch libraries to reflect their communities so this facility had to be lively and vibrant."

A perfect fit for the frenzied, fast-paced world of Ross-Cherry Creek. This is where Denver's beautiful people shop in Neiman Marcus, Saks and independent boutiques. They refuel at Starbucks or another such eatery

before heading north to their newly constructed, high-end condos, town houses or older single family homes. Their library occupies a prime site between the residential and retail areas, but it had completely drifted out of the community's consciousness prior to its facelift.

"I would tell people that I was working on the Cherry Creek Library and they would ask, 'Where's that going to be?'" remembers Michael Brendle, AIA. "They were shocked to find out that the building occupied the same spot for the last 30 years."

Of course, the good people of Denver weren't wholly to blame. The library, nicknamed "the Mausoleum" by staff, turned its back on an enviably busy intersection to face a side street across from a nondescript 1970s masonry office building. The cast-in-place concrete structure, covered with polished terrazzo and fitted out with heavy mahogany and tile inside didn't exactly help grab attention or spark imaginations.

The first two questions Brendle asked his clients were, "What can't I touch, and what do you want to change?" When the answer came back as "Nothing and everything," he knew his job was going to be much bigger than the original plan of adding an elevator and stairway. Brendle stripped the structure to its frame, then reinvented the facility from the inside out.

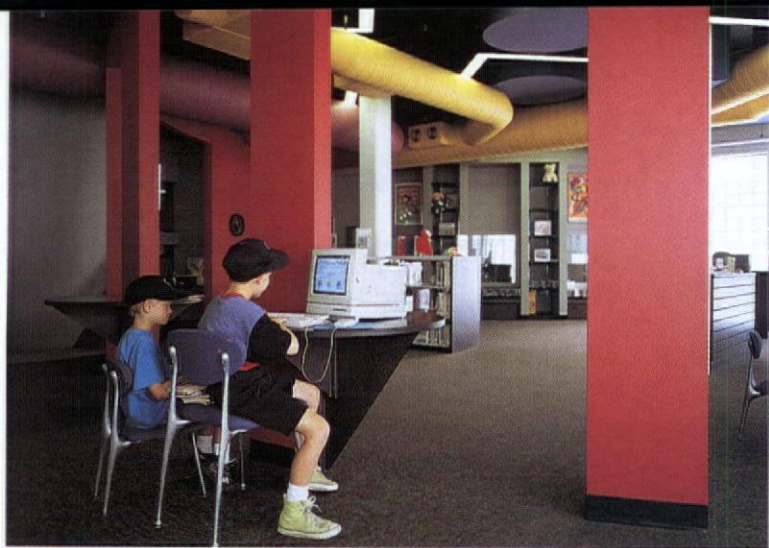
The library's new entrance stands firmly on the main intersection. To call attention to it, Brendle shaped a collision of colorful geometric forms to act as a "shopkeeper's" sign. "It's definitely the most abstract structure on the block," admits Brendle. "Yet it fits well with the area's character and energy."

The library's interior delivers on the promise of its entrance. Brendle combats the bane of all libraries—book-sized clutter—by overpowering the mess with grandly-overscaled, brightly-colored drywall forms. One example, an inverted dome with a corresponding circle of floor tile, recalls the historic rotunda found in many a traditional Beaux Arts library.

However, that's where classical allusions end. As the light plays over the soundproof forms that Brendle calls "acoustical stalactites," they appear to float, twist and change in scale and perception. Though perhaps the most fun could be found in the children's area.

Even the entrance to this space is special. Eager kids and sporting adults with good knees must crawl through a triangular-shaped tunnel to gain entry to the front corner space. (Brendle included a regular walkway for those of us with disadvantaged joints or good clothes.) Exposed duct work and brighter colors set the area apart as do three window seats that look onto the busy street. "Lots of times adults can be found at those seats," reports Connor.





Don't be fooled, however. Ross-Cherry Creek Library isn't all fun and games. To support the upscale community that would use the facility to research serious information, the architect made the library as straightforward and simple as possible. Within the admittedly loud and youthful environment, Brendle has included such grownup features as four small study rooms for those who need privacy, computers that augment the traditional card catalogue system and an extensive fiber optic system.

Brendle also made all of the resources accessible by opening up all three floors. Before, the library stored half of its collection in the basement. With all of the books on hand now, browsing, which Connor says takes up 50% of a library patron's time, is easy. "Circulation has doubled and we haven't added any books," she reports.

The library has also become a social center for the community. In his design, Brendle included a conference room and a 100-seat meeting room where groups gather to discuss books, business, school and other community concerns. While they notice the new surroundings they probably don't notice that the architect refurbished the old cast-aluminum tables and chairs to save money. "The forms really complement the architecture," Brendle says. New Charles Eames pieces augment the collection.

Though the Ross-Cherry Creek Library has won an AIA award, it has not won the

From nowhere to out there

hearts of the entire neighborhood. The City of Denver counts itself among the boosters, nevertheless. "Many people wanted a traditional library," explains Connor. "I just direct them to one of our other branches."

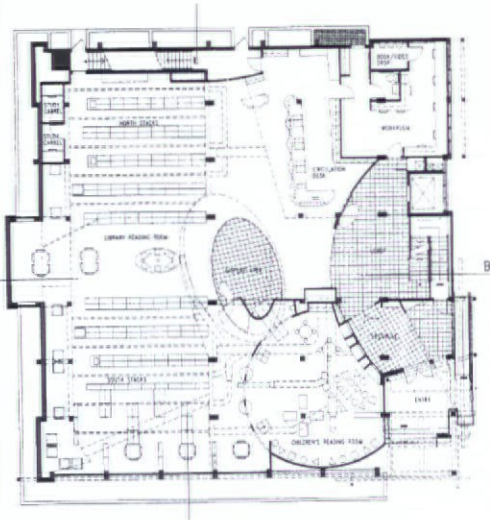
If anything, the City was as eager to make changes as its architect—if not more so. "People always ask me how I got a government office to pay for this project," says Brendle. "Truth is, they were always one step ahead of me when it came to pushing the envelope."

However, the true winners are the community's children. Both Connor and Brendle note that the youngsters have taken to the building from opening day and claimed it for their own. Connor reports that a group of 12-year-olds were roaming the building recently, admiring the design and the books.

But with reading on the rise in Denver, what will happen to all those savvy Ross-Cherry Creek citizens holding Nintendo stock? ☺

Project Summary: Ross-Cherry Creek Branch Library

Location: Denver, CO. **Total floor area:** 17,800 sq. ft. **No. of floors:** 3 **Average floor size:** 7,831 sq. ft. (1), 4,390 sq. ft. (2), 4,782 sq. ft. (basement). **Book capacity:** 73,000 volumes. **Seating capacity:** 8 (technology), 50 (study), 20 (lounge), 100 (meeting), 10 (conference). **Cost per sq. ft.:** \$71. **Furnish-**



ings budget: \$32,000. Total cost: \$1.265 million. Paint: Devco. Laminate: Formica. Dry wall: U.S. Gypsum. Glass block: PPG. Flooring: Armstrong. Carpet/carpet tile: Bentley Carpet Mills. Carpet fiber: DuPont. Ceiling: Armstrong. Lighting: Peerless, Lithonia, KLF, Prescolite, Artemide, Yorklite. Doors: W. Ray Crabb Inc., Weyerhaeuser. Door hardware: Hager, Best, LCN, Pemco. Glass: PPG. Window frames: Kawneer. Railings: St. Thomas Steel. Library and conference seating: Herman Miller. Library and conference tables: Herman Miller. Administrative desks: Herman Miller. Administrative seating: Herman Miller. Lounge seating: Brayton Int'l. Other tables: Herman Miller. Shelving: Montel Aetnastak Cantilever. Cabinetmaking: Real Woodcraft. Signage: Signage Inc. Elevators: Dover. Plumbing fixtures: Halsey Taylor, Crane, Sloan. Client: City and County of Denver, CO. Architect: Michael Brendle Architects, P.C. Structural engineer: The Sheflin Group. Mechanical engineer: Abeyta Engineering Consultants. Electrical engineer: Roos Szynskie Inc. General contractor: Snow Construction Co. Lighting designer: Roos Szynskie Inc. Acoustician: David. L. Adams & Assoc. Furniture dealer: Office Pavilion. Photographer: Elizabeth Gill Lui, Ron Pollard, Jerry Butts.



Bright geometric forms and colorful exposed ductwork set the children's library apart (opposite top and middle). Far from being oppressive, this area of learning is loud, active and fun. To date, kids and their parents appreciate it.

Much like schools, today's libraries serve communities in many ways. A 100-seat meeting room and a smaller conference room (opposite, bottom) welcome civic gatherings and book discussions to Ross-Cherry Creek.

Glass block windows with seating (above) serve a dual purpose. Readers enjoy looking at the liveliness of the Cherry Creek shopping neighborhood while passersby are enticed into the exciting world of books.

Most of the aluminum furnishings in the library are refurbished, saving on a tight budget. Brendle was able to add some new Eames chairs for style, however (left).





Conspicuous Non-Consumption

The National Renewable Energy Laboratory's Solar Energy Research Facility in Golden, Colo., is energized in more ways than one by a powerful design from Anderson DeBartolo Pan

By Jennifer Thiele Busch

Cas lines, Gulf Wars and the Exxon Valdez are grim reminders that our dependence on fossil fuel-based energy can yield catastrophic results. No wonder that in today's chaotic world scientists seek to develop more efficient, reliable and environmentally sustainable energy resources. One of our more plentiful yet virtually untapped resources is the sun. Some 55,000 quads of sunshine—equaling 700 times more energy than we currently consume—falls on the continental United States each year. Harnessing this ubiquitous energy source to power our buildings, transportation and industry is the focus of research that takes place daily within the aluminum-and-glass walls of the new National Renewable Energy Laboratory's Solar Energy Research Facility in Golden, Colo.

Visitors to the recently-completed building that juts out of a gently sloping mesa just west of Denver may be awed by its unusual appearance. Yet the distinctions go beyond photogenic looks. Architects Anderson DeBartolo Pan know that this facility is on the verge of tomorrow, using design and engineering techniques that are readily available today.

The brief history of the National Renewable Energy Laboratory (NREL) reads like a political sine curve. Originally established as the Solar Energy Research Institute by the Solar Energy Research, Development and Demonstration Act of 1974, the laboratory began operations in 1977 as a national center for federally sponsored solar energy research and development. During the Carter years, the laboratory enjoyed its biggest operating budget ever, followed by significant cuts when Ronald Reagan refocused domestic spending on defense. President Bush elevated the Institute to national laboratory status in 1991, renaming it the National Renewable Energy Laboratory. Between 1989 and 1993, according to NREL public affairs spokesperson Michael Coe, the laboratory's operating budget increased from \$50 to \$230 million.

Now owned by the U.S. Department of Energy, NREL has continued virtually undisturbed under the Clinton administration in its mission to lead the nation toward a sustainable energy future by developing renewable energy technologies and facilitating their commercialization. Undisturbed, that is, except for a recent move for 190 of NREL's solar energy research employees from leased office space across the highway to the Solar

Energy Research Facility (SERF). Completed in October 1993, SERF features state-of-the-art laboratories, functional office space and an energy-efficient design that uses 30-40% less energy per year than a comparable conventional building.

Increases in NREL's budget in the early 1990s led to expanded research programs and staff, which were awkwardly accommodated on leased floors in a standard office building near the SERF site. "Having labs in an office building is an oxymoron in itself," notes NREL facilities interior project coordinator Jennifer Simpson. "Aesthetically and physically, the space was a nightmare." The need for more appropriate laboratories to support NREL research in photovoltaics, superconductivity, photoconversion and materials science would become the driving force behind SERF.

In 1990, Anderson DeBartolo Pan (ADP) was commissioned to develop a conceptual design for the research facility. Starting out with a rough idea of the required building size based on laboratory needs and GSA square footage requirements per person, plus a characteristically strict budget, ADP was charged with producing a high-tech research facility with functional support space and amenities. "NREL stressed the need for flexible lab

The dramatic stepped profile of the office wings at the Solar Energy Research Facility creates excitement both inside (opposite) and out (below). Clerestory windows capture the sun's light to illuminate work spaces and corridors. Sunlight also helps heat the building during winter months, but its intensity is reduced by aluminum-clad trusses and roof tiers, window glazings and automatic shading during the warmer seasons.



spaces as a major focus of the project," notes ADP project architect Jack Paul. "Beyond that, they wanted a facility that was not your average, run-of-the-mill federal building, and they insisted on incorporating a number of energy-efficient systems into the design."

As Roland Hulstrom, NREL branch manager for photovoltaics engineering and applications and a SERF project manager during conceptual design, explains, "SERF is a model of energy efficiency designed to exceed federal standards by 20%. The fact that we have done that—cost-effectively—validates what we do here." Part of ADP's mission, adds Paul, was "to demonstrate that ecological soundness could be incorporated into an attractive building."

SERF's imposing exterior profile was derived directly from the client's request for an energy-efficient design. Though the laboratories were necessarily contained in standard, box-shaped building segments, the stepped portion of the building containing offices and public spaces facilitated the use of natural daylight that significantly reduced the need for energy-consuming artificial lighting.

Programming began with the laboratory areas, which would account for a full 70% of SERF's 115,000 sq. ft. A diverse array of lab types for semiconductor research, wet chemistry, dry physics and environmental testing had to be accommodated. "The ease of making changes over the next 30 years of occu-

Taking a new angle on energy-efficient design

pancy to reflect research changes was also essential," explains Hulstrom.

Architects and lab design consultants spent intensive, week-long "squatters sessions" at NREL, inviting teams of technicians and researchers to help determine what the SERF staff needed to support current and future research. Team members first established space and utility requirements, functional relationships, laboratory design criteria and fun-



damental approaches to laboratory layouts. From those sessions, the design team developed a 10 ft. x 28 ft. lab module, and grouped together laboratories with similar needs and common resources.

Three distinct pods contain 42 laboratories of varying sizes and configurations. All water, power and gas services are delivered down 12-ft. wide, double-loaded service corridors with three feet on each side dedicated to additional equipment storage. "Every 20 ft. a full complement of services is available if labs need to be converted or reconfigured" says Mike Jones, a senior mechanical engineer and assistant project manager at SERF. The modular facility enjoys

almost total flexibility within each pod.

Laboratories can also be accessed through secondary personnel corridors on the building's perimeter. These corridors have large windows that allow visitors to observe the scientists at work—a feature Jones admits is not a favorite of the more privacy-minded members of the SERF staff. Posterboard displays in corridors also help educate groups such as school children, who regularly take guided tours of the facility.

When the design team turned its attention to the office space it was aware that researchers and technicians prefer their desks to be just a few short steps from their lab benches. This close spatial relationship could not be accommodated cost-effectively, however. As Hulstrom notes, "The expense of special HVAC systems, air treatments and such construction techniques as waffled floors to absorb vibration that are required in laboratory pods could not be applied to square footage dedicated to office space."

Office space was thus arranged in two independent wings that scientists can enter via the personnel corridors. "Researchers' offices were laid out to be clustered around the labs they're working in," Hulstrom says. "We also tried to place people in similar research close together regardless of hierarchy."

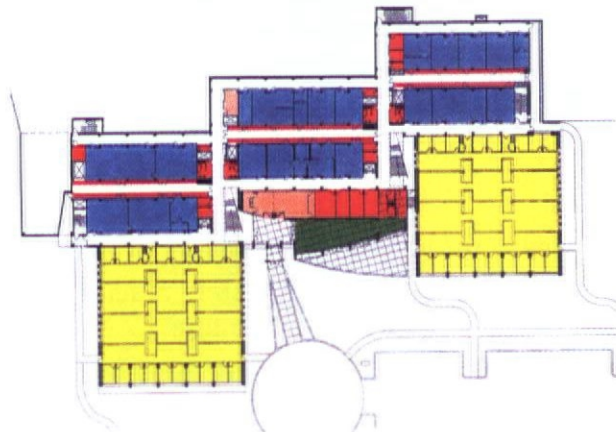
Though many researchers also preferred private offices, only a few actually required them for security reasons or rank. The bulk of the office space consists of standard 8 ft. x 10 ft. open plan work station modules, occupied by one or two employees each. The open plan arrangement, coupled with central break areas, a cafeteria/solarium and lounge areas at the bases of internal stairs, have effectively increased staff interaction as intended.



Internal service corridors (opposite, top) deliver all utilities and equipment to SERF's 42 laboratories, but extra-wide widths give them a dual purpose. Three feet on either side of the corridors are used as additional storage areas. The diverse array of laboratories (opposite, bottom) supporting superconductivity, photovoltaics, photoconversion and materials science research are universally designed on a 10 ft. x 28 ft. modular plan for maximum flexibility.

Cost-effectiveness required office areas to be separate from labs at SERF, so Anderson DeBartolo Pan has essentially divided the building into two distinct parts (above). Three research pods are separated from two identical office wings by a personnel corridor.

Public spaces at SERF help facilitate staff interaction and humanize an otherwise highly technical space. The solarium/cafe-teria (right) is a favorite of staff members all hours of the day.



Privacy issues were not ignored, however. "Small conference rooms with table, chairs, telephones and writing boards are dispersed throughout the space for small meetings or individual needs," indicates Hulstrom.

In a facility largely dedicated to technology, kept on a tight budget and subject to GSA standards and the fact that "neutral is a government philosophy," Simpson did her best to "humanize" the interiors. "We tried to create an impressive look that complemented the architecture while warming up the space," she recalls. As a result, SERF incorporates such details as cherrywood edging for work stations and conference room tables, lobby lounge areas with leather seating and colorful banners in the solarium depicting the relationships of ancient cultures and the sun.

Not least among the humanizing aspects of the building are the individual environment controls in each work area and the daylighting techniques incorporated into the design. Tall,

cone-shaped columns dubbed "air trees" are fitted with vents for individual cubicles, allowing occupants to control their own ventilation. Stepped clerestory windows in SERF's office wings let daylight illuminate work areas and brighten corridors. In spring, summer and fall, aluminum-clad trusses and roof tiers, automatic shading and graduated window glazings prevent sunlight from entering directly. In winter, lower-angled sunshine can enter the windows to bring light and warmth to the interiors. Daylighting has been so successful that offices require artificial lighting only one hour after sunrise and before sunset on most days.

"NREL wanted to stay away from the wild and esoteric, and develop the building with proven renewable energy techniques," says Paul. "These technologies are not experimental. They are not common, but they are all proven techniques that are commercially available." Other lighting, heating and cooling strategies include energy-efficient fluorescents, on-demand lighting, direct and indirect evaporative cooling, high-efficiency chillers and a laboratory exhaust heat recovery system.

"This project was truly a collaborative team effort," reflects Paul. "The design really developed out of our sharing engineering knowledge." Indeed, the architects were dealing with no ordinary client in NREL, where 36% of research and research support staff members have PhDs and another 20% hold masters degrees in science. Nevertheless, if ADP's design for SERF truly helps support and promote renewable energy research the way it's supposed to over the next several decades, perhaps the facility's greatest achievement will be to render itself ordinary—or even obsolete. ☺



Project Summary: Solar Energy Research Facility

Location: Golden, CO. **Total floor area:** 115,000 sq. ft. **No. of floors:** 2 plus basement. **Average floor size:** 58,000 sq. ft. (1), 38,000 sq. ft. (2). **Cost/sq. ft.:** \$170. **Wallcoverings:** Koroseal. **Paint:** Glidden. **Laminate:** Wilsonart. **Dry wall:** Gold Bond. **Vinyl flooring:** Armstrong, Mipolam. **Carpet/carpet tile:** Interface. **Ceiling:** NSG Acoustical Products. **Doors:** Weyerhaeuser. **Door hardware:** Best. **Glass:** PPG, Alpen. **Window treatments:** Hunter Douglas. **Laboratory benches and tables:** Hamilton. **Work stations:** Trendway. **Work station seating:** Trendway. **Lounge seating:** Metro, David Edwards. **Cafeteria, dining seating:** Knoll. **Auditorium seating:** KI. **Cafeteria, dining tables:** Falcon. **Upholstery:** Maharam, DesignTex. **Conference tables:** Nucraft, Falcon. **Conference seating:** Kimball. **Files:** Trendway. **Planters, accessories:** Peter Pepper. **Fire safety:** Globe Sprinklers. **Access flooring:** Tate. **Client:** U.S. Department of Energy, National Renewable Energy Laboratory. **Architect:** Anderson DeBartolo Pan. **Structural/mechanical/electrical engineer:** ADP. **Civil engineer:** Drexel Barrell. **General contractor:** G.E. Johnson Construction. **Lab design consultant:** Research Facilities Design Group. **Lighting designer:** Architectural Energy Corp., LightForms. **Landscaping:** EDAW. **Vibration consultant:** Frank Hubach Assoc. **Photographer:** Bob Harr, Hedrich-Blessing.

Delicate Hearts, Robust Design

For a look at a first-rate facility for little hearts with big problems, visit the Sol Goldman Children's Heart Center at Columbia-Presbyterian Medical Center, New York, designed by Architecture + Furniture

By Holly L. Richmond

A revolution is taking place in pediatric cardiology—an acceleration in medical knowledge and technology leading to advances in diagnosis and treatment that increasingly save young lives. Where only a few decades ago the average age for a child undergoing open heart surgery was six years or older, one third of all congenital heart defects are being corrected today within the first week of life. Babies & Children's Hospital at Manhattan's Columbia-Presbyterian Medical Center is renowned for implementing the field's latest developments, curing or stabilizing 95% of the children treated. Through the collaboration of staff, patients and families plus the design team of Architecture + Furniture (A+F), the Sol Goldman Children's Heart Center has opened as a state-of-the-art consolidation of the pediatric cardiology program at Babies Hospital. Its design is a dramatic departure from traditional pediatric hospital facilities that was ranked first

in pediatric cardiology care in the New York tri-state area by *U.S. News and World Report* in 1994.

"Our needs were obvious," notes Dr. Walton M. Gersony, director of the division of pediatric cardiology at Babies Hospital and the Children's Heart Center. "The staff and patient care facilities were located in three geographically separate locations. This did not make for a patient-friendly or staff-friendly environment. Too much time was spent traveling between buildings." Not only did the old arrangement waste time, it impaired effective communication between the surgical and medical groups. The patients were equally unhappy sitting on uncomfortable chairs in poorly lit hallways, or using restrooms designed only for adults.

To remedy the condition, Columbia-Presbyterian designated a vacant, 14,000-sq. ft. space for the Children's Heart Center with a connecting wing to Babies Hospital. The space had never been outfitted, and lent



itself perfectly to the program's objectives, namely, accommodating medical staff offices, patient care areas and a patient and family receiving and waiting area. Caryn Schwab, senior vice president and general manager of the Center, explains, "Through weekly meetings with Dr. Gersony, appropriate hospital staff members, and myself, we let A+F's team know our primary goal was to reduce patient stress by providing 'one stop shopping,' and since this is a teaching hospital, to afford a working and learning environment."

A+F principal Robin Guenther, AIA, and her team met these goals by minimizing the traditional hospital corridor plan with small rooms on either side, because, as Guenther believes, "The design is monotonous and a bit disorienting." Instead, A+F's layout replaces corridors with usable spaces, turning them into photo galleries and reading rooms rather than nondescript stretches leading from A to Z.

Adrian's Room (opposite), which serves as the reception/waiting area for Children's Heart Center at Columbia-Presbyterian Medical Center, is stuffed like a toy animal with chalk boards, video tapes and reading materials to keep patients occupied before their appointments. In the Hall of Hope (above), families wait comfortably in unmatched wood dining chairs that provide a playful alternative to traditional hospital seating—or they can accompany the patient into the diagnostic suite and sit with them through their procedure.

Adrian's Room





The Center's entry and reception/waiting area for patients and families is named Adrian's Room for Adrian Pace, a healthy 25-year-old who had surgery at Babies Hospital as a child. (Pace's family was extremely

Meet Adrian and the Ambassadors of Hope

active in raising money for the Center, and his mother continues to visit patients every Wednesday afternoon to prepare an English tea complete with china and sterling silver.) While Adrian's Room is decorated with simple materials and objects, its combination of masonry walls, slate chalk boards and cubbies filled with toys that cater to no specific age group manage to create a childhood environment with broad appeal.

Some 75 patients ranging from infancy through 20 years of age are served by the Center each week. Because of the age span among patients, Adrian's Room offers a range of video and reading materials, and the young people are pleased to find numerous child- and adult-sized restrooms. "The design is non-institutional, but not too childlike either," explains John Petrarca, partner at A+F. "We placed visual landmarks that patients will recognize as they continue to visit the Center over the years." This element of familiarity is especially comforting to young children.

When a patient's name is called, he or she proceeds down the Hall of Hope to one of five diagnostic suites to undergo electrocardiograms, echocardiography testing, Holter monitoring and other diagnostic tests. The aptly named Hall of Hope is a curved gallery lined with 36 framed photographs of children and young adults who represent the thou-

sands of patients treated at Babies Hospital. Each photograph carries a personal message from the patient or his or her parents providing words of encouragement for those following in their footsteps. "The children whose photos hang in this gallery have not only survived, but are now leading normal lives," says Dr. Gersony. "They're our 'Ambassadors of Hope,' and symbolize the quality care the Center provides."

The diagnostic suite is the initial point of contact between patients, families and the medical team. Each self-contained diagnostic suite, marked by a sliding solid wood "barn door" at its entrance from the Hall of Hope, is distinguished by its own design motif, such as an underwater or farm scene. Medical and support staff offices are located through doors opposite the sliding barn doors to keep patients from walking through staff areas and vice versa, increasing security and organization.

Margaret Challenger, supervisor of technical labs at the Center, is amazed at the positive effect the suite's lively designs have on patients. "There are mobiles hanging over each examination table," she says. "They're a wonderful distraction for children during their procedure."

Physicians' and administrators' offices, technicians' stations, an echo reading room complete with pull-out vertical files to store the VCR-sized echo tapes, a library/conference room and a kitchenette round out the Center's facilities. The staff area takes a noticeable departure from the patient area, but is still lively, pleasant and functional. Dark carpet with bright accents, neutral-colored vinyl tile and ample natural light flowing



Inside one of five diagnostic suites (opposite, top), a patient is put at ease by painted murals, framed photographs of patients, stuffed animals and mobiles. Physicians and technicians enter suites opposite "barn door" patient entries to keep patient care and staff areas separate. Vinyl, carpet tile and aniline-dyed wood paneling enliven the wing (opposite, bottom) connecting the Center to Babies Hospital. The green panels are the back of the cubbies in Adrian's Room.

All staff work areas at Children's Heart Center, including technician stations (right), physician and administrative staff offices and the echo reading room, are screened from public view. In the echo reading room (below), four alcoves provide privacy for study of diagnostic materials, while echo tapes are organized into vertical files for easy storage and retrieval.



through perimeter windows keep the space from feeling too cold or technical.

Not surprisingly, the staff prefers the new space to the old, especially the library/conference room, the most heavily used staff area. Outfitted with state-of-the-art audio/visual equipment that can enlarge a photo of a fetal heart to astounding proportions, the room functions admirably for staff meetings and seminars as well as teaching. "What's so wonderful about the new library/conference room is that the equipment is stored and organized well," quips Schwab. "With so many projectors, monitors and other equipment, physicians often couldn't fit in the old room."

Whether it's the new library/conference room or not, the staff is doing something right. Babies Hospital had more pediatric physicians in the 1994-1995 *Best Doctors In America* than any other hospital in New York or New Jersey. While they may treat only eight babies in 1,000 or less than 1% of live births that have some form of cardiac malformation, the Center's physicians offer genuine hope to children and parents that grows more promising with each advance in medical technology.

Indeed, this story, like the majority of cases treated at Babies Hospital, has a happy ending. "Children in a hospital are understandably frightened, angry and even depressed," Dr. Gersony concludes. "The professionalism and positive attitudes of the staff due to our upbeat setting goes a long way to dispel all those negative feelings." How satisfying to read the signs of a major revolution in pediatric cardiology—in the smiles on children's faces. ☺

Project Summary: Sol Goldman Children's Heart Center, Columbia-Presbyterian Medical Center

Location: New York, NY. **Total floor area:** 14,000 sq. ft. **No. of floors:** 1. **Total staff size:** 48. **Paint:** Benjamin Moore. **Laminate:** Formica, Abet



Laminati: Dry wall: U.S. Gypsum. **Masonry:** Trendstone, Trenwyth Industries. **Flooring:** Allstate. **Carpet/carpet tile:** Bentley. **Ceiling:** Armstrong. **Lighting:** Edison Price, IPI, Lightolier. **Door hardware:** Corbin. **Work stations:** Knoll. **Waiting room seating:** Loewenstein. **Other seating:** Knoll, Kl. **Upholstery:** Knoll, DesignTex. **Conference tables:** Knoll. **Other tables:** Knoll. **Files:** Knoll. **Shelving:** Knoll. **Architectural woodworking and cabinetmaking:** Somerset Wood Products. **Signage:** Sarah Balbach. **Plumbing fixtures:** Kohler, American Standard. **Client:** Columbia-Presbyterian Medical Center. **Architect:** Architecture + Furniture. **Interior designer:** Architecture + Furniture. **Structural engineer:** Peter Galdi. **Mechanical and electrical engineer:** Jaros Baum & Bolles. **General contractor:** Herbert Construction Co. **Furniture dealer:** Furniture Consultants, Inc. **Photographer:** Whitney Cox.



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It's Not So Elementary

Getting America's new and existing elementary schools to make the grade still depends on what the nation wants its children to learn—something designers cannot take for granted

By Holly Richmond and Linda Burnett

In February 1995, the General Accounting Office reported that millions of American students attend schools with objectionable environmental conditions (below). Specifically, one-third of both elementary and secondary schools found at least one entire building in need of extensive repair or replacement. If schools are left in their present condition, these elements will reduce energy efficiency and may have an adverse effect on students' learning potential.

The future of elementary education in America is up for grabs—torn between left-wingers touting holistic education and the total child, and right-wingers demanding a return to basics like teaching phonics in typical classroom settings. Parents, educators, business and civic leaders all say they want what's best for the nation's children. But how, where and when to educate is an issue chock-full of dissension. The ultimate why is obvious: More than one-fifth of adults score at the lowest level of the prose literacy scale, dimming the nation's hopes to see more of its businesses competing on a global level. How the United States resolves its current conflicts

25-64 having completed secondary school and college than any other large, industrialized country. At the same time, our children rank below their counterparts in 14 other developed countries in mathematics and science, as demonstrated in comparisons of nine-year-old students by the International Assessment of Educational Progress.

Will U.S. businesses tire of picking up the slack when the school years are over, spending \$30 billion a year on worker training (mostly for managerial-level programs) and losing \$25 billion each year as a result of poor employee literacy? Many educators believe it is time to focus on the best proven strategies rather than the most revolutionary ones to educate school age children. In their view, a quality curriculum taught by competent teachers must be reinforced by social considerations based on family, community and environment.

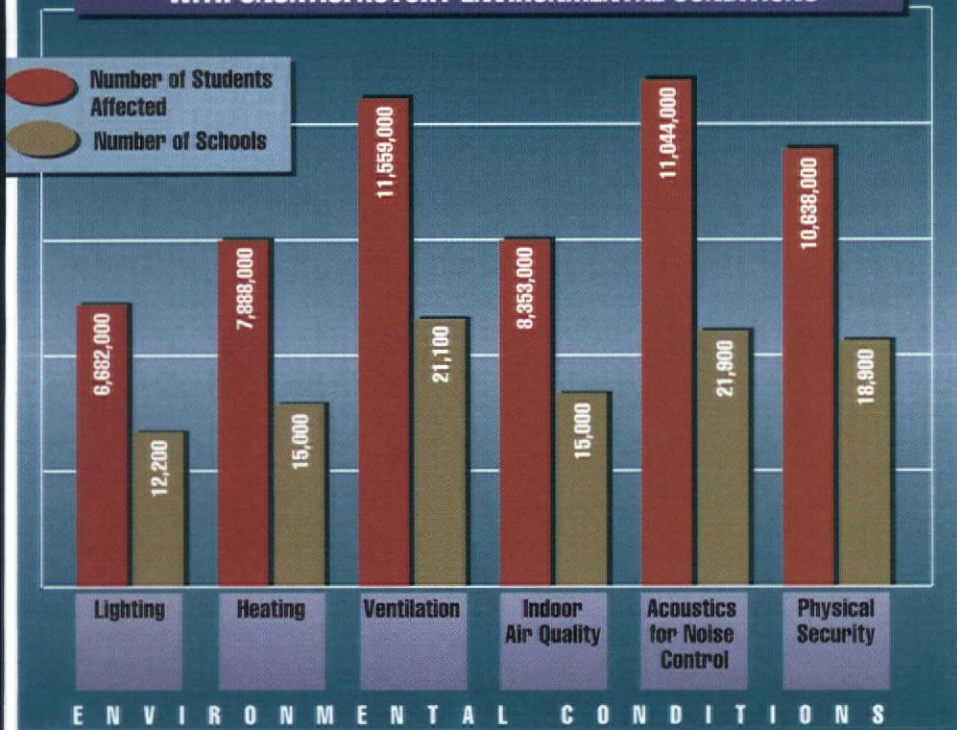
Content versus outcome: Do Johnny and Mary really need to read?

The latter, more specifically the nature of the immediate surroundings that affects a child's learning potential, has had educators, architects and designers arguing since the turn of the century. "Education needs to be considered in relation to its historical patterns," notes James Martin, a professor and director of the teacher education program at the University of Pennsylvania. He explains that one school of thought subordinates the child to the lesson whereby individual experience is eliminated, buttressing today's right-wing, back-to-basics philosophy. The opposing view places the child at the center where self-realization takes precedence over knowledge, thus informing the theory of left-wing proponents of holistic instruction.

John Dewey, the great philosopher and pioneer of education reform, encouraged the nation to eliminate the polarization between lesson and child. In his essay, *The Child and the Curriculum*, he suggested that the two are intertwined: A good curriculum will sympathize with a child's instincts. Out of this vision comes a strong relationship between the individual and society in which education is seen in a larger framework, and the school system is modified as a result of changes in society.

As a follower of Dewey, Lesley Morrow, Ph.D., professor of literacy and early childhood education at Rutgers University and

MILLIONS OF STUDENTS IN THE UNITED STATES ATTEND SCHOOLS WITH UNSATISFACTORY ENVIRONMENTAL CONDITIONS



among educational theories, political ideologies and economic realities will affect the way children learn for years to come—and the schools that architects and interior designers create to teach them.

The role of elementary education in shaping American society is replete with contradictions. We have the most educated adults in the world, with more of the population ages

consultant to *Highlight's for Children*, the largest national children's magazine, maintains that harmony can exist between the liberal and conservative points of view. "Children have been missing the basic skills with holistic learning," he says, "yet we don't want to swing too far back to the old ways of teaching either. Nobody seems happy in the 'radical middle,' and the fact is that if traditional or holistic teaching is done poorly, either is a disaster!"

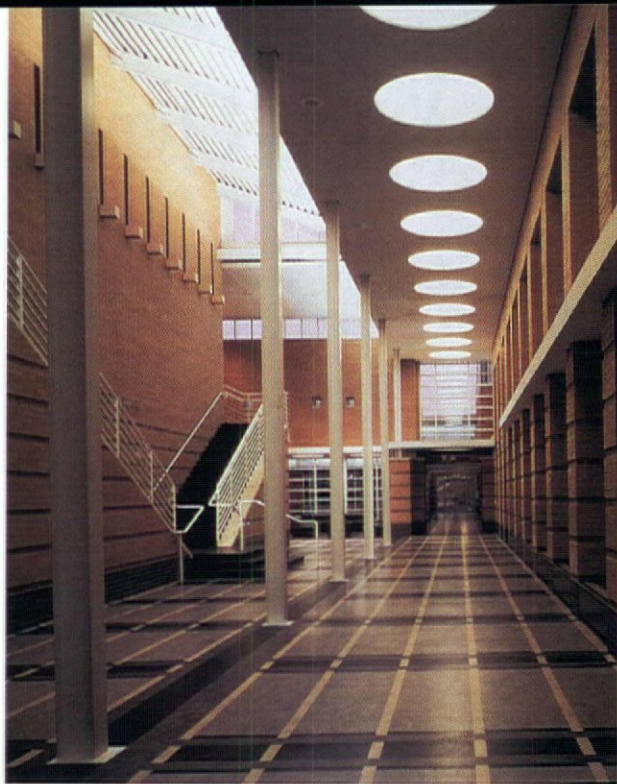
No aspect of current education policy has aroused more intense grassroots parental concern than Outcome-Based Education (OBE), which downgrades content in favor of outcome, namely thinking-skills and group learning. In the latest manifestation of this conspicuously trendy educational philosophy, students learn to read by intuiting entire words in context and disregarding phonics. The approach is called Whole Language, and like OBE, it trades off accuracy for approximate meaning.

To date, the bottom line is that America's children are not getting any more literate. Reading scores tracked by the National Assessment of Educational Progress from 1971-1988 for children ages 9, 13 and 17 show that progress has been sluggish and irregular in year to year comparisons. Meanwhile, national mean SAT verbal scores have yet to recover from the "Great Decline" of the 1960s. And while the nation's overall literacy rate is gradually improving, a study by the Educational Testing Service shows that fewer than half of the adult population has the reading and comprehension skills to use a bus schedule or accurately record car-maintenance information.

More money and personnel: Are we getting less for more?

Throwing more money and personnel at the problems—a favorite vote-getting tactic—is producing mixed results. A research poll published in *Time*, January 30, 1995, reports that 63% of Americans are extremely worried about the quality of education, 27% are a little worried, and 8% are not worried at all. Politicians appear to be listening to the majority. Per-pupil spending reached \$5,971 in 1993, up almost a third in 10 years since the landmark report, *Nation At Risk*, jolted the nation in 1983. Similarly, the pupil/teacher ratio has declined steadily since 1900, when it stood at 36.7, and is as low as it has ever been at 17.6 in 1993.

The generosity is misleading, however. Much of the new funding and personnel have been dedicated to special programs such as children who are economically disadvantaged, have limited English proficiency or suffer from learning disabilities. Good as these causes are, they do little for the majority of children. The fact that the average U.S. student is probably no worse educated now as before, a point raised by Richard Herrnstein and Charles Murray in their controversial book, *The Bell Curve*, is hardly encouraging.



America's drive towards ever larger educational institutions should raise red flags as well. According to the National Center for Education Statistics, public elementary enrollment is expected to reach 34.4 million in the year 2000, an 8% growth over 1994. Since the nation has been consolidating small schools and school districts into larger ones since 1900, there has been a decrease in the total number of schools from 247,000 in 1930 to 85,000 in 1994, and an increase in the number of pupils per school district from 103 in 1900 to 2,801 in 1992.

Because elementary level enrollment is also rising faster than the number of elementary schools, average school size has definitely increased. Buildings that housed an average of 403 students each in 1984-

The Perry Community Education Village in Perry, Ohio, by Perkins & Will, exemplifies the national trend in schools serving as community centers. Kindergarten through twelfth graders share the facility with community members, including three gymnasias, meeting rooms and the cafeteria, which is frequently booked for wedding receptions. The lobby (left), located in the main spire of the campus, is an impressive place to wait before entering the school's auditorium (below), which is also used for community theatrical productions and seminars. Photography by Nick Merrick, Hedrich-Blessing.



1985 were sheltering 464 in 1992-1993. Total per school enrollments in 1992-1993 would range from a low of 161 in Nebraska to a high of 613 in Georgia. How much individual attention children receive under these circumstances is hard to say, but the prospects look grim. According to University of Pennsylvania's Martin, the ideal size for an elementary school should not exceed 300.

Even if overcrowding is not a problem everywhere in the nation, it is fast becoming a fact of life in large central cities, where the average 1992 elementary and secondary school enrollment totaled 724. Many central city schools are experimenting with year round classes and splitting the day into two sessions to compensate for overcrowding. How well a longer school year works may soon be demonstrated on a limited scale in New York City, which will add 21,000 more students to its public school system each year until the year 2001.

Bill Brubacker, vice chairman of the architectural firm of Perkins and Will in Chicago and a specialist on architecture of educational facilities, indicates that there is a point, however theoretical, beyond which higher densities can hurt. "Students need to feel comfortable and in control of their environment," he says. "Overcrowding promotes exactly the opposite result. Architecture has a lot to do with why education in America is dysfunctional."

Even the shape of school architecture may help or hinder. Gyo Obata, co-chairman at the architectural firm of Hellmuth, Obata & Kassabaum in St. Louis, observes, "The classroom shapes the environment. Traditionally the classroom was a 30 ft. by 30 ft. space, but now we need nooks and crannies, collective work stations and individual areas."

Architectural choices: What is an ideal elementary school environment?

The shape and size of elementary schools are not the only elements of their design that are currently under scrutiny. Access to the outdoors is increasingly drawing attention in light of recent disclosures about "sick building syndrome" and the quality of indoor air. In the 1970s, energy conservation led to windowless schools. Now educators realize that students respond to climate and other environmental factors, and windows are prized once again not only for fresh air, but to remind students of the outside world they inhabit before and after school.

Architects are also using modular design to facilitate the creation of sub-schools within a single, large elementary school building. This reduces the sterile, institutional feeling, and replaces it with a more personal, home-like milieu. Yet different approaches are required to interpret this issue before a public or private school, or an urban or rural school. In a public school, for example, the board of education can often be an arch-conservative

client who refuses to change existing standards of construction. In an urban landscape, the neighborhood could be markedly affected by any outcome, and must be consulted well in advance. Is the building blocking the sun? Is the glass reflective? Are bridges needed to cross the street? Local residents will not let an architect ignore issues like these.

Before much innovative work is done to improve the effectiveness of elementary

Throwing money and personnel at our elementary school problems is producing mixed results

schools, however, substantial funds must be allocated to repair existing conditions that are unsafe and even harmful. A General Accounting Office report released in February 1995 states, "It is unfair to expect our youngsters to meet high performance standards if they do not have an equal opportunity to learn.... Fifty-two percent attend schools that have at least one environmental condition involving air quality, acoustics, heating, and lighting. It is frightening that 33% of our nation's schools need to repair or replace one or more buildings and that another 40% need to replace one major feature. One hundred twelve billion dollars is necessary—roughly four times the United States Department of Education's total annual budget—if we are to restore facilities to good overall condition."

Schools as high-tech community centers: Is this the future?

The troubled state of America's elementary school facilities could be alleviated by a trend towards having schools act as community centers. Such gestures as making classrooms available for evening courses, opening the cafeteria for Girl Scout gatherings and inviting local area residents to use the swimming pool can help bond schools to their communities. Schools that make these important gestures are likelier to draw political and economic support from a much wider spectrum of the electorate. In addition, staying open after 3 p.m. and on

weekends and summer months recaptures the opportunity cost of keeping schools closed during these times.

After-school programs can also be a god-send to working parents. Rachel Kramer, an assistant second-grade teacher at The Towne School, a private school on Manhattan's Upper East Side for nursery through eighth grade, knows this first hand. "The majority of our students take part in 'Post Script,' a program that runs from 3-5 p.m.," she reports. "This involves organized group activities that the students sign up for, such as sports, drama or language classes. Many students also stay for 'Club House,' which is more like day care, and allows them to stay at school until 6 p.m." She adds that the school's auditorium is frequently used for community seminars and plays.

It's clear that our school's functions are changing as rapidly as those in the office. Ideally, Brubacker notes, they will respond to inevitable changes in curriculum, size and technology by being infinitely adaptable and never quite finished, complete with movable partitions and other signs of institutionalized impermanence. Already, technology is having a dramatic impact on elementary school design, as rising numbers of institutions are equipped with such media capabilities as computers, facsimile machines, LANs and multi-media studios—once educators decide how they want these tools to be integrated into new or modified educational strategies.

How far can technology go in transforming the elementary school? "New technology must be accommodating as well as un-inhibiting," warns Dr. Anne Taylor, director of the Institute for Environmental Education at the University of New Mexico. "Appropriately equipped classrooms should be arranged like studios where children work on large, horizontal surfaces. They should encourage young artists and readers as well as 'techies' to create a truly three-dimensional learning environment."

Students, educators and community members, including architects and interior designers, are demanding that our nation's elementary schools be accountable to their communities, bringing them better educational opportunities, and incorporating a social support system to sustain children and their families. Is this too much to ask? A school is built to last well beyond its first commencement, after all, and its graduates go on to take their places in society.

Investing in elementary schools—indeed, all levels of schools—today will determine how profitable society is tomorrow. Yet designing good schools in 1995 still requires one key strategy that has never gone out of style. Designers must encourage educators and parents to get involved at the earliest stages to create schools that truly meet their needs. The two elementary schools and two high schools that appear on the following pages hint at how creative and exciting the possibilities can be when this happens. ☺



Howling Success

Rancho Cucamonga, Calif., has many small but important reasons to be wild about award-winning Coyote Canyon Elementary School, designed by Wolff/Lang/Christopher Architects

By Holly L. Richmond



Exterior architectural detail and intricate landscaping at Coyote Canyon's main entrance (above), prepare visitors for thought-provoking design indoors. High wood-beamed ceilings, ceramic tile floors and wainscoting in the central corridor (opposite), set the scene to show off the school's numerous awards. "To me, the high ceiling symbolizes the high expectations we have for our educational system," says superintendent Sonja Yates, Ed.D.

Its unmistakable paw print is everywhere. Extolled as a 49,000-sq. ft., three-dimensional, walk-in textbook, Coyote Canyon Elementary School in Rancho Cucamonga, Calif., has left its mark on students, teachers, parents and the community at large. "Critttermania"—a "Crittter" being the school mascot—is running rampant with enthusiasts donning such coyote paraphernalia as hats, sweatshirts and earrings. Rancho Cucamonga is not alone in its ardor. Its school has received five awards for outstanding architectural design, including recognition from the American Association of School Administrators and the American Institute of Architects, for the work of Wolff/Lang/Christopher Architects (WLC).

The design team at WLC has built on the school's motto, "A place that teaches the total child self-respect, self-motivation and self-discipline so each feels hopeful about his dreams," by creating an interactive environment to respond to children's needs. In doing so, it is reflecting the rich and varied history of California, as well as that of the

community itself. While paying tribute to the past, the school remains as timely as a newspaper headline.

Coyote Canyon first opened its doors in 1987 to students in the Terra Vista community, a residential development including low income apartments, luxury apartments, condominiums, and single family homes, as a K-6 school on a temporary site. The student population naturally increased with the community's growth, leading to the formation of a design committee of 14 community members, 10 school staff members, and WLC's team to create a permanent school serving approximately 700 students in grades K-4. Accommodating the

community's needs would represent a special challenge to all parties, however, as the architects discovered in presenting concepts for the new facility to the student body.

Due to the high percentage of apartments in Terra Vista, there is a substantial turnover of students—an astonishing 30% per year. Many families find themselves in transition, some having relocated to the area from as far away as Hong Kong and Bolivia as well as most of the 50 states. As a result, their children can easily appreciate a school environment that fosters a sense of stability each day they walk through its doors.

How would this sense of stability be expressed? Several committee members wanted a completely enclosed, indoor setting, while others favored a more open-air environment. "We met each side half-way by incorporating a main internal corridor that connects four outdoor courtyards to classrooms and other interior spaces," notes Gaylaird Christopher, principal-in-charge for WLC. "The Santa Ana winds can blow up to 100 miles per hour, and obviously the stu-

The main lobby (below) is a continuation of the school's spacious, open-air design, and is often used for small group gatherings. Two large windows span the wall between the lobby and media center, giving students and teachers a perfect view for spotting fellow Critters navigating the Oregon Trail on the Internet.

Whether learning indoors in the media center (opposite, top left), or outdoors in the Spanish-Mexican courtyard (opposite, top right), students benefit from a hands-on education, sitting comfortably on benches or the carpeted floor for presentations by library media specialists, or climbing an Aztec-style pyramid to learn about possible ancestors. For durability and adaptability, each courtyard is constructed primarily of concrete.

dents need protection, but the weather is pleasant most of the time, enabling them to use the courtyards."

Although the original plan for the courtyards was to emphasize the community's Spanish heritage, the design took on more significance with the identification of four historical periods. In the final scheme, a student's journey through the school begins with

sents the Mexican/Spanish *rancho* period of early California, with Mission style focal elements such as a bell and wagon wheels embedded in the pavement. The fourth courtyard, planted with grape vines, reminds students of California's first vineyards, located within Rancho Cucamonga before it became a residential area. Its grape arbor will shade a sitting area as it matures.

Do you take grape juice, rain forests and wagon trains with math?

the Native American courtyard, the focal point for kindergarten and first-grade classrooms, where a traditional village is simulated along with a *wickiup* and a dry river rock bed. The Spanish-Mexican courtyard, for second and third grades, features a five-foot Aztec pyramid which serves as a sitting and learning area. A third courtyard, adjacent to third and fourth-grade classrooms, repre-

What's more, the courtyards shared by each classroom cluster offer children a setting for cultural celebrations and multi-ethnic experiences such as *Cinco de Mayo*. Melanie Sowa, principal at Coyote Canyon, believes the courtyards provide an unsurpassed teaching environment by incorporating artifacts into the curriculum, thereby facilitating tangible education. But students can't experience everything first-hand. Sowa chuckles as she explains, "We stress, 'Say no to drugs and alcohol,' but we do realize the importance of the vineyards, so the students drink grape juice."

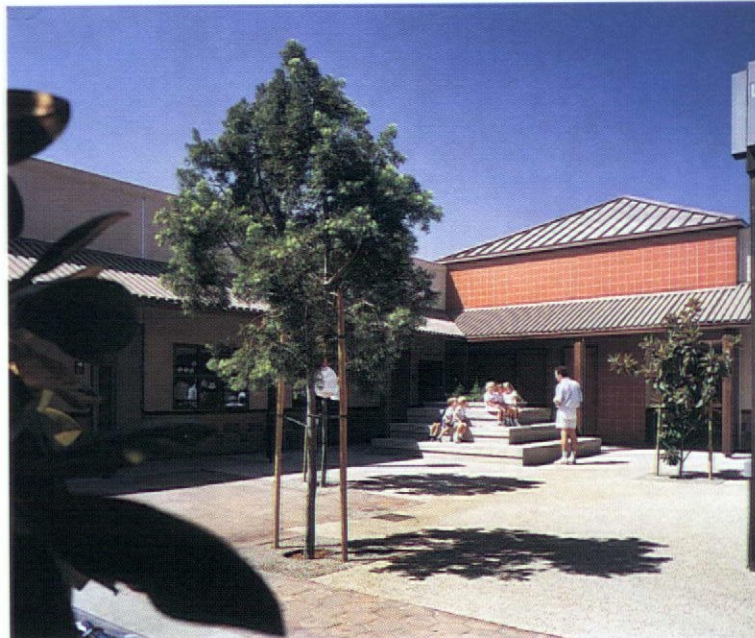
Aside from the school's mainstream curriculum, focusing on reading, writing, mathematics, geography and science, there are 64 students enrolled in an English-as-a-second-language program and an additional 35 receiving special education in classrooms designed for this purpose. Physical education, art and environmental studies are also an integral part of a critter's education. The courtyards have also begun to play a role.

Fourth grader Janelle Briggs says, "Our school is great because we learn indoors and outdoors. We do art projects and put on plays in the courtyards." One outstanding environmental project that students enjoyed was planting sunflowers in the back row of a garden of green beans, lettuce, tomatoes and marigolds. Because they were studying the blight of the South American rain forests and wished to be of help, the students harvested the seeds from the sunflowers, packaged them in cellophane baggies and sold them for \$.25 each, using their profits to purchase an acre of rain forest.

When they're not outdoors planting, building, or taking time-out for recess in a bi-level, hardscape play area complete with jungle-gyms, soccer and baseball fields, students take pleasure in an array of indoor interactive learning areas. If they enter the school at the main hallway or central spine, they find themselves in a historic gallery where pictures depict early residents of the area. The gallery also includes student art work and interactive displays to acquaint them with a variety of professions.

A computer for architectural design was donated by WLC, as well as a fireman's suit from the district's fire department. "We are fortunate to have The Business Partners in Education, a group that sets priorities and goals for community participation and donates their professional resources to our





school," remarks Sonja Yates, superintendent, Ed.D. "The displays are a connection to the real world for students and show them a means to an end." Coyote Canyon is also used by the YMCA as a daycare facility, and the multi-purpose room is filled most evenings with local youth groups, church organizations, and the Boy Scouts and Girl Scouts of America.

The media center (previously known as the library) and computer lab located just beyond the school's main entrance and lobby constitute one of the most dynamic and challenging components of the project, according to Godwin Sotilewa Osifeso, project architect for WLC. Coyote Canyon is in fact heavily committed to technology with such resources as a networked computer lab with 30 student stations, three printers, four Macintosh computers, modem and telecommunication link with schools worldwide, a computer and printer in every classroom,

and centralized VCRs and laser disc players that allow a demonstration in one room to be broadcast throughout the school. "Today technology is a rapidly moving target," explains Osifeso. "We take our best shot at what is happening and needs to happen in the classroom, and put the wiring and data links in place, then purchase equipment at the latest possible date."

Every Tuesday at 3:30 p.m. teachers meet in the computer lab to go on-line with educators across the country and discuss new ideas in curriculum, as well as the recent joys and concerns within their school system. Yet according to Shane Andrews and Mohit Mittal, two fourth graders, this is nothing compared to what students do in the lab. An Internet game called Oregon Trail, for example, simulates the trip pioneers made across the country, obliging students to take decisions based on geography, climatic zones, poor hunting grounds or hostile Indian areas. "Four pioneers play the game at a time, and you can't break up the wagon train, so we all have to decide together," says Andrews. "This is hard."

While students may not agree on the road best traveled, their teachers and other staff members concur that the school's layout and amenities make Coyote Canyon an unsurpassed learning, teaching and sharing environment. "New families walk through the doors and are immediately impressed with the design and excited to have their children enrolled here,"

notes Sowa. Some of the more spectacular advantages are open to all: abundant windows offer breathtaking views of Mt. Baldy in the San Bernardino Range.

Fortunately a sound, enjoyable educational opportunity accompanies the school's exceptional design. Student Alesha Stanfield made this abundantly clear not long ago. When asked by Melanie Sowa to identify what she liked best about her school, Stanfield replied, "The teachers!" After the principal suggested that she name a place in the school, Alesha quipped, "Oh, the whole thing is so cool!"

There you have it—straight from the Critter's mouth. ☺

Project Summary: Coyote Canyon Elementary School

Location: Rancho Cucamonga, CA. **Total floor area:** 49,000 sq. ft. **No. of floors:** 1. **Total staff size:** 40. **Student capacity:** 690 currently, 975 available. **Cost/sq. ft.:** \$118. **Wallcovering:** Koroseal. **Paint:** Frazee. **Laminate:** Wilsonart. **Masonry:** Orco. **Carpet/carpet tile:** Lees. **Ceiling:** Armstrong. **Lighting:** Bega. **Door hardware:** Von Duprin. **Students and teachers seating:** Culver Newlin Co. **Cafeteria, dining, auditorium seating:** Wallfol. **Other seating:** Culver Newlin Co. **Students and teachers desks:** Culver Newlin Co. **Cafeteria, dining, auditorium tables:** Wallfol. **Architectural woodworking and cabinet-making:** S.R. Coates, DeSteffano Cabinets. **Signage:** Architectural Signs & Graphics. **Building management system:** JPW Systems. **Client:** Central School District. **Architect:** Wolff/Lang/Christopher Architects. **Structural engineer:** K.B. Leung and Assoc. **Mechanical engineer:** F.T. Andrews. **Electrical engineer:** RWR Pascoe Engineering. **General contractor:** Tilden-Coil Constructors. **Construction manager:** Kim Schultz. **Lighting designer:** John Lomelei, JDSA. **Furniture dealer:** Culver Newlin Co. **Photographer:** Fred Daly Architectural Photography.

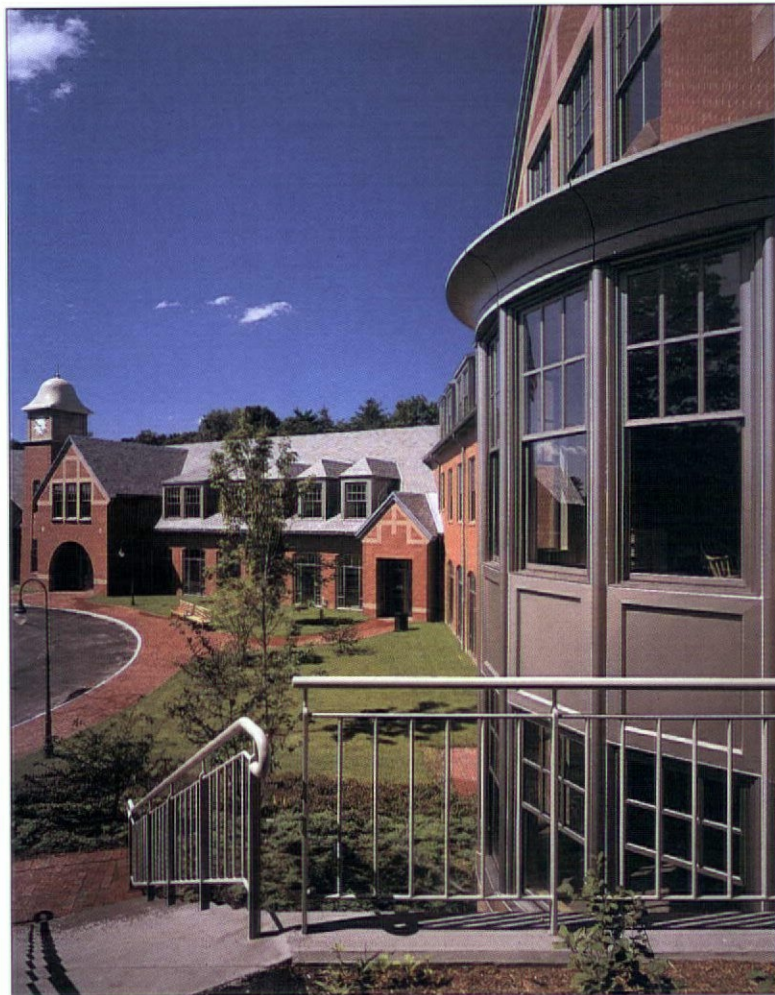




Class Action

Brookline, Mass., didn't know if it wanted the William H. Lincoln Elementary School until its school board and Graham Gund Architects taught it some important civic lessons

By Jennifer Thiele Busch



To satisfy requirements imposed by its location in an historic area of Brookline, the Lincoln School was designed to retain the upscale residential quality of the neighborhood with a red brick facade, pitched roof, gables and dormers (left). Interiors were left purposely neutral (opposite), allowing the building to recede into the background so the children and their artwork could provide the color and vibrancy.

Not in my back yard" is an attitude usually reserved for prisons, waste treatment plants and interstate highways, but this philosophy successfully prevented construction of a new elementary school in the prosperous Boston suburb of Brookline, Mass., for upwards of 60 years. In June 1994, however, following months of exhaustive research, vigorous campaigning, delicate negotiations with the state Historic Commission and construction delays, the William H. Lincoln Elementary School finally opened its doors to kindergarten through eighth grade students. While its completion marked a proud victory for a fiercely dedicated school board, the architectural expertise of Graham Gund Architects taught the town some important lessons about how good design can successfully bridge generational, cultural and social gaps.

The Lincoln School, in various forms, has been part of the Brookline public school system for 100 years. It entered the most colorful phase of its history in 1930, when it was moved from its original site to one on Route 9, which runs through the town. Though families of children attending the school worried about the active thoroughfare, all efforts to relocate the school to a residential neighborhood were denied. The William H. Lincoln School served

many of the town's working class children, and social and ethnic tensions may have over-ridden practicality in this regard.

"The school was built on the small site on Route 9 and it flourished, so people forgot that it wasn't where they wanted it to be," explains Kathleen Ames, a prominent Brookline resident and chairwoman of the school committee when the new Lincoln School was built. In 1975, overcrowding at the Route 9 site prompted the school committee to attempt to build a new Lincoln School away from what had now become a busy state highway. The suggested location was a private school campus on Kennard Street, in one of Brookline's better neighbor-

hoods, which the town had purchased in 1969.

Taxpayers defeated a referendum for a proposed \$2.5 million dollar school building for 700 K-8 grade students, ostensibly by objecting to a tax increase, but again, social issues may have been partially responsible. By this time, the state had started bussing children from inner city Boston neighborhoods to suburban schools and—typical of the nation's attitude at the time—people unaccustomed to cultural diversity were afraid of bringing it right into their own neighbor-

hoods. "None of this was ever proven," notes Ames. "There were just undertones."

The school committee regrouped, developed plans for a smaller, less costly school on the site and secured the necessary appropriations. But when a referendum was again defeated in 1977, the committee gave up. To address the overcrowding problem, however, the Lincoln School was effectively divided in half. Grades K-3 were moved to the old private school buildings, with grades 4-8 remaining in the Route 9 school.

When the school committee, chaired by Ames, revived the issue of building a new school once more in the late 1980s, history revealed what it might be up against.



In keeping with the residential quality of the exterior and the school committee's desire to humanize the educational environment, no two classrooms at Lincoln School are alike. The art room (left) has a cozy, attic-like quality that many children will identify with. The design also lent itself well to the use of skylights in a number of areas, including the gymnasium (below).

Fortunately, the lower elementary school was successful and loved by its neighborhood, a more open-minded attitude prevailed and nobody could deny that this particular district of Brookline badly needed a new elementary school. Nevertheless, the committee went through exhaustive preparations before bringing the issue to the voters.

"We knew we had to examine all possible alternatives and be very fiscally responsible this time around," admits Ames. "We hired an architect to do a feasibility study for options that included five sites and five configurations. The least expensive and most responsive option turned out to be a brand new school on the Kennard Street site."

A coalition of Brookline residents that included representatives from the taxpayers' committee, chamber of commerce, PTO, local businesses and various citizens and seniors groups actively campaigned for the new school. On December 4, 1990, under a threat of redistricting if the effort did not pan out, voters approved two to one the construction of the new \$13-million William H. Lincoln Elementary School on Kennard Street.

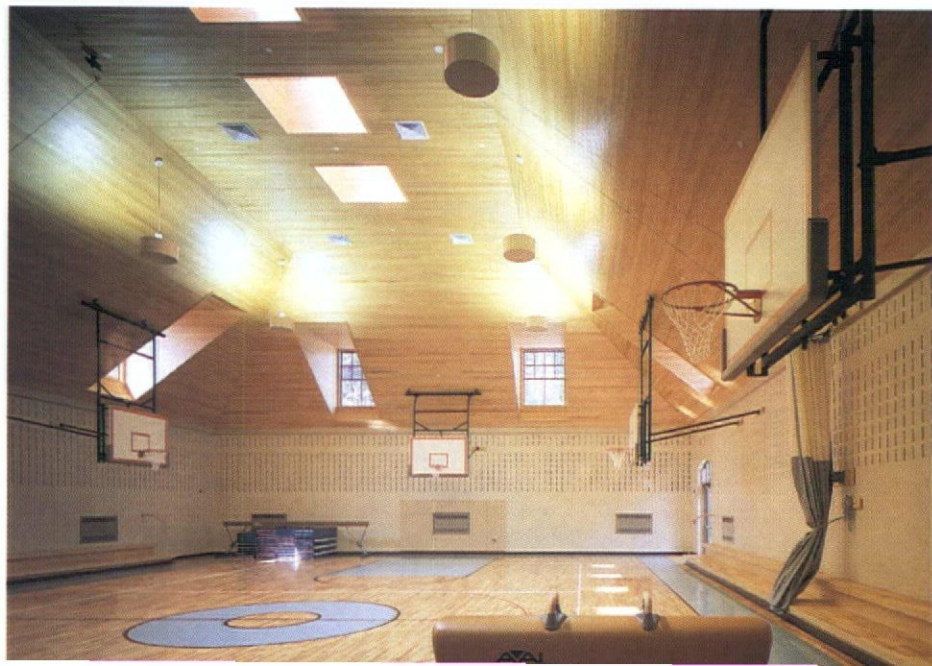
School principal Barbara Shea points out that the Lincoln School is still one of the most socioeconomically and ethnically diverse in Brookline, but now the differences are celebrated, not feared. "We really have a mix," she says. "And the building supports all of the most positive aspects of that diversity."

Not least of the differences is age. In a school with 505 K-8 students plus a nursery school program for 3-1/2-year-olds and up, each wing was dedicated to one or two

successive grades to keep students circulating among their own age groups. Shea dispels the notion that older kids and younger ones should not mix, all the same, noting that the school actually supports this kind of interaction.

If you can't knock 'em down, join 'em

"Instructional mixing is part of our program here," she explains. "There is a lot of peer teaching and other types of intergenerational experiences for the students. Our kindergartners and sixth graders visit senior citizens' homes together. We have partnering that pairs, say, a first grader with a fourth



grader. Our seventh graders wrote and produced a play for our nursery school kids. The point is that the design of the building redefines traditional learning spaces. When we want to bring kids together for these types of programs, we have the space."

As one of eight elementary-level schools in the system, this latest and most impressive version of the Lincoln School was designed by Graham Gund Architects to incorporate what is best about the town's existing education architecture and reject what is weakest. In fact, Gund and his design team really did their homework before making the winning design proposal to the selection committee. "Gund

sixth graders have used one to set up a display space that thematically changes to reflect their learning.

Since such varied influences as teachers, Shea, school superintendent James Walsh, neighbors, selectmen, the building commissioner, a representative from the historic preservation society and, of course, Ames, were all active members of the Lincoln School Oversight Committee, the building had to reflect numerous interests. But there is no doubt for whom the school was created. All the more practical considerations were incorporated into a design that has put the needs of the children first.



went to all the Brookline schools and put together a critique of what worked and what didn't," recalls Ames. "He taught us things we hadn't thought of before. The presentation was very impressive."

One of Gund's more important points about the proposed elementary school was that it should feature open, light corridors and learning areas. "We wanted to integrate different types of spaces to allow for flexibility in the teaching process," explains Jonilla Dorsten, project designer from Graham Gund Architects. "We broke down the corridors and turned them into more human spaces with areas used for teaching purposes, or places where students from different classrooms can come together." According to Shea, these activity spaces have also sparked creativity. The

In deference to the neighborhood, the building's footprint and exterior architecture work to scale down its 88,000-sq. ft. form. "The shape minimizes its impact on the site," explains project designer George Coon of Graham Gund Architects. "We created distinct pieces so you never really see the building as a whole."

Exterior materials were derived from the architectural vernacular of the surrounding homes. "The school is in a historical district surrounded by 5,000- to 10,000-sq. ft. residences," notes Peter Madsen, a principal of Graham Gund Architects. "The design required a great sensitivity to that scale and form."

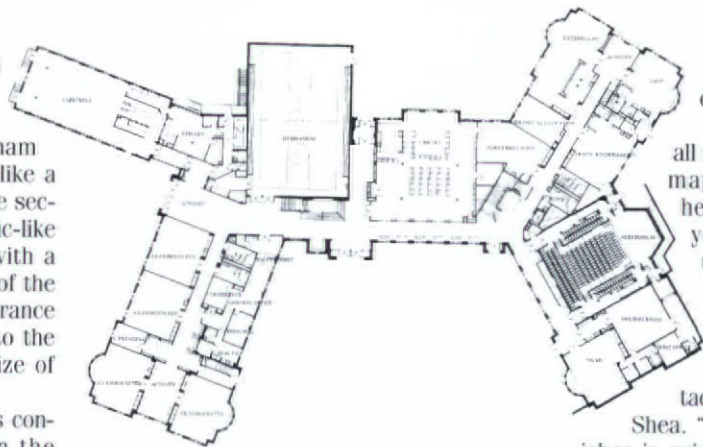
The residential quality of the two-story brick structure—complete with dormers and gables—worked well with the idea of down-scaling the educational environment. "Two

Graham Gund Architects opened the school committee's eyes to the possibilities of creating a building far superior to the typical box with long, dark corridors and institutional spaces. One result: the auditorium (above), which really resembles a small, intimate performing arts center.

ideas came together in creating a human scale for both the children and the neighborhood," says Dan Rutledge, project architect from Graham Gund Architects. "The building looks like a residence on the outside. Inside, on the second floor, the architecture creates attic-like classrooms and special use rooms with a very cozy feel." In the end, neighbors of the school were so pleased with its appearance that a number of them donated land to the Lincoln School site to increase the size of outdoor play areas.

Since the old private school campus contained more than one structure on the Historic Register, the architects were faced with the added complexity of incorporating the ones that absolutely had to be saved into the new building—and the school committee found itself embroiled in lengthy discussions with the local preservation society to make sure all necessary requirements were heeded. An old carriage house, for example, was physically moved, attached to the new building and restored to serve as a cafeteria with large windows overlooking the park-like setting. True to intentions the cafeteria is a real destination and a favorite of the children, who enjoy live musical entertainment served twice weekly with lunch.

Both the children and the community at large can make use of an impressive array of special features, including a gymnasium with skylights, a library and a 250-seat theater where the local symphony has held practice sessions. Teachers especially like the dedicated computer and science laboratories, flexible teaching spaces, classrooms designed to accept computer and multimedia



Breaking with other public schools in the area, the architects called for light, sun-drenched spaces such as this one outside the library (below). Turning long, straight corridors into shorter ones (above) also helped humanize the interiors, delineate functional wings and spaces and fit the school more comfortably on its restricted site.

technology—and an abundance of support and storage space.

If the architects risked using all neutral finishes and even blonde maple wood detailing at child-height level ("Most schools ask you to use poured concrete, unless you can find something more durable," jokes Madsen), concerns about the durability of the space have proved groundless. "The walls are all tackable vinyl surfaces," explains Shea. "Instead of adding life with finishes in primary colors, the space gets its color and vibrancy from student artwork. It's a wonderful way to give the building back to the children and create a sense of ownership in them, so they take good care of it."

Just as the children of the Lincoln School have needed little guidance on the value of caring for their building, the design team at Graham Gund Architects says the Brookline school committee needed little urging to seize the opportunity to create something immensely better than the typical box. "They all had a strong sense of the educational process, and the ability for architecture to facilitate that process," remarks Dorsten.

For Shea, the benefits are abundantly clear in the enthusiasm of the kids for their new school. "When you present children with a bright, warm positive learning environment, it validates the importance of their own education," she says. "This building reflects what education is all about. It arouses their curiosity and their imagination." And probably more than one dream of becoming an architect. ☺



Project Summary: The William H. Lincoln School

Location: Brookline, MA. **Total floor area:** 88,000 sq. ft. **No. of floors:** 2 1/2. **Student capacity:** 500. **Cost/sq. ft.:** \$117. **Wallcoverings:** Koroseal. **Paint:** Sherwin Williams. **Laminate:** Nevamar. **Masonry:** Lawrenceville. **Flooring:** Armstrong. **Carpet/carpet tile:** Mohawk. **Ceiling:** Armstrong. **Lighting:** Lite Control, Lam. **Doors:** Curries. **Door hardware:** Schlage. **Glass:** Viracon. **Window frames:** EfcO. **Cafeteria, dining, auditorium seating:** Hussey. **Elevators:** Dover. **HVAC:** Trane. **Building management system:** Andover Controls. **Plumbing fixtures:** American Standard. **Client:** Town of Brookline. **Architect/interior designer:** Graham Gund Architects; Graham Gund, FAIA, principal in charge of design; Peter Madsen, FAIA, principal in charge of construction; Dan Rutledge, RA, project architect; George Coon, RA, Jonilla Dorsten, RA, project designers; Tom Maloney, Mary Horst, RA, Laura Cabo, AIA, Maria Donovan-Fernandez, RA, Rob Bramhall, RA, design team. **Structural engineer:** Charles Chaloff Consulting Engineers Inc. **Mechanical/electrical engineer:** Cosentini Associates. **General contractor:** Corcoran Jennison Builders. **Acoustician:** Cavanaugh Tocci Associates. **Photographer:** Nick Wheeler Photographics.

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Brain Gain

Students are burning up the science curriculum at the Niles West High School in Skokie, Ill.—and the new Science Wing by O'Donnell Wicklund Pigozzi and Peterson just might be the cause

By Amy Milshtein

Weird science? Not at all—in the halls of the Niles West science wing by O'Donnell Wicklund Pigozzi and Peterson (opposite). Students gather here, spread their papers and get down to serious talking about school, studies and everything else. Outside, the building's architecture proved controversial from the start, requiring an extra sell from OWP&P and diligent backing from the client. One bone of contention was the use of blue (below), which school boosters felt was too close to a rival school's colors of purple and white.

Are our kids afraid of science? True, it may have been hip to be square a while back, but the nerd craze limited itself mainly to sleeveless cardigans, horn rim glasses and other fashion accessories, while a sweeping love of equations, experiments and complex theories never caught on. However, one school system has managed to lure students into advanced chemistry, biology and physics courses. These electives are filled at Niles West High School in Skokie, Ill., and are held in a new science wing designed by O'Donnell Wicklund Pigozzi and Peterson (OWP&P).

Granted, the science department at Niles West has remained historically strong, producing award-winning students year after year. Yet the physical plant never reflected the school's or the student's devotion to the subject. Luckily, a shift in demographics came to the rescue.

The school is part of the Niles Township High School District, which operates two four-year public high schools serving the suburban Chicago villages of Skokie, Morton Grove, Niles and Lincolnwood. Recently, older empty nesters have given way to young, large families, many from other countries. In fact, district-wide, students who speak a language other than English at home total a whopping 59%. Some of the languages include Korean, Russian, Tagalog, Greek, Spanish and Assyrian.

This growth put an understandable burden on the late 1950s structure. Built as a factory for learning—the model of the time—the long, narrow, non-descript facility looks decidedly industrial. And like many factories built at the time, it sorely needed updating.

"The science lab needed a complete renovation to bring it into the 20th century," jokes John Nix, former director of buildings and grounds for the District. "Everything from asbestos abatement to updating the plumbing needed to be done. At the same time, we desperately needed more regular classroom space."

Niles Township found it more economical to combine the two needs. The old labs were turned into standard classrooms. As the labs averaged more square footage than the classrooms (12-15,000 sq. ft. to 7,000 sq. ft.), the school gained a total of 17 classrooms out of the deal.

The new labs are housed in their own wing. While other schools may balk at an entire wing devoted to science, it seemed natural at Niles West. "Math and science are so strong in the school anyway," explains Jeff Foster, project manager, OWP&P. "Now they have a wing that expresses their power and position."

Powerful does describe the wing. Built at the terminus of the original structure, the wing was integrated by OWP&P with



the rest of the school by holding the cornice line and matching the brick. Inside, the wedge-shaped form elements loosen.

Classrooms move apart from each other, the metallic roof deck bends upward and the center core appears to be released and ready to move out from other parts of the structure. Columns move beyond into the landscape and suggest the infinity of internal space. Colors are bright while ductwork and structure remain visible throughout. "The unrestrained sentiment, exposed bones and high-tech finishes speak of the technology of architecture and science as a whole," explains Foster.

Yet, one cannot talk about the structure

The blue glass controversy

without mentioning the controversy it inspired. Both architect and client recall that criticism from the community began on day one of the project. "People were snipping at my heels," recalls Nix. "Even the word 'monstrosity' was used."

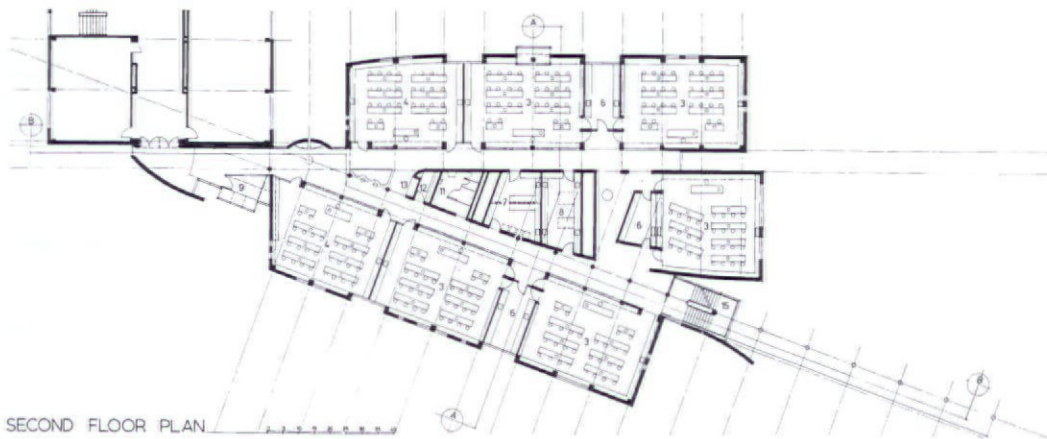
One feature to which locals took exception was the blue glass. While seemingly innocuous at first glance the detail becomes clear when one realizes that Niles West's school colors are red and white while its rival color's are purple and white. "People felt the blue was too close to purple," explains Foster.

Not surprisingly, these problems all disappeared on opening day. The kids came back from summer vacation and immediately took ownership of the wing. In fact, the hallways, which are equipped with wedge-shaped benches for impromptu gatherings, are always filled with students.

While the building is an admitted hit with the students, they were not consulted for the design process. The teachers, however,



The raw, high-tech feeling of the wing (above) speaks of the technology of architecture and science in general, while bright colors add zip. Students have responded to the message. Everything comes together in the lab (left), so the architect has included 14 of them. Safety measures include centrally controlled gas jets and electrical outlets so teachers can shut off potential problems before they get out of hand.



SECOND FLOOR PLAN

played a big role in planning the structure. They took their part very seriously—one might say almost too seriously. While they didn't ask architects for a superconducting particle accelerator, Nix remembers that negotiating the road between the perceived needs of the teachers and the realities of the budget proved a bumpy one.

And at the end of that road: the reward. The second and third floors of the wing hold 14 labs. (The first floor is currently unfinished, waiting to be filled by the projected population growth.) The finished floors include a student project lab that can be assigned to those involved in a long-term project, a green house, aquarium, central chemical storage and prep room and display case.

A central control for all the gas jets and electrical outlets in any classroom add safety as do eye/face shower stations. The designers also looked to future technological possibilities by including wiring conduits for media/video and connections between labs and the front desk. As of yet phones are not installed in the rooms, but necessary conduit and wall connections exist.

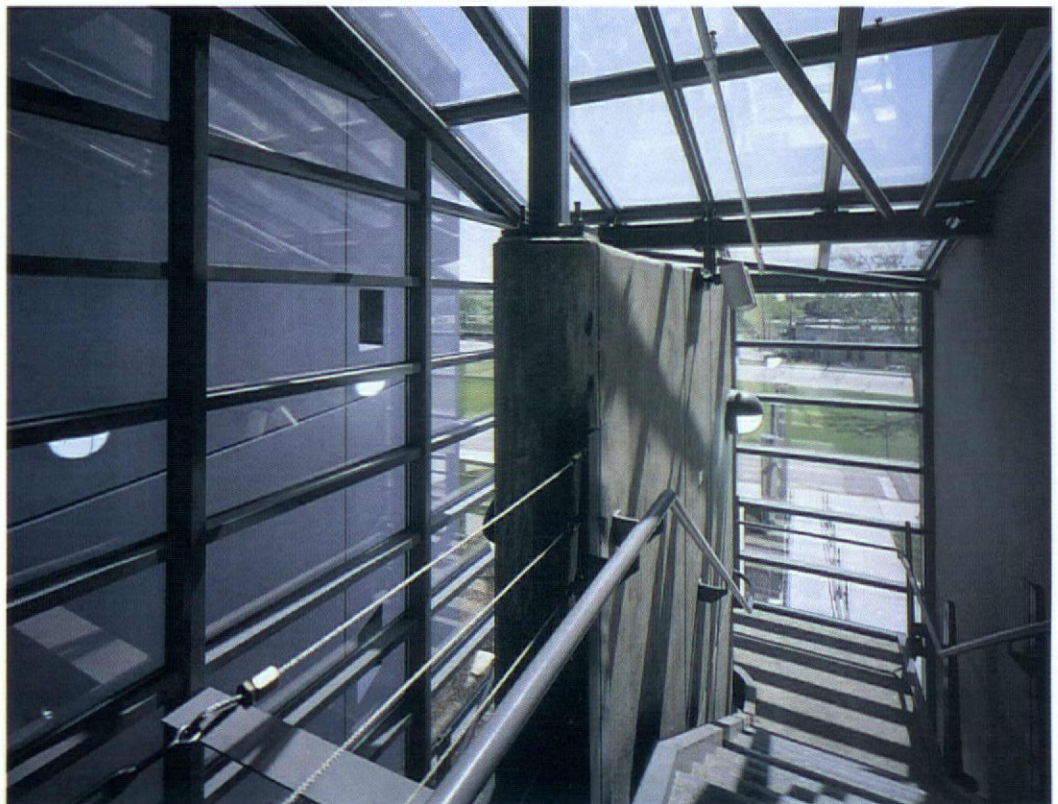
In the end, the architecture and amenities make a bold statement about the role of education and science in Skokie. But surely some die hard teachers must continue to ask, "Not even just a small superconductor?"

Project Summary: Science Classroom Addition, Niles West High School

Location: Skokie, IL. **Total floor area:** 36,000 sq. ft. **No. of floors:** 3. **Average floor size:** 12,000 sq. ft. **Student capacity:** 336. **Cost/sq. ft.:** \$111.25. **Paint:** The Glidden Company. **Dry Wall:** U.S. Gypsum. **Masonry:** Belden Brick Company. **Flooring:** Tarkett. **Carpet:** Mohawk Commercial Carpet. **Ceiling:** Armstrong, Chicago Metallic. **Lighting:** Metalux, Trimble House Custom Lighting, Lumark, Light Alarms, Divine Design. **Doors:** Algoma Wood Doors. **Door hardware:**

Hager, Yale. **Glass:** Viracon. **Window frames:** PPG Industries, Waussau. **Window treatments:** Levelor. **Furnishings:** Loose furniture by owner. **Science casework:** Campbell Rhea, Mohon International. **Signage:** designed by OWP&P Architects Inc. **Elevators:** Dover. **HVAC:** McQuay, Honeywell. **Fire safety:** Won Door Fireguard Corporation. **Plumbing fixtures:** Bradley, Sloan, Kohler, Elkay. **Client:** Niles West Township High School. **Architect:** O'Donnell Wicklund Pigozzi and Peterson Architects Inc., Andrew D. Mendelson, Jeffery D. Foster, Bjorn Hallson, Geoffrey C. Walters, Trung Le, Dasesik Park, Mark Dembrowski, Ron Plotrowski. **Interior designers:** OWP&P Architects Inc. **Structural engineer:** OWP&P Architects Inc. **Mechanical engineer:** Brian Berg & Associates, Ltd. **Electrical engineer:** Associated Engineering Consultants. **General contractor:** Pickus Construction & Equipment Inc. **Photographer:** Timothy Hursley, Barry Rustin.

The students may get a great view (below) but the architects looked to the future when designing the Niles West building. The first floor remains unfinished to accommodate the inevitable crush of high school students that will funnel in from the burgeoning elementary facilities.



Top This

The best secondary school in America could be Stuyvesant High School in New York City, designed by Cooper, Robertson & Partners and Gruzen Samton Steinglass

By Roger Yee

Had iron-willed Peter Stuyvesant (1610?-1672), the last Dutch governor of Nieuw Netherland, tried to find the current site of the high school bearing his name in lower Manhattan, he would have searched in vain. Until the earth excavated for the World Trade Center was used as landfill to develop 92-acre Battery Park City in the early 1970s, the site of the new Stuyvesant High School at 345 Chambers Street lay beneath the Hudson River. Yet the feisty Dutchman would probably have enjoyed seeing what goes on today at the \$150-million, 10-story, 365,544-sq. ft. structure designed by Cooper, Robertson & Partners and Gruzen Samton Steinglass.

On the outside, Stuyvesant High School responds to an awkward, 60,085-sq. ft. site

by acting like four buildings in one. The 10-story classroom and laboratory tower on the south side of the site is complemented by a five-story shop wing, a four-story theater wing and a six-story physical education wing that attach to it on the north side. Inside, space, light and views radiate in all directions from two central stairwells and an escalator bank on the north side to classrooms, faculty and administrative offices, laboratories and other special facilities to the south, east and west, which are grouped like little villages around corridors that can dramatically open up like village squares.

What brings these interiors to life, of course, are Stuyvesant's 2,800 students. These young men and women look and



sound like teenagers everywhere in their faded Levis, NBA jackets, concert T-shirts, Doc Martens boots or Reebok sports shoes, as they jostle one another through the corridors and shatter the silence between periods with high-decibel banter. In fact, they cover as broad a cross section of American society in the 1990s as a demographer might wish, coming from virtually every racial, ethnic and income group in New York. But they stand apart from their peers in one important way: They are among the brightest teenagers in the nation, gaining admission to Stuyvesant through a competitive, SAT-style examination and attaining an overall grade-point average of A-minus, an average SAT score of 1,290 and the most National Merit Scholars among America's senior classes year after year. The new building has gone to extraordinary lengths in its planning, design and operation just to keep up with the needs of these students and their dedicated teachers, administrators and support staff.

A listing of Stuyvesant's physical resources hints at what it takes to be the best public high school for science and mathematics in New York and possibly the nation. There are 65 classrooms, four laboratories each for chemistry, physics and biology, special shops and laboratories for ceramics, photography, wood, plastics, metal, robotics and energy, and special teaching environments for mechanical drafting and CADD, word processing, languages, music, art, theater and media. Supplementing these facilities are a 40,000-volume library, two full-size (60-ft. x 90-ft.) gyms and gyms for gymnastics, wrestling, dance and fitness, a six-lane PSAL competition swimming pool, an 866-seat theater, a 650-seat student dining room and a 60-seat faculty dining room, and infrastructure for computer and multi-media distribution to all academic spaces. Because the building is open almost all year, it has air conditioning and operable windows.

Yet the building's scheme becomes meaningful only when the school is in use. A student orientation booklet, *Stuyvesant High School, A Tradition of Excellence*, proclaims that "every student is a worthy human being and a necessary partner in a program established for his/her future in a democratic society." The new building has been developed by a unique partnership of educators, parents, students, government, designers and builders to let the students prove the point. Every school day, it turns them loose to find their way among its academic neighborhoods from 7:30 a.m. to 6:30 p.m. and later, hang out in the corridors or even leave when they want. In the words of Renee Levine, building coordinator of the Stuyvesant High School Coalition, "The



design reflects the philosophy of the school. It's not a building, it's a state of mind."

In all fairness, the struggles inherent in an adolescent's quest for intellectual and emotional maturity can be seen as much at Stuyvesant as anywhere else. Students at "Stuy" have always felt considerable pressure to succeed from their families if not themselves. They take great pride in attending the school that has produced such distinguished graduates as Nobel laureate sci-

Where were you when the lights went out on the third floor?

tists Roald Hoffmann and Joshua Lederberg, architectural critic Lewis Mumford, director Joseph Mankiewicz and actors James Cagney, Tim Robbins and Paul Reiser. Yet they also worry about grade point averages, and compare their academic standing with classmates—at times obsessively.

It's not surprising under these circumstances that the relocation of Stuyvesant from 345 East 15th Street would become yet another source of stress. Having adapted to such inconveniences as overcrowding, antiquated facilities and the lights going out on the third floor every time the power went on in the physics laboratory, the school had come to love its 1908 Beaux Arts building, the second home it had known since its founding as a manual training school for boys in 1904. But the situation went from bad to worse in the 1980s as enrollment reached 2,800 or 1,000 more than design capacity. A handful of concerned parents decided to take action by forming the Stuyvesant High School Coalition, an organization of parents, students, faculty and administration, along with a resurrected Alumni Association of alumni, alumni faculty and alumni parents.

The light at the end of the corridor: The corridor tracing the curving wall of Stuyvesant High School's theater on the third floor (opposite) is one of many "found spaces" where students of the legendary school like to gather informally. The 10-story school (above) at the north end of Battery Park City in lower Manhattan, Stuyvesant's third home since 1904, combines a classroom/lab tower with wings for physical education, theater and shops.



An annual musical *Sing!* and other forms of theater, dance and music are handsomely accommodated by the theater (above), which features an orchestra pit, balcony, projection/control room and movable partitions to create two 130-seat lecture halls. A view of a biology lab (below) shows the custom-designed, three-pronged lab bench that fosters biology teamwork.

In the absence of playing fields, physical education is housed within a six-story wing Stuyvesant calls "The Vertical Club." A 75-ft. long, six-lane competition swimming pool (opposite, top), two gymnasiums 60-ft. x 90-ft. each (opposite, bottom) and gyms for gymnastics, wrestling, dance and fitness give students a change of pace—and fresh opportunities for self-improvement.

Education president Robert Wagner, Jr. and Battery Park City Authority (BPCA) president Meyer Frucher to build a new Stuyvesant in Battery Park City. Under the terms of the agreement, the Stuyvesant Project Task Force would include BPCA as developer, the Board of Education as owner and the Coalition as user. BPCA would hire Cooper, Robertson and Gruzen Samton Steinglass as associated architects and W.J. Barney/M&T as construction manager, and let all prime contracts.

Unlikely as the awkward, 60,085-sq. ft. site was, encircled by the Hudson River, future building sites and the heavily trafficked West Side Highway, the concept for the new Stuyvesant developed steadily under the Coalition's vigilant stewardship. The Coalition reasoned that the best way to write a building

program for the new facility was to get as many concerned parties—educators, students and parents in particular—involved as possible. "Everyone who wanted input got it," Levine proudly states. "Those who nudged got more." Abraham Baumel, who recently retired as principal of Stuyvesant, gave his department heads considerable leeway to decide what was best, and Levine and other dedicated parents made certain that the Project Task Force was prepared to respond to everyone's wishes.

No premature judgments were made about how to design a school for gifted students. To see the latest in laboratory design at scientific organizations such as MIT and

Armed with hard facts, fierce determination and what proved to be formidable political savvy, the Coalition surprised itself by overcoming decades of inertia. "Stuyvesant parents had talked endlessly of renovating the old school building versus building a new one," recalls Levine. "When we organized the Coalition, we amassed the institutional memory to know what was best for the school. We decided to go straight to Mayor [Edward] Koch and tell him that we couldn't renovate. We wanted a new home for Stuyvesant."

Koch and New York Governor Mario Cuomo startled Coalition members by agreeing. By October 1, 1987, they signed a Memorandum of Understanding with Board of



Apple Computer, teachers went on fact-finding tours funded by a special grant. Two architects from Cooper, Robertson, Joseph Lengeling, AIA and Scott Newman, AIA, dressed as students and attended classes, assemblies and special events. ("The kids were great, really well rounded," Lengeling reports, "though they liked to squeeze an extra class or activity into every day.") Students were also encouraged to express their opinions.

Even the Board of Education begrudgingly recognized that its own dated construction standards—the City had not constructed a high school in 10 years—could not apply to Stuyvesant. "The Board of Education actually encouraged us to develop alternatives to its book of standards," says Alexander Cooper, FAIA, principal in charge for Cooper, Robertson. "We made good trade offs, and the project went forward in a timeframe unimaginable for a City school."

Many meetings of the Task Force, multidisciplinary discussions and design concepts later, the "four buildings in one" scheme emerged that principal Jinx Perullo describes as "truly realizing our chairpeople's dreams." Its exterior and interior work by balancing the extremes of Stuyvesant's program: order with randomness, large with small, and indoor with outdoor. Rather than force the various functions to conform to a planning grid, Cooper, Robertson let the functions find their own, appropriate forms, and then fit them into an ensemble that uses the grid mainly for orientation.

Is there a method to this madness? According to Cooper, yes indeed. "The limestone and brick exterior of the building responds to BPCA's architectural guidelines, the waterfront and the road through its varied elevations," he feels, "but the use of shared architectural elements on all sides holds everything together." The vertical zones of the interiors support the school's activities by starting with large-scale public spaces such as the street entrance lobby and theater, elaborate architectural detailing and the most enduring architectural materials and finishes, such as granite and terrazzo, at the lower levels—and changing to smaller-scale academic spaces, minimal detailing and industrial materials and finishes as the building rises. ("You get down to bare bones on the upper floors," Cooper says. "This is where the laboratories are for ventilation.") The siting of the wings has resulted in the physical education wing being placed directly



tors that serve every second floor or stairs that connect every floor. Resources vital to the entire student body are situated midway up, so that the dining rooms and lockers are found on the fifth floor, and the library is easily reached on the sixth floor. Circulation in this vertical campus imposes its own logic, all the same. The four minutes origi-

Fragments from the World Trade Center bombing preserved in glass

beside the highway as a visual and acoustic buffer for the rest of the building.

Moving students up and down a 10-story schoolhouse has not turned out to be a problem, thanks to a well conceived stacking plan. Students generally enter the building on the second floor across a pedestrian bridge spanning the highway and ascend to the upper floors on 14 high-speed escala-

nally set aside to change classes have stretched to five.

If there are individual areas that faculty, administrators and students like to single out for attention, they would appear to include the laboratories, library, dining rooms, teachers' and administrators' offices, theater, gymnasium and corridors. Each of these facilities has been designed

with the participation of its users, and it shows. A good example is the laboratories, which finally have the proper space for equipment, preparation and storage that were so lacking in the old building. Biology's custom-designed, three-pronged bench, which supports the student teamwork that Stuyvesant encourages in biology projects, may even be adopted by the New York City School Construction Authority as a standard.

For the sake of educators and students who had to leave behind the old Stuyvesant, pieces of the old building made the journey with them from East 15th Street, including wall plaques, an oil portrait of Peter Stuyvesant and a Museum Room that reproduces a 1908 classroom. Four hundred "reliquaries" consisting of glass blocks set into the brick and tile walls throughout the school hold historic and sentimental objects from each of the 84 classes that occupied the old Stuyvesant, with room to represent at least 84 of the classes that will graduate from the new one. (The Class of 1993 placed shards from the bombing of the World Trade Center in its block.) While the monumental Beaux Arts stair hall could not be reconstructed, the new great stair hall on floors one and two capture its spirit quite successfully.

Communities seeking advice in housing their own gifted students will find assurance in the words of principal Jinx Perullo. "If there is any lesson for others building their own schools in what we've done, it is to get involved," she says. "The words of experts should not be taken for granted, and all solutions should be kept as flexible as possible." She pauses for a moment and then adds, like a good Stuyvesant student, "Everything should be carefully documented."

On the second floor balcony overlooking the great stair hall, Peter Stuyvesant's portrait is keeping a stern watch to make sure that happens.

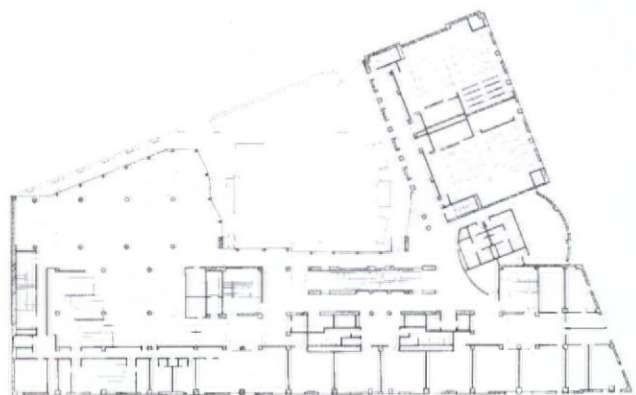
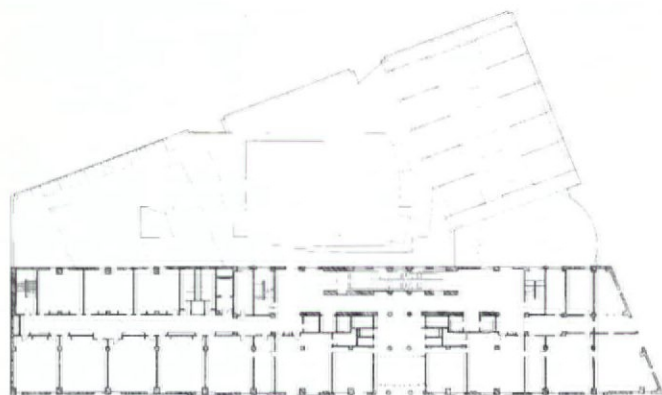
Project Summary: Stuyvesant High School

Location: New York, NY. **Total floor area:** 365,544 sq. ft. **No. of floors:** 10. **Student capacity:** 3,000. **Cost/sq. ft.:** \$275. **Paint:** Benjamin Moore. **Laminate:** Formica, Wilsonart. **Dry wall:** U.S. Gypsum. **Masonry:** Valders (limestone), Yankee Hill (brick). **Flooring:** Armstrong. **Carpet/carpet tile:**



Milliken. Ceiling: Celotex, Tectum. **Lighting:** Lightolier, Devoe, Neo-Ray, Hadco. **Doors:** Bilt-rite, Kawneer. **Door hardware:** Yale, Stanley. **Glass:** LOF, GE. **Window frames:** Efco. **Window treatments:** MechoShade. **Student desks:** Virco. **Student seating:** Virco. **Teachers' desks:** Steelcase. **Teachers' seating:** KI. **Administrative desks:** Allsteel. **Administrative seating:** Allsteel. **Lounge seating:** Yorkwood. **Student dining seating:** United Chair. **Faculty dining seating:** KI. **Library seating:** Jasper. **Laboratory stools:** Virco. **Student and faculty dining tables:** L&B. **Library tables:** Brodart. **Library shelving:** Library Interiors Inc. **Laboratory benches:** custom built by Collegedale. **Office shelving:** Able Steel. **Files:** Allsteel. **Architectural woodworking:** Somerset Wood Products. **Cabinetmaking:** Collegedale. **Signage:** Spanjer. **Elevators:** Schindler. **HVAC:** Trane. **Fire safety:** Case Acme. **Building management system:** Barber Coleman. **Plumbing fixtures:** Elkay, Bradley. **Client:** NYC Board of Education and Battery Park City Authority. **Associated architects:** Cooper, Robertson & Partners, Gruzen Samton Steinglass. **Interior designer:** Schaefer Cassety. **Structural engineer:** Severud Assoc. **Mechanical and electrical engineer:** Cosentini Assoc. **Construction manager:** W.J. Barney/M&T Construction. **Lighting designer:** Domingo Gonzales Design. **Acoustician:** Peter George Assoc. **Furniture integrator:** Furniture Consultants Inc. **Photographer:** Jeff Goldberg/Esto.

The main stairway on the first two floors of the new Stuyvesant (above) recalls the scale and dignity of the stairway at the old Stuyvesant, one of many ways the school's legacy has been honored. The floor plan of the fifth floor (below, right) includes the dining rooms, while the floor plan of a typical upper floor (below, left) depicts classrooms and labs.



CALL FOR ENTRIES

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PURPOSE

To recognize innovative, life-enhancing design that contributes to the quality of healthcare.

CATEGORIES

Awards will be given in the categories of **Remodel** and **New Construction**. Eligible projects in these categories include any environment in which the primary purpose is to provide healthcare services.

JUDGING CRITERIA

- Demonstrated partnership between clients and design professionals.
- The client's testimony that the project improved the quality of healthcare, for example:
 - Improved therapeutic outcomes
 - Enhanced staff performance
 - Increased visitor and community participation
 - Achieved higher satisfaction ratings
 - Etc.
- Visual and graphic images that support an environment capable of improving the quality of healthcare.
- A brief program statement (100 words or less) and a demonstrated response to it.

RECOGNITION

- Winners will be announced at a banquet during the Eighth Symposium on Healthcare Design, Friday, November 17, 1995, at the San Diego Hyatt Regency Hotel, San Diego, California.
- A specially-designed award will be presented to each winner.
- Expenses to attend the Symposium will be paid for one representative per award, including the \$895 registration and up to \$1,500 for travel and lodging.
- Winners will be published in *Contract Design* magazine's issue focusing on healthcare design.
- Winners will be notified by Sept. 1, 1995.



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RULES FOR ENTRY

- Must not have been previously published in a national design magazine, or be published prior to special publication date in *Contract Design* magazine.
- Submittals must be built and in use by June 1, 1995.
- Submittals must be contained on a maximum of two horizontally oriented 20" x 30" boards with foamcore backing.
- Must include professional-quality photographs, drawings, and/or renderings that do not extend more than 1/4" from the face of the board.
- Submittals must have the following minimum information; project name and location, floorplan description, design firm name and address, and submittal category.
- No entry form required.
- \$50 registration fee must accompany the submittal. Make checks payable to The Center for Health Design, Inc.
- All submittals must be received by noon on August 1, 1995. Any submittals received after the deadline will be returned unopened to the sender.
- Mail all submittals to: The Center for Health Design, Inc., 4550 Alhambra Way, Martinez, CA, 94553-4406 USA. Sponsors are not responsible for shipping and receipt of material. Submittals will be returned only at the entrant's request, and if return postage is provided.

The decision of the judges is final.

JUDGES

Kathryn E. Johnson, President & CEO, The Healthcare Forum
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Roger K. Leib, AIA, Chairman of the Board, ADD Specialized Seating Technology, Inc.
Jain Malkin, Principal, Jain Malkin, Inc.
Derek Parker, FAIA, RIBA, Senior Principal, Anshen + Allen Architects
James Ray, FACHE, Executive Director, Cedar Sinai Medical Center
Wayne Ruga, AIA, IIDA, President and CEO, The Center for Health Design, Inc.
Roger Yee, Editor-in-Chief, *Contract Design* magazine

Northern Exposure

The Canadian design industry shows why it's ready to take on a brave new market—the world

By Jennifer Thiele Busch

Canadian design is alive and well—and living in Toronto at the Design Exchange, a national showcase for design. The new facility, designed by the Canadian firm Kuwabara Payne McKenna Blumberg, incorporates a renovation of the historic Toronto Stock Exchange (bottom). The DX supports Canadian design both domestically and internationally with exhibitions, promotional activities and a resource center (below). Photography by Steven Evans.

The Canadian design industry has not been on top of the world recently, having suffered like the rest of North America from economic crisis and the elimination of protective tariff barriers that opened its markets up to waves of competition from the neighbor to the south. After years of eroding government support, culminating in 1985 with the closing of the federal agency Design

Canada by Brian Mulroney's Conservative government, the design industry has also discovered the need to depend more on its own business savvy. Individual marketing efforts coupled with cooperative partnerships that support the design industry, private resources and a still interested though more frugal government are actively promoting Canadian design both at home and abroad. As Canada emerges from its own recession, with the Canadian dollar trading at \$0.72 against the U.S. dollar and Prime Minister Jean Chrétien preparing to cut federal spending by \$18 billion over the next three years, designers and product manufacturers are restructured, refocused and ready to meet the challenges of a new, global marketplace.

The emergence of the Design Exchange (DX) in Toronto as a national showcase, support network and education center for Canadian-designed products and services is one strong sign the Canadian design industry is once again poised for long-term growth across national boundaries. "The challenge faced by Canada in the rapidly changing global context cannot be met if we ignore the significance of design," wrote DX president Howard Cohen in a 1994 inaugural essay. "As we enter the next millennium, the role of design will become increasingly important in determining the quality of our lives and the strength of our economy."

Canada is already recognized throughout the world for the livability of its cities, and architecture and interior design have as much to do with that image as anything. Design professions in Canada experienced much the same difficulties as their U.S. counterparts during the early 1990s, and many highly specialized practitioners found themselves without work, according to Margaret Stinson, president of Interior Designers of Canada. "The recession forced us to stretch our minds as to what else we could do," she says. She observes that more and more architects and interior designers have turned to facilities management and related services to fill the void left by the lack of design projects.

New construction is still scarce in Canada, Stinson indicates, except in Vancouver, British Columbia, where a huge influx of people and investment from



Hong Kong continues to fuel the city's need for both residential and commercial space. Renovation work is regaining strength in many of the major metropolitan areas. As Reva Karstadt, executive director of the Association of Registered Interior Designers of Ontario, explains, "Businesses here are going through the same downsizing and streamlining processes as those in the United States, including all the changes in the work environment that accompany these trends."

The health care industry continues to be an important source of work for designers and architects, though the semi-socialized health care system strictly limits the budgets on many of those types of projects. In addition, Karstadt reports that as Canadians vigorously embrace their leisure time, there is renewed interest in retail and restaurant design. Add to that Cohen's observation that the electronics, telecommunications, computer software, medical technology and multi-media industries are all gaining ground in Canada, and the opportunities for designers to help support other industries seem better than they have in years.

Indeed, part of the three-pronged mission of the DX is to build greater ties between Canadian business interests and the design community by emphasizing design consciousness as a way to improve profitability. "The DX is committed to fostering exchange, between the general population and the design professions, between business and designers, and within the design community," Cohen writes. Overall, the genuine need in Canada for a greater connection between design and manufacturing, in particular, is reflected in a late 1980s federal government study that found only 2% of products manufactured in Canada are actually designed there.

What Canadian-designed products there are, including contract furnishings, enjoy a solid if quiet reputation for quality. Nevertheless, design has never really been emphasized in and of itself as an important segment of the Canadian economy, in Cohen's opinion. The reasons for this, he suggests, are the overshadowing strength of Canada's prosperous natural resource exports and the protective tariffs that for years reduced the need for widespread design innovation that comes with competition. Things seem to be changing, however.

"Our furniture industry had existed for a long time on the strength of protective tariffs," Stinson agrees. As a result, too few manufacturers were export-oriented. "The new situation has forced them to become exporters whether they ever thought about it or not," she continues. Now, many Canadian manufacturers are looking not only to make greater inroads into the largest and most obvious export market—the United States—but into Latin America and Asia as well.



Many Canadian-designed products enjoy a solid reputation beyond Canada's borders. Keilhauer is just one Canadian contract furniture manufacturer that has built a successful business in the U.S. market with such stylish and high-quality products as the Fin chair (left), designed by Tom Deacon.

Statistics from the Canadian Department of Foreign Affairs and International Trade show that Canadian contract furniture manufacturers have made a concerted and successful effort to export goods into the U.S. in the 1990s. In 1991, Canadian office furniture exports to the U.S. totaled \$250 million, a figure that rose 32% to \$329 million in 1992 and another 47% to \$483 million in 1993. During the first nine months of 1994, exports had already reached \$438 million.

"Canadian contract furniture appears to be enjoying a good reputation for design and performance in U.S. markets," reports Cynthia Stevenson, a Washington, D.C.-based commercial officer with the Canadian Department of Foreign Affairs. "Whether seeking institutional or commercial sales, the Canadians have local representation and the ability to respond quickly to buyers' needs. Add that to a quality product, advanced design capability and good service, and basically you have a recipe for repeat business."

Organizations like the DX are committed spreading the word. "Canadian design isn't necessarily known for one particular aesthetic," observes Cohen. "But it is known for quality, function, ergonomics and environmental responsibility." As for the prospects for Canadian-designed products in the rest of the world, Cohen says the diversity of Canada's population and geography puts it at a distinct advantage in designing universally appealing products. "Canada's great strength is that it is so multicultural, and has such sensitivity," he says. "Our design already reflects the influences of a heterogeneous society."

The DX holds exhibitions on Canadian design and promotes Canadian design at

international exhibitions throughout the world. Two annual interior exhibitions, SIDIM in Quebec and IIDEX in Toronto, are popular showcases for Canadian-designed furniture and furnishings, and they emphasize not only selling to the Canadian market, but to export markets as well. "During SIDIM we clearly identify the companies that are currently exporting or are export ready," explains show director Ginette Gadoury. But she warns that exporting must be undertaken only after the proper preparations have been made.

Despite major cutbacks in funding, the Canadian government continues to do its part to support and promote the design industry worldwide. "During SIDIM, we work with the federal and provincial governments, who invite certain potential buyers to the show to meet with exhibitors," adds Gadoury. In addition to inviting potential buyers to SIDIM and IIDEX and helping Canadian manufacturers exhibit at U.S. shows like NeoCon and certain international exhibitions, the government even sponsors its own small but stylish trade reception, Contract Canada, in Washington, D.C. through its embassy there. This coming May 17-18 will mark the sixth annual event for a select group of 16 Canadian manufacturers and 400 invited interior architects, designers/specifiers, dealers and corporate and government buyers of office furniture.

As American businesses continue to seek market expansion into Canada, they should remember that mutually beneficial trade relationships are a two-way street. So ask not only what you can do for Canada. Ask what Canada can do for you. ☺



SIT DOWN IN STYLE AND COMFORT WITH ALLSEATING

Milan (left), an exciting new wood guest and dining seating product line from Allseating, will be introduced at this year's NeoCon. With several variations to choose from and most custom matching at no upcharge, Milan is expected to receive widespread attention.
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Allseating Corporation is an independently owned and operated manufacturer of business seating, with sales offices throughout North America. Allseating has become an industry leader due to its innovative ergonomic designs, which emphasize style and affordability.

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Highlighting 1995, Allseating is proud to announce the opening of our third floor Merchandise Mart showroom in Chicago, with the official opening scheduled for NeoCon '95.

One of several new products scheduled for a 1995 introduction at NeoCon is the award-winning Therapy series of seating. Maximum individual adjustment of the back is provided through the patented Therapod™ back that permits the user to actually change the contour of the back rest with four separate control areas.

Adept will also be introduced at NeoCon. One of several new products

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Allseating answers 1995 comfort and productivity concerns with unique flair. See us at NeoCon '95. Suite 3-96.

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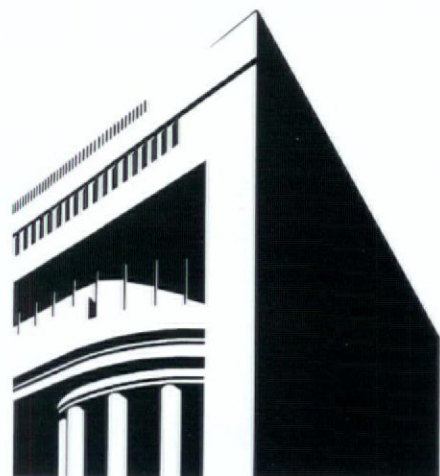
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The Rhythm Series seating medium back desk chair is shown in taupe leather (left) with standard molded black urethane arms and molded nylon base. Circle No. 252



Rhythm Series seating features an innovative Canadian design from Krug Furniture. The product offers a fresh new desk chair design that is unique to Krug in many aspects. Superior ergonomic comfort is assured by quality molding features strategically placed in the lumbar, upper torso and thoracic areas, and the specially designed seat cushion harboring a unique concept of support for the buttock area. The gentle forward slope of the arms allows clearance between the desk and chair, yet still provides ample arm support. One option unique to the Rhythm Series design is a **gel foam** seat. Initially the foam feels firm, then a slow molding effect is felt, giving each user a custom-molded seat. This action is repeated each time the user sits in the chair. Illustrated in burgundy leather (right) with optional leather upholstered arms and polished aluminum base. Comfort. Aesthetics. The Rhythm Series is the ultimate expression of innovation in seating.

Can You Manage?

What project managers are doing to growing numbers of today's design projects depends on whom you ask

By Roslyn Brandt

Is there anything wrong with design projects being managed by people other than their designers? It depends on whom you ask. An enormous transformation has taken place in the way projects are being managed all over America, and the sudden change has left many design firms reeling.

Architects and interior designers in the 1990s are frequently finding themselves answering to professional project managers at large real estate or construction companies rather than dealing directly with their clients. The project management services that were once the exclusive domain of designers are now being offered by a wide range of firms, including real estate and construction companies, construction management or project management firms, and a variety of specialized consultants. In effect, the interests of architecture and interior design are becoming subordinated to those of such disciplines as real estate or construction.

To retain an appropriate place for themselves in the emerging professional landscape, designers are being obliged to look more closely at the various causes and effects of this management transformation. Some designers may conclude that the recent changes are for the better. However, they should decide for themselves—rather than let others do it.

**The rise of project management:
How the "big picture" favors others**

With the downturn in the U.S. economy of 1990-1991 still fresh on everyone's minds, corporate executives nationwide have been under tremendous pressure to reduce operating costs and increase efficiencies by concentrating on their core businesses. Corporations have reacted by downsizing their in-house operations staff and outsourcing select real estate, facilities management and operations functions. Most are looking to form long-term strategic partnerships with consulting firms that can provide an all-inclusive approach to their strategic facilities planning and corporate portfolio asset management needs.



The complexity of these corporate transactions has created an ongoing need for perspective. Executives realize they have to see the big picture as their companies undergo such profound changes as "rightsizing" staff, re-engineering systems and processes, and implementing alternative workplace strategies such as job sharing, hoteling or telecommuting. None of these decisions should seem abstract to architects and interior designers. All have significant space implications.

Trouble is, understanding the full consequences of organizational restructuring on real estate and facilities calls for business management skills. Strategic planning is nec-

essary to evaluate existing leased and owned properties, devise scenarios for consolidating operations and produce methods of streamlining processes. The costs inherent in each of these areas must be carefully analyzed to help clients make informed decisions about lease consolidations, building sales or acquisitions, and operating expense reductions. Such demands have created the opening for project managers to take control of design projects.

Steve Tepperman, managing director of Bennis & Reissman, a New York-based project management company, explains that some projects are so complex now that they require management expertise from an entity with a "big picture" understanding of the ultimate goals of the corporation. "Our expertise covers the complete range of real estate consulting, finance, design, engineering, construction and legal issues," Tepperman says. "It's our job to be sure the big picture is painted properly, while allowing the professionals to focus on their specific responsibilities."

The term "program management" has thus emerged as the new designation for the overall management of a corporation's real estate portfolio assets and capital improvement programs. Traditional design services are a part—often a small one—of these programs. A project's scale is probably the most important determining factor. It's the large-scale, complex project that usually requires more sophisticated management approaches, typically for the large national or multinational corporation, that has created the demand for program management services.

With a network of 38 offices across the United States, South America, Europe, Asia and the Middle East, Turner Construction provides a good example of this new management trend. Claudia Lubin, former director of facilities management and procurement for NYNEX Corporation and now head of Turner's program management division, offers the following explanation for why clients come to Turner. "Our clients are looking for single source accountability, and they want a project management firm to provide overall team leadership," she indicates. "They want to know that the firm they hire has extensive experience in the

management of complex construction processes and diverse teams of industry professionals, supported by good control systems and a sophisticated value engineering process. This is what's required to give them the confidence that their real estate assets and capital improvement program are in capable hands."

A good project management firm isn't necessarily a large one, however. Bill Adams, president of Program Management Inc., a small specialty consulting firm in Houston, explains, "There are tremendous needs today for strategic planning services to help companies anticipate their needs over the next 10 years. Someone has to do economic modeling of alternatives to advise them on different ways to live out a future, to help them make informed decisions."

Clearly one of the primary reasons for project management moving out of the designers' control is the very scope of the services now required by so many corporate clients. Not only must design firms ask if they can provide these services. They must decide if they want to.

**The new economics of design:
More work, less time, less money?**

Apart from the changing needs of corporations, the complexity of the building projects themselves, the reduction of project development time, and the integration of intricate state-of-the-art technologies into new building projects have made the design process more complex than ever. Design itself has moved down the scale of priorities. Cost control and real estate issues have taken its place.

Compounding this situation is the fact that design fees have been substantially reduced by the competitiveness of the field. Fees are so low at this point, they barely cover the increasingly complicated and time-consuming design process. The combination of these factors has literally forced design out of its leadership role in the project management process, and contributed to the emergence of program management as a separate discipline and service, one not necessarily tied to what is being managed.

The past year alone has seen an enormous proliferation of management providers. The diversity of their origins and areas of expertise has created a somewhat confusing perspective. Each company tends to approach the project management process from the standpoint of its core business experience.


Real estate consultants emphasize the front-end issues while construction management companies tend to concentrate on construction-related issues. Designers, of course, emphasize the planning and design of the physical space, workplace development and improving staff productivity. Clients are required to establish their priorities before entering the new project management marketplace, since the question of

which discipline should take the leadership role now has 100 different answers.

Describing the skills required of construction management-oriented project managers, Norbert Young, president of Bovis Management Systems, a division of Lehrer McGovern Bovis, says, "They must possess professionalism, be smart and have common sense. In addition, they must know how to motivate people and manage conflicts, be able to achieve consensus, understand the team dynamic, believe in total quality management, and have listening skills and the ability to lead a team. We hire managers because of these skills and



**Program
management wants to
embrace a client's
real estate portfolio
and capital
improvement
programs, in which
design services are a
part—often a
small one**



we provide on-going management training to help them hone their skills."

Architectural firms which are not equipped to offer their clients comprehensive management services should view program management providers as a potential source of new business. Steve Laver, vice president of Trammel Crow, a large real estate and property management company, explains, "The focus today is on maximizing and rehabilitating the space the corporation has. We are in a position to recommend which consultants we feel are best for the job, so design firms do consider us to be potential clients."

**Designers as project managers:
What's wrong with plain vanilla?**

Inevitably, the recent transformation in project management has had disturbing effects on the design community. Somewhere along the way, corporations seem to have forgotten that it is designers who translate the company's goals into physical reality. Project managers do not design, after all.

The recent outsourcing of project management may be just a passing fad based on the cyclical nature of the economy. If history repeats itself, we may see construction management and real estate companies return to their core businesses when the economy picks up. However, the author predicts that we won't see the pendulum swing back for at least another five years, and the largest project management companies may not want to relinquish their new leadership role. If such is the case, architects and interior designers had better find a way to deal with the situation.

What can design firms do to regain control, or at least work productively in this new professional landscape? They can choose to offer program management services themselves. This will require expanding their expertise in such areas as cost control, strategic planning, and facilities management. Some firms, like Hellmuth, Obata & Kassabaum, Gensler and Associates and Haines Lundberg Waehler, have done so and are reaping the benefits.

Suppose firms prefer to concentrate on providing traditional design services for projects of this scope. They must learn to function as part of the team under the leadership of the program manager. Furthermore, they must find better ways to market their services to this new client base and defend their right to be fairly compensated for the important service they provide.

Strong, innovative design is essential to the successful restructuring of America's corporate operations. Who else but the architects and interior designers provide the labor force with the spatial tools they need to work effectively? Only they can take a list of programmatic requirements and create an environment that not only answers all the practical concerns of the client, but adds a touch of grace and meaning to people's daily lives.

It is time for the members of the design community as a whole to pull together, to stress the importance of their services in the "value chain" and to regain the respect they deserve. How they wish to serve their clients, through the traditional design services or by bundling such related disciplines as real estate, finance, engineering, construction and law in addition to design is admittedly a difficult choice to be made. On the other hand, who is more qualified to redesign the economic foundation of design—than designers? ☺

Roslyn Brandt is president of Brandt Resources, a New York-based marketing and management consulting firm serving the real estate, design and construction industries.

The Incredible Shrinking Fluorescent

Contract Design sheds a little light on the modest history, growing applications and brilliant future of compact fluorescent lighting

By Jennifer Thiele Busch

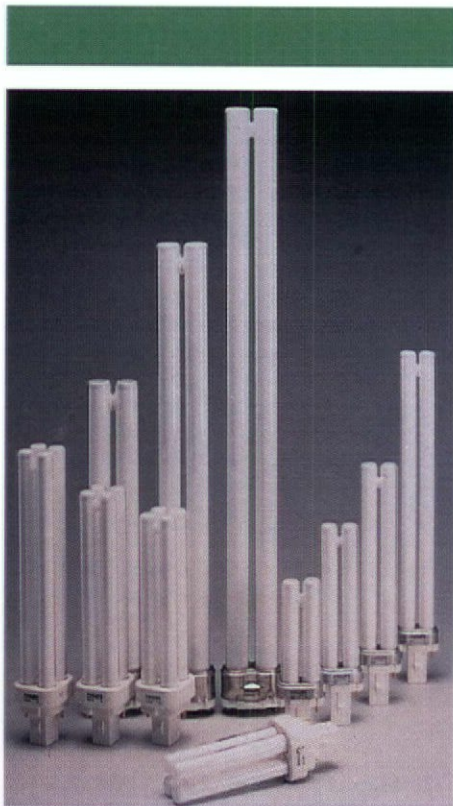
Most of us are familiar with incandescent lighting as the preferred method of illuminating our homes with warmth, atmosphere and style. Likewise, we primarily think of fluorescent lighting as long, unwieldy tubes that hang overhead in our offices, casting cold, unnatural, institutional light. So when the compact fluorescent lamp was first introduced to the U.S. market in 1980 as a replacement for the incandescent light bulb, it was met with some skepticism. Today, the compact fluorescent is acknowledged as a product that has revolutionized the lighting industry—and lamp and fixture manufacturers can't work fast enough to keep pace with its potential.

Definitions: If it looks like a fluorescent and acts like a fluorescent...

The predecessor of the compact fluorescent as we know it today was developed in Europe by Philips Lighting in the 1970s, which soon thereafter brought the technology to America as "the new trend in lighting." By way of definition, the compact fluorescent is just that—a miniature fluorescent lamp that operates on the same principle as its larger sibling. "The same elements are present in each," explains Gary Gumz, General Electric's manager of marketing research and trade relations. "They are simply positioned differently."

As such, the compact lamps also retain the same primary advantages as larger fluorescent tubes. "The miniature fluorescent is extremely energy efficient, as much as 75% more so than the incandescent it replaces," notes Steven Goldmacher, director of public affairs for Philips Lighting. Though the payback period for the substantially higher cost of the compact fluorescent lamp itself varies with the cost of a kilowatt hour, Goldmacher indicates that the time generally amounts to a matter of months, rather than years.

Compact fluorescents post some other advantages over incandescents. Warren Arthur, a designer and partner at lighting fixture manufacturer TSAO+CLS, points out that while incandescents tend to be hot to the touch, fluorescents are much cooler, making them more user-friendly in applications, such as task lighting, where they are within easy reach of the user. In addition, the life expectancy of a compact fluorescent is as high as 10,000 hours, compared to 750 to 1,000 hours



Philips Lighting developed the compact fluorescent in Europe and introduced it to the United States in 1980, where it has revolutionized lighting. These miniature fluorescent tubes (above) operate in exactly the same fashion as their larger siblings and boast the same energy-efficient features.

for a typical household incandescent or 2,500 hours for an industrial-grade incandescent.

Design challenges: More than meets the eye

Technically, there's a lot more to replacing an incandescent with a compact fluorescent than simply changing the bulb and enjoying the energy savings. "The electrical operation of the two technologies is very different," says Rick Shaver, vice president of research and development for Edison Price lighting. "Incandescent operates on a straight line voltage. Fluorescent needs a super-high voltage to

start, necessitating a ballast to jump the line voltage to the required level for each lamp." Effectively incorporating the ballast into the lamp or fixture has been a primary challenge of compact fluorescent lighting design.

Dick Dowhan, manager of corporate communications for Osram Sylvania, explains that compact fluorescents fall into two main categories. "Integral units with the ballast already incorporated into the lamp can replace common, everyday incandescents," he says. "Other lamps require dedicated fixtures that incorporate the ballast, and these generally have more commercial applications. They perform identically—they just use different methods of incorporating the ballast."

Lighting fixtures manufacturers have also been challenged to adapt their products accepting compact fluorescents to incorporate ballasts. "Fitting the ballast in has been a bit of an obstacle, especially for small lamp housings," explains Arthur. "Some companies opted to remote the ballast. Others have made it an integral part of the fixture."

Though compact fluorescents tend to be cooler than incandescents, they still generate some amount of heat buildup that can be problematic to their operation unless properly addressed in the fixture design. The best-designed products, contends Shaver, must be able to dissipate heat and keep air moving around the lamp without compromising the optical precision of the fixture.

Pros and cons: Don't toss out your incandescent bulbs yet

Fixture manufacturers were admittedly off to a slow start in responding to compact fluorescent technology in the early 1980s, but all that has changed in the 1990s. "When it was first introduced, nobody quite knew what to do with it," observes Joe Engle, vice president of product development for Alkco Lighting. "But the technology has exploded recently."

At first, compact fluorescents had several drawbacks that rendered fixtures manufacturers skeptical about their potential. "Initially, the lamps did not produce a great amount of light," notes Shaver. "One didn't really think of them as a replacement for incandescents." In the 1990s, lamp manufacturers have greatly improved light output in lamps whose shapes maximize tube surface area without actually increasing the length of the unit.

Another problem related to light quality. "Fluorescents have traditionally been rejected in some applications because of poor color rendition," explains Dowhan. "Today's compact fluorescents have a much higher color rendering index, so color should no longer be an issue."

The use of improved tri-phosphors to coat the inside of the tubes has yielded better color quality in compact fluorescents. "They aren't a 100% match to incandescents, but the difference is indiscernible unless you place them side by side," observes Gumz. Manufacturers also produce compact fluorescents in cool, medium and warm color temperatures so lamps can be matched to applications, notes Goldmacher.

Thirdly, "When compact fluorescents were introduced, they were large by comparison to what we have today," says Gumz. Developments in electronic ballasts—as opposed to traditional magnetic ones—have helped manufacturers reduce the weight and size of compact fluorescent lamps, making them appropriate for a wider variety of lighting applications. Shaver of Edison Price notes, "As lamp manufacturers are showing us the next generation of compact fluorescents, most fixtures manufacturers are responding very quickly to the possibilities."

Luminaires: The fixtures explosion

Today, options for fixtures that accept compact fluorescent lamps are varied and growing. Some fixtures are modified to ac-



The compact size of miniature fluorescents has opened up numerous design and application possibilities among luminaires, as seen in the Litedisc, a decorative fixture from LAM Lighting (above).

cept either incandescent or fluorescent with no outward differences, while others are designed specifically for compact fluorescents. However, some industry experts would still make the distinction. Warren Meltzer, vice president of sales, marketing and new product development for Lam Lighting, contends, "The best results happen when you start with the lamp and design the fixture around it."

Once-reluctant designers are also jumping on the compact fluorescent bandwagon as decorative fixture manufacturers find ways to incorporate compact fluorescent technology into a variety of highly styled products. "Design will be very important to the future of compact fluorescents," Arthur observes.

Applications: Dos and don'ts

The compact fluorescent's applications are practically limitless. "They can be used any place you're interested in saving money," says Gumz. According to industry experts, the

lamps most effectively replace incandescents in downlighting, task and indirect lighting applications. The technology is also being used to replace traditional linear fluorescents, creating "the biggest revolution in the lighting industry since the fluorescent tube was first demonstrated publicly in the 1940s," according to Shaver.

Practical limitations include applications with extreme outdoor environments, very low temperatures or a critical need for color rendition. Since constant switching on and off limits life expectancy, fluorescents are not highly efficient in applications requiring less than four hours continuous use per day. Nor have compact fluorescents made great inroads into the residential market, due to high initial cost and the perception that fluorescent lighting is "noisy, blue and flickers," according to Engle. Electronic ballasts, however, have eliminated the noise and flickering associated with fluorescent lighting.

Future compact fluorescent lamps should continue to get smaller with higher light output and even greater energy-efficiency. Dimming capabilities exist, but remain cost prohibitive. Look for this potential to be more highly developed in the coming years, however. Meltzer predicts, "Manufacturers who understand both photometric performance and aesthetics will be the big winners."

"Revisit this topic in a year, and you'll see how rapidly the technology is changing," muses Gumz. Developments are coming so quickly that some compact fluorescent bulbs may be outdated long before they burn out!

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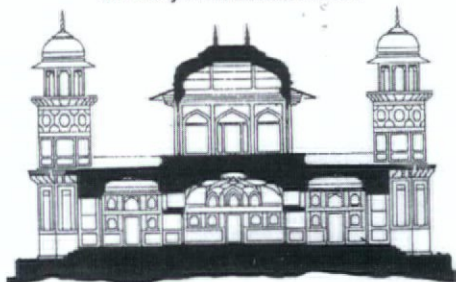
An Architectural Passage to India

The History of Architecture in India, by Christopher Tadgell, 1994, London: Phaidon Press, distributed in the United States by Chronicle Books, 336 pp., \$49.99 cloth

More than a few Westerners have been baffled trying to understand the Indian subcontinent, but this has not daunted Christopher Tadgell, senior lecturer in archi-

tectural history at the Canterbury School of Architecture, Kent Institute of Art and Design, in the U.K. Dr. Tadgell, whose specialties include Indian and French architecture, has undertaken *The History of Architecture in India* as a sweeping, panoramic view beginning with the growth of Buddhism in the 4th century B.C. and culminating in the sunset of Anglo India in 1947. Like other works that encompass vast expanses of time, space and culture, this volume is perhaps best sampled slowly and sequentially.

Tomb of Itimad-ud-Daulah, Agra, India, from *The History of Architecture in India*.



Through a subdued text and a wealth of architectural plans, elevations and sections, and black-and-white and color photography, Dr. Tadgell introduces the reader to major religious and secular structures that possess as complex a cultural heritage as any Western counterpart. Along with familiar structures such as the Taj Mahal in Agra, the City Palace in Jaipur or Sir Edwin Lutyens' Viceroy's House in New Delhi, he has included scores of other powerful works. Even the casual architect or interior designer will be moved by this volume's testimony to the power of the man-made environment to shape our view of ourselves.

All in all, a passage to India worth taking.

The Body, Photographs of the Human Form, edited by William A. Ewing, 1994, San Francisco: Chronicle Books, first published by Thames and Hudson, 432 pp., \$29.95 paper

A Singular Elegance, The Photographs of Baron Adolph de Meyer, by Anne Ehrenkrantz, 1994, San Francisco: Chronicle Books, 128 pp., \$40.00 hardcover.

Ruth Bernhard: *The Eternal Body*, by Margaretta Mitchell, 1994, San Francisco: Chronicle Books, 144 pp., \$60.00 hardcover, \$29.95 paperback

What three photographic titles recently introduced by Chronicle Books, namely *The Body, Photographs of the Human Form*, edited by William A. Ewing, *A Singular Elegance, The Photographs of Baron Adolph de Meyer*, by Anne Ehrenkrantz, and *Ruth Bernhard: The Eternal Body*, by Margaretta Mitchell, have in common is a familiar yet astonishing subject nonetheless. The human form in all its strength, grace, frailty, intricacy and grotesqueness is captured here in the lenses of master photographers such as de Meyer (1868-1946), a brilliant portrayer of fashion and portraiture, and Bernhard (1904-), an inspired student of the nude, as well as countless anonymous but talented individuals. As these books demonstrate, even an age that no longer hesitates to portray the body's most intimate aspects in public can still be moved by the mirror that a gifted photographer holds before us.

If architects and interior designers need any justification for enjoying and profiting from these studies of the human body, it might well be to compare how the parts of a form this complex—certainly more than any building or interior will ever be—come together as a whole with the structures they create. ☺

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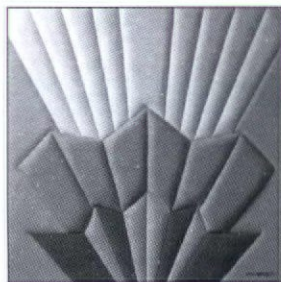
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AD INDEX

Advertiser	Reader Service No.	Page	Advertiser	Reader Service No.	Page
Allseating Corporation	20	72-73	LightFair	24	80
Armstrong	7	10-11	Mayline Company Inc.	16	33
BASF Fibers	2	2	Merchandise Mart Properties	10	15
Baldinger Architectural Lighting	3	4	Milliken	8	13
Bernhardt Furniture	4	5	Momentum Textiles	1	Cover 2-1
BioFit Engineered Seating	23	79	Monsanto Company	14	29
California Products Corporation	25	Cover 3	National Symposium on Healthcare Design	19	69
Canada Contract	21	74	Office Master	12	17
Dauphin	9	14	Suspa Inc.	11	16
Executive Office Concepts	15	31	USG Interiors Inc.	26	Cover 4
Haworth Inc.	5	6-7	Vinyl Plastics Inc. (VPI)	6	9
InterPlan	18	59	Westin-Nielsen	17	46
KI	13	18-19			
Krug	22	75			

This index to advertiser page location is published for reader convenience. Every effort is made to list page numbers correctly. This listing is not part of the advertising contract, and the publisher is not liable for errors or omissions.

PRODUCT INDEX

MANUFACTURER	PAGE	MANUFACTURER	PAGE	MANUFACTURER	PAGE
Alkco	20	Haskell.....	25	Nucraft.....	22
Allseating Corp.	72	Herman Miller.....	25	Peter Pepper Products.....	22
Arc Age.....	23	Howe.....	27	Phenix.....	30
Artemide.....	23	JG Furniture Systems.....	25	Pleion.....	27
Beta Lighting.....	20	KI.....	26	Rosemount.....	27
Boyd Lighting.....	23	Kinetics, a Haworth Company.....	25	Rover.....	22
Brentano.....	23	Knoll.....	26	Rubbermaid.....	27
Bretford.....	24	Krug.....	75	SPI Lighting.....	21
Charles McMurray.....	23	LAM.....	20	Steelcase.....	27
Dar/Ran Furniture Industries.....	24	LUI.....	26	Sterner Lighting Systems.....	21
Datel Byrum.....	32	Leviton.....	20	TSAO+CLS.....	21
Executive Office Concepts.....	24	Lightolier.....	21	Tuohy.....	28
Fiberstars.....	20	Maharam.....	22	VISA Lighting.....	21
Flex-Y-Plan.....	24	Maria Marra Designs.....	22		
Forminco.....	25	Mayline.....	26		
Geiger Brickel.....	27	Metro Furniture.....	26		
Gunlocke.....	25	Nova.....	26		

This editorial index gives the page number where information about a product manufactured by the company listed appears.

PERSONALITIES



Orser

Following a dream

Kathleen Orser

Who says you can't change careers? Certainly not Kathleen Orser, IIDA, vice president interiors/associate at Lohan Associates in Chicago, who was a registered dietician before becoming an interior designer. After receiving her bachelor's in nutrition and working in health care for four years, Orser made the change in pursuit of her creative side. Starting all over was difficult but worth it, she admits, since she could not ignore a heart-felt longing to design.

Becoming vice president of Lohan didn't happen overnight. After working for a furniture dealership while still in school, Orser went on to serve various design firms, rising to department head and senior associate at O'Donnell Wicklund Pigozzi & Peterson, Deerfield, Ill. But her experience in health care wasn't all for naught. "Working in a hospital prepares you for life, like basic training," says Orser. "You are always involved with different people and situations. There is no time for decisions. You just act."

Another major source of inspiration has been dance training. "People who dance have a feeling of spatial relationships and are sensitive to form, movement and how people relate to spaces around them," observes Orser. "Dance is like living sculpture, and interior design is like that as well."

Orser continues to expand her creativity by studying photography and other art forms. "Designers need to continually hone their skills," she says. "Our cli-

ents expect it from us." Anyone having spatial problems should just calm down—and call Orser in the morning.

Perfect timing

Susan Dell

While she's too modest to take full credit, Susan Dell, director of interior design at Charlotte, N.C.'s, Odell Associates, must be responsible in some way for the most successful interiors department in the 54-year-old firm's history. "The groundwork for the achievement was already in place," she insists. "I guess I was in the right place at the right time."

Dell's timing has proved fortunate throughout her 17-year career. A graduate from North Texas State University, one of the few FIDER-accredited schools at the time, she smartly rode out the Texas land boom with her own firm. When the Lone Star lost its glitter, she moved to Charlotte—just when the Carolina's started coming into their own. "It's amazing



how the area grew around me," says Dell. "An exciting aspect of that is that now clients realize they can have more than a traditional Southern interior."

Despite a career of constant work in busy boom times, Dell seeks balance in her life. A self-proclaimed non-workaholic, she finds time for family, friends and her five "kids"—three dogs and two cats. Dell even fits travel into her schedule and just returned from one of Charlotte's six sister cities, Arequipa, Peru, where she attended a school opening. But didn't her "kids" miss her? "The reunion was so energetic that they almost turned over my car on the ride home." Now that's a real balancing act.

Bay City stroller

Phyllis Martin-Vegue

At age 14, Phyllis Martin-Vegue, ASID was already on the road to an interior design career when her architect-father invited her to help decorate the family's new home in suburban Detroit. However, at U of Michigan she came to prefer commercial design. "I love working with intimate environments," she explains. "But I'm interested in concepts beyond color, materials and accessories."

As the design principal who oversees interiors projects at San Francisco's Simon Martin-Vegue Winkelstein Moris, Martin-Vegue has lots of opportunity to address larger design issues. "We never approach any project without understanding a client's goals and the context of the space," she reflects. "Those things help inform our conceptual thinking."

Martin-Vegue came to the Bay City after college 30 years ago to live for a year, but "was seduced by the quality of life here." That has improved ever since. Splitting from Marquis Associates in 1985 to form SMWM, Martin-Vegue and partners built a respected practice, designing such high caliber projects as the San Francisco New Main Library, numerous Apple Computer sites and most recently, a Kaiser Permanente hospital in Emeryville, Calif.

With only child Matthew off in college, Martin-Vegue rejoices in the extra time on her hands, spending it on activities like golf and hiking with her husband. "Getting married and having children was never a goal of mine," she reflects—adding that it's been the most rewarding part of her life. In fact, she couldn't have designed it any better herself.

Passionate designing

Dina Frank

Having recently been named vice president and design principal of the New York design firm Mancini-Duffy, Dina Frank has not forgotten how she began her career in a field neither she nor her family had ever known. "My father is a civil



Martin-Vegue

engineer, so I was exposed to T-squares, scales and drawings early in life," she recalls. "I never heard of interior design until I was a student at Syracuse and babysat for a woman to earn extra money. She was studying to be an interior designer. I was intrigued."

Frank always had a passion for aesthetics. "As a girl," she says, "I had a strong desire to make any ugly object I saw beautiful. I live and breathe design in everything—interiors, fashion, graphics, even the food I serve." Frank graduated in interior design ("We were trained as interior architects at Syracuse," she emphasizes) and worked for such mentors as Stanley Felderman and Karen Daroff before joining the New York office of Gensler and Associates in 1981, where she rose to vice president during a 15-year stay.

Now her challenge is to help develop design talent at Mancini-Duffy, and the prospect has her creative juices flowing. "There's a real reward in seeing people grow and knowing you've made a difference," she observes. But is her world getting more beautiful? "America isn't Italy," she admits. "But when I see the latest cars and appliances, I know we're getting there." For Dina's sake, let's hide those avocado kitchens and fake wood finishes!



Frank