

Environmental Design Solutions with Water, Wind and Light

By Barbara A. Nadel, FAIA

FROM LAKEFRONT PANORAMAS,
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Preserving Art Amid an Island Setting

Interior living spaces with natural light and panoramic waterfront views are ideal for entertaining and relaxing. When an art dealer wanted an 800 square foot, two story addition with 360 degree lake views for his weekend retreat on Candlewood Isle, Connecticut, he turned to New York City architect Jeffrey Berman, AIA, principal of Jeffrey Berman Architect - and to Marvin Windows and Doors for the big picture solution. The house, located in the middle of man-made Candlewood Lake, was originally built with Marvin products, and both the client and Berman chose Marvin for the addition.



The design goals were to create a large space for entertaining, protect an art collection and capture the magnificent views overlooking the garden and the lake. Marvin was the only manufacturer to provide the flexibility needed for different sizes and shapes, including larger assemblies. The wide expanses of glass maximized views, while retaining a smaller, residential scale for a grand window wall, and avoiding a curtain wall look. Window trim is painted on the outside, and provides the only opportunity to add color to the building's exterior palette of natural materials.

"The client wanted Marvin Windows and Doors, because they offer the best thermal performance and airtight seals to protect artwork from dust and dirt. Humidity and temperature control were also considerations in the windy lakefront environment. We used insulated double glazed, operable windows with integrated screens. On a cool summer night, the clients will open a window, enjoy the breeze, and feel like they're outside," said Berman.

Beachfront Conditions Provide Design Challenges

Hurricane-strength winds, extreme temperatures, ocean views and natural light were the environmental design criteria for a home facing the Atlantic Ocean in Locustville, on Virginia's Eastern Shore. This seaside summer residence - designed by Don A. Swofford, AIA, principal of DASA, in Charlottesville, Virginia - in classic Colonial Williamsburg style, had to withstand hurricane winds exceeding 135 miles per hour. The Marvin Magnum Window series was specifically chosen to provide the historic house appearance and withstand hurricane wind loads.

"The code calls for 105 mph wind resistance, but the owner wanted

to design to 135 mph for safety. The windows in the rooftop lantern could not have hurricane covers, so we designed the lantern with a steel frame running down to the foundation. Marvin's Magnum series provided 1-1/2" wide custom detailed muntins, solar thermal panes and authentic divided lites. Year-round temperature swings at this Atlantic beachfront vary from 105 degrees in summer to 10 degrees below zero in winter. These windows provide good E values to reduce interior cooling and heating loads," said Swofford.

"Marvin helped us meet our design goals by manufacturing high performance windows to reflect the Colonial Williamsburg style, while cutting project costs by 40 percent. As the first architect in Virginia to use Marvin Windows and Doors, I'm confident Marvin can meet criteria for any job and work with architects and owners to meet special design criteria. We know we can rely on the quality, performance and aesthetics of their products. The Magnum series has successfully met unusually high wind resistant requirements. Most importantly, our client is very pleased with the results," Swofford added.

Light-filled Small Scaled Addition Saves Energy Costs

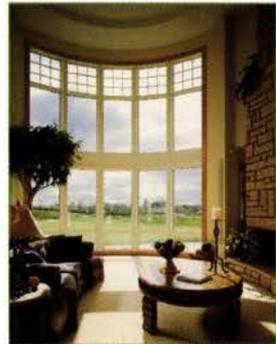
Starting the day in a cozy light-filled breakfast nook overlooking the woods is just what architect Michael Crosbie, an Associate with Steven Winter Associates, Inc, in Norwalk, Connecticut, had in mind when he designed an addition on the north facing side of his 1938 vintage home. He wanted the new windows to match the existing "six over one" windows on the rest of the house. Crosbie achieved these aesthetic goals and more, with Marvin Windows and Doors.

Crosbie chose Marvin because of the high quality they provide, the custom capabilities and selection available to meet project needs. Specifically, the simulated muntin - the strip separating panes of glass in a window sash - attached to the window gave the appearance of a true muntin, while providing the advantage of double paned glass and energy efficiency.

"I wanted the small scaled addition to appear like it had always been part of the house, and Marvin worked out all the details just perfectly. They ganged three windows together in one assembly for easier installation, but the windows look like three separate units. The contractor installed the windows in less than a day. The product versatility is endless; Marvin will do anything you want," said Crosbie.

Inside, the simple, tastefully detailed addition overlooks a naturally landscaped area, and includes built-in bench seating below the windows.

"We rarely turn the lights on, because there is so much natural light entering the space, even with a northern exposure. As a result, we've saved on electricity and energy use. Marvin was the most economical choice available on the market that gave me exactly what I wanted: aesthetics, maximum natural light, energy efficiency, double glazed units and ease of installation," Crosbie added.



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Barbara A. Nadel, FAIA is principal of Barbara Nadel Architect, in New York City, specializing in programming, planning and design of institutional facilities. She is 2001 National Vice President of the American Institute of Architects and frequently writes about design and technology.



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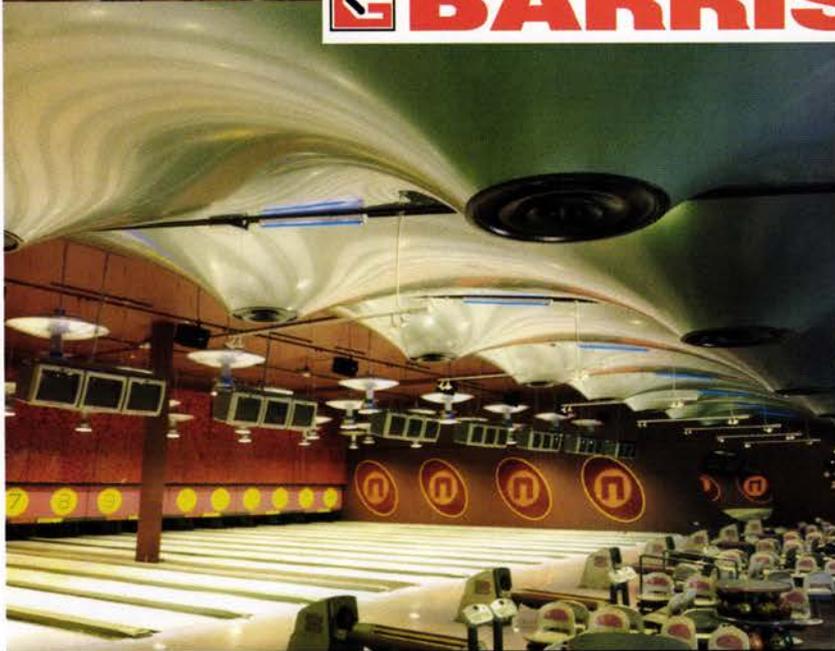
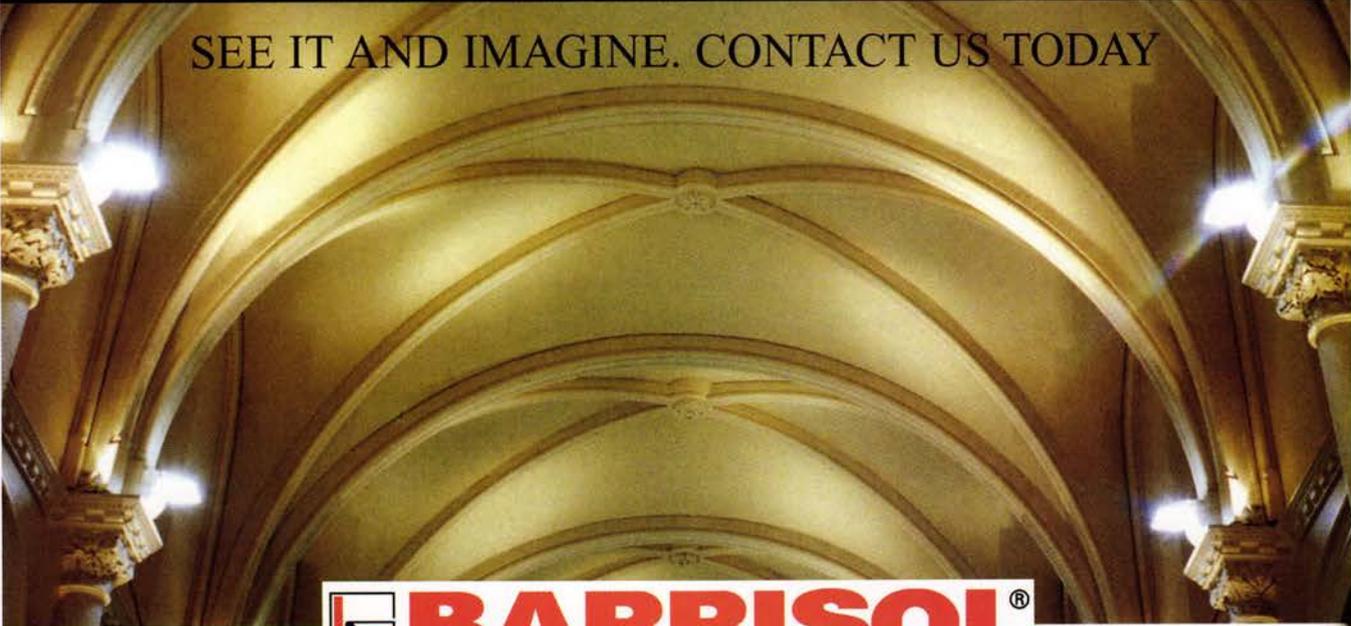
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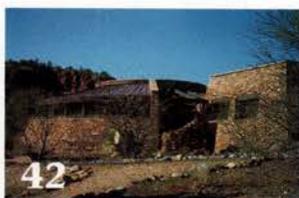
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MARCELO UCHOA

Cover

Taegu Trade and Product Exhibition Hall, South Korea
 Architect: The Leonard Parker Associates Architects, Minneapolis, Minnesota
 Photographer: Munghwan Cho



CAMILLE LEFEVRE



RALPH RAPSON, FAIA



BRIAN VANDEN BRINK © 2001

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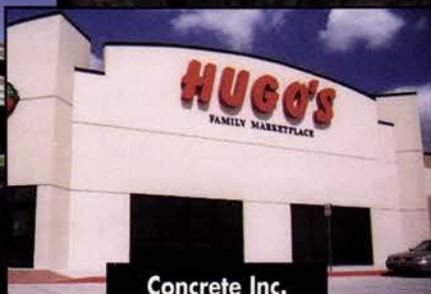
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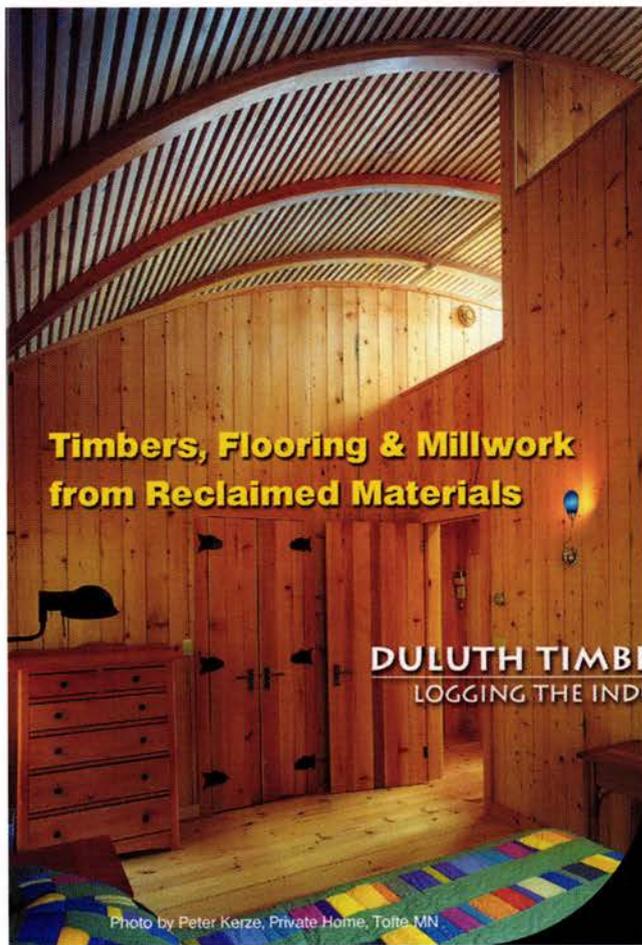
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Global Moves

Everyone's leaving. Despite my penchant for exaggeration, it's (very nearly) true; many of my friends are moving away, far away. Julie and Carter just left for Northumberland (they're coming back in four months, but I miss them all the same). Another couple are setting up shop in Europe. Drew and Barbara are closing on a house in Taos.

Even though these friends are venturing to places high on my list of travel destinations, that doesn't stop me from worrying that we'll lose touch. "Think global," Barbara encouraged one afternoon, listing all the ways—e-mail, fax, phone and good old-fashioned air travel—that we'd stay connected. It was hard to argue with her.

Julie is working on some sort of Internet feed so she can converse, in "real time," with visitors to her gallery show in Minneapolis next month. Drew and Barbara expect little change in their public-relations business, as many of their clients are national. The other couple have plans for an international architectural office. Am I envious, just a little, that they're realizing their dreams by taking up residence in the emerging global civilization?

For now, I'm living vicariously through their adventures and the global work of AIA Minnesota firms featured in this issue. The spectacular spaces created by The Leonard Parker Associates Architects for South Korea's first two convention centers inspire awe, as does the architectural savvy, diplomacy and technical acumen such projects require.

Its siting is extreme, but the house Julie Snow Architects perched on a cliff overlooking the Bay of Fundy uses light, space and materials in stunning ways. The maximum-security facility Ellerbe Becket designed for OptiGlobe in Rio de Janeiro underscores how fragile our cyberconnections truly are, and how architecture and technology combine to ensure those connections remain intact.

But I'm most moved—intellectually, emotionally and spiritually—by small exquisite

things. Sedona, Arizona, is one of the most visited places in the world, but when the state designated a park in the area and asked David Eijadi, AIA, what kind of interpretive center they should construct, he told them to build nothing at all. The client agreed but needed a structure nonetheless. So Eijadi designed a small, nearly invisible building embedded in the landscape.

I used to live in Sedona with my grandmother, who always expected I'd return. After she died, and after several years of believing our family foothold in this beloved place was lost, we were able to acquire Gram's narrow little house. Everyone assumed I'd be packing up for the long-anticipated move back home. It hasn't happened yet.

But given all the moves going on around me, perhaps it's time to purchase a laptop, cell phone and the other technological accoutrements designed to make long-distance officing a seemingly seamless way of doing business in the 21st Century and give it a go. I'm cautious though. Aside from slight envy of my friends' worldly ventures, I enjoy my life and work in Minnesota. For now, I'm going to watch and learn, from friends who've been close to home and heart, how one takes up residence in a global society.

At press time, tragic events occurred on the East Coast of our country. All of us at AIA Minnesota extend our deepest sympathy to everyone suffering a personal loss. As repercussions of September 11 continue to be felt around the world, we'll begin, in our next issue, to address the ways in which terrorism is changing the practice of architecture in Minnesota.

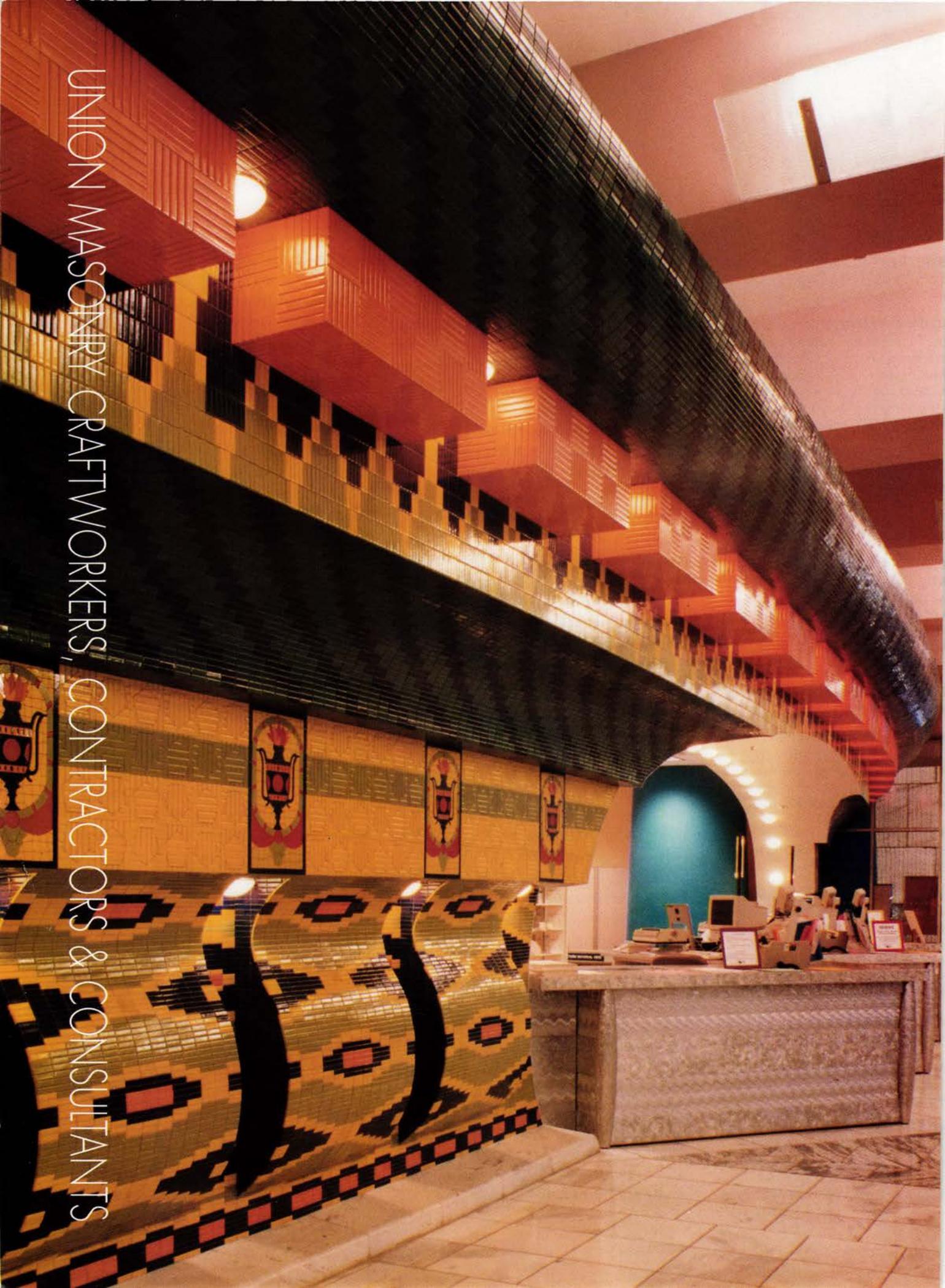


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the union contractor, Corcoran Tile & Marble, Inc., and the designers to provide the initial shop drawings for the two abstract feature walls which were to be the library's focal points. Ceramic tile would factor heavily into the design due to the numerous contours it employed. Once the design phase was complete, Team IMI and the union craftworkers went to work. In the end, 193,000 pieces of mosaic were handset, piece by piece. All in all, it took 17 of the world's finest union craftworkers 50,000 hours to complete the two 150' x 12' walls. The result is a true work of art—an abstract design executed using traditional materials and concepts developed during the construction of the original 1920's structure.

Of course, the Louis Stokes Wing of the Cleveland Public Library is just one example of how Team IMI is making a real impact in the

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AIA Minnesota's 67th annual state convention, which will be held Oct. 30–Nov. 2 at the Minneapolis Convention Center, Minneapolis, is one of the largest and most successful conventions organized by an AIA state component. The theme of this year's convention is “Settings, Substance and Solutions,” with a focus on recognizing and addressing the architect's role as placemaker in our communities.

Nearly 2,000 architects, landscape architects, interior designers, engineers and other design professionals attend the yearly convention, which features a hall of approximately 200 exhibitors and a bevy of inspiring and educational programs. Program topics this year include urban design, changing demographics, the evolving architectural profession, spiritualist placemaking, historic preservation, marketing, ethics, interior architecture, wayfinding, new media, affordable housing and sustainable design.

Keynote speakers for this year's convention are: Tony Fitzpatrick, chair, Arup in the Americas, New York City, who will discuss how creative engineering design can achieve, and sometimes drive, architectural solutions that might otherwise be considered impossible; and Cal Lewis, FAIA, principal, Herbert Lewis Kruse Blunck Architecture, Des Moines, Iowa (the 2001 AIA National Firm of the Year), who will present work that showcases the firm's commitment to design and the built environment.

The convention concludes with announcement of the annual Honor Awards winners and presentations by the jurors. This year's Honor Awards jurors are: Ray Huff, AIA, principal and partner, Huff + Gooden Architects, llc, an architecture and urban-design and planning practice in Charleston, South Carolina; Lee Becker, FAIA, partner, Hartman-Cox Architects, Washington, D.C., which has completed many award-winning projects in the realm of historic preservation, adaptive reuse and rehabilitation; and Margaret McCurry, FAIA, principal, Tigerman McCurry, Chicago, Illinois, whose credits include the Chicago Bar Association, the Juvenile Protective Association Headquarters and the much-lauded conservation housing community Prairie Crossing.

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The most comprehensive exhibition on the architect's work to date includes photographs, photo murals, more than 100 drawings and 30 original models that represent Pelli's half-century career.

NIGERIAN TEXTILES, GLOBAL PERSPECTIVES
SEPTEMBER 16–NOVEMBER 11
THE GOLDSTEIN, A MUSEUM OF DESIGN
ST. PAUL, MINNESOTA
(612) 624-7434

The exhibition focuses on four types of contemporary textiles made and used in Nigeria, and links them to current research examining global, cultural and historical contexts of West African cloth.

VAN GOGH AND GAUGUIN:
THE STUDIO OF THE SOUTH
SEPTEMBER 22–JANUARY 13, 2002
ART INSTITUTE OF CHICAGO
CHICAGO, ILLINOIS
(312) 443-3600

The exhibition examines the personal and professional history of both artists, as well as their mutual admiration, rivalry, professional dialogue and collaboration in Arles, France, in 1888.

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Young Architects Awarded

THREE MEMBERS OF AIA MINNESOTA who have been licensed for less than 10 years received a 2001 Young Architects Award. The award is given to individuals who, in an early stage of their architectural career, have shown exceptional leadership in service to the profession, the community, design, planning and/or education.

Paul Yaggie, AIA, Meyer, Scherer & Rockcastle, Ltd., Minneapolis, is recognized for his contributions to several award-winning projects by Minnesota architects. Yaggie's contributions were instrumental in these projects receiving recognition. His ability to work as a true collaborator exemplifies contemporary architectural practice, which requires the diverse contributions of many to create quality architecture.

Mohammed Lawal, AIA, KKE Architects, Minneapolis, is recognized for his leadership with KKE Architects, and for his contribution to the profession of architecture and the larger community. His involvement with the Architectural Youth Program over the past several years is a great example of how architects can positively affect the lives of others beyond the making of buildings.

Tracey S. Jacques, AIA, Elness Swenson Graham Architects, Minneapolis, is recognized for his leadership in design while working at ESG Architects and The Leonard Parker Associates Architects, Minneapolis. In addition to his design leadership, he is recognized for his commitment to teaching and mentoring of students at the University of Minnesota's College of Architecture and Landscape Architecture.



Paul Yaggie, AIA (top);
 Mohammed Lawal, AIA
 (center); Tracey S. Jacques,
 AIA (above).

INSIDER LINGO By Gina Greene, Allied AIA

Post-Occupancy Evaluation

While post-occupancy evaluation, or POE, is a heavy subject, rest assured it's not as dark and macabre as Edgar Allan's tales. A post-occupancy evaluation occurs after a building has opened and been occupied by its users, when an architect conducts an evaluation of the building to determine its effectiveness in meeting the needs of the users. This comprehensive assessment takes into consideration space function, building performance and positive and negative aspects of the building's design. It allows architects to see how well their design ideas are functioning in reality. After assessing whether the building is meeting its intended use, the architect can make adjustments accordingly and, knowing the impact the design has for its users, the architect can make sure any possible inadequacies on future buildings are nevermore.

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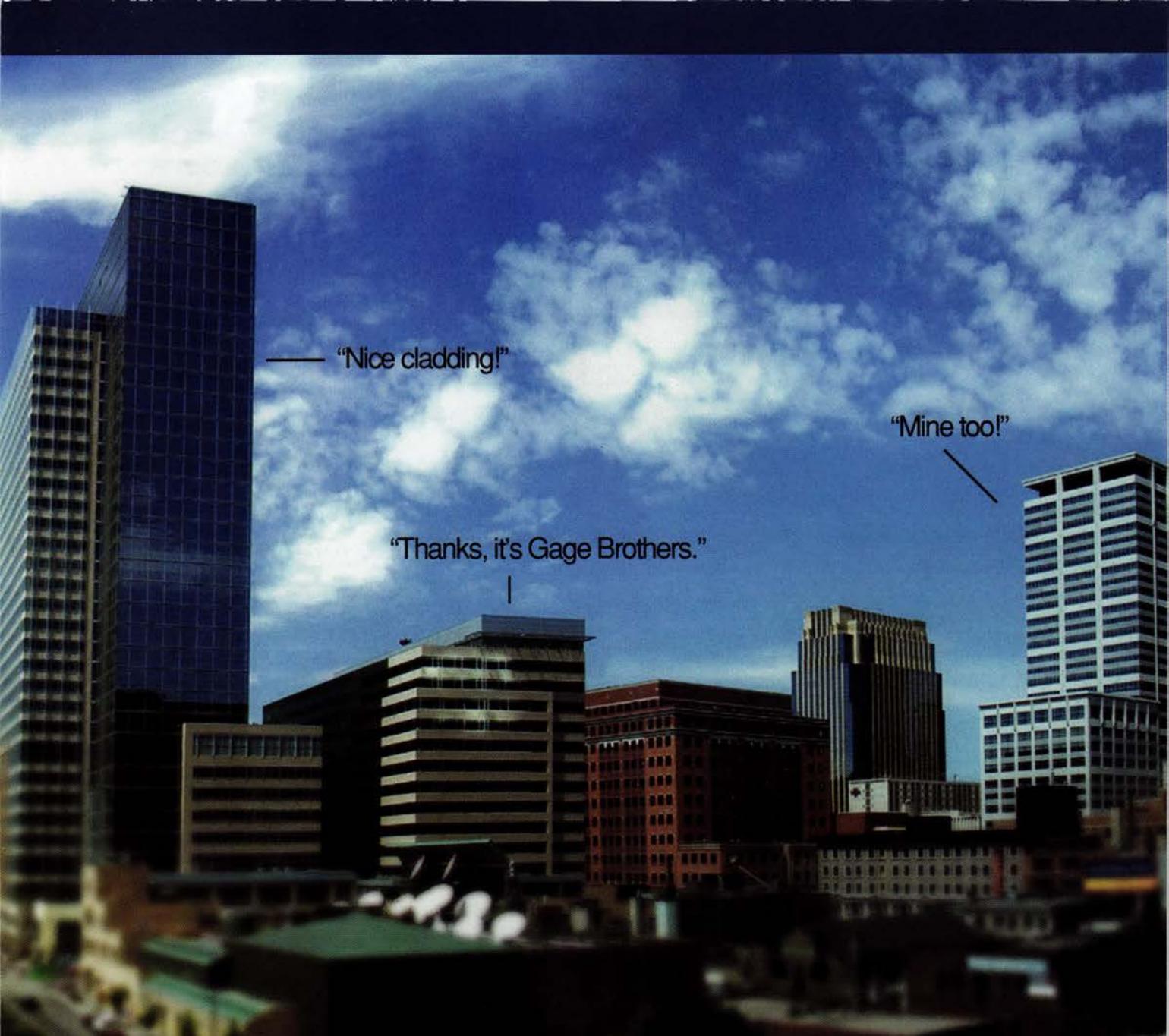
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AIA Minnesota's 2001 25-Year Award

Citing their design excellence, staying power, groundbreaking vision and contextual engagement, this year's jury for AIA Minnesota's 25-Year Award bestowed the honor on two projects: Highrise in Harlem at 1199 Plaza (1974) by The Hodne/Stageberg Partners and Butler Square (1973) by Miller Hanson Westerbeck Bell, Inc., both of Minneapolis. This year's jurors were Elizabeth Close, FAIA, co-founder of Close Associates, Inc., Minneapolis; Christine Albertsson, AIA, Christine Albertsson Architect, Minneapolis; and Katherine Solomonson, associate professor, Department of Architecture, College of Architecture and Landscape Architecture, University of Minnesota. The award recognizes buildings completed at least 25 but not more than 50 years ago.

The first adaptive reuse of a historically significant building in downtown Minneapolis, Butler Square's renovation created a "powerful impetus" for revitalization in the multiblock area now known as the Warehouse District, Close said during the jury process. In 1972, Miller Hanson Westerbeck Bell completed a bold design for the 1906 building that centered on removing the interior floors to reveal and create a multistory atrium. The "peeling away of the layers of the building was a very '70s thing," Albertsson said, "but continues to be satisfying," while Solomonson called the move "a vision that was free of the forces of the time."

"It was a real brainstorm to take out the floors for an atrium," Close added, as the decision "reveals the structure and flexibility of the building." Not only was the building powerful in its original form, the jurors agreed, but through its renovation Butler Square inspired social and economic change throughout the city. "Palatial ware-

houses were once part of the city's civic identity and this building in its new use continues that," the jurors added.

A year later, a small Minneapolis firm won a national competition to design a moderate- and middle-income cooperative-housing development in New York City's East Harlem. Hodne/Stageberg's winning design for 1199 Plaza accommodated a high density of residents with a design of low-rise and high-rise apartments in a tower and U-shape configuration that afforded various living options for those residents.

The jurors responded to the project's "impressive" and "sculptural" form that "steps down to the river." The composition of high- and low-rise units, they

added, bridges gaps between the towers, the street and the East River, giving the building a humanizing presence. Such exterior elements as balconies and terraces, Solomonson said, "which are used liberally and well," further add to the project's sculptural quality and suggest a reaching out to the river.

"That a small firm could realize a project of such scale and have it stand up so well over time is a wonderful testament to the architects' vision and design," Close said. Added Albertsson, "This project relates so well to its site. There is still a sense of activity on the street around the building, and up close and from a distance it has real drama to it."



1910



1974



2001

*Butler Square
Minneapolis, Minnesota
Miller Hanson Westerbeck Bell, Inc.
Minneapolis, Minnesota*



2001

*1199 Plaza in East Harlem
New York City, New York
The Hodne/Stageberg Partners
Minneapolis, Minnesota*



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Newsmakers By Bette Hammel

Judy and Tom Hoskens of Cuningham Group, Minneapolis, are both involved in international projects. As project director for an elementary school in Heinavaara, Finland (see *Architecture Minnesota*, November - December 1999), Judy reports that five Finns visited the firm last October to learn platform-frame-construction techniques. The mayor of Heinavaara also hopes for future approval of a sports complex designed by Cuningham. Meanwhile, Tom Hoskens, AIA, principal, says the firm won an international competition to design interiors for a proposed Grand Casino in Zurich, Switzerland. Cuningham is also doing a conceptual design for an Italian-themed casino in Mendrisio, Switzerland.

"Can you imagine trying to add onto a completely hand-crafted building—the American Swedish Institute, known as the 'fairy castle?'" asked **B. Aaron Parker, AIA, principal, B. Aaron Parker & Associates, Minneapolis**, during an Institute event. Before tackling the job, Parker traveled to Stockholm to study Swedish architecture, and how old and new buildings fit comfortably side by side. His addition is based on the proportions and symmetry of the historic Turnblad Mansion, with a swooping roofline of standing-seam metal that conveys the nobility of the old structure with 21st-century materials. The new wing will include an exhibit hall, performance hall, library, education center and a café featuring Swedish foods. The mansion's veranda will also be restored.

AIA Gold Medalist Michael Graves, FAIA, dedicated his Target Stage on St. Paul's Harriet Island in August. **Rafferty Rafferty Tollefson Architects, Inc., St. Paul**, the architect of record, shared the excitement. The structure's two 77-foot, steel-frame, red towers—which Graves said were inspired by the open-lattice truss work of the old Wabasha Street and High bridges—are beacons that invite the community to celebrate. The copper roof, suspended by cables, floats over the stage.

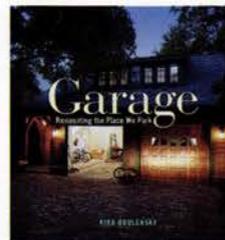
"It's a very typical Graves design with clear separation of all the components," explained Craig Rafferty, FAIA, of the structure. During the dedication, two black Labrador retrievers pranced in the park's meadow, prompting Graves to comment, "Look at those wonderful Labs! I can't wait to get home to mine tomorrow."

Talk about a unique school! **Wynne Yelland, AIA, and Paul Neseth, AIA, principals, Locus Architecture, Ltd., Minneapolis**, were asked to rejuvenate the lobby of the Circus Juventas training facility for young would-be circus performers in St. Paul. Locus came up with an ingenious lobby where performers can move around, over and even under arriving spectators. The architects designed spidery steel catwalks, a suspended "bug" to house mechanicals and a concrete reception desk with hiding places to create a fun-filled space.

Like a TV drama unfolding, the architecture-selection process for a new Minneapolis Central Library narrowed to three candidates this summer: **Ellerbe Becket with Meyer, Scherer & Rockcastle, Ltd.**, the only all-Minneapolis team; **Cesar Pelli & Associates, New Haven, Connecticut**, with **Architectural Alliance, Minneapolis**; and **RSP Architects Ltd., Minneapolis**, with **Hardy Holzman Pfeiffer, New York**. A fourth team was recommended by the library board and staff—Will Bruder of Phoenix with HGA, Minneapolis—but was rejected by the city council, which backed the library implementation committee's original decision. The selected architectural team, to be decided this fall, will design a new library, planetarium and retail on the old site, plus potential housing and parking on the next block to the north.

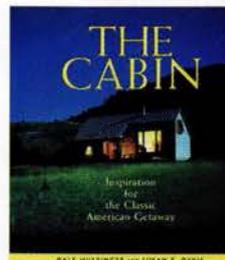
New Releases

Refuting the current trend to maximize the idea of "cabin" by building bigger, more extravagantly and for year-round use,



Dale Mulfinger, AIA, principal, SALA Architects, Minneapolis, and **Susan Davis**, New York editor of *HOW Magazine*, have compiled a book that celebrates the less-than-1,200-square-foot, new, rescued and renovated cabin. *The Cabin: Inspiration for the Classic American Getaway* (Taunton Press, Inc., 2001) examines the American love affair with this structure by showcasing 37 small cabins from around the United States (and one from Canada). The cabins are divided into four categories: rustic, traditional, transformed and modern. Site plans, floor plans, photos and explanatory essays explore this American icon in depth. In the introduction to *The Cabin*, Mulfinger writes, "Back to nature. Solitude. Simplicity. Escape. Intimacy. Self-sufficiency. Romance. Refuge. Resourcefulness. Nostalgia. These are the feelings that cabins evoke, and they're at the root of my passion for this elemental building form."

Kira Obolensky, former editor of *Architecture Minnesota* and collaborator with Sarah Susanka on *The Not So Big House* (Taunton Press, Inc., 1998) has also



compiled a book on another small American structure, the garage. In *Garage: Reinventing the Place We Park* (Taunton Press, Inc., 2001), Obolensky showcases 50 garages that do more than simply store cars; these garages also function as office, workshop, studio, laboratory, living space, soundstage, playroom and storage. Illustrations, floor plans and photos accompany the text.

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State Hospital

Fergus Falls, Minnesota

BY ROBERT ROSCOE

Of the 15 or more public institutions in the state, the greatest, the most complete, is the state hospital for the insane in Fergus Falls," gushed the *Fergus Falls Weekly Journal* in its November 21, 1895 edition. Ten years before that, the Minnesota State Legislature authorized a search for a northern-Minnesota location in which to build a third state hospital to complement overcrowded facilities in Rochester and St. Peter. Leading citizens in Fergus Falls, located in western Minnesota approximately 50 miles southeast of Moorhead, successfully campaigned for the hospital. Minneapolis architect Warren B. Dunnell was commissioned for the project.

Dunnell translated the programmatic concept of Dr. Thomas S. Kirkbride, an internationally renowned, innovative mental-health physician, into a graceful crescent-shaped linear structure more than 1,500 feet long, ennobled by a blend of Chateausque, Beaux Arts Classical and Romanesque Revival architectural elements. Kirkbride espoused very narrow buildings, because he believed every room should have an outside window. He advocated single rooms and small wards for patients, fire-proof construction and spacious grounds for farming, gardening, exercise and privacy. He also specified that lower wings for patient housing should flank a relatively high and prominent center section for administration and support functions.

As a result of these mandates, the central section of the Fergus Falls State Hospital features an eight-story tower capped by a pyramidal roof that serves as a focal point for Fergus Falls. Patient wings are five stories high, with pitched roofs and intersecting dormers; horizontally the wings are interrupted by slightly projecting lounges and day rooms.

A cream-color brick produced in nearby Pelican Rapids is the major exterior-wall material. Half-round arches top third-floor windows. The masonry wall features a finely detailed cornice with corbelled masonry. An underground tunnel extending the full length of the complex carries heat and water pipes, and once served as a corridor for food carts delivering meals from the main kitchen to patient dining rooms on each floor.

Originally the complex provided living quarters for employees. For most of the institution's active life, its 640 acres included spacious lawns, recreational space and a farm that provided



The main building of the old Fergus Falls State Hospital features an eight-story tower capped by a pyramidal roof that serves as a focal point for Fergus Falls.

food by means of patient labor. Overall, the complex's height, unusual length and 835,000 square feet of floor space make it one of the largest structures in western Minnesota.

According to the winter 1986 issue of the *Otter Tail Record*, published by the Otter Tail County Historical Society, the hospital began receiving male patients in 1890, when the building's first phase was completed. Their occupations included farmer, laborer, blacksmith, bricklayer, shoemaker, sailor and tramp. Most were Norwegian or Swedish immigrants. Some of the alleged causes of their mental illness included disappointment in love, death of wife, epilepsy, financial troubles, heredity, intemperance, injury to head, overwork, solitude, fright and typhoid fever. Three years later, female patients were admitted. By 1900, the Fergus Falls State Hospital housed more than 1,300 patients.

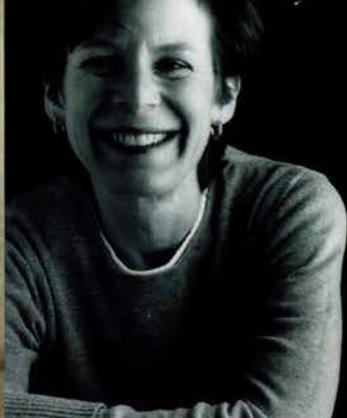
In the late 1970s, significant changes took place in mental-health care. "De-institutionalization" became an operative term, a process whereby large numbers of mentally impaired patients were removed from large institutions and placed in group homes; other patients were placed in various types of independent-living situations with outpatient support.

As a result, the population at what is now called the Fergus Falls Regional Treatment Center is 200 patients. None of them is

Continued on page 58

89.3 WCAL's Musical Architects

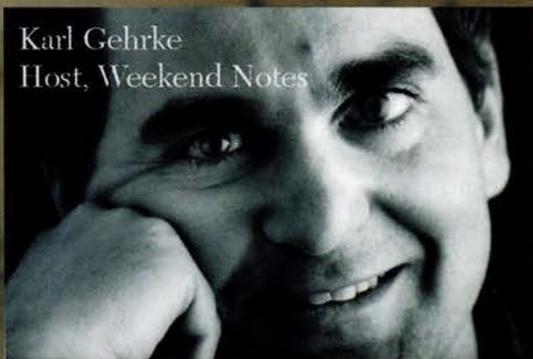
Melissa Ousley
Host, Musical Midday



Steve Staruch
Host, Top of the Day



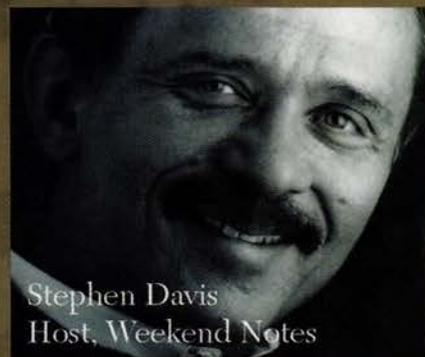
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Window Shopping

Architects can meet energy, comfort and lighting needs by balancing requirements when selecting windows

BY JOHN CARMODY

Windows are often a dominant aspect of a building's appearance, but also play a large role in building performance and the quality of the interior environment. While the design and selection of window systems is driven by codes, standards and other functional requirements, architects still must make window choices that can significantly affect a building's cost, appearance and energy performance. When making these choices, the six key components architects must consider are: annual energy use, peak-load impact, daylight, view, glare and thermal comfort.

Annual energy use A window is part of an envelope system that may include interior or exterior shading devices and daylight-enhancing devices. Light and heat energy that flow through windows influence the heating, cooling and lighting loads in the spaces near the building perimeter. Selecting the most energy-efficient windows in commercial buildings is not as simple as it is in a residence. A window with a low U-factor (a measure of the rate of non-solar heat loss or gain) in a house will reduce heat loss, but this may not be as critical in a commercial building where heating is not a major part of energy consumption. A window with a low solar-heat-gain coefficient (SHGC) will clearly reduce heat gain and summer cooling loads, but if it is not accompanied by a high

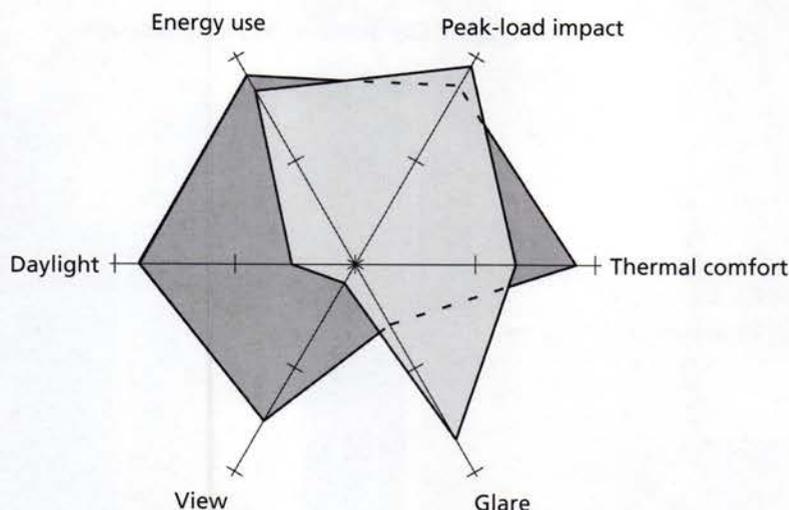
visible transmittance (T_v), the opportunity is lost to use daylighting to reduce electric-lighting loads.

Peak-load impact In addition to annual energy use, peak-load reduction is an important performance indicator for windows in commercial buildings. A lower peak load reflects reduced utility-demand costs during peak periods, as well as reduced mechanical-equipment costs in a building. A window with a lower SHGC will result in a lower peak load.

Daylight The presence of daylight is a positive attribute in most interior environments. Daylight is linked to increased satisfaction and productivity in work and school settings. A window with a higher T_v will provide more daylight.

View The most subjective of the attributes associated with windows is view. Nevertheless, it deserves attention since it is a desirable characteristic in workplaces. Factors influencing view include window shape and area, as well as color and T_v of the glass.

Glare If a space is not properly designed, too much daylight can produce excessive glare, which is particularly undesirable in computer work environments. To provide a general indication of the potential glare problem with different windows, glare factor can be calculated



Overall Comparison of Glazing Types

Note: A larger shaded area is better. This comparison is for a south-facing perimeter office zone with 0.30 window-to-wall ratio and no shading in a cold climate such as Minneapolis. All values are for the whole window unit including aluminum frame.

U = U-factor (Btu/hr-sq ft-°F)
 $SHGC$ = solar heat gain coefficient
 T_v = visible transmittance

double glazing, reflective coating
 $U = 0.54$, $SHGC = 0.17$, $T_v = 0.10$

double glazing, spectrally selective clear
 $U = 0.46$, $SHGC = 0.34$, $T_v = 0.57$

Continued on page 62

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BY BURL GILYARD

When the school board in Aberdeen, South Dakota, wanted to build a new high school, coming up with a design for the proposed building was far from the architectural minds at DLR Group, Minneapolis. Public-school projects typically require the support of voters through a bond referendum to pay for such an undertaking; without funding, there's nothing to design. So DLR, which gets more than half its business from school projects, has become adept at conducting focus groups and community surveys as part of bond-referendum campaigns for its clients.

Over the years, DLR has discovered that polling members of the community often reveals surprising results. "In Aberdeen, we found a complete mistrust of the school board because of decisions made 20 years ago," says Chris Gibbs, AIA, senior associate. Thus, plans were put on hold while the school board improved communications and addressed lingering resentments with parents and citizens. Subsequently, the school board unveiled a master plan for the school district that included a new high school.

In November 2000, Aberdeen voters approved funding for the project. Work on the 250,000-square-foot building is under way. "The success of the story is that the school board cleared up all the issues they needed to with the community," Gibbs says. When DLR gets involved with school focus groups and funding campaigns, adds Charles Orton, AIA, associate, communities boast an 80-percent passage rate for bond referenda on the ballot for the first time.

How did DLR get into a business that sounds a lot like political consulting? By paying careful attention to the needs of its clients. "Some of this stuff is obvious," Orton says. "If a client can't fund a project, they can't do it." Orton notes that DLR's expanded services have bolstered the firm's business. "It has given us a much stronger presence in the K-12 marketplace," he explains. "Philosophically, it's an approach that's client-focused rather than project-focused."

Architectural firms like DLR are finding that widening their range of services beyond traditional design work is essential to both maintaining current clients and attracting new ones. When a firm gets into the area of facilities management or consulting, for example, it can keep doing business with a client long after

the original project is complete. Firms are finding that these new services often blend organically with the traditional discipline of design. As architectural firms diversify, they can increase their strength and stability.

Another service DLR offers its education clients is facilities assessment, a service that arose in response to clients asking for opinions on whether they should build anew or renovate. After discovering there was no single source of information detailing how long various building components would last, DLR began assembling statistics from various sources—product literature, facilities managers, insurers—and creating its own database.

Today DLR's database analyzes more than 150 different building systems and architectural components within a structure. For example, when asked how long a roof will last, DLR provides a solid answer. "We can give a client a very good projection of what year they're going to have to replace that roof," Orton says, "and they can begin budgeting appropriately."

Other firms are taking facilities assessment a step farther into facilities management. Bob Walsh, AIA, principal, Walsh Bishop Associates, Inc., Minneapolis, is also a certified facilities manager. As many corporate clients have decided to outsource property oversight, Walsh says, architects have picked up those duties to help clients with ongoing office-space needs—even providing a staff member on site when needed.

Long-term clients of Walsh Bishop's facilities-management services include such large financial firms as Dain Rauscher and ING ReliaStar. The firm also provides long-range facilities forecasting for its clients. "Do you need more real estate? Less real

As architectural firms widen their range of services beyond the traditional discipline of design, they can increase their strength and stability.

Continued on page 67

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Want Fries With That Building?

BY BILL BEYER, FAIA

As I sat in the office one weekend trying to manage the mass of paper on my desk, a radio commercial caught my ear. The ad mentioned architects, career choices and skills like teamwork; the ability to plan, meet deadlines and be creative. It went on to say, "And where can you learn skills like these to be an architect tomorrow?"

I assumed the AIA National advertising campaign was in full swing, my dues dollars hard at work, so I listened eagerly for the hook. Where could I work to get the foundation for an architectural education? Turns out, being an architect is just one of the jobs that you can prepare for by working at . . . McDonald's.

I called the ad agency that created this public-service announcement and spoke with the account executive. She told me the ad had been produced in three versions using architects, business owners and teachers as examples for the skill-building attributes of the McDonald's workplace. Advertising hyperbole is to be expected in our over-hyped world. I suppose architects should be flattered to have our professional strengths recognized by others, especially the world's largest employer and leading service provider.

Now that it looks like a master's degree requiring seven years of ever-more-costly higher education will be the new ticket to professional licensure, maybe the McDonald's route isn't a bad alternative. The McWork/McStudy program could reduce educational costs; or, as part of a creative private/public partnership, one's service at McDonald's could pay for later architectural education in a new version of the GI (gastrointestinal) Bill.

We would, of course, learn to design and build a better burger. Four years of service at

Mac & Don's could elucidate the theory of the golden mean and the meaning of arches. Where better to understand how to super-size those McMansions? Or to write exacting specifications, albeit for beef patties? Taking orders and making change could eventually prove valuable in writing change orders.

We'd get the training needed to deal with unruly customers and clean up after them. Graphic skills and spatial awareness could be acquired by arranging sesame seeds in various bun patterns. We'd find out about structural aspects of poor soils by trying to drive straws into those hyper-dense shakes.

Environmental awareness could be on the menu, reminding us that it takes 1,400 gallons of water to produce each burger, order of fries and soft drink. Let's not overlook the practical value of calculating heat loss on pocket pies and paper coffee cups.

The already-licensed could acquire learning nuggets via continuing education. Happy Meals could give us marketing lessons for including scratch-off prizes in every proposal, with merchandising tie-ins. We'd learn to offer Jurassic Park III landscaping packages and animated holographic dinosaurs with our building designs. We could install those deep-fry buzzers in our offices to alert our teams to impending deadlines at each phase of design.

Of course, architects never stop learning and eventually develop the kind of minds needed to appreciate beauty in every shape and form. The more I think about it, the most beautiful lesson to be had from working at McDonald's is learning to live with those generous compensation packages we can expect in our chosen profession. We love to see you smile.

"It requires a certain kind of mind to see beauty in a hamburger."

—Ray Kroc

Convention Innovations



MYUNGHWAN CHO AND JUNGSIK MOON

South Korea's first convention centers blend architectural drama with a proven program to introduce an American style of business *By Camille LeFevre*



Project team (from left to right): bottom, Sara Rothholz Weiner, Assoc. AIA, Francis Bulbulian, AIA, Steve S. Huh, FAIA, Leonard S. Parker, FAIA, Yong Koo Lee; top, David Hyde, Gary Mahaffey, FAIA, Ray Greco, AIA.

With its 800-foot-long prefunction space, a glass gallery that soars to 165 feet (opposite), the Pusan Convention Center and Exhibition Hall (top) embodies the city of Pusan's forward-thinking approach to the design of its dramatic new building.

On South Korea's southern coast, poised between mountains and sea, is the bustling harbor city of Pusan. Four years ago, eager to stay up-to-date with economic and technological advances worldwide, the city government of Pusan hosted a design competition for a convention and exhibition center, to be located on a former airport site slated for commercial development. The Leonard Parker Associates Architects (TLPA), a part of The Durrant Group, Minneapolis, entered the competition with a building design that captured the city's sense of self.

"We began researching the city by asking our clients why they think Pusan is unique," says Stephan Huh, FAIA, president and CEO. Thousands of seagulls hover over Pusan's beaches, and the client, a government and privately owned company, was attached to the city's existing seagull imagery. "But a lot of port cities have seagulls," Huh continues. "So we asked them what makes them special. They said Pusan is proud of being a progressive, forward-thinking city."

TLPA's winning design conceptualized a seagull in flight through its ensemble of forms; but the project team also canted the building slightly forward so "it leans toward the future," says Leonard Parker, FAIA, founder. As Huh explains, "The opposing

forms of the prismatic gallery and the ascending roof of the exhibition hall recall the wings of a seagull in flight, while the exterior walls of the building cantilever forward 11 degrees, giving the building a tangible dynamic that reflects Pusan's aspirations."

The 900,000-square-foot Pusan Convention Center and Exhibition Hall, completed in 2001, is based on the functional diagram of the Minneapolis Convention Center, designed by TLPA and Setter, Leach & Lindstrom, Inc., Minneapolis, and undergoing expansion. Both buildings feature four components: three exhibition halls, a back-of-the-house area for warehousing and service activities, meeting spaces with a ballroom, and prefunction spaces in front of the exhibition halls where registration occurs and people gather. "This is the ideal organization of a convention center," Parker argues.

Pusan's prefunction space, however, is an 800-foot-long glass gallery that soars to 165 feet. "The front of the house or prefunction space has all the glitz and all the glory," Parker continues. "This is where the people are. This is where the action is. So with Pusan, we're making the action open and visible with an extensive use of glass. The glory of this building is the glass galleria—an exciting spatial experience." A restaurant is suspended in the atrium





MYUNGHWAN CHO AND JUNGSIK MOON



The center's exterior walls cantilever forward 11 degrees to express Pusan's progressive character (opposite, top and above). Based on the functional diagram developed for the Minneapolis Convention Center, the Pusan building features four components: exhibition halls, a back-of-the-house area for warehousing (top), meeting spaces and a dramatic prefunction space (above).

at the mezzanine level of the glass gallery, offering diners expansive ocean and mountain views.

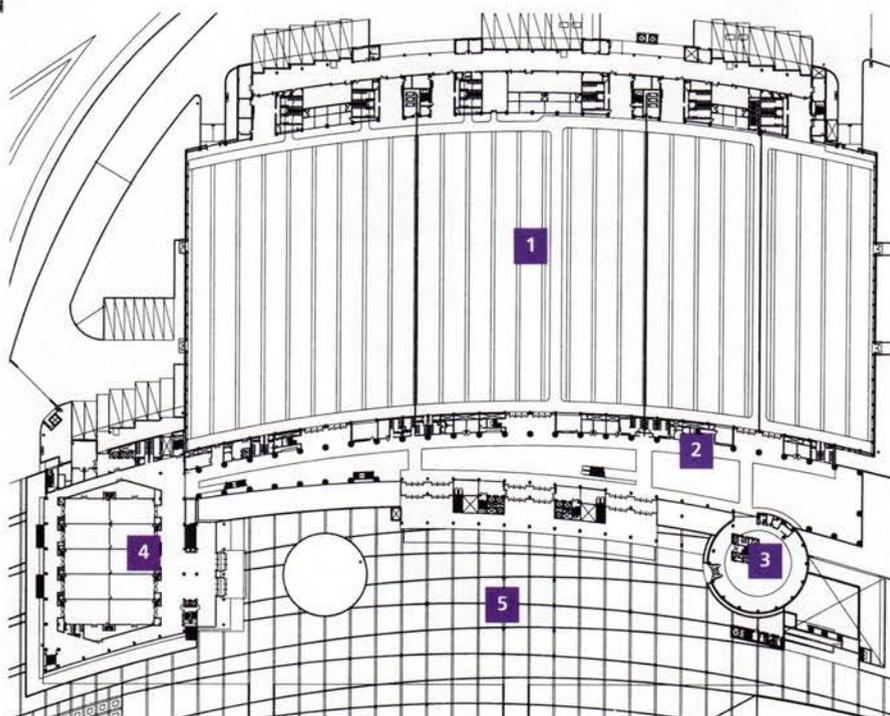
Stainless steel, green- and blue-tinted glass and metal panels accentuate the building's sculptural forms. The structural frame of the glass gallery, Huh explains, "is a trichordal truss generated by slicing a doughnut-shaped 'torus of revolution' that accommodates the hall's curved, graduated geometry." Originally, the hall's design utilized a light, airy, cable-supported system, which was abandoned

after Korean officials determined it was too controversial to engineer.

When introducing an innovative structural system in Asia, Huh explains, local engineers are often not as daring or comfortable with such systems as American engineers may be. "In fact, they're very careful," he continues. "Architects and engineers are put in jail if a structure fails. Monetary compensation alone is not acceptable in Korean society. If somebody does something wrong, they're held accountable."

First-floor plan

- 1. Exhibition halls
- 2. Glass hall
- 3. Seminar
- 4. Meeting rooms
- 5. Exhibition plaza









The project team compromised by using conventional systems in the structure, “but the overall concept in the macro sense is still apparent,” Parker says. “All of the major ideas were followed to the letter. The concept is so compelling, it overcomes the engineering particulars.”

Imagine if TLPA had proposed such innovations for South Korea’s first convention center, located in Taegu. Unlike Pusan, Taegu is a conservative, traditional city, Huh explains, but was daring enough to host a competition for the design of the country’s initiation into American-style convention and exhibition centers.

“I spent a lot of time convincing the Taegu Convention Center and Exhibition Bureau of the importance of putting meeting rooms and exhibition halls in the same building,” Huh recalls. “With Pusan this was easy, because I could show them Taegu.”

TLPA won Taegu’s competition by designing a functional, three-story box, “then making it rationally unique so people would feel good about it,” Huh says. The team added a variety of dramatic curves that echo the “Korean architectural idiom found in the country’s traditions and culture.” The 854,000-square-foot Taegu Trade and Product Exhibition Hall, completed in 2000 and constructed of metal panels, stainless steel and glass, sits compactly on its tight site: exhibition halls, meeting areas and a dramatic multilevel curved-glass atrium—the prefunction space—are functionally stacked. Eventually the building’s exterior will be hung with sunshades of colorful cloth to indicate the city’s

growing fabric industry. A high-rise trade center will be built next to the convention hall in the near future.

The Taegu center is viewed as more traditional for its Asian references; the Pusan center more progressive for its play with metaphor. Both facilities, however, have ushered into South Korea a genre of architecture that supports a way of promoting products, building the economy and networking that is new to the country. And both facilities, with their soaring glass galleries, elicit excitement no matter what language is spoken.

The Taegu Trade and Product Exhibition Hall, South Korea’s first convention center, also features a stunning, multilevel atrium (opposite); the prefunction space is one of the traditional Korean curved forms the project team added to the building’s simple box structure (top) to win over the more traditional client.

Pusan Convention Center and Exhibition Hall

Pusan, South Korea

Taegu Trade and Product Exhibition Hall

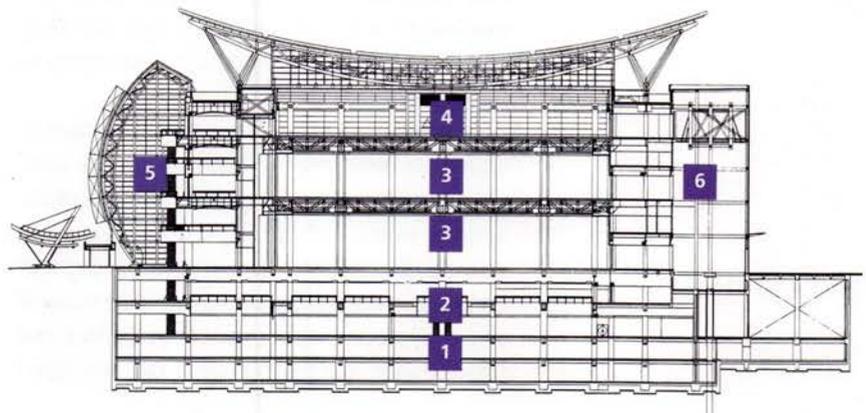
Taegu, South Korea

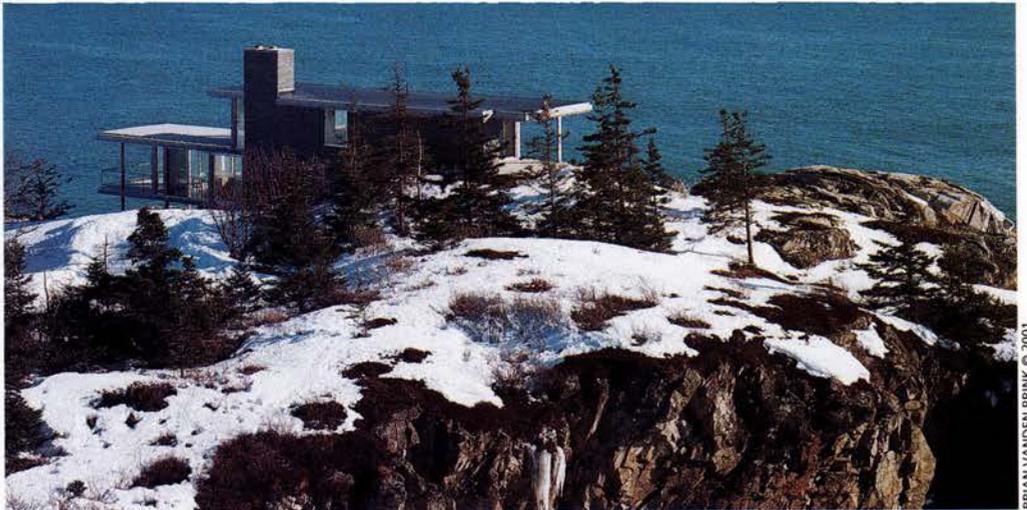
The Leonard Parker Associates Architects, a part of The Durrant Group

Minneapolis, Minnesota

Section

- 1. Parking
- 2. Shopping mall
- 3. Exhibition halls
- 4. Ballroom (multipurpose mall)
- 5. Lobby
- 6. Truck elevator





BRIAN VANDEN BRINK © 2001

Seaside Modernism

A house on the Bay of Fundy supersedes regional differences by combining global modernism with a human need for connection to the outdoors *By Thomas Fisher, Assoc. AIA*



Project team (from left to right): Julie V. Snow, FAIA, Ben Awes, Connie Lindor (Lucas Alm, Ken McQuade, AIA, Jim Larson not pictured).

Like Thoreau's description of seaside houses, this modern residential interpretation, a narrow rectangle perched above the Bay of Fundy (top), is "low and broad" with a "great number of windows" (opposite).

We can go to the sea, not just to contemplate the world, as Thoreau observed, but also to contemplate architecture. Thoreau went to the seashore some 150 years ago because he saw it as a place where people lived in more environmentally sensitive and less architecturally pretentious ways. Modernists went there some 80 years ago because they saw, especially in sea-going ships, an architecture whose form derived from necessity and modern technology.

The seaside house that Julie Snow Architects, Minneapolis, designed for David and Mary Beth Koehler in New Brunswick, Canada, gives us cause to contemplate such things anew. The house combines some of Thoreau's ideas with the forms of modern architecture. In so doing, the house forces us to rethink the supposed gap between the modernist's search for universal forms and technology and the environmentalist's sensitivity to the land and local conditions.

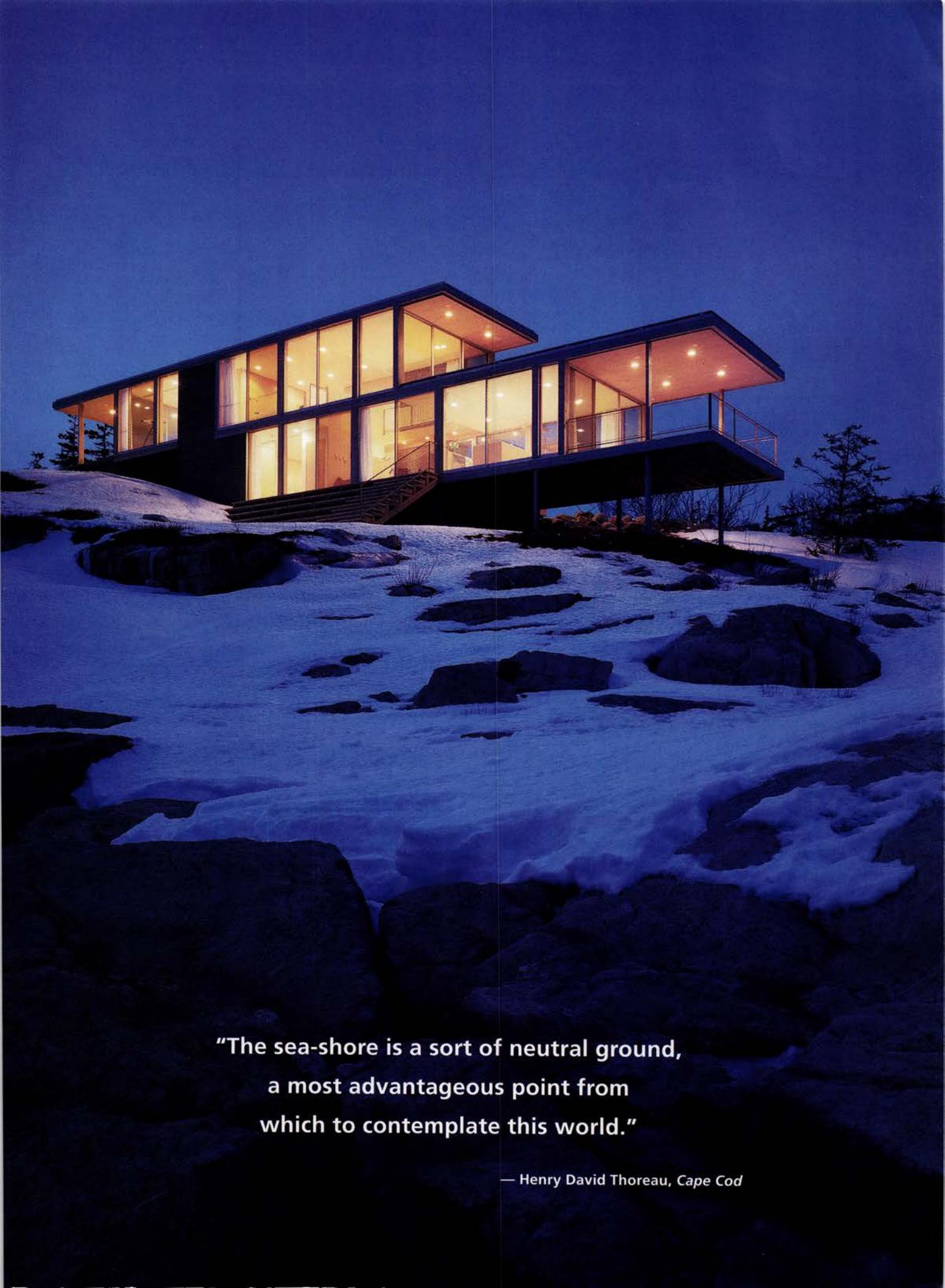
We often assume, for example, that modern architecture, with its emulation of the machine, sought to separate us from nature. Aspects of the Koehler house reinforce that belief. Standing above rocky cliffs, this glass-wall house, partially clad in bluestone and with floors mostly elevated above the ground, stands aloof from the land and sea around it. Yet the Koehler house also repre-

sents an urge to return to nature; its glass walls slide open to the outdoors and its broad steps lead to the sea's very edge.

In the mid-19th Century, as Americans plowed under the Midwest, Thoreau saw in seaside communities a different land ethic, one that largely leaves the land alone. In some respects, this house echoes that ethic. The Koehlers spent three years looking for coastal land to buy, eventually purchasing—sight unseen—the 55-acre property that juts into the Bay of Fundy between New Brunswick and Nova Scotia. "Nothing had been done to the land since the time of King George," says David Koehler.

The project team respected that wildness by locating the 1,680-square-foot, wood-frame house at the ocean edge of the property, tucking it behind a hill to ensure its privacy from the road. They altered only 1,400 square feet of the site, even rolling up the native vegetation in peat to protect it during construction. "This house is about living simply," says Julie Snow, FAIA, principal, "but not in a nostalgic way."

Just as Thoreau admired the plain asymmetrical houses he saw in Cape Cod, Snow admired those she saw in New Brunswick. "We talked with Julie about a modern version of those houses," says Mary Beth Koehler. As a result, "people look at the house and think of the Farnsworth house,"



**"The sea-shore is a sort of neutral ground,
a most advantageous point from
which to contemplate this world."**

— Henry David Thoreau, *Cape Cod*





says Snow, referring to the steel-and-glass structure designed in 1950 by Ludwig Mies van der Rohe in Plano, Illinois, "but that was the farthest thing from my mind."

While the buildings have superficial similarities, the Koehler house has none of the formal, classical character of the Farnsworth house. The Koehler house instead recalls Thoreau's observation that, "Houses near the sea are generally low and broad. . . . The great number of windows. . . and their irregularity in size and position. . . [are] agreeable."

A narrow rectangle set slightly askew from the coast, the Koehler house has two floors offset from one another. The upper floor, containing the master bedroom and a screen porch, perches on a rock looking west toward the sunset, while the lower floor, with the kitchen and a dining room and deck at one end, projects east toward the morning sun. At the center of the house, visually tying the two floors together, stands a double-height living room, with a study overlooking it and a guest bedroom and bathroom tucked behind the stair.

The Koehlers expressed some initial hesitation in working with an architect. "We had heard that architects are artistes," says Mary Beth Koehler, "and we didn't want to be like Mrs. Farnsworth fighting with her architect. But Julie and her team were great to work with." Architecture as well as architect made the difference here.

Edith Farnsworth battled with Mies over a glass house with one solid wall and no privacy. The Koehlers, instead, got a glass house with ample privacy and internal variety. Bluestone walls block the view of the interior from the approach drive, sliding screens provide privacy for the bedrooms, changes in floor levels separate the owners from their guests. "Some of the neighbors have asked if

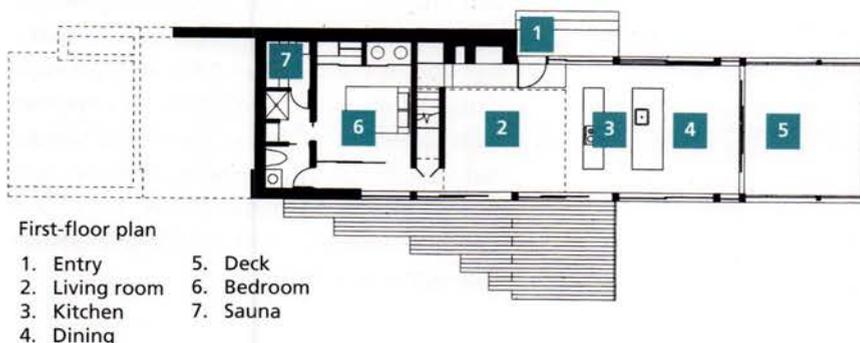
all houses in America look this way," says David Koehler. "To them, the use of so much glass is foolish, but to us, it's a very renewing place."

To achieve the openness of this glass house in such an exposed location, the project team had to "stiffen the floor and ceiling plates for sheer," Snow says, "while planting a stone wall into the ground and layering the two floors against it."

Finding a builder in New Brunswick who could construct the house proved difficult and details had to change to accommodate the local knowledge, but maybe that is as it should be. Just as Thoreau wondered if balloon framing, new in his day, could adapt to various climates and cultures, so too does the Koehler house raise one of the most important questions of our time: Can global modernism adjust to regional differences?

The Koehler house shows that it can, by hybridizing the universal and the local, privacy and responsibility, culture and nature. That is a remarkable accomplishment for this small house by the sea, but look at the impact Thoreau had with his small cabin by Walden Pond.

Koehler House
Bay of Fundy, Canada
Julie Snow Architects
Minneapolis, Minnesota



The open kitchen, with adjacent living and dining areas, features low cabinets that don't obstruct the view (opposite). At the center of the house is a double-height living room, navigated via a catwalk with mono-filament screen panels that leads to a second-floor study (top) and overlooks the north entry beside the fireplace (above).



MARCELO UCHOA

24/7 Design

A mission-critical Internet data center in Rio de Janeiro ensures security and safety for the high-tech operations it houses *By Burl Gilyard*



Project team (from left to right): top row, Peter Styx, AIA, Darren Regan, Teri LaDouceur, Kate Zwicky; bottom row, Dave Conner, Jerome Biedny (Karin Kennedy, Al Wenzel not pictured).

Most buildings are designed with people in mind, but in today's increasingly technology-based society, many facilities are created for the comfort of computers. In the past decade, e-business applications have generated a growing demand for facilities designed to provide extraordinary levels of reliability and security for data operations that run 24 hours a day, seven days a week.

Ellerbe Becket's Minneapolis office is a leader in the design of these so-called mission-critical facilities, which house computers and Internet servers for customers whose systems can never, ever, go down. In fact, Ellerbe has adopted the slogan "Building Mission Critical Confidence" to reflect its expertise with projects ranging from State Farm Mutual Automobile Company insurance-support centers in Atlanta, Georgia, Dallas, Texas and Phoenix, Arizona, to the E*TRADE brokerage data center in Atlanta.

So when OptiGlobe Communications Inc., based in Bethesda, Maryland, began seeking architectural services, "Ellerbe Becket came to the fore several times," recalls Alastair McPhail, executive vice president, operations and facilities management. "Clearly this firm was among the leaders in this field."

"What they wanted was a world-class Internet data center," says Peter Styx, AIA, principal, Ellerbe Becket. OptiGlobe was founded in 1999 to provide infallible, around-the-clock Internet data centers and related services for the technologically underserved market in Latin America. Many of the firm's clients are financial companies; today OptiGlobe is the only company certified for mission-critical work with financial institutions in Argentina.

To date, Ellerbe Becket has designed three facilities for OptiGlobe in Buenos Aires, Argentina, and São Paulo and Rio de Janeiro, Brazil. The Rio facility opened in April 2001.

Security is paramount at the Rio facility, which sits on the edge of a rain forest in the shadow of a 1,000-foot-high mountain. "We design to protect the data from all kinds of environmental conditions: earthquakes, 200-mile-an-hour winds," says Styx, who notes that Ellerbe even avoids picking sites under airplane flight paths. The perimeter of the 104,000-square-foot site is encircled by a 12-foot-high concrete wall and chain-link fence with razor wire.

Primary materials on the exterior of the building are precast concrete and thermal-pane glass. Visitors to the building must first pass through a guard house and, once inside, a "man trap"—a 400-square-foot space visible to security guards behind bulletproof glass—before entering the real lobby. To get to computers housed in the facility, employees must also submit to optical card readers. "The building truly is as secure as what you see in the movies," Styx says.

Roughly 60 percent of the building's space is devoted to the "data floor," which houses the computers. More than 150 cameras sweep the aisles between the machines, to ensure nothing is amiss. In addition to preparing system architecture design and Internet connectivity, Ellerbe designed power- and cooling-distribution systems for concurrent maintenance.

The single-story Rio building is nearly 30 feet high, a design that accommodates the fresh-air



While security is paramount at the Rio facility (opposite), with employees working around the clock in control rooms (above), the building's glass entries and lobbies are still inviting (below).

intake needed to supply the emergency generators. The facility utilizes two main sources of power, plus two different backup systems, including generators. "Every system is redundant," McPhail emphasizes, "so there's no one point of failure in the building." The building also features a dual-membrane roof system—essentially two roofs, Styx points out—to protect computers in case the facility's shell is damaged by severe weather.

Despite the need for high security, Styx says, his clients wanted to have some welcoming spaces. "Although it's a fortress for the data center, the facility's glass entries and the lobbies are very lively," he explains. "OptiGlobe wanted to make sure we had inviting conference rooms and lobby spaces where employees and clients could meet and do business." The facility also includes a cafeteria and lounge area for employees, who work in three shifts, around the clock.

"We did not want the facility to look like a prison or Fort Knox," McPhail says. "We wanted to make the building reasonably high-tech looking, but fairly low-profile." In finding the perfect balance, he concludes, "Ellerbe Becket did a first-class job."

OptiGlobe Internet Data Center

Rio de Janeiro, Brazil

Ellerbe Becket

Minneapolis, Minnesota



MARCELO UCHOA



DAVID EIJADI, AIA

Hidden Resource

Arizona's first environmental-learning and interpretive center at a state park educates visitors about sustainability and Sedona's fragile beauty *By Camille LeFevre*



David Eijadi, AIA.

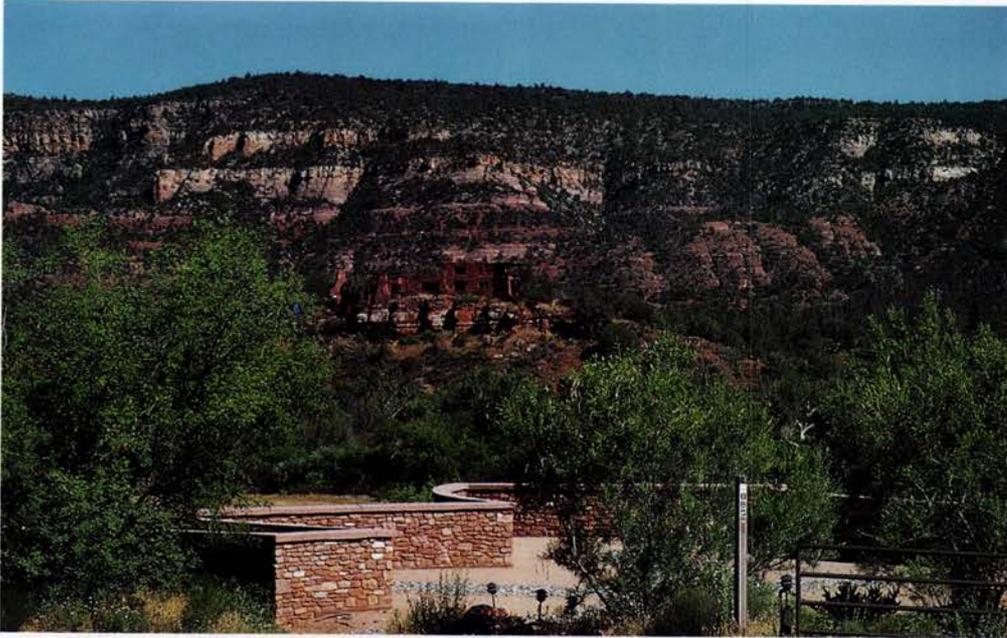
A place of towering red-rock canyons, diverse ecosystems, petroglyphs and ancient cliff dwellings, Sedona, Arizona, and its wilderness environs have long drawn visitors seeking inspiration, solitude and spiritual renewal through connection with the landscape.

The area was home to Pueblo people 10,000 years ago. But in the last century, Sedona's extraordinary color palette of red Supai sandstone, gray and green vegetation, and clear blue sky has also spurred the town's growth from cow town to artists' haven to New Age mecca. Today, a mobile workforce and growing legion of retirees are fueling

rampant development of Sedona's once pristine landscape.

Thankfully, in 1986, Arizona officials had the foresight to establish a state park in the area. They also decided this park would be the site of the state's first park-based environmental-learning and interpretive center. David Eijadi, AIA, then with BRW, Inc., Phoenix, leaped at the chance to work on an education facility at the edge of "the only remaining unspoiled riparian environment left in Arizona," he says.

Red Rock State Park, located along lower Oak Creek to the west of Sedona, sits in the upper Sonoran Desert biome, a transition zone between



the Colorado Plateau and the Sonoran Desert. The 286-acre park's three primary biotic communities are Oak Creek's aquatic zone, the riparian areas surrounding the creek and the higher-elevation pinyon-and-juniper woodland.

Noting the site's environmentally sensitive location, park administrators asked Eijadi during a preliminary interview what sort of building they should construct. "I said they shouldn't build anything at all," Eijadi recalls, "but if they had to, they should construct a building that visitors wouldn't see until the last minute." So they did.

Today, says John Schreiber, park manager, "people drive into the parking lot thinking they're lost, the building is so effectively hidden." Discreet signs, walkways and roof overlooks hint at the existence of the red-sandstone structure, completed in 1991. Nestled into the earth on its north side, the interpretive center spirals down into the ground; only hikers traveling the park's five-mile trail network to the south enjoy views of the whole building.

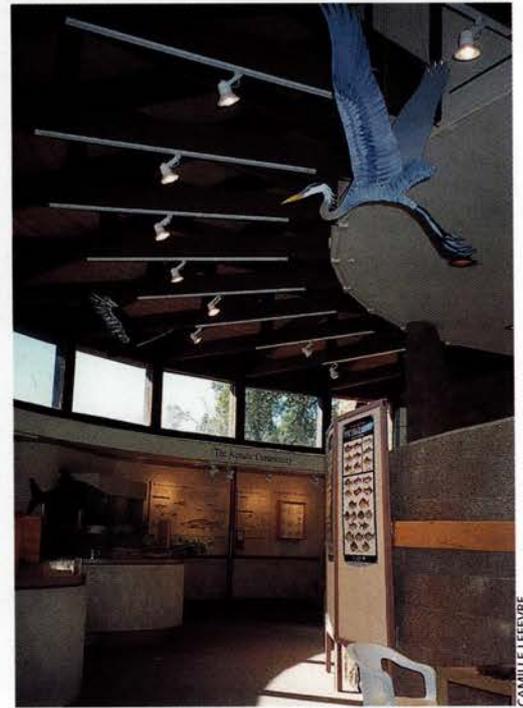
"The design of the building was shaped by several factors," Eijadi explains. "First was the



From the parking area, visitors barely see the building, which is built into the earth on the north side (opposite). Gradually, discreet rooftop overlooks with views of the House of Apache Fire (top) and winding paths lead visitors down into the building (above).



The red-sandstone facility is divided into two halves (above). To the west is the interpretive center, with its hallways that spiral down to exhibits (above right) and clerestory windows that frame the ridge and the House of Apache Fire on the other side of Oak Creek (right).



CAMILLE LEFEVRE



desire to leave the site as unspoiled as possible from the road, but on the return side, after being out on the trails, I wanted the building to serve as a landmark, like the House of Apache Fire is a landmark in the other direction." Constructed in 1947 by TWA president Jack Frye, the abandoned hilltop residence was the site of Hollywood parties and a retreat for a religious cult before becoming part of the state park. The house is periodically open for tours.

"Second," Eijadi continues, "I'd visited Tuzigoot National Monument nearby and was

struck by the way the Native Americans had piled up rocks to give distinct shape and scale to their structures." Similarly, the interpretive center is constructed out of local Supai sandstone to blend into its environment. "Last, when you travel through the area, you rise and fall between landforms," Eijadi concludes, "so I wanted the approach to the building to mimic the macroscale of the environment."

Indeed, from Highway 89A out of Sedona, which curves through the landscape, visitors turn onto a road that gently dips and rises along the bed of Oak Creek before it arrives at the interpretive center's parking lot. The journey doesn't stop there. On winding walkways surrounded by native vegetation visitors descend to the building, which is organized in two halves divided by a stream: to the west is the interpretive/visitor center; on the east side are indoor classrooms, restrooms and outdoor learning areas.

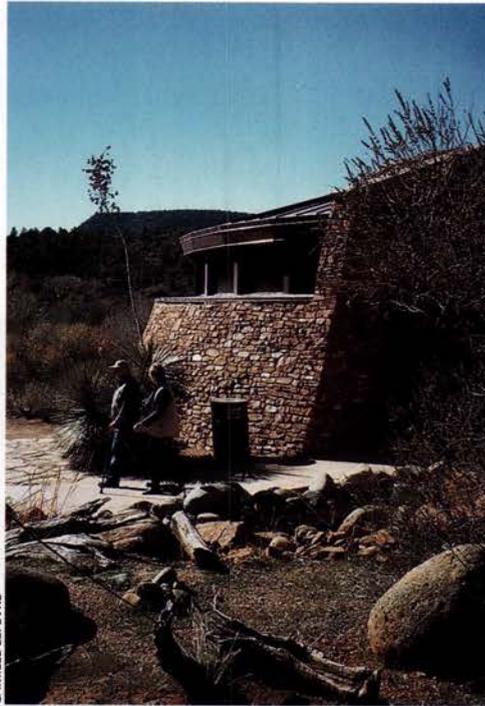
Entering the circular, 6,000-square-foot building, visitors can study a round scale model

of the watershed area; over the model is a domed skylight and straight ahead are clerestory windows framing the ridge on the other side of Oak Creek. A hallway spirals down to the center's exhibits on the area's woodland, aquatic and riparian communities. After circulating through the exhibits, visitors exit through a door that leads to outdoor trails.

Because Red Rock State Park's building was the first environmental-education center in a state park in Arizona, Eijadi incorporated many systems that foreshadowed today's sustainable-design movement. The building requires minimal heating and cooling because of its site orientation, earth-berming on the north side and maximization of daylight. Backup heating and cooling are provided by a residential-scale system, which is simple and efficient.

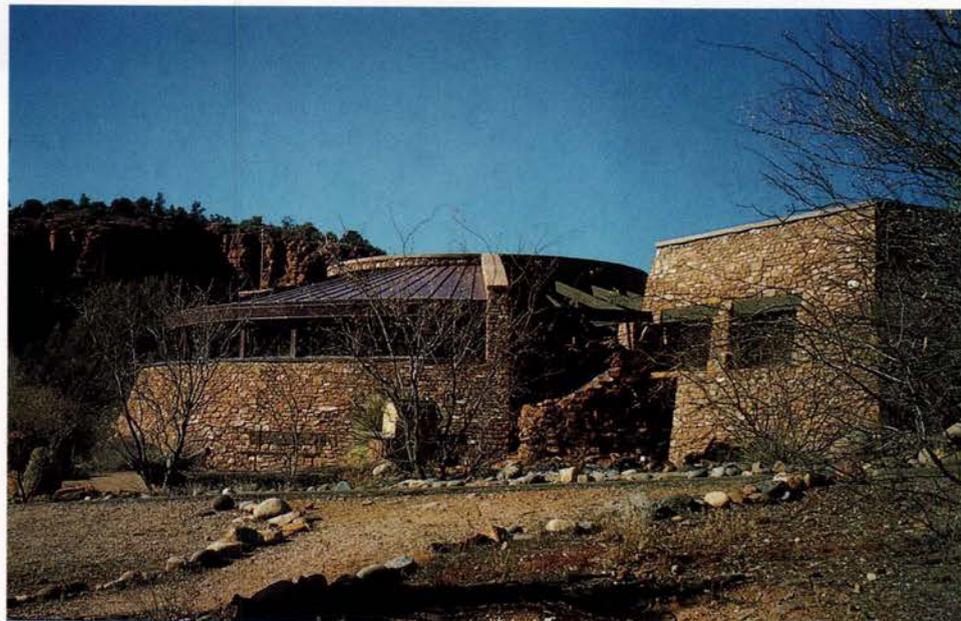
Water for the outdoor stream that divides the building is recirculated via a solar-powered pump. On the trails, visitors can use composting toilets and view an exapotranspiration bed designed to dispose of wastewater through direct atmospheric evaporation. Many visitors also watch birds from a wood-truss bridge over Oak Creek that Eijadi designed, which has photovoltaic panels used in environmental-education experiments.

"Of all the things I've ever done," says Eijadi, now a principal with The Weidt Group, Minnetonka, "this project was the closest to sculpture." Beautifully designed and sensitively sited, Red Rock State Park Center for Environmental Education has become a popular location for hikes, bird watching, environmental learning, even weddings. More important, the interpretive center educates residents and tourists about Sedona's fragile and finite natural beauty, just as its design grounds them in the landscape they love.



CAMILLE LEFEVRE

After circulating through exhibits, visitors exit the building on its south side (left) where they can enjoy outdoor exhibits and walk the park's trails. Only from the trail system can visitors glimpse the entire building (below), which serves as a subtle landmark for hikers.



**Red Rock State Park Center for
Environmental Education
Sedona, Arizona
David Eijadi, AIA
Minnetonka, Minnesota**

Once and Again

Miller Dunwiddie Architects earns AIA Minnesota's 2001 Firm Award by providing clients with technical expertise, design savvy and historic authenticity *By Joel Hoekstra*



DUANE JONES PHOTOGRAPHICS

Firm principals (from left to right): Charles Liddy, AIA, Craig Lau, AIA, Mark Miller, John Mecum, AIA.

A few years ago, a prospective client asked Craig Lau, AIA, president, Miller Dunwiddie Architects, Minneapolis, for a list of his previous clients. "I said, 'I don't have any previous clients. They're all current clients,'" Lau recalls. The 50-person firm has a history of turning single jobs into a string of successes, with more than 60 projects for the City of Minneapolis and 50 for the University of Minnesota, along with 35 years of service to the Metropolitan Airports Commission (MAC).

"One thing that has helped this firm over the years is that we've concentrated on developing long-term relationships with clients and have not necessarily chased developers or single projects as heavily as other firms do," says John Mecum, AIA, vice president, "and that approach has insulated us as we go through the business cycles associated with this profession."

One could also argue that the quality of the firm's work has kept clients happy. From the restored James J. Hill House in St. Paul to the Basilica of St. Mary in Minneapolis and the newly opened Humphrey Terminal at the Minneapolis-St. Paul International Airport, the design and restoration expertise of Miller Dunwiddie can be seen throughout the Twin Cities and across Minnesota.

For every high-profile project on the firm's résumé, there are dozens of less-visible but equally well-executed jobs the firm has completed: a Carnegie Library addition in Little Falls, Minnesota; a new equipment-maintenance building for MAC; and a restoration of the Superintendent's Building in Minneapolis's Loring Park.

The firm has also carved out a particular niche in the area of historic preservation. This



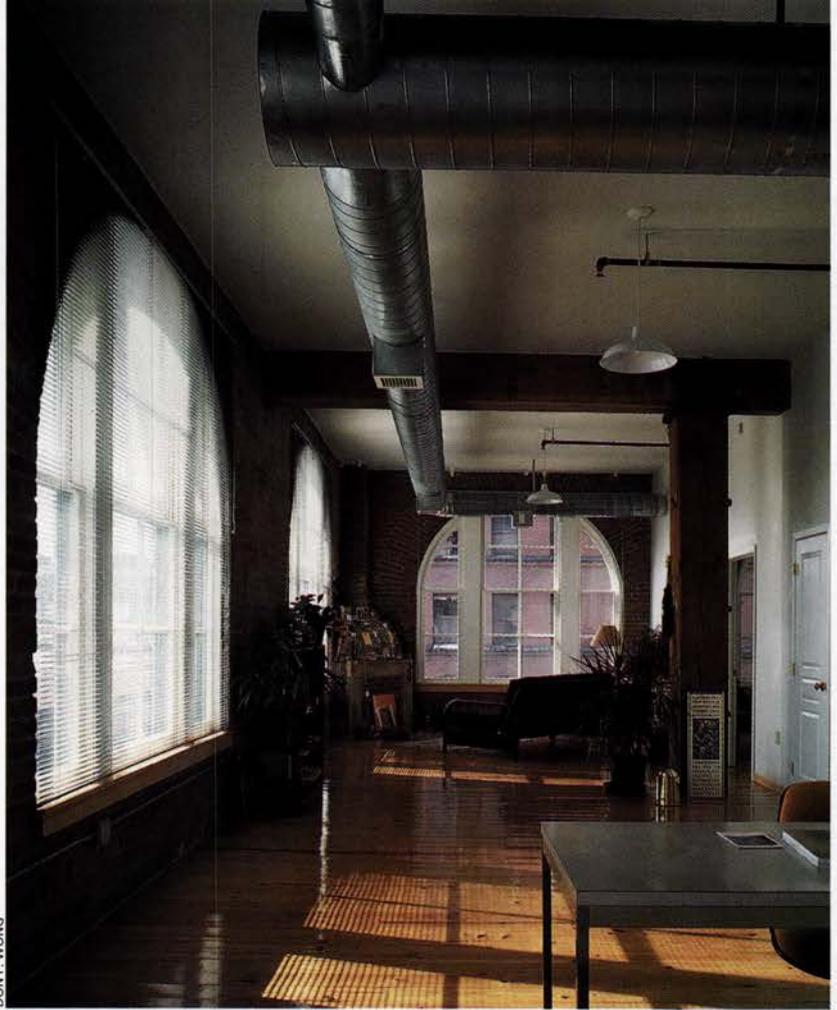
DON F. WONG

specialty has earned Lau, Mecum and fellow principals—Charles Liddy, AIA, and Mark Miller—not only client commissions, but the respect of fellow architects. “We get calls from other firms in town asking us to consult about particular issues on historic projects,” Liddy says.

Founded in 1963, the firm still reflects the primary interests of its original principals, Bill Miller and Foster Dunwiddie, FAIA. While Miller focused on aviation projects, doing work for Northwest Airlines, United Airlines and other aviation-related companies, Dunwiddie took an avid interest in the growing field of historic preservation. The two founders turned over the firm’s reins to the younger staff in 1990, but aviation and preservation still account for the bulk of the firm’s \$6 million in net annual revenue. The firm also services select clients by fulfilling their ongoing retail, healthcare, corporate and multiunit housing needs.

Perhaps the best example of Miller Dunwiddie’s ability to land prestigious projects is the new 400,000-square-foot Humphrey Terminal, which opened in May 2001. The firm and its consultants provided planning, architectural and interior-design services for the efficient new facility, which features ticketing and baggage-claim areas, 10 working gates (and expansion space for six more), and stylish details that remind travelers of the glamour and sophistication once associated with air travel.

“It’s a fabulous facility,” says Dennis Probst, director, landside development, MAC. “We wanted people to know how to use the terminal intuitively and this design provides that kind of accessibility. If you used the old building, you can really appreciate how far we’ve come.” A companion parking facility designed by Miller Dunwiddie and SRF Consulting Group, Minneapolis,



DON F. WONG



WILLIAM DUNWIDDIE

Miller Dunwiddie’s broad gamut of expertise ranges from modern airports to historic renovations, with projects that include the new Humphrey Terminal (top left) at the Minneapolis-St. Paul airport, the renovation of the Tilsner Building in St. Paul (top) and a new visitor center for Grand Rapids (above).



ASSASSI PRODUCTIONS

is slated for completion in fall 2002; its integrated light-rail transit station should be operational by 2004.

Such aviation projects as the Humphrey Terminal, in-flight kitchens for Northwest Airlines, and jet-engine testing facilities for clients in countries as far-flung as Iraq and Peru might seem oddly paired with the firm's second specialty, historic restoration and preservation. But the principals insist that the skills needed for both types of projects aren't all that different.

Attention to detail, client needs and execution are the hallmarks of any good project—whether a plane hangar or historic building. "The basic things you learn in architectural school about designing a building and meeting a program are the same, whether you're starting

with an empty cornfield or an existing building," Liddy explains.

Lau agrees. The firm's technical expertise regarding the integration of mechanical, electrical and communications systems into an existing structure—skills honed in airport work—has been important in the renovation of historic buildings for modern use. Consider Miller Dunwiddie's addition of bathrooms in the Basilica of St. Mary Undercroft in Minneapolis, for example, or the integration of a sprinkler system into the University of Minnesota's Northrop Auditorium.

The firm's work on airport projects, Lau continues, also helped the architects dream up a method for hiding electrical raceways in the baseboards of each room in the remodeled Minnesota State Capitol. "The Capitol may be the most prominent historic building in the state of Minnesota," Mecum says, "but it's also a modern working office building."

Arguably, the firm's more visible aesthetic alterations—the replacement of the copper dome on the Cathedral of St. Paul or the restoration of the Rathskeller at the Minnesota State Capitol—have generated the biggest public response. When it comes to authenticity, Miller Dunwiddie takes care to "go the extra mile" that ensures historical integrity, says Charles Nelson, historical architect, State Historic Preservation Office, Minnesota Historical Society, St. Paul.

The Miller Dunwiddie partners are also proud that their preservation specialty is generally profitable for the firm. "We know what it takes to do the job right," Lau says. Such confidence has also won the firm preservation work from such clients as the Minnesota Historical Society, Carleton College in Northfield and the College of St. Catherine in St. Paul.

As a result, Miller Dunwiddie's staff roster has grown from 18 employees to more than 50 in the past six years. "It's hard trying to manage a group of people you don't know as well as you used to," says Mark Miller, managing partner and son of founder Bill Miller. "We try to make this a great place to work, where employees feel they're making a contribution and learning something valuable."

In recent years, Miller notes, the firm has expanded the services it offers clients. A construction-services department now handles design-



DOM F. WONG



SAARI FORRAI PHOTOGRAPHY

build and construction-management projects. Last year, the firm created an interiors group. In 1997, Miller Dunwiddie spun off its computer-animation division, Studio Z, as a separate business that produces sharp, realistic 3-D renderings for many of the firm's projects, as well as for other clients including architects.

"We're still small, so we can react quickly to client requests," Lau says. Such flexibility ensures that satisfied clients keep coming back for more, while the firm's attitude and approach continue to attract new commissions.

In fact, the four principals marvel at the string of ongoing, high-profile commissions they've worked on during their tenure: the Cathedral of St. Paul, the Basilica of St. Mary, the State Capitol, the Hill mansion, the Humphrey Terminal. "These are once-in-a-lifetime projects," Liddy says, "and the marvelous thing is we've gotten to work on many of them more than once. We certainly feel that Bill Miller and Foster Dunwiddie provided a strong foundation on which the firm has continued to build."



STUDIO Z IMAGING

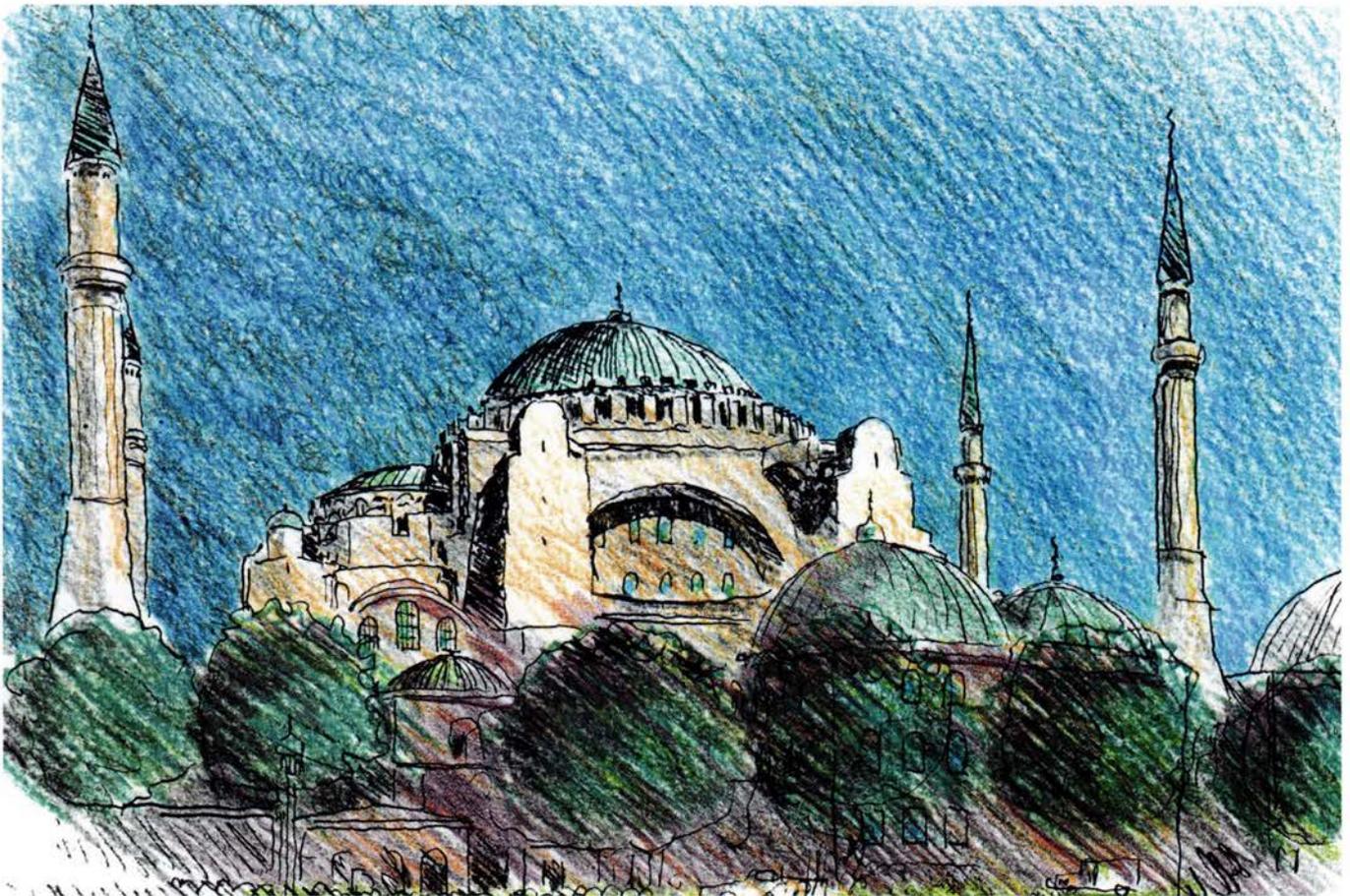
A new equipment-maintenance building for MAC (opposite) and a proposed light-rail transit station (above) represent only one sector of Miller Dunwiddie's work. The firm also specializes in historic preservation, with such projects as the Minnesota State Capitol's Rathskeller (top left) and an addition to the Little Falls Library (top) to its credit.



2001 Firm Award

Miller Dunwiddie Architects
Minneapolis, Minnesota

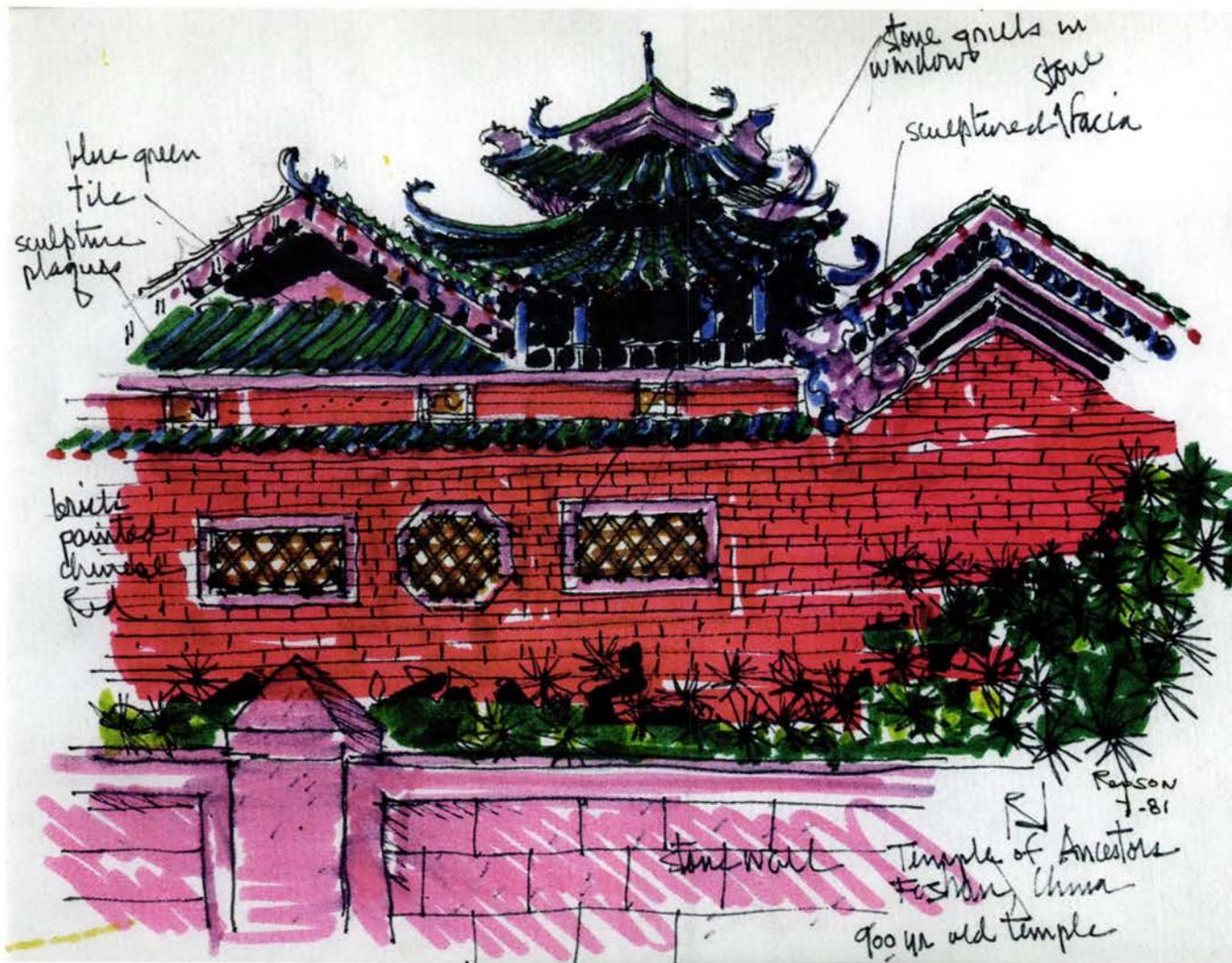
In his new book, *Ralph Rapson: Sketches and Drawings from Around the World* (Afton Historical Society Press, 2001), Ralph Rapson, FAIA, writes that he has always “sketched not only for my own pleasure, but also as a way of documenting my experience. . . . Pencil, ink, crayon, watercolor, felt markers—the media varies, and often consisted of whatever was at hand.” Among the architects noted for their drawings in the mid-20th Century, perhaps none is as revered as Rapson. As Cesar Pelli, FAIA, writes in the book’s introduction, “Rapson’s drawings were fresher, more irreverent, and at the same time more accurate and carried more information than anybody else’s at that time.” As these excerpts from his new “sketchbook” show, “I have always searched out the old, the unusual and the new in my travels,” Rapson writes. “Historic or commonplace, beautiful or mundane, people or places—everything is potential subject matter.”



Hagia Sophia.

TURKEY

I may be one of the few people who have seen Istanbul and the Straits of Bosphorus from atop a minaret. I'd long wanted to see the Hagia Sophia, once a mosque, a Christian church and now a museum, and when I suggested to a guide I'd met in the streets that I'd like to see the city from one of the towers, he miraculously found a way. For 20 dollars, I not only had several meals and a day's worth of touring, but I also got to see the city's jostling narrow streets and port from one of the finest vantage points around.



CHINA

My plans changed, of course, but originally I had intended to go to China right after college. I was intrigued by the country's unfathomable mystery, vast history and reputation for inventiveness. In my studies, for example, I had read about underground shelters that Chinese peasants would carve into the sides of mountains or hills. The idea, perhaps, served as inspiration for my Cave House, a structure I designed while at Cranbrook and later built.

In 1978, while traveling around the world, I stopped in Shanghai and Hong Kong. I would later return to China—with Mary, with students and with clients. In 1980 I lectured at 10 universities in as many weeks. One trip took me to the start of the Great Wall, just east of Beijing, where a client was interested in building a hotel that never materialized.

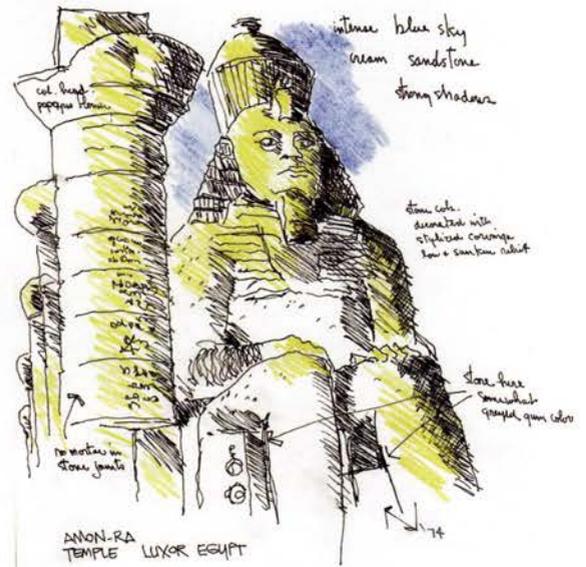
One of the most memorable of those visits brought me face to face with one of those underground shelters I had read about. Some Chinese still live in them, papering the walls with newspapers and burrowing into the earth to create more rooms.



Temple of Ancestors (top);
Great Wall (above).



Mohamed Ali Mosque (above); Amon-Ra Temple (above right).



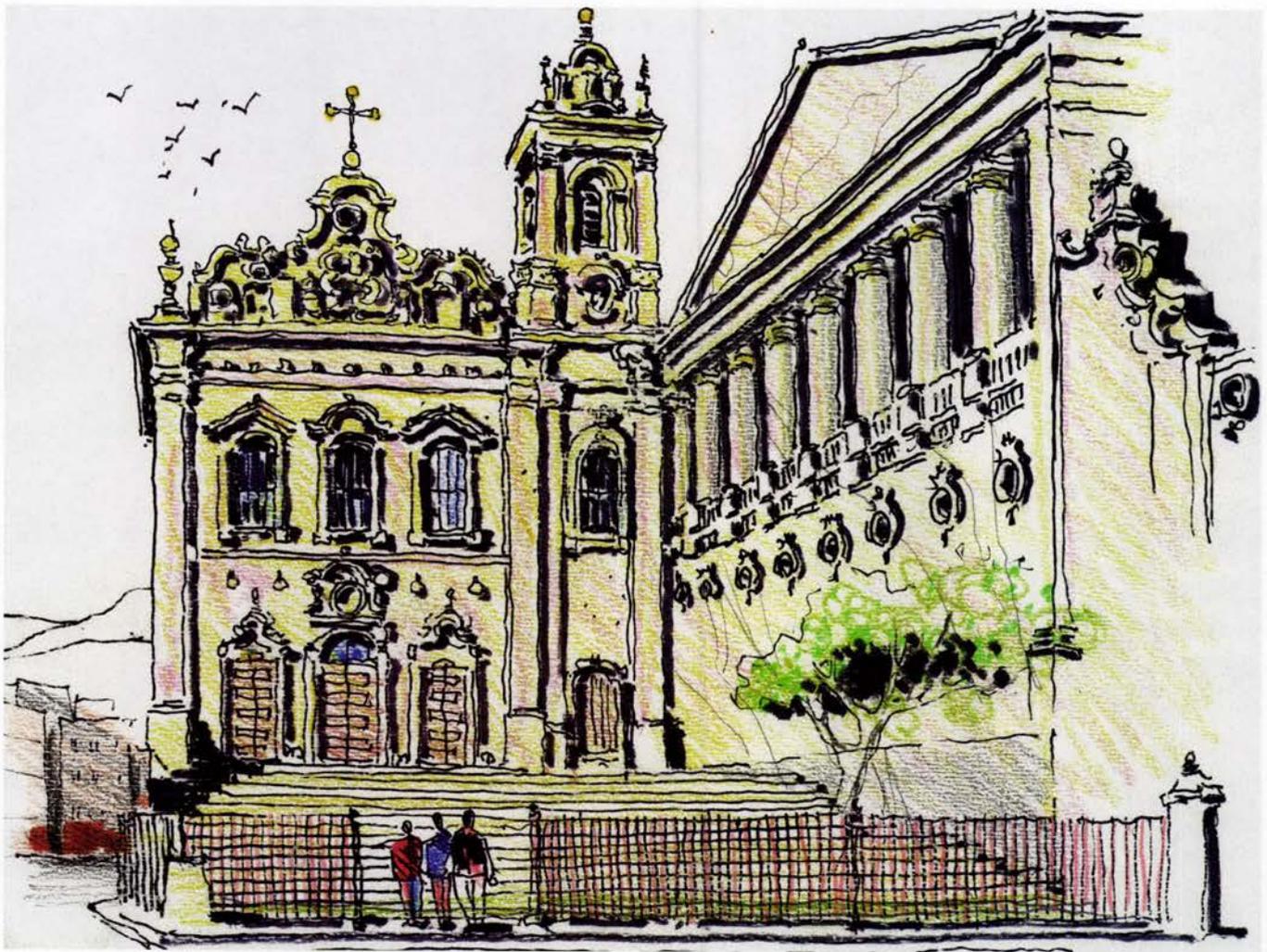
EGYPT

It was 115 degrees in the shade and I was sick from eating green plums by the time I reached Karnak.

I have traveled to Egypt a number of times, once with a group of University of Minnesota architecture students on a side excursion from our semester of study in Europe, and again when our firm won an international competition to design the headquarters for the Egyptian National Petroleum Products Institute.

But I was alone for the few days I spent in Karnak, the city of temples. My hotel was a stone's throw from the Temple of Amon-Ra, one of the most important. Because of the heat, I had the place almost entirely to myself. I made several visits to Amon-Ra, and was fascinated by the massive size of the weathered columns, the magnificent hieroglyphic carvings that tell ancient stories and play of sun and shadow in the complex. I have long been intrigued by Egyptian civilization and have read several novels and histories on the subject, but like most architects the question that most puzzles me is one of construction: How did these ancient peoples erect obelisks, giant temples and the pyramids? It remains one of the world's great architectural mysteries.

The visitor to Cairo, on the other hand, is never alone. The city's streets are crowded, dirty and noisy. But even here, I couldn't help but imagine myself as a figure in history, the shadows of the ancients sliding along the narrow streets next to me.



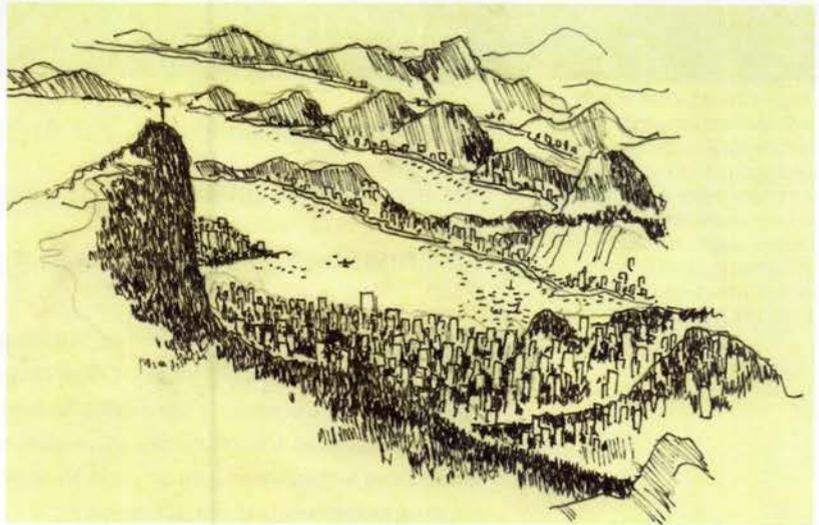
BRAZIL

Mary and I visited Brazil just once. It was during the mid-'80s, when my work as a member of the State Department's architectural advisory committee required occasional visits overseas to assess the facility needs of American embassies. While there, we traveled to Brasília, the seat of government designed by Lúcio Costa in the late 1950s.

The orderly capital impressed me. Brasilia serves as the hub of a new transportation and communications network that has opened up the vast Brazilian hinterland. But I was also taken with Rio de Janeiro, the nation's cultural capital and a jewel of a city. Its twisting streets, turquoise shoreline and beautiful men and women were dazzling. A tram to the top of the fabled Sugarloaf Mountain afforded us a bird's-eye view of the city and the white sweep of Copacabana Beach.

As is my custom, I also wandered a bit. And on this particular trip, a Spanish colonial church caught my eye. I spent some time sketching the ornate façade, as well as the columns of the abandoned armory that neighbored it.

Reprinted with permission from Ralph Rapson: Sketches and Drawings from Around the World, by Ralph Rapson (Afton Historical Society Press, 2001). Order by calling (651) 436-8443 (in Minnesota) or (800) 436-8443.



*Parish Church - Pilar (top);
Cross on Hill Top (above).*



Architecture *by* Appointment

Angie Emeott, student archival assistant, searches for architectural renderings, photographs, documents and correspondence in the archives' enormous storage vaults (above). Later, researchers will study the material in one of the archives' reading rooms (opposite top).

Collections at the Northwest Architectural Archives provide windows to the past for anyone seeking inspiration, documentation or practical information *By Jane King Hession, Assoc. AIA*

Deep within the rock of the Mississippi River bluffs, under the West Bank campus of the University of Minnesota, lie myriad architectural treasures. Yet neither excavation nor spelunking is required to gain access to these riches; an appointment is all that is necessary.

The treasures in question are the collections of more than 120 architects, engineers, contractors, landscape architects and interior designers from the Upper Midwest, including those of Leroy Buffington, William Gray Purcell, Long and Kees, Clarence Johnston, Edwin Lundie, Emmanuel Masqueray, John Howe and Close Associates. Their repository is the Northwest Ar-

chitectural Archives (NAA) located in the Elmer L. Andersen Library.

Exquisite renderings, historic photographs, detailed construction documents, correspondence and files are kept in enormous climate-controlled, state-of-the-art, precast concrete storage vaults created within excavated stone caverns. By appointment, interested researchers can examine specific drawings and documents in one of the library's spacious, well-appointed reading rooms, located several floors above the vaults.

The NAA owes its existence to Alan Lathrop, curator, who in 1970, as a University of Min-



DON F. WONG

nesota librarian, was given the opportunity to develop an architectural archive. The archive would be the new home for the William Gray Purcell Papers and the Leroy S. Buffington Papers, already in the university's possession.

At the time, according to Lathrop, only a few institutions were in the business of collecting architectural material, so there were few precedents to which to refer. Archives focusing on architecture tended to feature "the pretty stuff" or architectural renderings, which institutions viewed as fine art. In contrast, Lathrop had a broader vision for NAA and set out to collect not only beautiful renderings, but a range of architectural representations, including the nuts-and-bolts working drawings, preliminary sketches, specifications and office documents that are at the heart of every architectural project.

Lathrop was well prepared for the task. At the University of Iowa he worked in special collections and was responsible for collecting business and company records. Architectural records, he says, "were just another kind of business record to me, so that's the way I started treating them."

To shape his vision, he established collecting criteria. First, he sought out the oldest collections, especially those of the 19th Century, which were rapidly disappearing. Next he went after the collections of individuals and firms who had contributed significant work to the region. Finally, he looked for collections that were complete in terms of documentation.

The process wasn't always easy. Lathrop quickly discovered that many architects didn't save their drawings beyond their period of usefulness. "It became a matter of trying to convince the heirs that the material was worth saving," he says. In addition, architects frequently purged their files of excess paper, thereby diminishing the integrity of their collection as a whole. In most cases, they saved presentation drawings, renderings and representations of important projects, but they frequently disposed of their preliminary sketches—fascinating windows into an architect's creative process.

On occasion, the losses were devastating. It was only after the fact that Lathrop learned the entire collection of a noted early 20th-century Minnesota firm was lost when the widow of one of the partners simply threw out the material in 1960.

Continued on page 56



DANA WHEELLOCK

The archive, located in the Elmer L. Andersen Library (above), owes its existence to curator Alan Lathrop, who is assisted by Angie Emeott (below).



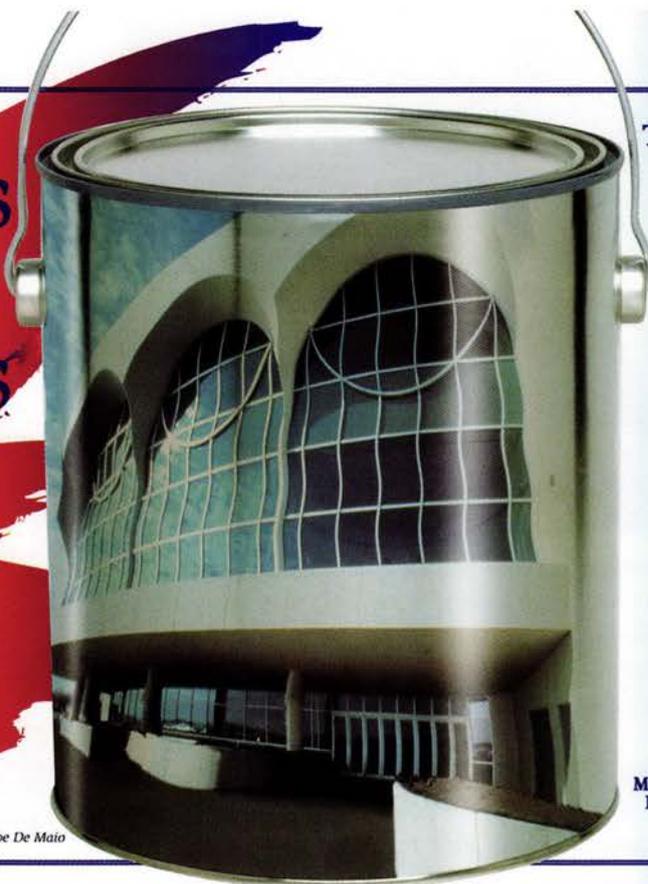
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Architecture by Appointment

Continued from page 55

On another occasion, Lathrop seized a collection, literally, from the jaws of destruction. One afternoon he received a call from friend Jack Liebenberg, whose architectural firm, Liebenberg and Kaplan, was well known for its striking theater designs. "They are going to demolish this shed and all my plans are in there," Liebenberg lamented to Lathrop.

The curator rushed to the Loring Park site and found the shed roof listing, a corner of the building missing and a bulldozer with an idling motor. In an 11th-hour act of desperation, Lathrop invoked fictional "important friends in city hall who will make life really rough unless we can hold off the wreckers for about 24 hours so we can get the records out of that building."

His ruse worked. The drawings were saved and are now safely housed at the archive. But "no sooner did we pull out of the parking lot with the drawings," Lathrop recalls, "than the bulldozer went straight through that building."

Although the primary mission of the NAA is to "preserve architectural history through its documentation," the archive's primary users are not historians, scholars or students. Many researchers, including homeowners, lawyers, contractors, realtors, engineers and architects, seek practical information that can provide critical answers to today's and tomorrow's questions.

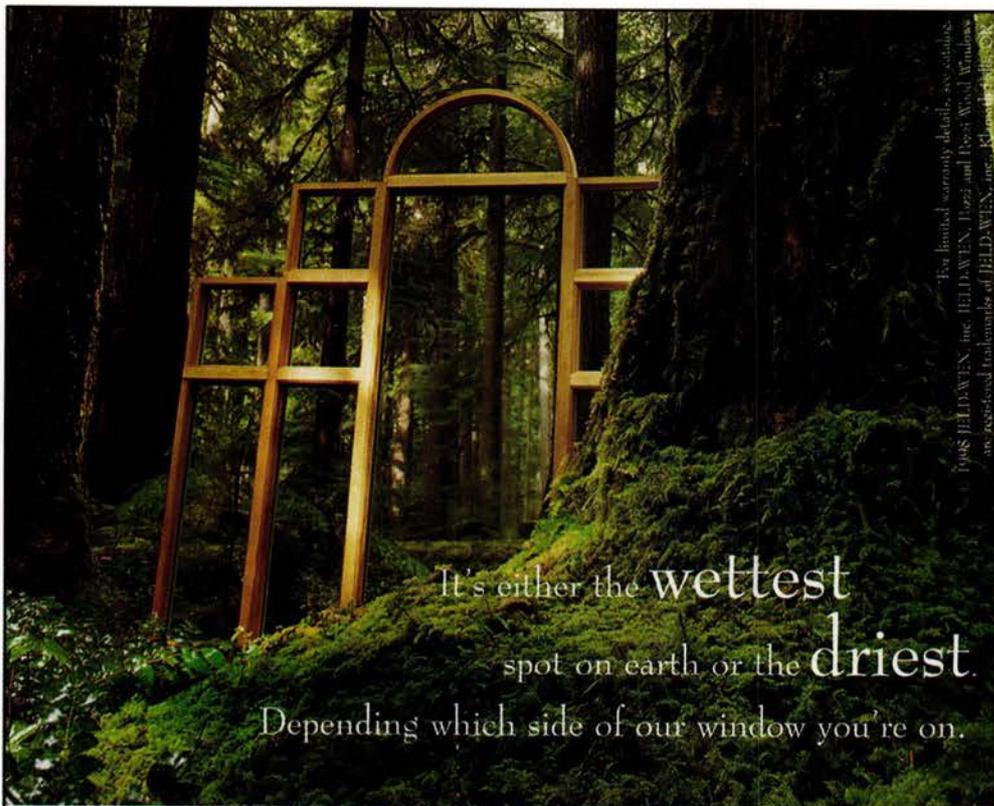
Original plans may be needed for restorations or renovations, or information about past owners might be sought. Recently Lathrop and his staff were called upon to provide foundation and footing plans for extant buildings along the proposed light-rail route in Minneapolis.

Just as the practice of architecture has been revolutionized in the past decade by the prevalence of a wide variety of computer-aided drawing techniques, the difficulty of archiving and preserving these computer-generated files has become the single most vexing challenge for archivists. For example, Lathrop recently received an architectural collection that included material preserved on five-inch floppy disks, which are essentially obsolete.

"I scoured the university system to find someone who still has a five-inch drive," Lathrop says, only to realize he didn't know which software program, out of scores of now-defunct programs, was used to create the files. Such labor-intensive efforts could be easily avoided if practitioners kept a printout of all their computer files.

When asked to comment on his accomplishments of 30 years at NAA, Lathrop modestly replies, "I think we've gotten a darn good start on preserving the architectural legacy of this area, but there's a lot more to do." High on Lathrop's to-do list is establishing an oral-history program to document and preserve the insights, recollections and stories of the region's leading figures in the field, in their own words and voices, before they are lost forever.

Although Lathrop has a "wish list" of architectural collections he'd like to secure, he won't reveal it. But he will offer words to the wise for prospective donors. Never underestimate the value of, or interest in, your work. Keep all your records. Always make printouts of your computer files. And call him before the bulldozer arrives. ☺



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endangered

Continued from page 21

classified in the archaic "feeble-minded" category. Most of the residents are problematic elderly or have addiction-related problems. The building's owner, the Minnesota Department of Human Services, has leased portions of the old state hospital as offices for social-service agencies and the local school district.

Several concerned citizens in Fergus Falls, as well as preservationists around Minnesota, have sounded the alarm about the state's lack of repair to the facility. The state's benign neglect, they add, could eventually result in the building's abandonment and demolition. In May, the Preservation Alliance of Minnesota, Minneapolis, placed the Fergus Falls Regional Treatment Center on its annual list of Minnesota's Ten Most Endangered Historic Places (see *Architecture Minnesota*, July – August 2001).

Mark Sundberg, chair, Fergus Falls Heritage Preservation Commission (HPC), calls the old hospital not only an extremely important historic resource, but also a major provider of jobs in the area. The center is listed on the National Register of Historic Places, but its lack of local designation means the Fergus Falls HPC has no review role. The commission has experienced recent successes in the renovation of the Kadditz Hotel and the post office, but this project is a huge challenge.

"In my dreams, this place would make a wonderful four-year college," says Sundberg, musing on possible reuses for the building. "The building's architectural quality, the use of the central section for classrooms and the patient wings as dormitories, the underground connection, and the sizable grounds would all work well together to create a wonderful campus."

Gordon Hydukovich, city planner, Fergus Falls—who wrote his master's-degree thesis on the Fergus Falls Regional Health Center as an example of joint-agency administration—also believes the treatment center is important to the city. "When we look across the skyline in our town, those towers have such an important presence," he explains. "The hospital is half the history of Fergus Falls." Ten years ago, however, state funding cuts limited repairs to the complex.



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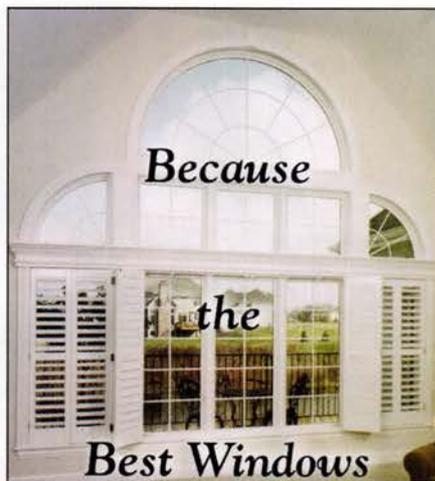
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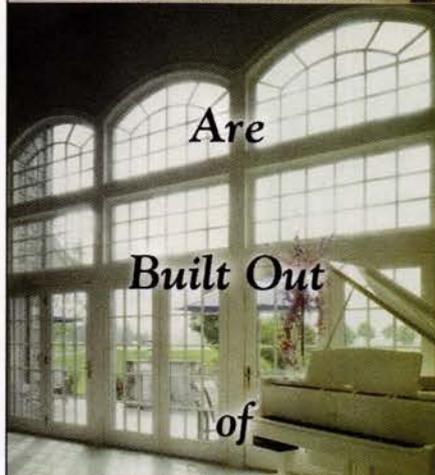
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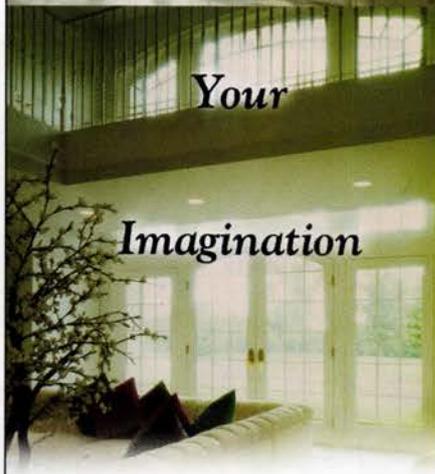
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endangered

Continued from page 58

"Needed repairs continue to mount, making any eventual renovation increasingly more costly," Hydukovich says. "There needs to be a commitment to getting the facility in full use." Hydukovich and Sundstrom are hopeful the building's Preservation Alliance endangered status will generate the kind of recognition and concern that can lead to new life for the complex.

Conversely, demolishing the 835,000-square-foot, five-story building and its large center section would require a prohibitive chunk of any public agency's budget, Hydukovich adds. The complex's "walls and floors are thick and solid concrete—it's built like a castle."

Possible reuses for the complex include a mix of offices, artists' lofts, lodging, apartments and commercial ventures, he continues. "The architecture and the grounds that Kirkbride envisioned and the architect designed are a tremendous asset to reuse. The base value here is \$23 million and its replacement cost would be more than \$200 million." Ironically, Hydukovich adds, Fergus Falls is struggling with a significant housing shortage while vast portions of the old state-hospital complex are vacant.

Hydukovich raises an economic factor that is often central to, but obscured in, historic-building issues. The base value of historic buildings with significant qualities can be underappreciated by owners who have focused too closely on liabilities of repair and renovation. In his books *Lost Twin Cities* (Minnesota Historical Society Press, 1992) and *Twin Cities Then and Now* (Minnesota Historical Society Press, 1996), Larry Millet provides many examples of shop-worn buildings with striking architectural presence that have been replaced with low-quality structures that quickly fade in investment and real-estate value.

Settling for less, as Millet warns readers, has been an all too familiar outcome. Reuse of the old Fergus Falls State Hospital may require political intervention to structure a viable development and renovation package, but it would preserve a sound historic structure and refute a cultural proclivity of settling for less. **AM**

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at a specified point and orientation of a viewer within the space. Glare factor is based on the difference in brightness within the observer's field of view. A window with a higher Tv will produce more glare.

Thermal comfort Thermal comfort is based on temperature, humidity, air movement and mean radiant temperature. In a perimeter office space, the main effect of a window is on radiant temperature from both direct sun and the glass temperature on the window side of the room. Cold-glass temperatures also induce drafts leading to further discomfort. A useful measure of thermal comfort related to windows is based on the difference in radiant temperature affecting the side of the body facing the window and the radiant temperature affecting the side away from the window. This asymmetry in radiant temperature can then be correlated to data indicating the percent of people satisfied with this condition. The higher the percentage, the better the window in terms of thermal comfort. A window with a higher U-factor is generally more comfortable.

Using a computer-simulation tool such as DOE2.1E, it is possible to compare windows for a given set of conditions based on each of the factors described above. The illustration accompanying this article shows a graphic for envisioning how well different windows respond to the key energy and indoor-environment characteristics described above.

The graphic includes an axis for each of these characteristics—energy use, peak load, thermal comfort, daylight, glare and view. Each axis has a 1-to-10 scale with 10 being the furthest from the center and the most positive condition (lowest energy, least glare, most daylight, best view). The greater the shaded area and the more it approximates a regular hexagon, the higher the window performance on all six criteria.

While some windows may be superior in one or two attributes, such as energy performance and peak-load reduction, they may be deficient in other areas, such as daylight and view. For example, a window with a reflective coating reduces solar

Continued on page 64

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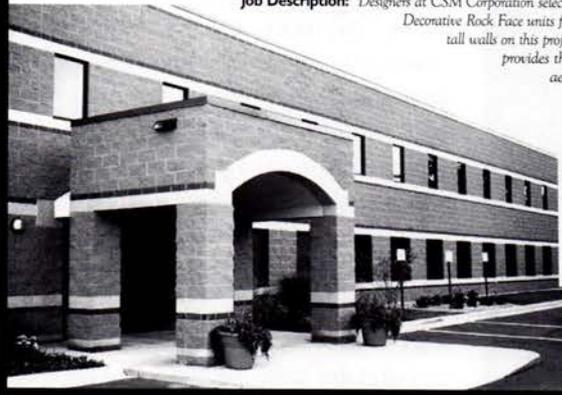
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heat gain (SHGC=0.17), resulting in a very good energy and peak-load performance. Unfortunately, the reflective coating's low Tv means that daylight and view are sacrificed—only 10 percent of the visible light is transmitted through the glazing.

A more balanced performance is found with a spectrally selective, clear-coated glass, which rates high in terms of all the attributes except glare control (which can be managed with shading and proper design). This result is achieved because the clear coating is designed to "selectively" allow daylight to be transmitted (Tv=0.57), while reflecting most of the heat gain (SHGC=0.34). Assuming that light sensors in a building dim the electric lights when there is sufficient daylight, the reduction in lighting energy (and cooling required because of heat from the lights) with the spectrally selective glazing more than offsets the slightly better cooling performance of the reflective glazing.

Using this graph for decision making requires an understanding that all of these attributes may not be valued as equally as they appear to be in the diagram. Users prioritize the six factors and weigh each axis as it reflects their individual value system. For example, maintaining a low interior-light level with glare control may be a higher priority than maximizing daylight and view.

Typically, there are at least four sets of values that must be considered when designing a window system: those of the architect, the mechanical engineer, the owner and the occupants. The architect may be the most interested in exterior appearance (which is not included in this analysis), as well as the interior-environmental factors of view, daylight and glare control. The mechanical engineer is likely to place peak load (and its effects on equipment sizing) as the highest priority, along with thermal comfort and energy use. The building owner is probably most interested in cost and appearance issues. Annual energy use may be the owner's highest priority from this set of six factors.

The occupants would tend to be most affected by the interior-environment is-

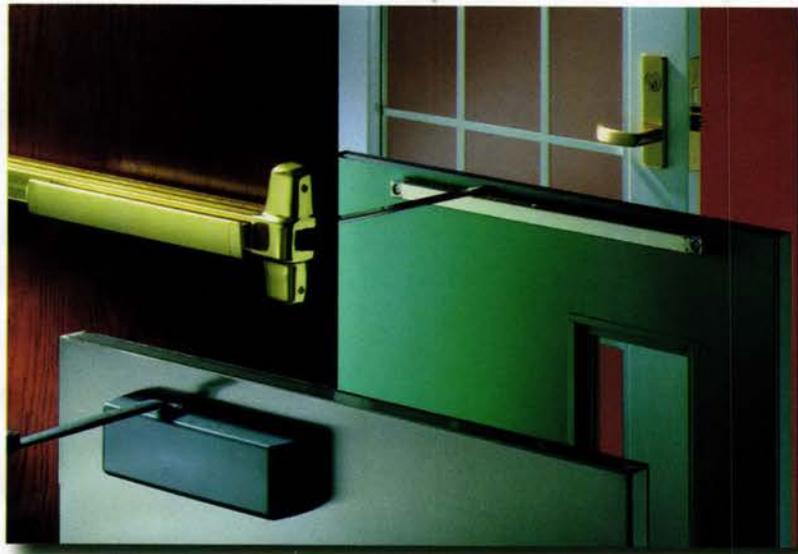


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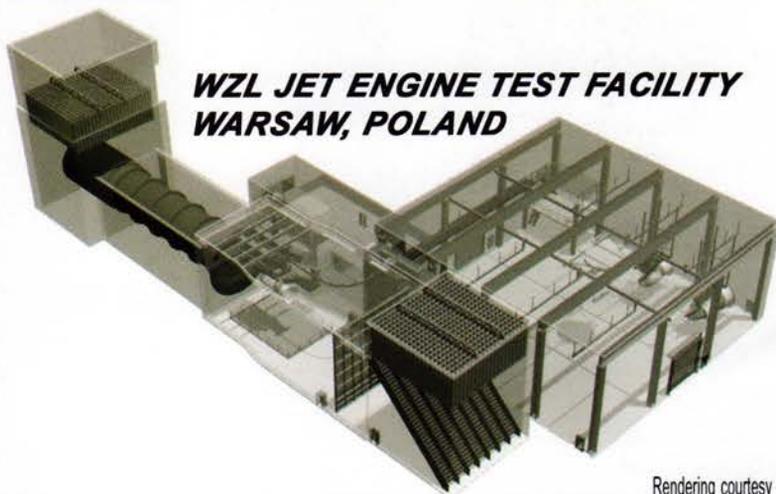
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Continued from page 64

sues—daylight, view, glare control and thermal comfort. Because of growing awareness that a better interior environment leads to greater employee health, satisfaction and productivity, some building owners also are concerned with these interior-environment issues. Since each of the six attributes is a priority to at least one of the interested parties, the best window will rate highly in as many categories as possible, not just one or two.

In the near future, new glazing technologies may decrease trade-offs made when selecting windows. For example, electrochromic coatings can change window properties from a clear, high Tv state to a darker, low Tv state, similar to the way photometric sunglasses respond to increased sunlight. Electrochromic windows that dynamically change their properties in response to light, heat or a building occupant's preferences are close to being available in the commercial-building market. **AM**



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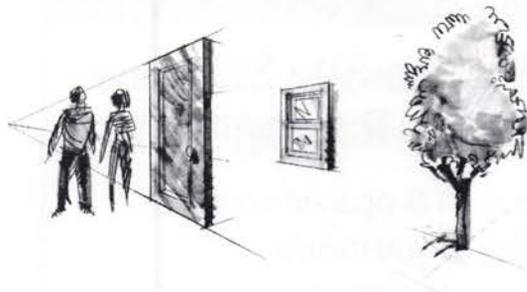
Continued from page 27

estate? More space? Less space?" Walsh asks. As the economy slows down and many companies find themselves laying off employees, Walsh finds clients still need Walsh Bishop. "You can provide some services even in a downturn."

Expanding into new areas is healthy for the profession of architecture, Walsh says. "It's absolutely positive. The nature of architects, in my opinion, has historically been a little egocentric. I think the profession is probably slow to adapt." Walsh notes that over the years, many realtors have gotten into the business of facilities management, taking potential business away from architects. "A lot of architects have realized this and said, 'We can get into [the facilities-management] business,'" Walsh says.

Animation is another service area for architects to explore, since it's essentially a high-tech, 3-D extension of traditional design work. Recently Todd Thelen, visualization coordinator, Ellerbe Becket, Minneapolis, created a one-minute piece of animation

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Continued from page 67

depicting a proposed new football stadium for the Minnesota Vikings. The Vikings use the short as a marketing and lobbying tool in the team's ongoing efforts to secure public funding for the project. Several television stations have aired the animated clip, which in turn generates publicity for Ellerbe Becket.

In addition, firms providing animation services can offer clients animated walk-throughs of a facility, projected on a big screen, which give clients a better feel for a project than standard two-dimensional drawings. The service, Thelen explains, "makes us much more competitive with other international firms."

Small firms, too, are broadening their service rosters to ensure their competitive viability. One way his firm now competes with bigger players, says Dean J. Dovolis, AIA, principal, DJR Architecture, Inc., Minneapolis, is by acting like a developer and proposing projects, rather than waiting for a client to materialize. Dovolis calls this approach "project invention." His latest undertaking is Nicollet Lake Commons, a project that calls for a reopening of Nicollet Avenue at Lake Street in south Minneapolis, currently blocked by a Kmart store.

Recognizing an unmet political and community desire to reopen the street, Dovolis says, DJR proposed a plan for six to eight city blocks that would include a reconfigured Kmart, a Cub Foods store, other retail, possibly a clinic and some 400 units of housing. The project will need both government approval and public funding to proceed, but Dovolis is optimistic. If his plans work out, the firm will be attached to a big project that Dovolis says it could not land otherwise. "[Project invention] takes us places where we would never be able to compete under the standard RFP [Request for Proposal] process," Dovolis says.

While Dovolis is dreaming up new projects, another Minneapolis firm has been helping its clients dream. Kevin Wm. Halbach, AIA, senior associate, KKE Architects, Minneapolis, says his firm has been working as a "vision-process facilitator" for the city of Reykjavik, Iceland. The New Age-sounding term, he explains, "has to do with helping people think about what their mission is and

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how their facilities contribute to that."

"What [city officials] are trying to figure out is how to integrate their schools and public spaces with nature and the existing community, and reflect their community image," he continues. In Reykjavík, the fundamental challenge was figuring out how to best integrate a school with a neighborhood center. As part of the process, KKE held workshops to solicit ideas from parents, teachers, school administrators and businesspeople. Now Reykjavík officials will decide the next best step for the city.

Halbach, like many of his colleagues, doesn't consider such services contradictory to the fundamentals of architecture. Instead, developing nontraditional services is a way to ensure the profession's and a firm's future. Facilitating workshops and discussions in Iceland, Halbach reflects, "provides us with opportunities to implement change, which I think is the unsaid mission of architecture throughout the centuries. Added services help us work with our clients to facilitate their vision for change." **AM**

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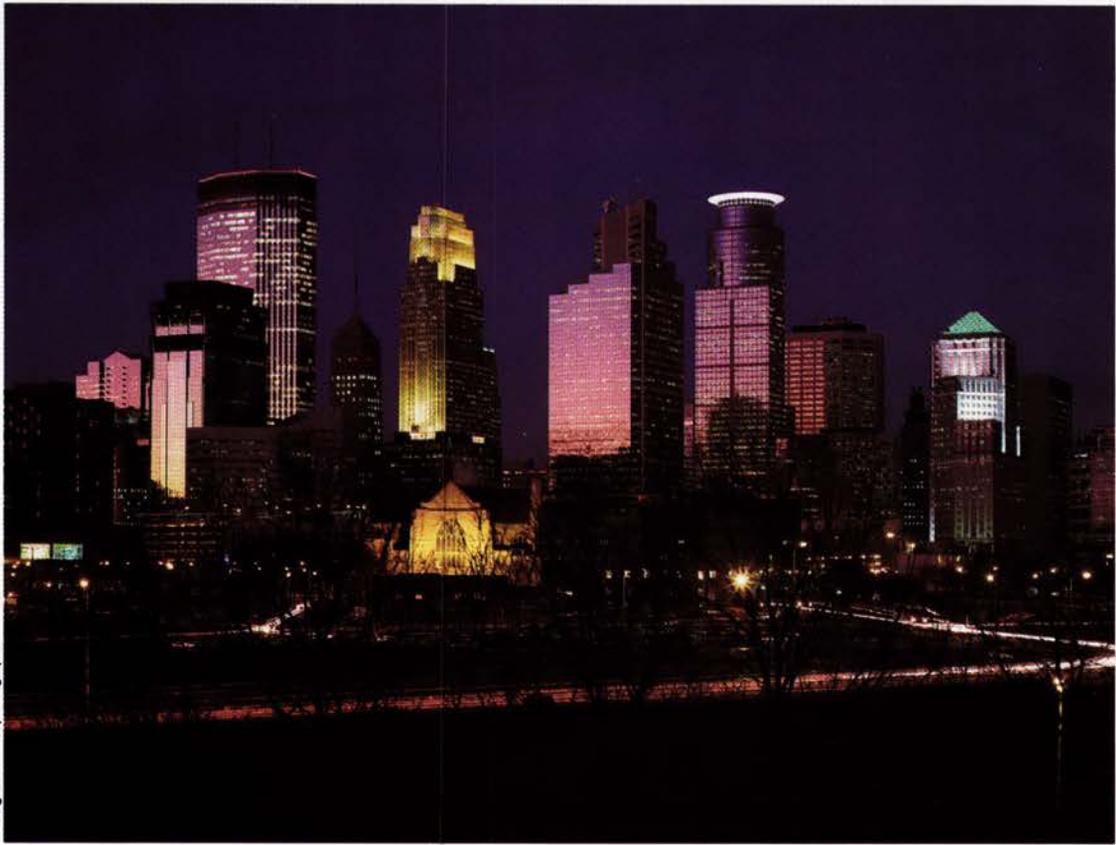
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Other MN Offices:
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Building Div., 612/721-7581
Midwest Div., 763/786-7711
NorthDiv. (Bemidji),
218/759-0596
Total in MN Office: 650

—
Bruce W. Engelsma,
Chrmn./CEO
Alan A. Gerhardt, Sr. VP,
Mpls. Div.
Jack Schletty, Sr. VP, St. Paul Div.
Dave Mervin, Sr. VP, Bldg. Div.
Gary Hook, Sr. VP, Midwest Div.
Clint Bruestle, Sr. VP, North Div.

—
Kraus-Anderson Construction Company is a leading provider of general contracting and construction management services. Our projects are delivered within a team-oriented format, working together with all parties, so informed decisions can be made prior to the commencement of construction. We are dedicated to providing quality projects on schedule that meet our clients' expectations.

—
ADC Corporate Headquarters, Eden Prairie, MN; Northfield Hospital, Northfield, MN; Cabela's (Retail Store), Kansas City, MO; LaCrescent Schools, LaCrescent, MN; Data Recognition, Maple Grove, MN; Sibley Park/Essex on the Park (Housing), St. Paul, MN

Continued on next column

MCGOUGH COMPANIES

2737 Fairview Ave. N.
St. Paul, MN 55113-1372
Tel: 651/633-5050
Fax: 651/633-5673
E-mail: bwood@mcgough.com
Web: www.mcgough.com
Established 1956
Other MN Office: Rochester,
507/536-4870
Total in MN Office: 725
Other Office: Phoenix, AZ
Total in Other Office: 12
Contact: Bradley S. Wood,
651/634-4664

Thomas J. McGough, Sr.,
Pres./CEO
Thomas J. McGough, Jr.,
Exec. VP/COO
Richard E. optiz, Sec./Treas./CFO
Thomas H. Nonnemacher, Exec. VP
Michael J. Hangge, Exec. VP, Oper.
Bradley S. Wood, Exec. VP,
Corp. Serv.

McGough is best known for being a premier contractor with an unmatched reputation for delivering projects on time and within budget. Primary services/specialties include general contractor, design/build, construction manager, strategic facility planning, build-to-suit, development services and facility management.

Medtronic World Headquarters, Minneapolis, MN; Minnesota Life, St. Paul, MN; St. Paul Companies, St. Paul, MN; Federal Reserve Bank of Minneapolis, Minneapolis, MN; Ordway Center for the Performing Arts, St. Paul, MN; Allianz/Life USA, Minneapolis, MN

M. A. MORTENSON COMPANY

700 Meadow Lane North
Minneapolis, MN 55422
Tel: 763/522-2100
Fax: 763/287-5430
E-mail:
ken.sorensen@mortenson.com
Web: www.mortenson.com
Established 1954
Other Offices: Denver, CO;
Seattle, WA; Milwaukee, WI;
Los Angeles, CA; Chicago, IL
Contact: Ken Sorensen,
763/287-5326

John Wood, Senior VP
Ken Sorensen, VP
Tom Gunkel, Pres.

Continued on next column

Mortenson is a family-owned, total facility services enterprise that was founded in 1954. Our purpose and mission, values, personal focus, and quality master builder performance are the cornerstones of our organization. The company is a diversified construction company providing its customers with state-of-the-art services in general contracting, construction management, design-build, consulting, pre-construction and development services.

Xcel Energy Center, St. Paul, MN;
50 South Sixth Street Office
Tower, Minneapolis, MN; Regions
Hospital Expansion, St. Paul, MN;
Westminster Presbyterian Church,
Renovation and Addition,
Minneapolis, MN; McNamara
Alumni Center University
Gateway, Minneapolis, MN

OLSON GENERAL CONTRACTORS, INC.

5010 Hillsboro Avenue N.
New Hope, MN 55428
Tel: 763/535-1481
Fax: 763/535-1484
E-mail: esorgatz@olsongc.com
Web: www.olsongc.com
Established 1909
Total in MN Office: 8
Contact: Ed Sorgatz,
763/535-1481

Robert Olson, Pres.

A design/build general contractor with over 90 years experience in all facets of industrial, commercial and institutional construction, including interior build outs and historic restoration and remodeling. An emphasis is placed upon utilization of the contractor's experience and resources during the design process, to assist in guiding the project to desired goals, especially those which are budget related.

Open Book, Minneapolis, MN;
Media Loft, Minneapolis, MN;
Junior Apprentice Training
Center, St. Michael, MN;
Systematic Refrigeration, Inc.,
Ramsey, MN; Americom, West
St. Paul, MN; U. S. Filter Control
Systems, Vadnais Heights, MN

PCL CONSTRUCTION SERVICES, INC.

12200 Nicollet Avenue S.
Burnsville, MN 55337
Tel: 952/882-9600
Fax: 952/882-9900
E-mail: fgauch@pcl.com
Web: www.pcl.com
Established 1906
Total in MN: 200
Total in Other Offices: 4,000
Contact: Fred G. Auch,
VP/Dist. Mgr., 952/882-9600

Other Offices: Denver, CO; Orlando
and Ft. Lauderdale, FL; Seattle, WA;
Los Angeles and San Diego, CA;
Phoenix, AZ; Las Vegas, NV; At-
lanta, GA; In Canada - Edmonton
and Calgary, Alberta; Regina and
Saskatoon, Saskatchewan; Toronto
and Ottawa, Ontario; Winnipeg,
Manitoba; Vancouver, British Co-
lumbia; Yellowknife, Northwest
Territories; St. John's, New Found-
land; Halifax, Nova Scotia

Fred G. Auch, VP/District Mgr.
Terry Brickman, Mgr.,
Special Proj. Div.
Colin Terras, Operations Mgr.
Brad Hendrickson, Chief Estimator
Daniel L. Ilten, AIA, PE, Dir.
Design & Constr. Services

PCL Construction Services, Inc. is one of Minnesota's largest, most diversified construction firms. The company is engaged in industrial, healthcare, institutional, high technology, commercial, and light civil construction - delivering projects as a general contractor, construction manager, and design/ builder. PCL also has a Special Projects Division that specializes in interiors, renovations, and remodeling.

Minneapolis Lifestyle Centre
(Block E), Minneapolis, MN; Amer-
ican Express Client Service Center,
Minneapolis, MN; CentraCare
Health Plaza, St. Cloud, MN; Pills-
bury Company, Various Locations
throughout the United States; Var-
ious Projects at the Mall of Ameri-
ca, Bloomington, MN; 3M Mainte-
nance Program, Maplewood, MN

SHAW-LUNDQUIST ASSOCIATES, INC.

2757 West Service Road
St. Paul, MN 55121-1230
Tel: 651/454-0670
Fax: 651/454-7982
E-mail:
info@shawlundquist.com
Web: www.shawlundquist.com
Established 1974
Total in MN Office: 80
Contact: Paul Nelson,
651/454-0670

Continued on next column

Fred Shaw, President
Hoyt Hsiao, VP, Internal Oper.
Thomas J. Meyers, VP, Constr. Oper.

Construction Manager, Design/
Builder, General Contractor
delivering facility services to the
following market segments:
commercial, industrial,
institutional, educational, religious
and multi-unit housing.

Wells Fargo Prosperity Bank, St.
Paul, MN; University of Minnesota
Hockey Arena and Tennis Center,
Minneapolis, MN; Mendota Heights
Family Townhomes, Mendota
Heights, MN; MAC Green (A & C)
Concourse Expansion, MSP
International Airport, MN;
Minneapolis Community and
Technical College, Wheelock
Whitney Hall Library and
Informational Technology Center,
Minneapolis, MN; 3M, St. Paul, MN

STAHL CONSTRUCTION COMPANY

5900 Rowland Road
Minnetonka, MN 55343
Tel: 952/931-9300
Fax: 952/931-9941
E-mail:
cschmidt@stahlconstruction.com
Web: www.stahlconstruction.com
Established 1981
Other MN Office: Eden Prairie,
952/345-1580
Total in MN Office: 70
Contact: Cathy Schmidt,
952/931-9300

Wayne Stahl, CEO
Phillip Baum, President
Scott Everson, VP
Paul Perzichilli, VP
Cathy Schmidt, VP

Stahl provides construction man-
agement, design/build and general
contracting services to public and
private clients throughout the Mid-
west. Services include strategic plan-
ning, budgeting, value engineering,
scheduling, project management,
and on-site field supervision. We
perform for our clients by fulfilling
our commitments and following
through on our promises. Stahl is
celebrating its 20th year in business.

Anoka-Hennepin Public Schools;
Mounds View Public Schools;
Residence Inn - Milwaukee Depot;
St. Anthony Villages; Wayzata
Community Church; Central Park
Community Center, Eagan

■ **SWEDENBORG-SHAW CONSTRUCTION, INC.**
7685 Corporate Way
Eden Prairie, MN 55344
Tel: 952/937-8214
Fax: 952/934-9433
E-mail:
jshaw@swedenborgshaw.com
Established 1977
Total in MN Office: 7
Contact: John N. Shaw (Jack),
952/937-8214

—
John N. Shaw (Jack), President
James B. Swedenborg, CFO

—
Swedenborg-Shaw Construction, Inc. is a design/build general contractor successfully providing: new construction, additions, tenant improvements and unique construction within the commercial, light industrial, manufacturing and retail construction markets. Swedenborg-Shaw Construction, Inc.'s construction products and services have developed long-lasting relationships with owners, developers, architects and engineers throughout the Twin Cities and Upper Midwest.

—
Tech Center, Interior Improvements, Edina, MN; Tenant Improvements, Willis Re, Minnesota Center, Bloomington, MN; 20,000 s.f. Warehouse Addition, Madison Partners, Little Chute, WI; Tenant Improvements, The Wine Company, St. Paul, MN; Warehouse, Manufacturing and Office Addition, Twin City MetalFab, Inc., St. Paul, MN; 45,000 s.f. Complete Exterior and Interior Renovations, Edina, MN

■ **TOWER ASPHALT, INC.**
15001 Hudson Road,
PO Box 15001
Lakeland, MN 55043
Tel: 651/436-8444
Fax: 651/436-6515
E-mail:
rhockin@towerasphalt.com
Web: www.Towerasphalt.com
Year Established 1964
Total in MN Office: 70
Contact: Ronald Hockin,
651/436-8444

—
Ronald Hockin, Pres.
Michael J. Leuer, Constr. VP
Gary Balk, Sec.
Cindy Ecklund, Compliance Officer
Paul Hofmann, Qual. Control Tech.

—
Continued on next column

Founded in 1964, Tower Asphalt, Inc. is an asphalt paving contractor. We operate a state-certified hot mix asphalt batch plant located on the Minnesota-Wisconsin border, 15 miles east of downtown St. Paul, MN; Tower Asphalt operates in Minnesota and Wisconsin. We are experienced in the construction of roads, highways, airports and commercial construction. Projects have ranged from \$5000 to \$6 million.

■ **ULLAND BROTHERS, INC.**
P.O. Box 340
Cloquet, MN 55720
Tel: 218/384-4266
Fax: 218/384-4110
E-mail: cwercinski@ulland.com
Web: www.ullandbros.com
Established 1929
Other MN Offices:
Albert Lea - 507/373-1960
Hibbing - 218/262-3406
Total in MN Office: 275
Contact: Curt Wercinski,
218/384-4266 x19

—
Robert Ulland, Chrmn.
George Jessen, Pres.
Curt Wercinski, VP
Ken Johnson, VP
Orlin Ofstad, VP
Joan Ford, VP

—
Ulland Brothers, Inc. provides quality workmanship on site preparation, bituminous paving, grading, underground utilities and aggregate production. Ulland Brothers operates many gravel pits and rock quarries in Northern and Southern Minnesota supplying decorative landscape, slope, shoreline and roofing rock throughout Minnesota and as far away as Michigan.

—
I-90, Albert Lea, MN; TH 169, Chisholm, MN; Home Depot, Bemidji, MN; Fortune Bay Golf Course, Tower, MN; Westcott Field, Albert Lea, MN; Edgewood Vista Development, Virginia, MN

■ **WATSON-FORSBERG CO.**
1433 Utica Avenue S., Ste. 252
Minneapolis, MN 55416
Tel: 952/544-7761
Fax: 952/544-1826
E-mail:
dalef@watson-forsberg.com
Established 1965
Total in MN Office: 40
—
John Forsberg, Chrmn.
Dale Forsberg, Pres.
Mike Ashmore, VP
David Forsberg, Sec./Treas.
Donna Lucero, Controller

—
Watson-Forsberg provides general contracting and construction management services. Expertise in commercial, retail, multi-family, religious, educational, medical and industrial projects. Projects include new construction and renovations.

—
A Chance to Grow/New Vision School, Minneapolis, MN; University of Minnesota North Family Practice Clinic, Minneapolis, MN; Redstone Grill, Minnetonka, MN; Redeemer Missionary Baptist Church Renovation, Minneapolis, MN; East Village Apartments, Minneapolis, MN; Hazelden Mediation Center, Center City, MN

■ **WEIS BUILDERS, INC.**
7645 Lyndale Avenue S.
Minneapolis, MN 55423
Tel: 612/243-5000
Fax: 612/243-5010
E-mail:
marketing@weisbuilders.com
Web: www.weisbuilders.com
Established 1939
Other MN Office: Rochester,
507/288-2041
Total in MN Offices: 87
Other Office: Chicago, IL
Total Other Office: 30
Contact: Brett Christofferson,
612/243-5000
—
Jay Weis, Pres.
Erik Weis, Exec. VP
Cassie Warner, CEO Finan.
Brett Christofferson, VP,
Bus. Dev.

—
Continued on next column

Weis Builders is in the business of building relationships and has been doing just that for over 60 years. As a national General Contractor/ Construction Manager, we serve Assisted Living, Commercial, Hospitality, Housing and Retail clients from offices in Minneapolis and Rochester, MN and Chicago, IL. We offer a full range of professional services to our clients including: pre-construction, construction management, program management, and design/build.

■ **WITCHER CONSTRUCTION CO.**
9855 W. 78th Street, Ste. 270
Eden Prairie, MN 55344
Tel: 952/830-9000
Fax: 952/830-1365
E-mail:
info@witcherconstruction.com
Web:
www.witcherconstruction.com
Established 1945
Total in MN Office: 200
Other: Witcher is a wholly-owned subsidiary of Kansas City-based J. E. Dunn Group
Contact: Andrea S. Komschlies,
Dir. of Mktg., 952/833-5933
—
Kenneth A. Styrlund, P.E., Pres.
David B. Burtness, VP/CFO
Scott Sharp, VP Field Oper.
Douglas Loeffler, VP

—
Witcher provides general contractor, construction management, and design/build services on commercial and institutional projects. Services include extensive pre-construction services. Majority of projects are negotiated. Expertise in new and renovated retail, religious, multi-family housing, hospitality, cultural, educational, office, and tenant improvements. Projects are across Minnesota and in over 40 states. Crews self perform light demolition, concrete, masonry, and carpentry.

—
Lindsay Lofts Condominiums, Minneapolis, MN; Minneapolis Institute of Arts Expansion, Minneapolis, MN; University of Minnesota Frontier Hall Expansion, Minneapolis, MN; Church of the Open Door, Maple Grove, MN; Von Maur Department Store, Eden Prairie, MN; Golden Valley Country Club, Golden Valley, MN

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A101/CMa	3.50	Owner-Contractor Agreement Form-Stipulated Sum-Construction Manager-Advisor Edition (1992)
A105/A205	7.50	Combination Document Standard Form of Agreement Between Owner and Contractor for A Small Project and General Conditions of the Contract for Construction of A Small Project (1993)
A107	5.00	Abbreviated Owner-Contractor Agreement Form for Small Construction Contracts-Stipulated Sum (11/97)
A111	4.50	Owner-Contractor Agreement Form-Cost Plus Fee (11/97) with instruction sheet
A117	Drop	Abbreviated Owner-Contractor Agreement Form-Cost Plus Fee (4/87) with instruction sheet
A121/CMc	5.00	Owner-Construction Manager Agreement Form where the Construction Manager is also the Constructor (1991)
A131/CMc	5.00	Owner-Construction Manager Agreement Form where the Construction Manager is also the Constructor-Cost Plus Fee (1994)
A171	3.50	Owner-Contractor Agreement for Furniture, Furnishings and Equipment (1990) with instruction sheet
A177	3.50	Abbreviated Owner-Contractor Agreement for Furniture, Furnishings and Equipment (1990)
A191	5.00	Standard Form of Agreement Between Owner and Design/Builder (1996) with instruction sheet
A201	9.00	General Conditions of the Contract for Construction (11/97) with instruction sheet
A201/CMa	7.50	General Conditions of the Contract for Construction-Construction Manager-Advisor Edition (1992)
A201/SC	3.50	General Conditions of the Contract for Construction and Federal Supplementary Conditions of the Contract for Construction (1999) with instruction sheet
A271	7.50	General Conditions of the Contract for Furniture, Furnishings and Equipment (1990) with instruction sheet
A305	3.50	Contractor's Qualification Statement (12/86)
A310	1.50	Bid Bond (2/70)
A312	3.50	Performance Bond and Payment Bond (12/84)
A401	6.00	Contractor-Subcontractor Agreement Form (11/97)
A491	5.00	Standard Form of Agreement Between Design/Builder and Contractor (1996) with instruction sheet
A501	5.00	Recommended Guide for Bidding Procedures and Contract Awards (1995)
A511	9.00	Guide for Supplementary Conditions-incorporates A512 (6/87)
A511/CMa	9.00	Guide for Supplementary Conditions-Construction Manager-Advisor Edition (1993)
A512	1.50	Additions to Guide for Supplementary Conditions (12/89)
A521	5.00	Uniform Location Subject Matter (1995)
A571	9.00	Guide for Interiors Supplementary Conditions (1991)
A701	5.00	Instructions to Bidders (4/87) with instruction sheet
A771	3.50	Instructions to Interiors Bidders (1990)

Other Series:

B-SERIES DOCUMENTS: Owner-Architect Series

C-SERIES DOCUMENTS: Architect-Consultant Series

D-SERIES DOCUMENTS: Architect-Industry Series

G-SERIES DOCUMENTS: Architect's Office & Project Forms

M107-94	225.00	The Architect's Handbook of Professional Practice (1994)
M107B	6.95	Binders

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International Market Square
275 Market Street, #54
Minneapolis MN 55405
TEL: 612/338-6763
FAX: 612/338-7981
www.aia-mn.org

Pusan Convention Center and Exhibition Hall

Location: Pusan, South Korea
 Design architects: The Leonard Parker Associates Architects, a part of The Durrant Group
 Principal-in-charge: Stephan S. Huh, FAIA
 Project team (in alphabetical order): Eric Amel*, Namkee Choi, AIA, Young Jun Choi, * KIA, David Dimond, AIA*, William Engelhardt, Stephan S. Huh, FAIA, David Hyde, Yong Koo Lee, Gary Mahaffey, FAIA, Robert Reis, AIA*, Leonard Parker, FAIA, James Schnack*, Sara Weiner, Assoc. AIA, Brenda Wentworth (*team members not currently with The Leonard Parker Associates Architects – a part of The Durrant Group)
 Program consultant: Richard Speers, AIA, principal, Convention Center Design Group
 Architect of record: Ilshin Architects, Associates Co., Ltd.
 Structural: Ove Arup & Partners USA
 Mechanical: Syska Hennessey
 Electrical: Syska Hennessey
 Lighting: Schuler & Shook, Inc.
 Acoustical designer: Kvernstoen, Kehl & Associates, Inc.
 Photographers: Myunghwan Cho, JungSik Moon

Taegu Trade and Product Exhibition Hall

Location: Taegu, South Korea
 Design architects: The Leonard Parker Associates Architects, a part of The Durrant Group
 Principal-in-charge: Stephan S. Huh, FAIA
 Project team (alphabetical order): Francis Bulbulian, AIA, Namkee Choi, AIA, Young Jun Choi KIA*, David Dimond, AIA*, William Engelhardt, Ray Greco, AIA, Stephan S. Huh, FAIA, Robert Reis, AIA*, Phil Olander*, Leonard Parker, FAIA, Brenda Wentworth (*team members not currently with The Leonard Parker Associates Architects – a part of The Durrant Group)
 Program consultant: Richard Speers, AIA, principal, Convention Center Design Group
 Architect of record: Korea Architects, Inc.
 Structural: Skilling Ward Magnusson Barkshire

Mechanical: Convention Center Design Group
 Electrical: Convention Center Design Group
 Lighting: Schuler & Shook
 Acoustical designer: Anderson-Kvernstoen
 Photographer: Munghwan Cho

Koehler Residence

Location: New Brunswick, Canada
 Client: David and Mary Beth Koehler
 Architect: Julie Snow Architects
 Project team: Julie V. Snow, FAIA, Benjamin Awes, Connie Lindor, Lucas Alm, Ken McQuade, AIA, Jim Larson
 Engineers: Campbell Comeau Engineers, John Johnson Engineers
 Consultants: Mechanical Design-Jack Snow Engineering, Ed Young-Building Construction Consultant
 General contractor: Erb Builders
 Exterior cladding: Masonry: Blue Stone
 Roofing: Fully adhered membrane
 Sliding doors/windows: Aluminum Manuf. Arcadia
 Interior finishes: Paneling: Maple; Flooring: Maple throughout; Concrete in guest bath/sauna/hearth
 Special surfacing: Kitchen/Bath Countertops: Type: Kemresin Lite (solid surface epoxy resin) Manuf. Kewaunee Scientific Corp
 Lighting fixtures: Flos
 Bath/kitchen fixtures: Kroin
 Kitchen appliances: Sub-Zero
 Photographer: Brian Vanden Brink

Internet Data Center

Location: Rio de Janeiro, Brazil
 Client: OptiGlobe Telecommunications
 Architect: Ellerbe Becket - US/Henrique Mindlin Associates, S.A.
 Principal-in-charge: Peter Styx, AIA, Walter L. Morrison, Walmyr L. Amaral
 Project manager: Ellerbe Becket - Jerome (Jay) Biedny
 Project architects: Ellerbe Becket - Karin Kennedy
 Project lead designer: Ellerbe Becket - Tom Storrs
 Project team: Ellerbe Becket - Jihad Abuatiya, Bob Bauman, Jay Biedny, Sarah Colandro, Dave Conner, Dan Dropik, Phil Isaak, LeeAnn Jasperse, Chris Johnson, Sandy Juenke, Karin Kennedy, Teri LaDouceur, Darren Regan, Peter Styx, AIA, Steve Terrill, Irina Turovskaya, Al Wenzel, Brian Zabrok, Kate Zwicky
 Structural-engineering team: In country: JKMF - Mario Franco

Mechanical-engineering team: EB - Dave Conner, Darren Regan, Chris Johnson, Dan Dropik In country: HVAC - Datum - Eduardo Gudin, Marcelo Peçanha, Henrique Morgado, Edison Tito Guimaraes Plumbing - ENIT - Moshe Gruberger
 Electrical-engineering team: Ellerbe Becket - Teri LaDouceur, Al Wenzel, Dan Zitzer In Country: ENIT - Moshe Gruberger
 Civil-engineering team: In country - Rubens Misorelli Engenharia de projectos S/C Ltda.
 Interior design: Ellerbe Becket - Sarah Colandro
 Construction manager: US - Holder Construction In country: Racional Engenharia Ltda.
 Landscape architect: In country: Ipê Assessoria
 Photographer: Marcelo Uchoa

Red Rock State Park Center for Environmental Education

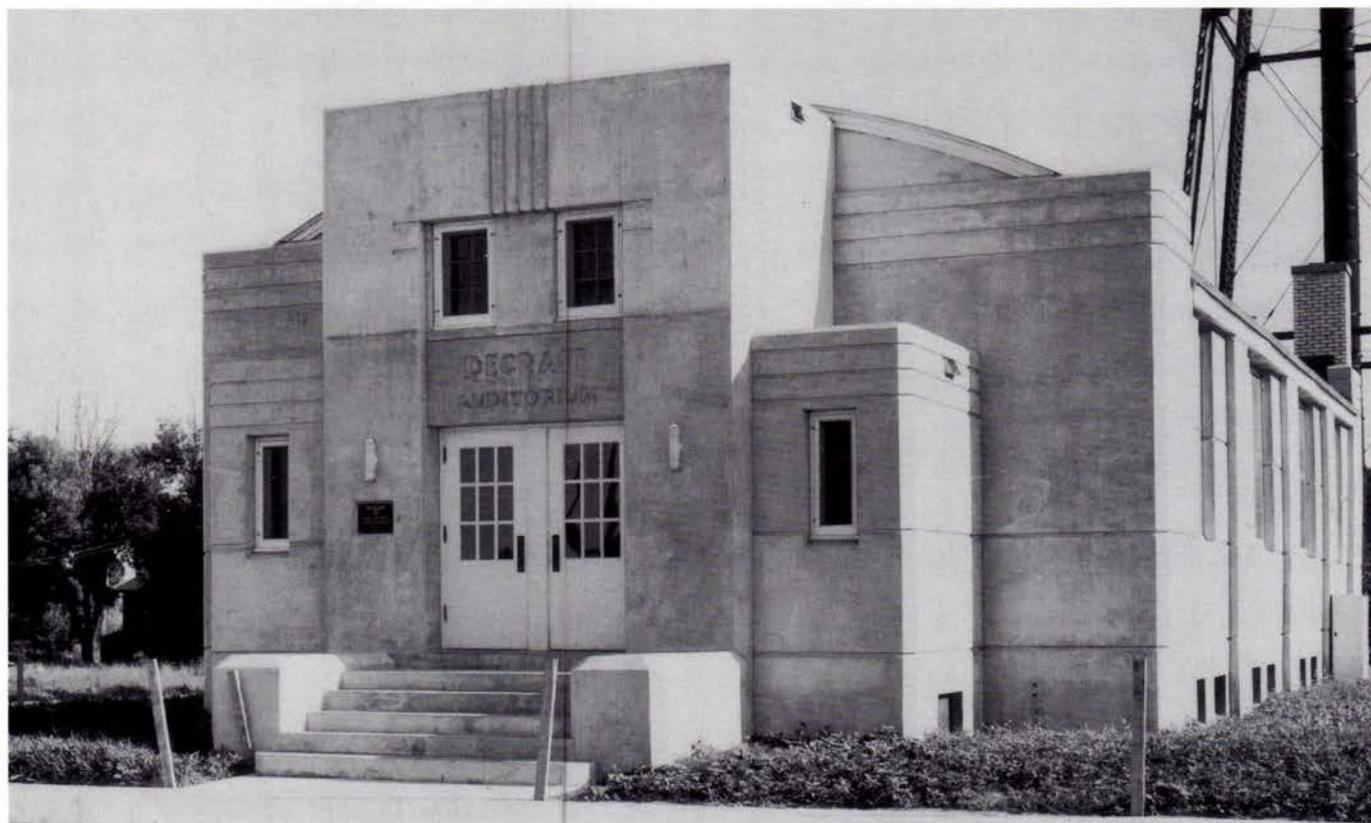
Location: Sedona, Arizona
 Client: Arizona State Parks
 Architect: David Eijadi, AIA, Rick Crandall
 Principal-in-charge: David Eijadi, AIA
 Project architect: Herman Neuberger
 Project lead designer: David Eijadi, AIA
 Civil-engineering team: BRW Phoenix
 Landscape architect: Jeff Kratzke
 Stone: local Supai sandstone
 Photographers: David Eijadi, AIA, Camille LeFevre

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The advertising director apologizes for the following error:

**September/October '01 Issue
Directory of Interior Design.
Should read KKE Architects.**



MINNESOTA HISTORICAL SOCIETY

DeGraff Auditorium, DeGraff (1939-2001)

Between 1935 and 1943, the Works Progress Administration (WPA) built more than 1,400 structures in Minnesota, including public buildings and bridges. The WPA, a Depression Era employment and public-works agency, pumped hundreds of millions of dollars into those projects, leaving a collection of well-built and often beloved buildings throughout the state.

Minnesota's WPA legacy was reduced by one last July with the razing of the auditorium in DeGraff, a town of about 150 people northwest of Willmar. Erected in 1939, the Art Deco building had hosted countless dances, concerts and basketball games, and for a time it housed the town's fire department and American Legion Post. It was built of steel-reinforced concrete, two feet thick in some walls, that stoutly resisted the efforts of the 21st-century demolition crew that knocked it down.

The auditorium's decline began when DeGraff transformed a nearby school into a new community center. A local business bought the building, obscuring the stylishly carved words "DeGraff Auditorium" above the door with a painted sign reading "Central Lakes Taxidermy." The taxidermist fell behind in his property taxes and in 1997 Swift County reluctantly took possession of the building.

During several years of vacancy, the wooden floor buckled, the roof collapsed and vandals took potshots at the windows. In addition, the auditorium lacked handicapped accessibility and updated facilities. Restoring the building to health seemed financially impossible. When the Swift County Board could find no buyer for the property, it voted early this year to spend \$8,800 to demolish the auditorium.

At the last minute, a potential savior came forward, a Medina developer named Dan Cox who devised a plan to convert the auditorium into offices and manufacturing facilities. Cox and the county ultimately could not agree on the financial terms of the rehab and Cox withdrew his proposal. That left the building, and all the memories it contained, in the hands of the wreckers.

On July 30, the DeGraff Fire Department began the demolition by setting aflame the interior of its old headquarters. On the following day, a backhoe operator knocked down the walls, sending clouds of dust into the summer sky. Saved from the building were a historical plaque and the concrete slab that bore the words the taxidermist's sign had previously concealed. The county donated the land to the town of DeGraff. A municipal water tower is likely the next occupant of the site. *Jack El-Hai*

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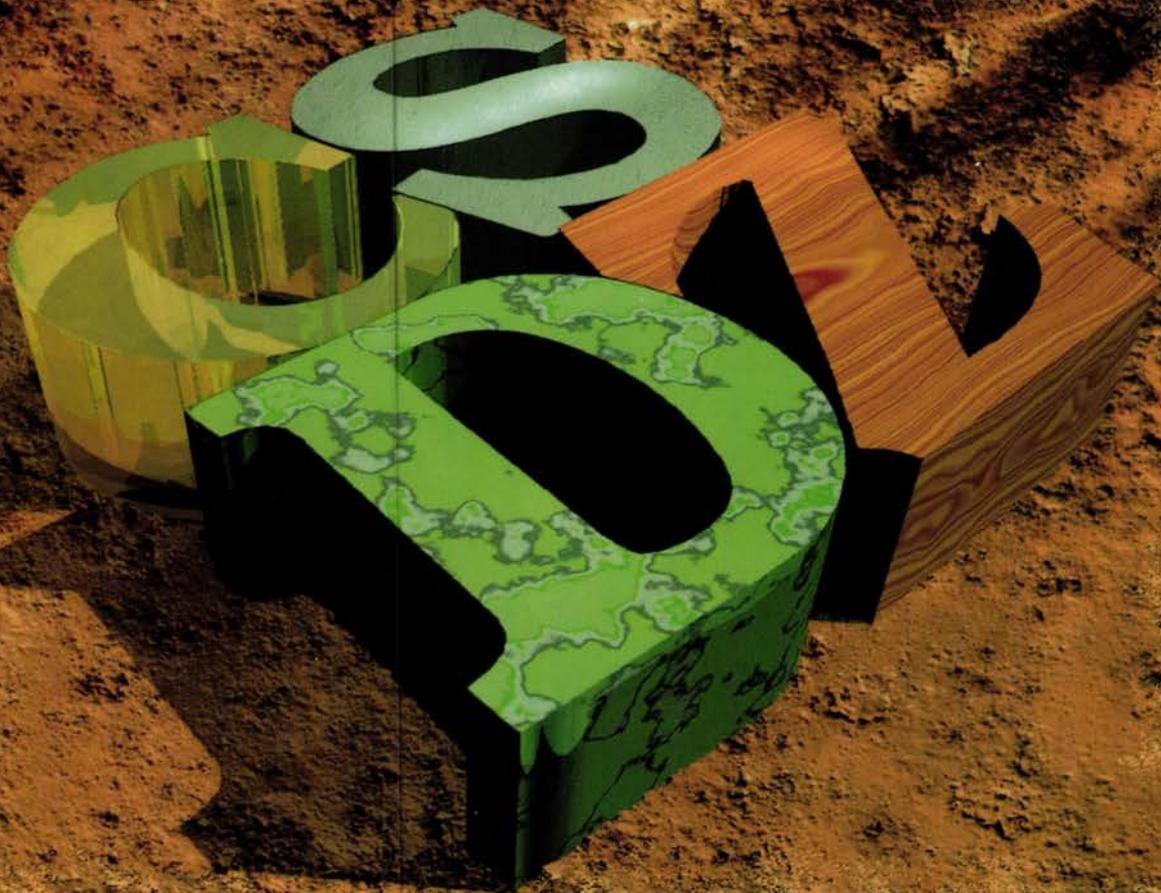


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