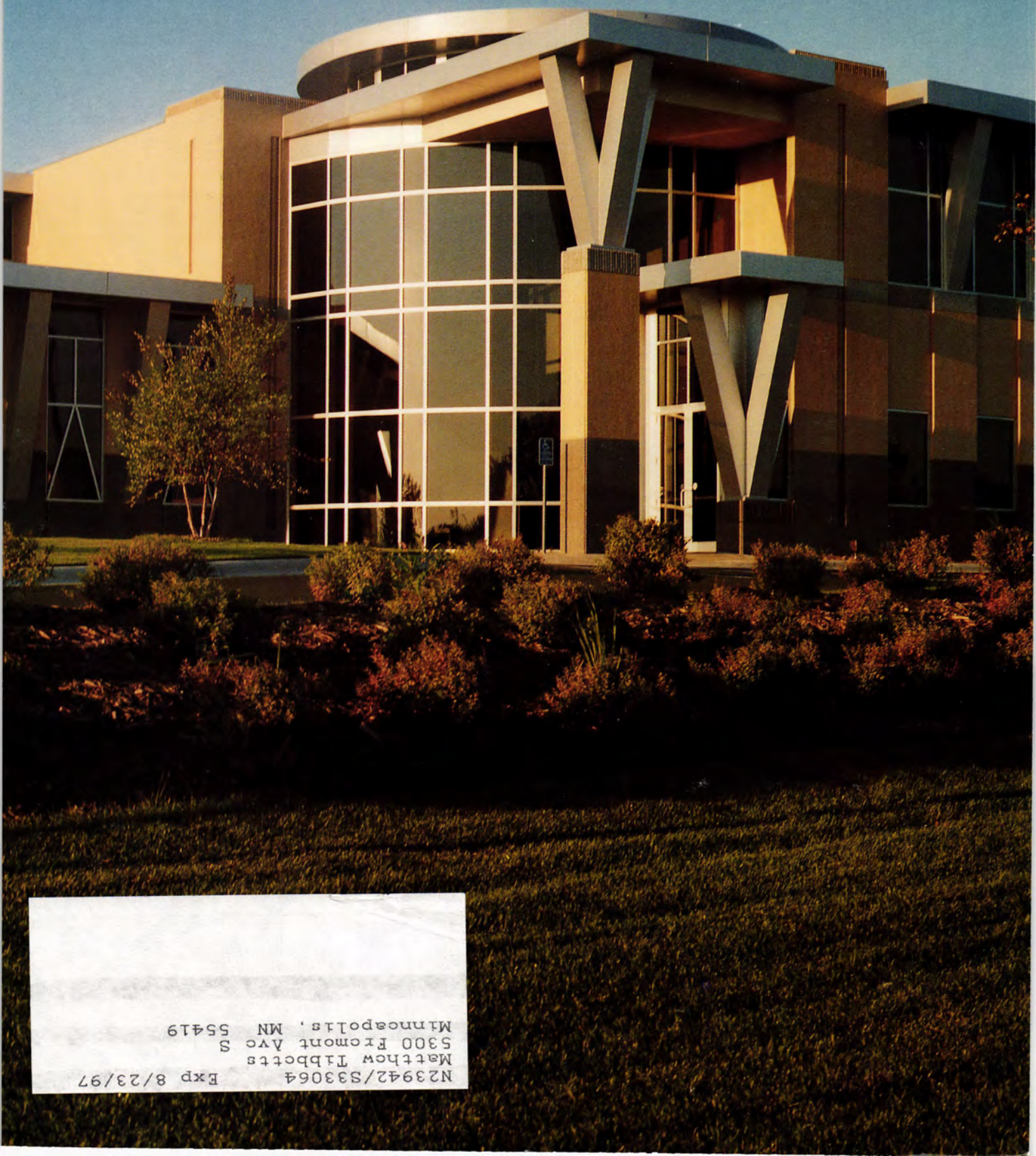


# Architecture

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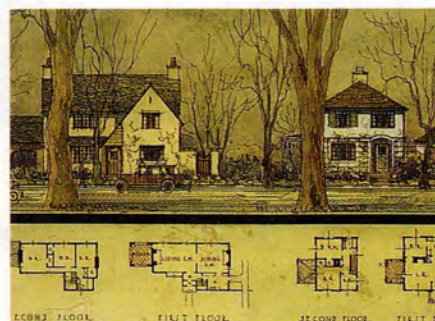
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# River buzz

In the late-19th and early-20th centuries, when Minneapolis was still a young, rough-and-tumble frontier town, the Mississippi River was the source of economic power. Along the riverbanks sprouted sawmills and grain mills, harnessing their power from St. Anthony Falls. As steam power allowed the sawmills to move farther upriver in the 1880s, grain mills flourished, elevating Minneapolis to one of the nation's major milling regions.

Well, times have changed and the mills have long since closed, extinguishing the river's churning economic engine. Today, the downtown-Minneapolis river front is a hodgepodge of abandoned structures, new construction and historic rehabs, and unrealized development proposals. This is not to suggest, however, that the Minneapolis river front is an urban wasteland. In fact, much has risen along the river of late. The Historic Stone Arch Bridge was recently reborn, a river walk invites pedestrians and cyclists to the river, a recent river-front master plan led by architect Scott Wende won a 1995 AIA Minnesota Honor Award, and the city itself has pursued incremental development guided by its own river-front master plan.

Yet the Mississippi River still remains, more or less, an untapped urban resource awaiting the bloom of its fullest potential. That's why John Cuninghame of Cuninghame Group in Minneapolis has high-dived into the river, soliciting design ideas.

After touring three successful urban river-front projects throughout the Netherlands, Cuninghame sent out a "Call for Visions" to architects, landscape architects and urban planners throughout the United States and the Netherlands. He asked for creative and comprehensive ideas for redeveloping an 80-acre area along the Mississippi River from Washington Avenue across the river to Main Street S.E., and from Third Avenue South to Interstate 35W. He received 14 submissions. With the backing of an ad hoc committee, Urban Design Advisory Group, Cuninghame presented these 14 ideas to the city with a book entitled *The Minneapolis Riverfront: Vision and Implementation*.

The 14 schemes, many quite fanciful, are not necessarily meant to be developed. One scheme by the Center for Urban Design in Cincinnati, for instance, suggested building houses and shops on stilts over the water, and linking them to the land with floating pedestrian bridges. Another design by Peter Cavalluzzi of New York suggested creating a lake around the Metrodome. Some designs were more pragmatic, such as one by Ralph Rapson of Minneapolis that envisioned more housing and a glass-enclosed cultural and entertainment complex.

Yet all schemes serve as a basis to generate further discussion and ideas about the river. Elements from each plan may find their way into actual built projects. Ultimately, Cuninghame's undertaking has provided a foundation for further inventive and practical river-front thinking.



Schemes for the river front include one by Atelier Heamavihio (right) of Fargo, N.D.; Shea Architects (above) of Minneapolis; and Katherine Spitz Associates (top) of Marina del Rey, Calif.

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## Hot off the presses



The Minneapolis Institute of Arts has put one of the state's Prairie School masterpieces on CD-ROM. *A Prairie School Gem: A Virtual Tour of the Purcell-Cutts House* provides a virtual-reality tour of the 1913 house, which is owned by the museum. With the CD, visitors begin their virtual

tour at the front door and work their way through the house with an interactive floor plan. Simple clicks of the mouse allow visitors to zoom in for details or make complete 180- or 360-degree turns. The CD-ROM was developed by the museum's Interactive Media Group with technical assistance by the locally based Macromedia Technologies, Inc. *A Prairie School Gem* is available in the Minneapolis Institute of Arts' Museum Shop.

Another CD-ROM architectural tour is offered by *LivingHome*, a quarterly multimedia home design and gardening magazine with on-line access. Published by Novo/McKinley, *LivingHome* offers such editorial features as *Dueling Designers*, in which two interior designers take a crack at designing the same house; *A Fine Mess*, cottage gardening presented in a multimedia format; and *Dream Kitchens*, a software program for selecting and viewing surfaces and textures in a new kitchen. For more information about *LivingHome*, call (800) 852-1480.



Le Corbusier is frequently referred to as "architect of the century." Geoffrey H. Baker's new book, *Le Corbusier: The Creative Search*, sheds further light on Le Corbusier's genius by showing how the architect developed his creative approach. As with *Le Corbusier: An Analysis of Form*, this follow-up concentrates on the way a designer's mind works. Baker extends the analytical skills used to explain Le Corbusier's architecture into a detailed analysis of the architect's early sketchbooks. The author provides comprehen-



sive documentation of sketches in La Chaux-de-Fonds, Italy, including English translations of his notes. Baker, trained as an architect at Manchester University, has taught architecture and design for more than 30 years. *Le Corbusier: The Creative Search* is published by Van Nostrand Reinhold, New York.

A Chicago native who worked for five years as Frank Lloyd Wright's chief associate before establishing his own practice in 1906, Walter Burley Griffin was one of the early century's great architects. Yet his accomplishments, while significant, often languished in the shadows of Wright and others from that period. An Australian commission led Griffin eventually to settle in Australia. In *Walter Burley Griffin in America*, a collection of nearly 200 beautifully reproduced black-and-white photographs of about 65 of the architect's residential structures and landscapes in America, the architect is given his due. With photographs and essay by Mati Maldre, and an additional essay, catalogue and bibliography by Paul Kruty, the book reveals that Griffin's American work should, indeed, be ranked alongside the works of Wright and Louis Sullivan's. *Walter Burley Griffin in America* is published by the University of Illinois Press.

Walter Burley Griffin in America

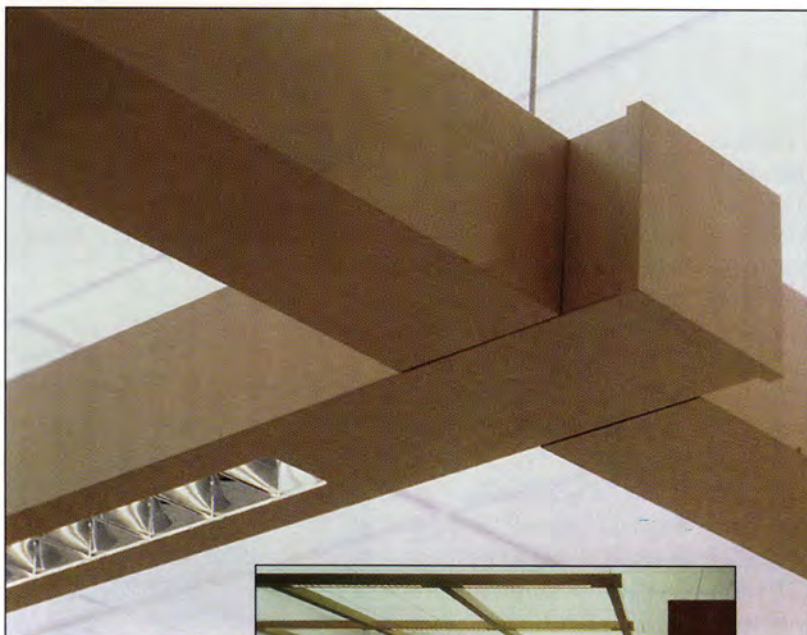


Photographs and Essay by Mati Maldre  
Essay, Catalog, and Selected Bibliography by Paul Kruty

## New CALA dean

Thomas Fisher, former editorial director of *Progressive Architecture* and *Building Renovation* magazines, has been named the new dean of the College of Architecture and Landscape Architecture at the University of Minnesota. Fischer joined *Progressive Architecture* in 1982, overseeing one of the architectural profession's most influential design magazines before it folded this past year. Before *Progressive Architecture*, he served as a historical architect with the Connecticut State Historical Preservation Office from 1979 to 1981, as a historian with the Historic American Engineering Record in 1979, and as a regional preservation officer with the Western Research Historical Society from 1976 to 1978. Fischer holds an architecture degree from Cornell University and a master's degree in interdisciplinary studies from Case Western Reserve University. He assumes his new position at the University of Minnesota this July.





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**Up North: The 49th Parallel Project**  
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Atlanta-based artist Gregor Turk traveled the length of the western Canadian-U.S. border, the 49th parallel, by foot and bicycle in 1992 to satisfy his artistic interest in maps and mapping. The journey's resulting work, *The 49th Parallel: Barrier as Corridor*, includes small drawings, manipulated photographs, ceramic sculptures and cast paper maps. His travels included the entire 90-mile Minnesota/Manitoba border, resulting in specific drawings.

For more information, call (612) 338-8053.



Delineated Landscape 912, 1993

**Reading and Collection Books**  
**Minneapolis Institute of Arts**  
**Through Aug. 11**

More than 50 books, letters and manuscripts from 23 Minnesota collectors reveal diverse literary interests. The varied books range from scientific, literary, printing, religion, and sporting to books from around the world and throughout history.

For more information, call (612) 870-3000.

**Ancient Nubia: Egypt's Rival in Africa**  
**Minneapolis Institute of Arts**  
**Through Aug. 18**

Featured are 300 bronze, ivory, stone and ceramic artifacts that trace the 3,500-year history of Nubian culture from ca. 3100 B.C. to A.D. 400. Among the art objects are sculpture, ceramics and jewelry, as the exhibit explores the relationship between the Nubian and Egyptian civilizations. South of ancient Egypt in the Nile River Valley, ancient Nubia thrived in what today is divided between Egypt and Sudan.

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**Building the Ballyhoo:**  
**Architectural Photographs by the**  
**Wurts Brothers Company**  
**National Building Museum**  
**Washington, D.C.**  
**Through Aug. 18**

This exhibit explores how commercial architectural photography shaped popular expectations of the built environment in the United States. Focusing specifically on images produced by the Wurts Brothers Company—one of the first photography firms to specialize in architectural subjects—the exhibit demonstrates how photography helped generate enthusiasm for architecture throughout the century.

For more information, call the Building Museum at (202) 272-2448.

**Converging Paths: Split Rock in**  
**St. Paul Visiting Faculty 1996**  
**Goldstein Gallery**  
**University of Minnesota**  
**St. Paul**  
**Through Sept. 8**

This is the gallery's third collaboration with the Split Rock Arts Program. The exhibit, featuring the work of faculty who teach week-long workshops as part of the program, complements the courses and illustrates the unique and personal expression of each artist.

For more information, call Goldstein at (612) 624-7434.



Stamp series #1, Helena Hemmarck, 1985

**Art Works: The PaineWebber Collection of**  
**Contemporary Masters**  
**Minneapolis Institute of Arts**  
**Through Sept. 15**

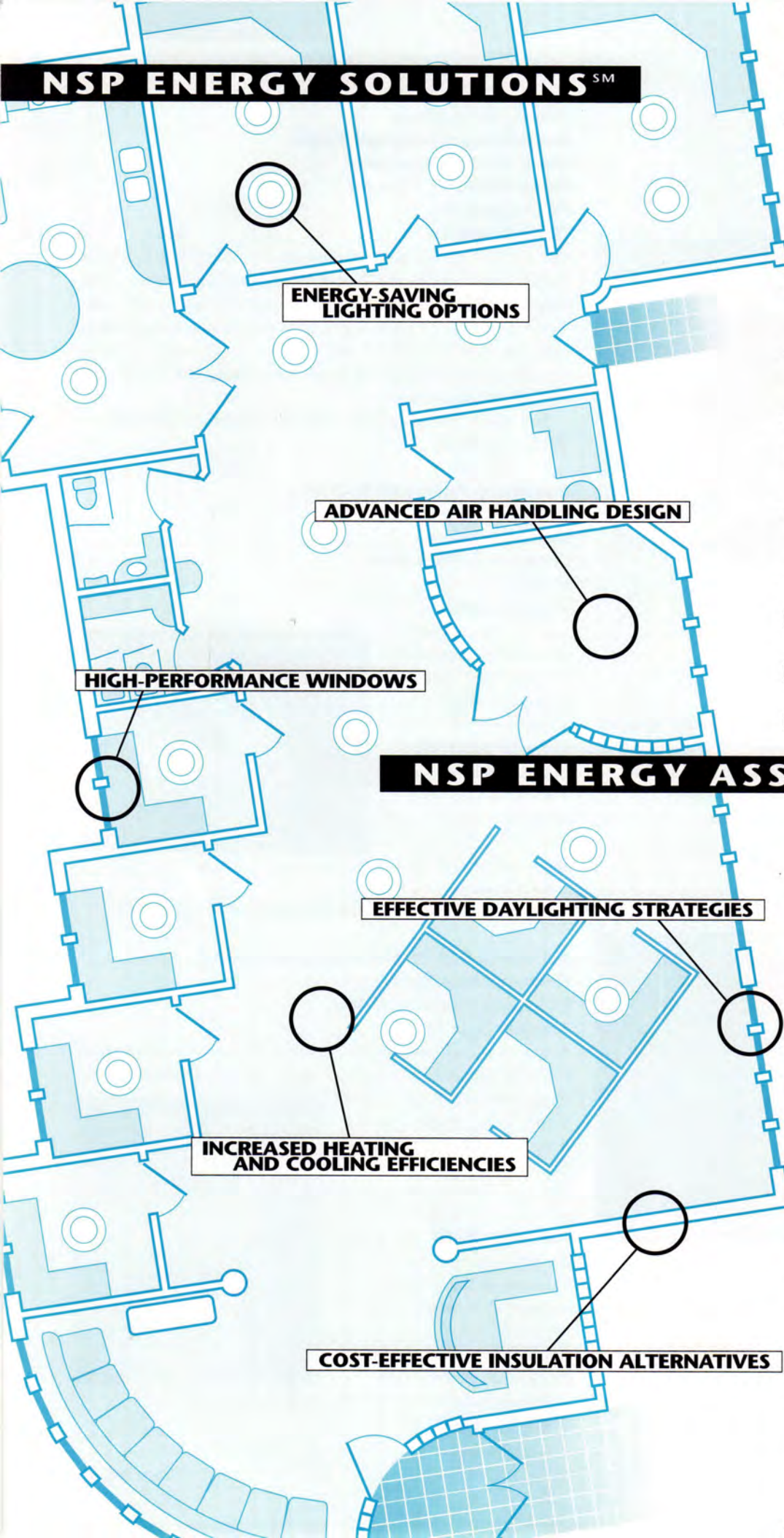
Seventy objects sample the extensive corporate collection of PaineWebber, which numbers approximately 650 paintings, sculptures, works on paper, prints and photographs. PaineWebber began collecting American and European artists of the avant garde, post-World War II era 25 years ago. Today it's one of the finest corporate art collections in the country. On display are works by such illustrious artists as Andy Warhol, Jasper Johns, Robert Rauschenberg and others.

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Helen, Gerhard Richter, 1963





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**Walker Art Center  
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The exhibit examines the myriad aspects of the Beat culture and illuminates the interaction between artists, poets, musicians and filmmakers during this fervent midcentury period. Focusing on New York, San Francisco and Los Angeles, some 200 objects, including painting, sculpture, drawings, collage and film, unveil the interdisciplinary nature of the culture. The objects are shown alongside books, magazines, recordings of music and poetry, illustrated notebooks, documentary photographs and video, and original manuscripts.

For more information, call WAC at (612) 375-7650.

**Through the Body**

**Frederick R. Weisman Art Museum  
University of Minnesota  
Minneapolis**

**Through Sept. 1**

A group of 10 Minnesota artists, dealing with the human body as an artistic form, are highlighted. Represented artists include nationally known Dorit Cypis and Lynn Likkas. Also featured are such emerging artists as Jessica Crawford, Shannon Kennedy, the team of Michael and Abigail Mouw, Laurie Phillips, Stevie Rexroth, and collaborators Mark Barlowe and Keith Braafladt.

For more information, call (612) 625-9494.



*Biker, Dennis Hopper, 1961*



*BIG WOMEN: The Weisman Illuminations, Laurie Phillips and Heather Ray, 1996*

**The International Library  
Frederick R. Weisman Art Museum  
University of Minnesota  
Minneapolis  
Through Oct. 6**

Highlighted is artwork from an ongoing project by German artist Helmut Lohr, in which he and a group of artists communicate through the exchange of book objects. Lohr utilizes pages from existing commercially printed books by removing the covers and then tearing and relayering the pages so that the book is transformed into a purely visual, sculptural work. He then sends the book to each artist for their artistic input.

For more information, call Weisman at (612) 625-9494.

**D.H. Burnham and Mid-American Classicism  
Art Institute of Chicago  
Through Sept. 2**

Approximately 100 drawings and models from the museum's permanent collection will comprise this exhibit celebrating the 150th anniversary of the birth of this influential Chicago architect. Burnham worked with such greats as William LeBaron Jenney and Frank Lloyd Wright before teaming with John Wellborn Root. After Root's death in 1891, Burnham formed his own firm and designed such Chicago landmarks as Marshall Field's and Orchestra Hall. He also is well known as a city planner and devised master plans for numerous American cities.

For more information, call the Art Institute at (312) 443-3600.

**Between Fences  
National Building Museum  
Washington, D.C.  
Through Jan. 5, 1997**

The history of fences as a defining element in the American landscape is the subject of this exhibit, which examines the settlement of North America, the significance of land ownership and home, and the role of fence builders in the history of the United States. The exhibit also explores individual, community and national boundaries in contemporary America.

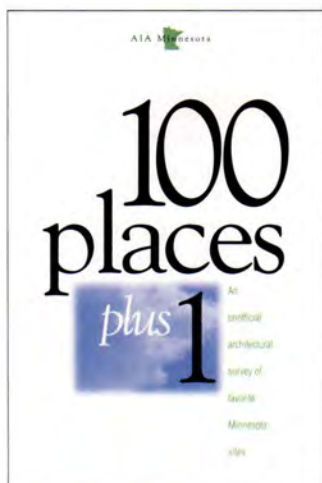
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*Ola, Idaho, self-help cooperative and farming community, Dorothea Lange, 1939*



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In this collection of short essays with accompanying color photographs, writers, architects and designers elaborate on their favorite Minnesota sites and places. While most guidebooks give just the facts, *100 places* goes beyond mere architectural description as the writers reveal personal anecdotes about different places. In one essay, for instance, the author recalls how he and his son munched on celery stalks and imitated gorillas after viewing a jungle-theme film at the Omnitheater. Another author relates how she reconnects with the memory of her late husband by visiting a church that he designed. Still another writer

confesses grooving to the beat of a trend-setting downtown nightclub. All the featured places are publicly accessible and include bridges and buildings, art and architecture, gardens and parks, streetscapes and pavilions.

*100 places plus 1* is published by AIA Minnesota, and is available in local bookstores or by calling AIA Minnesota at (612) 338-6763. Or, check off the subscription card and mail to us with your check for \$20.

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Christopher Monkhouse

**Christopher Monkhouse is the new Bell Memorial Curator of the Department of Decorative Arts, Sculpture & Architecture at the Minneapolis Institute of Arts. Before moving to Minneapolis in December 1995, Monkhouse was the founding curator of The Heinz Architectural Center at the Carnegie Museum of Art in Pittsburgh. Beginning with a \$10 million endowment in 1991, Monkhouse built a \$5 million Study Center and acquired more than 3,000 architectural drawings, models and artifacts. He developed three major exhibitions between 1993-'95, encompassing architectural history from the 18th century to the present. Prior to that time, he spent 15 years as the curator of European and American Decorative Arts at the Museum of Art at the Rhode Island School of Design.**

**In a recent interview, he shared some thoughts about his plans for the architectural collection at the Minneapolis Institute of Arts.**

### **What attracted you to the Minneapolis Institute of Arts?**

Evan Maurer [director of the Minneapolis Institute of Arts] is an old friend from my college days at the University of Pennsylvania. When he called about the curator's position, it was just the right timing. I'd spent the last four years developing The Heinz Architectural Center and Evan offered me a chance to get back to decorative arts and sculpture, as well as architecture.

Minneapolis has a good reputation for supporting the arts and the city itself intrigued me. When I first came to visit, I was delighted to discover so many connections with the poet Longfellow. I once wrote an essay about the impact of his poetry on American decorative arts and the Colonial Revival—we're still looking at our past through the eyes of Longfellow today. I was excited to find Minnehaha Park and Lake Nokomis and Lake Hiawatha, and the replica of the Longfellow House. It seemed like a good sign.

### **What are your plans for the architectural collection at the Institute?**

One of the most interesting things I've found here is the original plaster model of the building—the one that McKim Mead & White built between 1912 and 1915. I'd like to display it again so that people can see what the architect's original concept of the museum looked like.

As far as programs are concerned, I've been pleased with the collaborative efforts between museums in the Twin Cities. The more joint programming we can do, the more we can create a critical

mass. I'm already talking with the staff at the Walker Art Center and the Frederick R. Weisman Art Museum about cooperative efforts.

When I was at the Museum of Art at the Rhode Island School of Design, it was a real challenge to get people from Boston to drive 45 minutes for an exhibition. So we worked with the Rhode Island Historical Society and the David Winton Bell Gallery at Brown University to assemble a large architectural drawing show of Rhode Island buildings. We produced a brochure to guide people from one exhibition site to another—and it worked very well. I think we can use that model to build public awareness here, too.

### **How does the Purcell-Cutts House fit into the architectural program?**

That was a great acquisition. It gives the collection an important dimension. I'd like to bring the house into the scope of the museum more effectively—establish more of a connection between the house itself and the material in the galleries. Jennifer Komar [the curatorial assistant responsible for the Purcell-Cutts House] will be evaluating a program at the Currier Art Gallery in Manchester, N.H., where visitors are bussed from the museum to a Usonian house by Frank Lloyd Wright that the museum owns. The challenge is to start the program inside the museum and then make it easy for people to continue on to the house.

### **What can you tell us about specific architectural exhibitions for this year?**

The exhibition I've been working on with Jennifer Komar is

*The Twin Cities on Paper: A Century of Architectural Drawings for Minneapolis and St. Paul* [which closed June 23]. There is such wonderful material at the Northwest Architectural Archives. The show is organized around drawings and models for both the public and private realm. Some of them were built, some not. There are drawings by Harvey Ellis for the Fort Snelling Vets Home that look like one of Mad Ludwig of Bavaria's castles on the Mississippi River bluffs. Then there are some exquisite Edwin Lundie drawings of design details like door latches for a country home in White Bear Lake.

I'm also excited about the contemporary work that will be on view. We have wonderful drawings by Ralph Rapson from the '50s and '60s, and, of course, the massing model for the Weisman Museum by Frank Gehry. There are so many stories that go with these drawings. We have a real opportunity to broaden people's view of architecture through drawings. For me, this exhibition is a chance to test the waters, to see people's reaction.

An art museum can play an important role in educating the public—architectural drawings are art. They deserve to hang in a museum. By addressing architecture on a daily basis in our galleries, we have the opportunity to engage potential patrons and the public in a lively dialogue with the architectural profession—with all parties becoming better informed in the process.

**Interview by  
Janet Whitmore**



# Fabcon Gave The "Y" A Great Looking Build!

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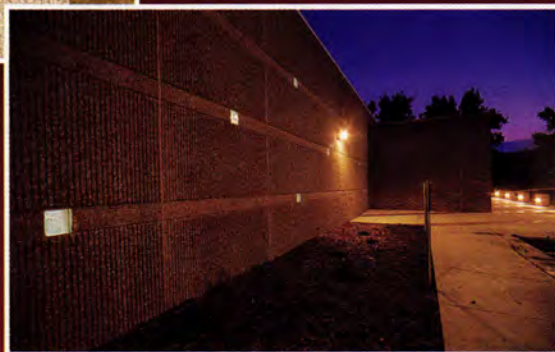
Al Povondra  
Design Architect



**N**ot only do Fabcon's precast panels offer a cost-effective method of construction and quick enclosure, they also present the opportunity for unlimited design possibilities. The YMCA in Omaha is a case in point. It features three-inch solid glass pinhole lights, embedded in the panels of the natatorium and gymnasium, unique decorative bands on the exterior that align with the lights and other architectural details. If you want practicality while also exercising your design freedom, call Fabcon for a great build.



Project: Butler-Gast YMCA, Omaha, NE  
Architect: Krhounek Povondra Architects  
Contractor: Kiewit Construction Co.



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# A public AGENDA

By Camille LeFevre

**Looking beyond the purely business or artistic sides of their profession, architects consider their civic responsibility toward enhancing the public good**

**W**hen architects register with the state, the registration law includes a mandate to serve the public good. "Registered architects have a responsibility to serve their clients, and to serve the public health, safety and welfare of their communities," explains Ed Kodet, president of AIA Minnesota. "Therefore, it's part of their legal responsibility. Architects, in my observation, have been very conscious about being educated in terms of fire codes, building codes, zoning laws and the needs of people with disabilities, particularly with regard to the Americans with Disabilities Act."

Intervening on a legislative level as a professional organization, however, is only one way architects can exert civic influence on behalf of the public good. "I would argue that continually emerging needs and opportunities on a community level are where architects can make the most critical contribution to the public good," says Rip Rapson, senior fellow at the Design Center for the American Urban Landscape at the University of Minnesota.

"We tend to overlook the notion that the design community can be a powerful voice in articulating a community vision," he continues. "Design sets the stage for public life. It affects how people move through the city. It helps identify and preserve structures and places that have enduring value. And it shapes the environment in which investment decisions are made, whether the investment is in a home, a storefront or a community garden."

The vision and problem-solving skills architects acquire through the daily practice of building projects are integral to the success of community endeavors, and thus it's critical that architects offer these services to their communities, adds Sally Grans, cochair of the AIA Minnesota Urban Design Committee, project manager with the State of Minnesota, Department of Administration, and an architect involved in community work since 1978. "I can't think of an example in which an architect's involvement in a community project isn't needed, whether it's a nature-trail group, a group that's building a structure, or a group that's trying to solve a special economic or social issue."

"I'm in love with the great thought process that good architects bring to their jobs," she adds, "and their ability to bring to the community table both vision and practicality, a thoughtful analysis of alternatives, priority setting, an under-

standing of how systems work, economies of scale, the effects of economics on people, and the understanding that there are phases of development necessary to reach the vision of where the civic community wants to be."

"Because architects have these abilities, they should be a part of the civic process. That's also why often they're not a part of it," Grans continues. "First, to volunteer in any community—where there's not the end goal of a structure to build, and when we as a profession are time-stressed as it is—is very difficult. Second, democracy is not a pretty sight. One person one vote is a messy thing. It's hard to hold a vision in a democracy. But consensus skills are what we as a profession can offer. We can talk about good design, value and how things are interwoven to create that vision."

Opportunities for civic leadership exist through such AIA professional groups as the Search for Shelter committee, Urban Design Committee and the Minnesota Design Team. "I've been on enough Minnesota Design Team trips to see what a difference they make to outstate communities," says architect Scott Wende. "Over a period of a few days, as the design team talks through the issues and alternatives in developing community, you can see the mayor, city planner and city council begin to understand that what they wanted to do they have the opportunity to do better. In those terms, public policy was affected."

AIA has also raised public consciousness of design issues through public outreach programs, adds Kodet. Architects like Grans have participated in such programs sponsored by the Committee on Urban Environment (CUE) as the Commercial Corridor Conference and the Infill Options to Boarded-Up Buildings symposia. Other volunteer opportunities for individual architects to serve the public good exist on the grass-roots neighborhood level, whether with community groups, church or school committees, arts and cultural organizations, athletic organizations or park-planning groups.

Commissions are increasing for paid professional involvement on the community level. Since monies through the Neighborhood Revitalization Program (NRP) became available in Minneapolis, such projects as Wende's Conceptual River Corridor Plan (a neighborhood-based plan for the upper corridor of the Mississippi River) have flourished. Such projects are working examples of what Rapson calls "the

*Continued on page 44*





**U.S. Department of Agriculture  
Northern Crop Research Center, Fargo, ND**

"We wanted...(the structure) to tie into other buildings at the University, so we used a color of brick found on the adjacent structure, plus two other colors predominant on campus. The patterning of the brick draws from the Scandinavian tradition of enlivening utilitarian structures with color and pattern, creating visual interest during the long northern winters."

– Loren Ahles, AIA, Project Designer

– Hammel, Green and Abrahamson, Inc., Minneapolis

Photography: Tom Hlavaty



**Burnsville Marketplace – Burnsville, MN**

"Brick was chosen as the primary facing material...for all the long established, practical advantages; durability, low maintenance and cost effectiveness. Equally important...were the major aesthetic benefits...Brick was consistent with the surrounding context. The inherent design flexibility of unit masonry coupled with the available ranges of color and texture ensured us that Burnsville Marketplace would indeed age with interest."

– John Gould, AIA, Director of Design

– KKE Architects, Inc., Minneapolis

Photography: Lea Babcock



**Bailey Elementary School  
– South Washington  
County Schools, ISD 833,  
Dan Hoke, Superintendent**

"Brick brought the appropriate scale to this building for a sense of strength and warmth. Its color provides a pleasing contrast to the brightly colored steel elements, and its long-term durability adds value."

– James Rydeen, FAIA, President

– Armstrong, Torseth, Shold and Rydeen, Inc., Minneapolis

Photography: Ralph Berlovitz

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## Value defined

When approximately 10,000 architects and related design professionals gathered in the Twin Cities this past May for the national AIA convention, Minnesota slipped on its best duds. After all, architects—professionally trained to discern good from bad design—were here scrutinizing the urban fabric.

The conference theme, *Value*, presented prime opportunities to assess the value of our urban environment. AIA president Raymond “Skipper” Post, in his opening remarks, posed the question, “What is the value of architecture and how do we measure it? When you visit a community, look first at the architecture, because it expresses the people of that area. It’s their signature.”

Twin Citians often brag about the region’s high quality of life, noting the lakes and parkways, well-maintained residential neighborhoods and thriving businesses as evidence of exemplary urban living.

Of course, value and quality are subjective criteria. Visitors adopt instantaneous impressions of places. Many out-of-state architects, taking advantage of the numerous tours offered during the convention, had plenty of opportunities to lend their opinions of the Twin Cities. An architect from Brooklyn wondered where all the people were, citing that the downtown-Minneapolis streets seemed quiet for a business day. Another architect, from central Florida, was impressed with the downtown bustle; the abundance of high-rise apartment buildings particularly impressed him. A California architect complained that the architecture lacked color, while a Birmingham architect praised the renovated warehouses along First Avenue. Everyone who visited Rice Park in St. Paul admired it, and more than a few complained that Minneapolis lacked a central plaza or enough public seating—the Crystal Court, a revered piece of urban architecture, easily could benefit from benches and chairs. The skyways drew the expected attention, with many conference attendees voicing the familiar refrain that the skyways pulled activity off the streets.

Conference keynote speakers looked at the broader issues of value. Milwaukee Mayor John Norquist examined the state of American urban design during the past 30-some years, and—surprise—found it dismally misguided. Norquist is credited with steering Milwaukee toward a more urbane design course by changing zoning codes, encouraging developers to emphasize the streetscape and laying the groundwork for inviting urban spaces. Taking value to the corporate world was Ronald Mitsch, vice chairman of 3M. Architectural value, he said, is found in a functional building. He emphasized that good architecture is not necessarily defined by dazzling, high-design trophy buildings. Good architecture meets clients’ needs, expresses the corporate culture, and encourages employee productivity and creativity.

**Eric Kudalis**

Finding and defining architectural value is an individual endeavor. Yet we are all architectural clients. It’s our job as clients to demand the best from the architectural profession.





## Beyond the Box

By Bruce N. Wright

**T**he great industrial architect, Albert Kahn, had a knack for summarizing in simple, elegant forms the mystique, power and dynamism of the automobile industry—the quintessential American manufacturer of the first half of this century. He was most known for his large factory designs, notably his 1937 Dodge Division Half-Ton Truck Plant in Warren, Mich., which presaged many later industrial-manufacturing designs in Europe and the United States. “Kahn’s factory designs broke new ground for their innovative use of reinforced concrete, as well as their recognition of the crucial

importance of open-floor factory spaces for a dynamically expanding industry,” says John M. Staudenmaier, technology historian. Staudenmaier notes that one of Kahn’s more significant contributions to architectural design was the insight that factory architects need to integrate their designs with the production engineer’s plans in order for the building to adapt to changing production requirements.

What Kahn did for the automobile business, SKD Architects may well do for the pharmaceutical industry. SKD’s recently designed corporate headquarters and pharmaceutical-manufacturing facility for Paddock Laboratories in New Hope, Minn., has all the earmarks of a classic form type. This 80,000-square-foot facility is organized around

a logical and efficient production flow—from incoming raw materials to outgoing packaged products—and with enough space for 10 years of company growth. SKD’s innovative use of precast-concrete panels brings the low-cost construction method to a new aesthetic high. And the building’s overall massing and exterior articulation speak well of the corporation and architect’s sensitivity to the lab’s surrounding residential context. All of this for \$55 per square foot.

This state-of-the-art manufacturing facility is divided equally into three parts: headquarters and office support areas, laboratories and production, and warehousing. Each area is expressed differently on the outside but with a consistent use of fenestration

**A pharmaceutical company’s new headquarters and manufacturing facility offer state-of-the-art technology within the tradition of classic industrial-plant design**





and details. The entire building is wrapped with buff-colored precast panels that are occasionally interrupted by sections of reflective curtain-wall glass. What's more, the classically proportioned base-middle-cornice banding on the precast helps tie the building's disparate parts together. The effect is of a subtly sophisticated industrial complex with a worldly pedigree; its bold projecting cornices with oversize brackets and rhythmic façade seem to come from outside the Midwest, perhaps California. Indeed, the aesthetic suggests high tech à la Silicon Valley.

Actually, an enlightened client may have contributed as much to the success of the project as the architect. "The owner absolutely did not want a glass-box office tacked onto a warehouse box," says Steve Kleineman, principal in charge. "The company literally began in the basement of a converted laundry building, so the president



SAVARI & FORRAI PHOTOGRAPHY

asked for an aesthetically interesting building that would not only be functional and in tune with the regulatory rigor of the FDA, but also project an image of integrity and quality with a progressive, high-tech look expected from a pharmaceutical-manufacturing company. Quickly thrown together metal boxes would not do."

Shaping the typical suburban spec office building is the cliché that SKD Architects avoids. They do it in sculpted

*Paddock's new headquarters and manufacturing facility breaks from the typical suburban box with a varied façade of stone, precast, glass and metal.*



precast, three-dimensional building forms and carefully orchestrated light patterns that break up the mass of the facade—from every vantage point. SKD's palette is stone (in a triad of varying aggregate surfaces and colors in the precast panels), glass (in the tartan-patterned, curtain-wall sections), and metal (in the crisp, taught slabs of aluminum-faced composite panels used for the projecting cornices and brackets). "Our intent was to recall the urbanism and dignity of the many fine, old warehouses in downtown Minneapolis," says Joseph Mayhew, project designer, "through the use of prominent cornices and the play of shade and shadow. The cornices help give the building a top edge, something the prototypical suburban box lacks. These devices also help express the functions of the different building parts in the way they are handled."

In addition to the precast color and cornice metal, a continuous narrow band of gray aggregate at mid-height ties the building together like a ribbon. The same narrow band is picked up in the curtain wall's horizontal rails, suggesting a division of first and second floors. The architect's deft handling of aggregate is nothing short of dazzling. In truth, the panels are three in one. The aggregate lowest to the ground is dark and highly polished to look like granite. Above that is a wide swath of buff-colored rough aggregate, followed by the gray ribbon band, then another swath of rough, buff aggregate. At the base of each ground-floor window is a short panel of vertical fluting in the same dark "granite" color. The visual effect of this elaborate ensemble makes sense as you approach the building and discover that the granite, fluting and ornamental banding work beautifully together. The same flat, continuous surface

treatment is carried into the inside where the architects have created a parquet floor using three colors of terrazzo.

The building plan is organized on an east-west axis overlaid with a roughly north-south axis, with each of the three functional areas grouped around these two lines. The two axes converge in one corner where the main entrance is located. In one di-

rection are the employee lounge, cafeteria and entrance from parking; in the other direction are administration offices and the president's office, which terminates the axis with a tall glass cylinder capped with a bracketed clerestory light monitor. The intent, according to the architects, is to create an interior streetscape that provides recognizable landmarks as orientation guides. It works.



In Kleineman's estimation, the key to making the plan work was spending a great deal of up-front time analyzing and understanding the people and product flow in the manufacturing operation. "We spent a lot of time studying the movement of raw materials to the final products with people interaction to minimize any cross-contamination or mishandling of products in the manufacturing process," says Kleineman. The effort paid off in substantial savings for the client in construction costs and future building use. Another reason for the project's relative low cost was the fact that the architect produced a full set of detailed construction documents that aided contractors in accurate pricing bids. Kleineman noted that they worked closely with the client, contractors and sub-contractors throughout the entire process, insisting on approval of such picayune details as placement of expansion joints in the exterior precast panels and exact location of floor drains in laboratory spaces.

Tight budgets and tight timetables meant that SKD Architects necessarily decided to bring in a design/build contractor (Opus) early in the process. Subcontractors were screened carefully to ensure compatibility and control. Final details were not drawn until all parties were in agreement with the intended goal: an aesthetically pleasing workplace that worked efficiently. "We were lucky," says Kleineman. "The client empowered us to do what needed to be done."

**Paddock Laboratories**  
**SKD Architects**  
**New Hope, Minn.**



The interior (opposite) is organized along two axes. The building includes warehouse space (top) and laboratories (above).







# Flight bound

A new training center finds  
a medium between  
site and flight



KOYAMA PHOTOGRAPHY

**L**ocated at the Winona airport, the aviation-training center for Winona Technical College draws its aesthetic inspiration from both flight technology and the southern Minnesota landscape along the Mississippi River Valley. The building is clean, efficient and functional, providing a laudable setting for its mission: to train pilots.

Architectural Alliance of Minneapolis organized the 72,000-square-foot building into two distinct components, with two levels of classrooms and labs sectioned to one side and the hangar and shops to the other. A central circulation spine, beginning at the front entrance and terminating with a cafeteria in the back, demarcates the two halves. Administrative offices, a reception area, work room and conference room lie immediately off the spine.

Though located at an airport, the site is scenic with views of the river bluffs and lake. Architectural Alliance used the river's rocky limestone bluffs to full advantage by anchoring the training facility

to the site with a limestone-colored blockwork base, and the architects detailed the base with alternating bands of rough and smooth textures. The block base continues into the interior through the central circulation spine. White and

silver metal panels, reflective of an airplane's metal skin, enclose the building's upper portions.

Despite the building's primary use of masonry and metal, the facility is quite translucent. Skylights open up the circulation corridor all the way to the cafeteria, a semidetached, circular room enclosed with floor-to-ceiling windows. Diners enjoy views of planes arriving and departing, as well as views of the river. The hangar, too, is brightened with clerestory windows and white tones that enhance the light. *Eric Kudalis*

**Winona Technical College Aviation  
Training Center  
Architectural Alliance  
Winona, Minn.**







The aviation training center (above) is ideally sited by a lake and the Mississippi River bluffs. A central circulation spine (opposite top) divides the facility between offices and classrooms, and the hangar and shop. Cafeteria windows (opposite below) allow diners to enjoy the landscape, while clerestory windows (left) brighten the hangar.





*The brick-and-metal façade (above) blends comfortably with the surrounding campus buildings, belying the maintenance facility's utilitarian function of handling radioactive waste. A centralized lab-safety office (opposite) within the staging area monitors loading, handling and processing. Mechanical equipment (opposite top) is up a level.*

WILLIAM ARMSTRONG



# P r e v e n t a t i v e

*With a steady increase in hazardous waste, the University of Minnesota consolidates its 14 waste sites into a single facility designed with safety in mind*

# a r c h i t e c t u r e

**T**he \$6 million Integrated Waste Management Center at the University of Minnesota is designed to handle the most dangerous substances known to man—chemical and radioactive waste.

TKDA, approaching the design task with an eye to safety, designed a facility that meets safety-code requirements, is highly functional and respects the campus's brick buildings surrounding it. The center provides for in-house analysis, waste treatment, increased waste reduction and recycling, long-term storage and campus-wide, spill-response capabilities.

The 47,000-square-foot, wedge-shaped building is built to withstand possible accidents or explosions. Consider the structural frame, which includes poured-in-place concrete joists, beams, columns and spread footings. Exterior materials are concrete, masonry and brick, with prefinished metal relief panels that release at pressure points to prevent damage in case of an explosion.

Layout considers function and safety. Storage areas break into two blocks, separated by the shipping and receiving dock; one for low-level radioactive and other long-term wastes, and one for flammables, acid oxidizers and reactive wastes. Waste flows from the shipping and receiving dock through staging to handling and processing areas, and finally to storage. A centralized lab-safety area monitors all the loading, handling and processing.

All waste handling occurs on a recessed, concrete-slab floor with a waste-resistant membrane surface coated twice. When the first coat, usually a bright color, becomes visible through the darker second coat, it's time to recoat the floor.

Handling radioactive waste is no sure bet. Although the waste center was designed to prevent emergencies, potential accidents always exist. Should one occur, the building will contain any leak or spill, and ease the time and energy needed for clean-up, thus ensuring environmental and human safety. *E.K.*

**Integrated Waste  
Management Facility  
TKDA  
University of Minnesota  
Minneapolis**



STEVEN BERGERSON



STEVEN BERGERSON



## expansion



PHILIP PROWSE

Three distinct façades distinguish different components of the Graco facility, which is an addition to an existing building. Metal sun screens (above) shield the office component. A peaked circulation spine (opposite and this page) organizes the building into different zones.

With an 80,000-square-foot addition, Graco Technical Center has more than doubled its research and development facility in northeast Minneapolis. The expanded facility for this international designer and manufacturer of pumps offers a three-volume building under one roof that includes the original 58,000-square-foot building, a new lab and a new office core.

Setter, Leach & Lindstrom applied a clean, industrial aesthetic using precast-concrete panels, and metal awnings and roofs. Despite incorporating similar materials, each building component is distinguished by a different treatment. The office is sheathed in

white square panels, the lab in gray vertical panels, and the original in glazed white brick.

A peaked, metal-roof entrance corridor binds the three components, while clerestory windows allow the interior to fill with light. As with the exterior, the architects chose concrete, metal and an original brick wall to reinforce the facility's industrial character. The 2-story main corridor, in addition to circulation, is used for displays that highlight the firm's products throughout its 70-year history.



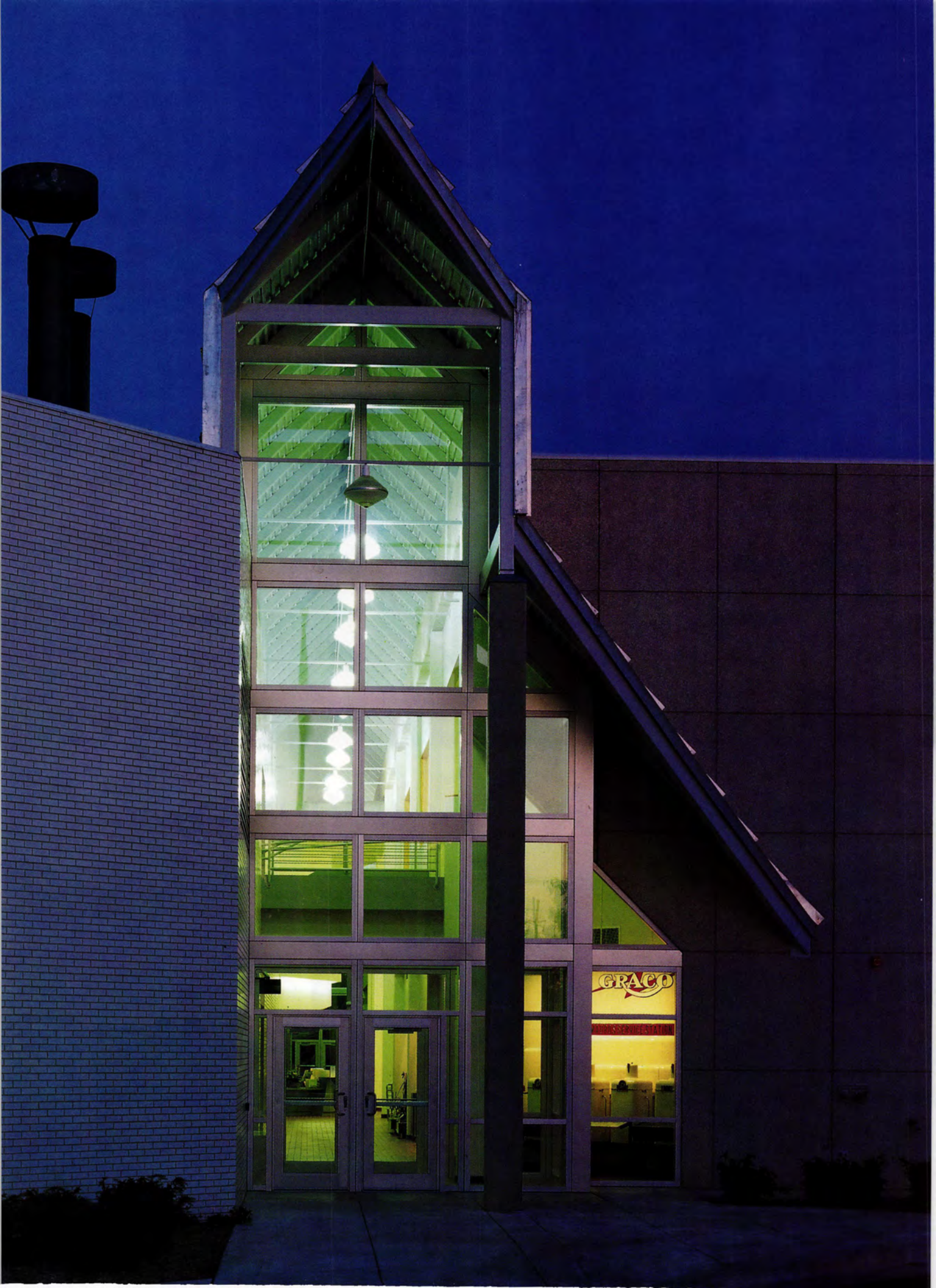
The 2-story office addition provides 140 open work stations, in addition to private offices and conference areas. The company's true industrial nature is found in the single-story laboratory addition. Here new pumps are fabricated and tested under conditions that duplicate various environmental situations throughout the world. An enlarged and remodeled model shop is surrounded by lab-technician rooms for assembly and evaluation, as well as by test cells to operate the products under different conditions. *E.K.*

**Graco Technical Center**  
Setter, Leach & Lindstrom  
Minneapolis



A HIGH-TECH ADDITION GIVES AN INTERNATIONAL MANUFACTURER AN EDGE ON GROWTH









# Democratic *Production*

A production facility  
is built on the  
principle that all  
employees are equal  
and all work is  
a team effort



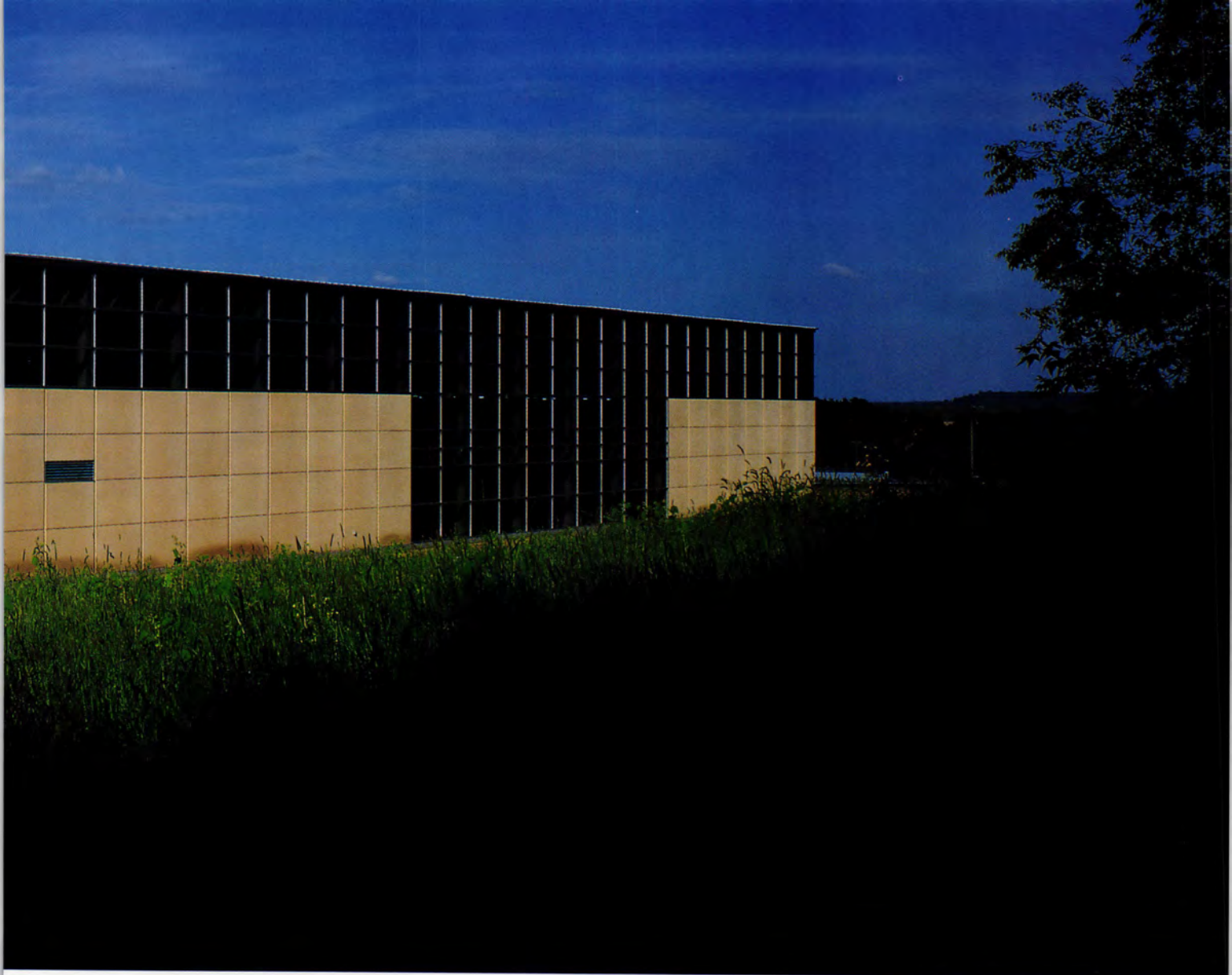
**W**ith the QMR Plastics Division in rural Wisconsin outside River Falls, architect Julie Snow continues her exploration of transparency and solidity, function and aesthetic, in a truly democratic architectural form. One might not necessarily expect democracy in a

manufacturing plant, but at QMR, a division of Quadion Corporation, management and production workers, nature and architecture, exist in harmony.

Snow's expertise in designing manufacturing facilities has been duly rewarded. Her work for Phillips Plastics garnered her two AIA Minnesota Honor Awards: the first for the company's Short Run plant in 1990 and the second this past year for Phillips's multifunctional Origen Center.

As with Snow's other two facilities, QMR is beautifully sited. The 34,000-square-foot, single-volume building is set back from the main road, secure





*QMR is located in rural Wisconsin on restored prairie land. Windows open the production areas (above) to the outdoors. Dormers (opposite and below) bring more light into the work areas.*

within a landscape of replanted native grasses and natural vegetation that are reclaiming once-cultivated farmland. The loading docks come into view as you approach on an entrance road, signifying that at QMR the loading zone is as important as any other portion of the building.

With a modernist sensibility, Snow chose materials that express their function efficiently and with minimal fuss. Colored, slablike precast panels anchor the building to its site while providing necessary insulation against Wisconsin's northern winter winds. A metal roof with five dormers slopes upward,



*DON F. WONG*









allowing rain to wash off and snow to lay a blanket of added insulation. While the north side is protected by the concrete panels and the metal roof, the building's south side is much more open, with clerestory windows spanning the building's length, and floor-to-roof windows opening the cafeteria and manufacturing plant to the outdoors.

QMR's remarkable attribute is its openness, which effectively dispels any dark, glum image we may have come to expect from manufacturing plants. A full-height curtain wall divides the production facility from the management portion. Management and production workers remain in view of each other, lending a sense of team effort to all work.

Other design details further reinforce the sense of teamwork, which in turn boosts morale and thus productivity. In a typical plant, for instance, the employee cafeteria always seems to be pushed into some grim corner with few—if any—windows. Here the cafe-

teria is in a corner next to the main entrance and framed with floor-to-ceiling windows that allow employees to enjoy views of the restored prairie and a grove of trees while eating lunch. In the production plant itself, heavy machinery stands in front of a large window. Heavy production tasks are surely lightened by the exterior views, sunshine-filled spaces and high ceilings.

Snow has said that she looks to early modernist factory designs for inspiration, particularly Peter Behrens's Turbine factory and Walter Gropius's Fagus-Werk factory. The architects of those factories rooted the visual lightness of steel and glass in brick or masonry bases to create humane environments that are permanent yet airy. These same qualities make QMR a model of late-20th-century design, as well as an exemplary working environment. *E.K.*

**QMR Plastics Division**  
**James/Snow Architects**  
**River Falls, Wis.**



*A glass wall (top) divides the management side from the production side, creating an openness between the two halves. The cafeteria (above) enjoys open views, as does the manufacturing area (opposite).*

DON F. WONG



The fathers of domestic industrial design brought style and aesthetic acumen to the home front, revolutionizing the way we live

# Designed for the home

By Bruce N. Wright



Extensive advertising helped market new home products for General Electric, Westinghouse and Hotpoint.

The beginning of American industrial design as a profession dates to around 1927. In the 1920s, the growth of mass production stimulated a consumer boom for new products. Constantly searching for more cost-efficient methods of production and ways to increase sales, manufacturers found that product appearance and aesthetics influenced sales. As a result of the growth of advertising, the image of a product was often more widely distributed than the object itself.

Influenced by the worldwide popularity of the 1925 Paris world exposition—"Exposition Internationale des Arts Décoratifs et Industriels Modernes"—that introduced the art-deco style, American manufacturers asked advertising agencies to help them in redesigning their products. Advertising agencies, in turn, called upon their illustrators, artists, typographers, package designers, window-display specialists and theatrical designers to help with the design of these first products' facelifts. These early industrial designers were artists primarily concerned with surface decoration and showmanship, as they adapted the techniques of presentation learned from advertising to their product designs.

As the influential engineering journal *Machine Design* stated in the late '20s, "Designers of automobiles, electric refrigerators, washing machines, home laundry appli-

ances, etc., now are very much alive to the importance of style. Today...problems of utility have been reduced to a routine and therefore the designer's greatest opportunity to create distinctiveness lies, in most cases, in his treatment of the aesthetic of his product."

A number of early industrial designers significantly helped shape the design of American domestic appliances after 1927, including Norman Bel Geddes, Walter Dorwin Teague, Henry Dreyfuss, Raymond Loewy and Harold Van Doren.

## Norman Bel Geddes (1893–1958)

The first American industrial-design office was established by Norman Bel Geddes in

1927 to apply his design talents and unique perspective to a number of everyday products. Bel Geddes—a successful poster artist and theatrical designer—experimented with designs for automobiles, ships, airplanes, railways and factories, and, in so doing, helped establish the image of the industrial designer as able to design anything and everything. He is most closely tied with the concept of streamlining, the pseudo-scientific practice of applying aerodynamic forms to objects and machines, sometimes on the basis of scientific calculation, but often for its symbolism of modernity and advanced technology. Streamlining reached its greatest flourish in the late





Bel Geddes had tremendous influence on other designers, yet few of his designs were produced. However, his 1932 prototype of a modern kitchen range for the Standard Gas Equipment Corporation (SGE) of New York City led the appliance industry toward newer approaches to kitchen-equipment design. In this landmark experiment, according to the design historian Donald Bush, "He sought utmost simplicity, eliminating projections and dirt-catching corners and minimizing cracks and joints. Oven doors acted as shelves when open and closed flush with the front surface. Surface burners were covered with a hinged panel when not in use so that there was no evidence that the enameled cabinet was a stove. Legs were eliminated (along with the need for cleaning underneath), and the resultant space was utilized for pot storage."

Walter Dorwin Teague began his career as an advertising designer and typographer but during the mid-1920s forsook this lucrative work to travel Europe in a quest to find greater meaning in his life. During his travels he met several influential Americans, including an executive of the Eastman Kodak Company. The meeting proved providential to establishing him as an industrial designer. His first industrial-design con-

Teague became the most successful industrial designer of his generation because of his total commitment to business procedures and his clients' needs. His designs appealed to manufacturers and consumers, in part, because of his innovative use of materials and unerring sense of

inal stove. Teague's design for refrigerators in the late 1930s also was innovative. His 1935 "Shelvador" refrigerator for Crosley was the first to have shelves in the doors for storing food items.

Henry Dreyfuss began his career as a theatrical set designer working for Norman Bel



EVERYBODY at our place is pitching in and getting all the War Bonds he possibly can! Dave and Sis invest over ten percent of their pay—and I squeeze every penny I can out of the household budget for my bond bank! We all want to help end this war in a hurry and get back to normal living again. Then we can have that Hotpoint Electric Kitchen we've been counting on. And of course the more money we lay aside now the more labor-saving appliances we'll be able to afford when peace comes.

LOOK What They're Going to BUY US!



**FOR HOMES COSTING \$6,000**  
The Parrot Kitchen is designed for homes costing as little as \$6,000 and is completely electric, with Hotpoint Range, Refrigerator, Dishwasher, Sink and Hotpoint Steel Cabinets.

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● The money you put in War Bonds today not only helps hasten Victory but also gives you the *means* to enjoy the great advancements in living that will surely follow. You know, our scientists are learning a lot of amazing things making war materials. They're finding short cuts—and cheaper ways of doing things *better*. So imagine how much finer-

and less expensive—our homes of the future are bound to be! Hotpoint Electric Refrigerators—Ranges and Dishwashers and other home equipment will be improved unbelievably . . . So buy War Bonds to hasten peace! Buy War Bonds with this future in mind! Remember that every three dollars you invest now will bring you four dollars at maturity.

**BUY WAR BONDS TODAY—An Electric Kitchen Tomorrow!**



• At the touch of a switch, garbage disappears—dishes are washed hygienically clean. The Horpoint Automatic Electric Dishwasher and Disposall do your disagreeable work like magic!



- Ample storage facilities provided by the Hotpoint Electric Refrigerator will enable you to save money by buying food in large quantities.



• Meals taste marvelous—are better for you, too—when you cook on a Hotpoint Electric Range. For healthful vitamins, minerals as well as the savory, natural juices do not waste away!

**ELECTRIC** **Hotpoint** **KITCHENS**



FOR HOMES COSTING AS LITTLE AS  
**\$4,000**

Hotpoint Electric Kitchens including Range, Refrigerator, Sink and Steel Cabinets have been installed in numerous homes costing only \$4,000.

The cost of a Hotpoint Electric Kitchen averages about 10% of home-building costs.

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**Cooks while you're away**  
Completely automatic cooking! Just set the automatic timer. It starts, it watches, it turns off the cooking while you're away. Controls oven, cooker or outlet.

**Giant 17-in. oven**  
Holds a 20-pound turkey, a whole oven meal or four 10-in. pies. Pre-heats fast. Bakes to an even, golden brown. Broils with charcoal-type action. Heavily insulated. Current runs only 1/3 of baking time.

**Speed heat unit**  
At last! A right heat speed and right size unit for every cooking job. There's a giant and two regular burners, a deep well cooker. Each has seven precision speeds, from simmer to high. Signal light, too.

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They take the last bit of guesswork out of cooking. Chime timer tells you when cooking's done. Or automatic timer cooks when you're away. Note big fluorescent lamp.

**Big warming drawer**  
Upper left drawer warms plates or keeps foods ready to serve. Two lower storage drawers keep all your pots and pans handy. All float on roller bearings.

**YOU'VE DISCOVERED SOMETHING, MRS. COLUMBUS**

Here's EVERYTHING you want in an electric range for a lot less money

Speedy! Two big oven units rush the oven to 400° in 7 minutes. Flexible! Each top unit has 7 precision speeds instead of the usual 5. Big! The biggest stove and biggest oven in its price range. Completely automatic! Check all the features on this page at your Kalamazoo dealer's. Then compare prices with other electric ranges. KALAMAZOO STOVE & FURNACE CO., 564 ROCHESTER AVE., KALAMAZOO 6, MICHIGAN

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HOME APPLIANCES BY  
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QUALITY LEADERS SINCE 1901

5-BURNER RANGE, 4-BURNER RANGE, 3-BURNER RANGE, REFRIGERATOR, FURNACE

Advertising campaigns and brochures depicted a life made ideal and easy with new appliances. Sears' Cold Spot refrigerator (opposite top) was designed by Raymond Loewy.

Geddes. Like Bel Geddes, Dreyfuss branched into product design, opening his office in 1929 to handle work for Bell Telephone, his first client. Unlike Bel Geddes, Dreyfuss had a strong conviction for researching and studying a client's problem before suggesting design solutions. His extensive documentation and analysis of how people used telephones

led to his innovative designs for telephone hand sets that remain classics of 20th-century design. Dreyfuss's entry into consumer-appliance design began with his designs for the Sears "Toperator" clothes washer of 1932-'33, and his first kitchen-appliance design was the GE "Flat Top" refrigerator of 1934, which he helped promote on a nationally broadcast radio program.

Dreyfuss eliminated the famous "monitor top" by moving the condenser coils to the base of the refrigerator, extending the sides down to the floor, and designing clean, simple hinges and a door latch. The resultant machine was a large, squared-off, white porcelain box, "styled for the years," as GE advertised.

Dreyfuss was adept at blending the functional with psychological and aesthetic considerations. The GE refrigerator remained unchanged until 1939, despite industry trends to follow the automobile companies' approach to marketing the yearly model change. It would be up to Dreyfuss's competitor, Raymond Loewy, to introduce artificial obsolescence to the appliance industry.

#### Raymond Loewy (1893-1986)

Perhaps the most celebrated American industrial designer is French-born Raymond Loewy, not the least because he was the most adept at self promotion. His redesign of the Sears Cold Spot refrigerator (introduced in 1935) has been trumpeted as the most significant change in major appliance design in

the 20th century because of its influence on all other appliance manufacturers. Technically, it was not much different than what was currently on the market. Aesthetically, however, it took the bold step of fully applying principles of streamlining to the refrigerator, a machine that was in the kitchens of more than half of all American households by the mid-1930s.

Loewy, like Bel Geddes, Teague and Dreyfuss, began

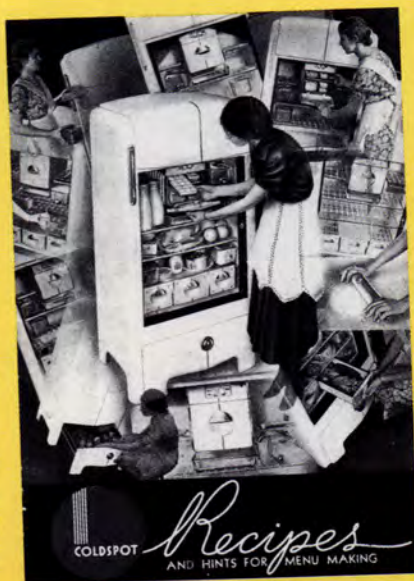


in commercial art and advertising. He came to the United States from Paris in 1919 to seek his fame and fortune in fashion illustration and advertising, but got in on the ground floor of industrial design when he was asked by Gestetner in 1929 to redesign their duplicator machine.

Loewy produced many more stylistic versions of the Cold Spot to help Sears increase its market share of the refrigerator business in America, quickly producing "innovations" in door handles, exterior trim and some internal storage arrangements, all of which turned out to counteract Loewy's and Sears's claims of radically new designs that "eliminated unnecessary detail" when in fact they provided only superficial modifications. Nevertheless, Loewy's designs did receive tremendous publicity, helped pull Sears up from 10th position to fourth in sales of refrigerators, and influenced other manufacturers to follow suit with annual product changes—as major an influence on the market as one could expect. For this reason, Loewy's Cold Spot design is held up as an icon of midcentury industrial design.

### Harold Van Doren (1895–1957)

Harold Van Doren began his practice as an industrial designer in 1930 when he moved to Toledo, Ohio to become consultant designer to the Toledo Scale Company, a relationship that he maintained throughout much of his professional life. His background was probably the most unusual of all the early industrial designers.



Van Doren was an art historian in Paris from 1920 to 1925, where he translated important art texts into English. He left Paris to move to New York and then came to Minneapolis where he served as assistant director of the Minneapolis Institute of Arts from 1927 until his move to Toledo in 1930. He opened his own office in Toledo in 1933 with partner John Gordon Rideout to begin designing for other clients, such as Swartzbaugh Manufacturing Company (a kitchen grill), and the DeVilbiss company (a paint gun).

His big breakthrough as a major designer came in 1935 when he was sent by the Toledo Scale Company to the Mellon Institute of Industrial Research to study new uses for a product called Plaskon (a urea thermosetting resin plastic invented in 1928), which led to his award-winning design of the Toledo Scale Company's counter scale in late 1935. The new scale's cover was built out of eight Plaskon elements that could be used right out of the molds without surface refinishing labor, a great savings in manufacturing costs. Van

Doren's design received first place in the commercial division of the *Modern Plastics* magazine competition of 1936. The design was a paragon of the streamlined style that was in vogue in the mid-1930s, a style that Van Doren helped to make popular with this and many subsequent product designs.

But Van Doren didn't begin his affiliation with a major-appliance manufacturer until his work with the Philco Refrigeration Division in 1940. When he did, his thoroughgoing research of consumers' desires brought many innovations to the refrigeration-appliance field, including the use of such new materials as aluminum wire racks for shelving and new plastics for interior compartments. He also added a general stream-

lined sleekness to all elements of the appliance, from hardware to decorative finish.

Another significant designer from this period was Lurelle Guild. Design consultant to the Norge company, he developed the idea of making refrigerator cabinets in metal sections that were clipped to a metal skeletal inner frame, a major manufacturing innovation and a huge labor- and cost-saving feature.

### A new generation of designers

In 1933, the city of Chicago hosted the Century of Progress International Exposition, an enterprise instigated by several midwestern business and industrial leaders to celebrate the centennial of the nation's second-largest

*Continued on page 48*







Designs for work include the alternative office concept "free address" (above) by The Wheeler Group for the office expansion of Duffy, Inc., at Fallon McElligott in Minneapolis; the Jazz storage system (opposite top) by Jeff Scherer of Meyer, Scherer & Rockcastle for Conwed designscape; and the Nelson Sling Sofa (right) for Herman Miller.



COURTESY HERMAN MILLER, INC.





DANA WHEELER



COURTESY CONWED DESIGNSCAPE

*The innovations of 20th-century industrial design revamped the office, from the corporate tower to the home*

B Y D A V I D A N G E R

# DESIGNED FOR WORK

As I'm speeding eastward on I-94 through Maplewood, by the Ellerbe-designed 3M Company tower of 1955 and its pastoral 417-acre corporate campus, an indelible image springs to mind. The year is 1968. Mother is driving my father to work in our four-door Chevrolet Impala sedan. I am day-dreaming in the back. The radio is tuned to WCCO-AM. Dad is wearing the company uniform—a dark, two-piece business suit complemented by a white shirt and thin tie. When we reach the office, my parents lean across the wide front seat, kiss each other good-bye and say, "I love you."

This image is familiar to thousands of Minnesotans my age. Besides the 3M Company, several other Minnesota-based enterprises created vast corporate acadias. In 1957, General Mills baptized its Skidmore, Owings and Merrill building in suburban Minnetonka. That same year, IBM opened its International-

style creation by the great Eero Saarinen outside of Rochester.

Despite the postwar trend toward edge-city complexes, many other companies opted to build citadels of commerce downtown. IDS recruited Philip Johnson and Edward Baker in 1968 to craft a marvelous 51-story glass monument. In the early 1980s, Norwest retained Cesar Pelli to design a stunning headquarters in the tradition of America's early skyscrapers.

Most of the corporate edifices were built by burgeoning service industries that have, perhaps ironically, endowed today's professionals with the requisite technology to run home offices. The convergence of these new innovations—including voice mail, cell phones, fax machines to personal computers, the Internet and E-mail—are shattering the living and working patterns that have dominated much of the 20th century. The old nine-to-five routine, which tied employees to a single location, is being challenged and replaced by the more flexible home office.





COURTESY HERMAN MILLER, INC.

In our increasingly decentralized and non-hierarchical world, my work environment is nothing like my father's. Unlike with Dad, my daily commute typically involves getting out of bed and turning on the Macintosh computer in the next room. There is no corporate uniform, sometimes in a crunch only pajamas, more often just weathered khakis and an unpressed shirt. Shoes are optional.

Yet, surveying the corporations that dominate the landscape of the Twin Cities it is easy to assume that offices began in commercial buildings. But, in fact, the earliest offices were home offices. In pioneering agrarian communities, farmers conducted business over the farmhouse kitchen table. The first banks were housed on the ground floors of private residences. Colonial traders and shipping magnates also converted part of their homes for financial pursuits until expansion forced them to seek alternative accommodations.

The Industrial Revolution stimulated the development of the mod-

ern commercial office. As the economies of Europe and the United States were transformed from sleepy agricultural orders to industrial giants, as factories were built and cities bloomed, so the paperwork

mounted and the clerical field was born. In the U.S., the number of clerks boomed 10 times between 1880 and 1920.

A series of key inventions helped rush the pace of office work. In 1844, the first Morse telegraph speeded up communications. Next came the introduction of the first practical typewriter by E. Remington & Sons and the invention of the telephone by Alexander Graham Bell in 1876. Three years later, Thomas Edison successfully developed the first light bulb.

Architects joined designers and inventors in crafting a new work world. In 1884, William Le Baron Jenney designed the world's first skyscraper—the Home Insurance Building in Chicago. By 1919, the year that the National Association of Office Managers was formed under the leadership of Frederick Taylor, America positioned itself as the leader in office practice. Offices soon became vast, complex places operated by large numbers of staff.

Many innovations intended for the commercial office quickly walked into the domestic arena, paving the way



DON F. WONG



for the resurrection of the home office. And just as the late-19th-century inventions of Bell, Remington and Edison encouraged people to organize work away from home, industrial designers today are empowering people with the tools to work at home. Professional of all kinds work out of the home, from architects to graphic designers, financial consultants to engineers.

For any home office, the desk remains an essential ingredient. Even though the 20th century has ushered forth breathtaking scientific advances, a work surface is still a work surface. Even so, Knoll International and Herman Miller revolutionized the modern-office look during the mid-20th century.

Herman Miller swept away its dowdy image in 1944 when George Nelson, a Yale-educated architect, became the company's design director. Nelson hired the acclaimed Charles Eames, whose Erector Set Office for Herman Miller dared to use such unusual materials as plywood, fiberglass and perforated aluminum. In 1942, Knoll International opened its inaugural Fifth Avenue showroom. Under the leadership of Florence Knoll, the company deployed a multinational stable of talent, including Harry Bertoia, Isamu Noguchi, Eero Saarinen and Minnesota's own Ralph Rapson.

In the 1960s, plastics came into their own. Remember the famous line from *The Graduate*, in which an older gentleman whispers to a bewildered Dustin Hoffman, "plastics." Without a doubt, plastics brought a lightweight, space-saving potential to the home office. Furniture could be stacked or folded away. The Italian company Kartell, founded in 1949, forged the development of high-quality plastic products.

Joe Colombo's storage trolley of 1970, Simon Fussell's drawer system of 1974 and Anna Castelli Ferrieri's stacking armchair of 1986 possess enduring allure for the design-conscious home worker, as do Florence Knoll's elegant executive desks from the 1950s. Still, recent trends in home-office furniture explore design conventions of the past. These days Shaker and Prairie School appointments abound.

Sitting atop every desk is a telephone. Alexander Graham Bell, a speech therapist and self-trained physicist, was only 29 in 1876 when he whispered the first memorable words across a phone line, "Come here, Mr. Watson. I want to see you." The patent he took out that year on his invention has been perhaps the

most profitable and profoundly important of all time.

Throughout this century the telephone has taken many shapes. Among the turn-of-the-century designs were the Candlestick and the Skeleton telephones, which were produced by the Swedish company, L.M. Ericsson. These models flourished until a radical change in telephone design was initiated, first with the Neophone of 1929, which combined all of the mechanisms within one unit.

Then, in 1931, Jean Heiberg—an artist lacking any engineering training—used Bakelit to achieve a simpler, more streamlined form. Heiberg's 1931 tele-

allows for business transactions to be performed on the street, in the car and at the neighborhood coffee house. Then, too, the telephone's integration and interaction with answering machines, fax machines and personal computers has opened a new frontier for the home-office worker.

In addition to the telephone, new technology in the form of personal computers, photocopiers and fax machines has enabled people to easily replicate the commercial office at home. Two great industrial companies of the modern age, IBM and Olivetti, share much of the credit for

*Continued on page 50*



COURTESY HERMAN MILLER, INC.

phone is a classic of modern industrial design. Six years later the renowned industrial designer Henry Dreyfuss transformed the American telephone for the Bell Company by way of the Bell 300 telephone. These two designs remained unchallenged for two decades until Ericsson christened the first one-piece telephone, incorporating the handset and push-button dial in 1956.

Through the development of the mobile cell phone, the telephone has ceased to be merely a standard utility and now functions as a status symbol. The cell phone is further expanding the notion of the office—even beyond the home—as it

*Other notable examples of office designs include this setting (above) for Herman Miller; the author's home office (opposite bottom) in south Minneapolis; and Ethospace Interiors (opposite top) by William Stumpf + Associates for Herman Miller.*







**M**otorcycle riding for me has never meant the roar of a Harley or the speed bursts of a crotch rocket, but rather a quiet touring bike ambling along a country road. I ride for the landscape's wide-open spaces, the country lanes, farms and rural villages. My need is to be projected into an environment complete with expanded temperature gradients and the rush of wind in my helmet.

My affinity for motorcycling was born of a family crisis. My oldest daughter, Kira, had taken deathly ill and my wife needed the family car for hospital runs. Buses and bicycles could not easily get me from Linden Hills in Minneapolis to my new job in St. Paul's Frogtown. I needed better transportation, short of the expense of another car. A motorcycle seemed a logical choice—perhaps a risky choice, yet the irrationality of my daughter's illness made life appear short and precautions inhibiting.

"A bicycle with an engine," I told my wife. I'd had a long history of bicycling to playing fields as a kid, to the University of Minnesota as a student and to work as an adult. Now with an engine attached I could broaden my range. And I wouldn't have to limit my opportunity for employment. I'd seen a clean but well-used 185 cc Honda for sale in my neighborhood, and for \$400 I became an "easy rider," a "hell's angel" on a scooter.

Within two years I needed a cycle that would "stay with traffic," allow me on highways and get me to the open road. A used 550 Honda would do. I'd discovered that middle-aged men buy new cycles, ride them a lot the first year, a little the second, none the third, and in the spring of the fourth "she" says "sell the damn thing." By then, the cycle is a dated style and although ridden less than 10,000 miles has lost considerable value. I've learned to step into these situations and bail my "brothers" out by taking the machine off their hands with a promise of getting it out on the road where it belongs. A dated style never bothers me as long as it purrs like a kitten down those country roads.

Next came a 500 twin Honda shaft drive. I'd been fixing chains since second grade and I was used to sprockets, tension devices and chain-oil spray. Ronald Reagan helped me by slamming import tariffs on foreign bikes for Harley Davidson's benefit. This was proof to me that Harley had a noncompetitive vehicle. The Japanese had flooded the market with everything they could in advance of the tariffs and three years later you could buy a brand new cycle that had never been in style to begin with. The Silver Wing, one of them was called—an attempt to compete with BMW. This cycle meant serious touring, overnight bags and all. Not those leather holdovers from the Pony Express.

When she was nine, my second daughter, Anna, convinced me to go camping with her. I suggested we pack up the cycle

and hit the back roads to Taylors Falls for a weekend adventure. Despite the rains and Dad's camping naiveté regarding tent locations, we considered it a success. Maybe surviving lightning bolts and rain-soaked sleeping bags helped build lore of our mighty adventure. We promised to make camping an annual affair.

The next year, I suggested she pick a destination within a 100-mile radius. After great deliberation over several maps, she found Annandale or, as she said, Anna "n" Dale.

With that, a tradition was secured camping at Don's farm amid the moos of cows and cluck of chickens. Fourteen years later Anna still jumps behind me on the cycle and we are off for a long weekend traversing the back roads of our region.

We gleaned from these rides the knowledge that destinations are only important for general orientation. The ride is what we enjoy along with the adventure. A storm or a roadside advertisement for a country fair can send us easily off course. (When you're on a motorcycle you naturally want to stop often, posterior fatigue, I suppose.) We've stopped for flea markets, small-town softball games, swimming holes and pool halls. Finding a place to stay for the night is always an adventure. Camping has given way to cheap motels with cold showers, bed and breakfasts with instant friends, or possibly a night in a time-share town house turned rental. Short stops have included farm auctions and hat stores, elegant restaurants and catfish fries. We've found old books, rare gems, used hats and chain-saw art. And we've met great people who make you proud to be of the Midwest. But most of all, we've seen the land, its geological kettles and glacial outwashes, its forests and streams, and its transformation into productive farmland. We're not prone to photographic capture, but occasionally we test the camera against our memories.

Most recently my wife has caught the biking spirit. For her it began as voyeuristic rides around residential neighborhoods. After finally learning to lean into corners rather than away, she too enjoys a weekend on the road. We've been joined by friends John and Gracie Waugh on their blue Harley. On route to Galeana, Ill., we discovered the English Cotswold town of Mineral Point by way of Wisconsin letter-designate roads. With minimal shoulder and few or no ditches, these roads allow you to experience the landscape at arm's reach. Parallel to and inland from the Mississippi River, these roads traverse the coolies and zigzag across the landscape. There are ridge roads with spectacular views and valley trails with gurgling streams. Progress is slow if you're in a rush to get to a specific locale, but you do progress fast to tranquillity. Galena was home to my great-grandparents, and I could almost feel their pace of life by the time we arrived.

This past year our foursome traversed the Minnesota River Valley from Bloomington to

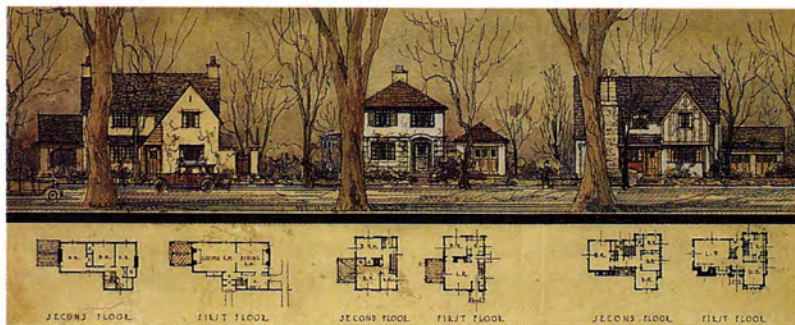
*Continued on page 50*

# Cycle odyssey

Motorcycle in gear, an architect  
discovers Minnesota along the  
winding back roads

By Dale Mulfinger





NORTHWEST ARCHITECTURAL ARCHIVES

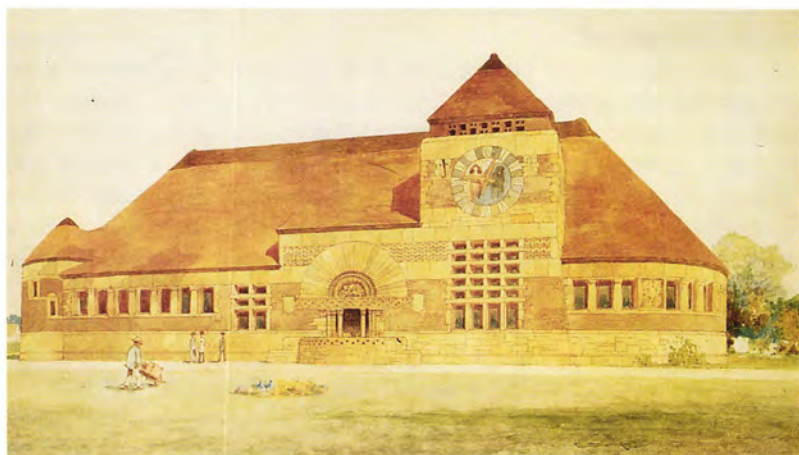
# Paper cities

The art of architecture is found in a building's crafted details—in the chiseled stone and textured brick and carved wood. Yet architecture's art is also found on paper. *The Twin Cities on Paper: A Century of Architectural Drawings for Minneapolis and St. Paul* reveals the architect's masterful hand at drawing, as seen in this sampling from the Minneapolis Institute of Arts' recent architectural exhibit.

NORTHWEST ARCHITECTURAL ARCHIVES



Group of three house drawings (top), Minneapolis, late-1920s, Larson and McLaren; Minneapolis Club (above), Minneapolis, 1892, William Channing Whitney; University of Minnesota building (right), Minneapolis, 1891, Harvey Ellis.



NORTHWEST ARCHITECTURAL ARCHIVES



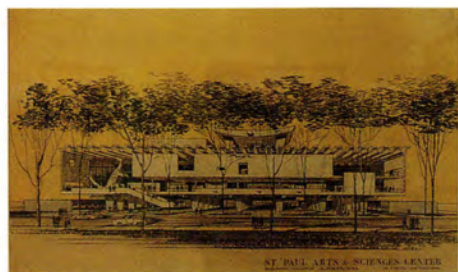


THE HEINZ ARCHITECTURAL CENTER, CARNEGIE MUSEUM OF ART



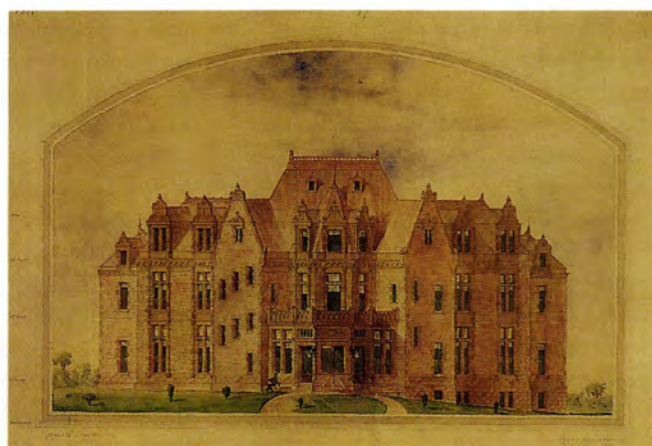
NORTHWEST ARCHITECTURAL ARCHIVES

The Vanderbilt Hotel (left), unbuilt, Minneapolis, ca. 1928, J.V. Vanderbilt; Uptown Theater (above), preliminary design, Minneapolis, 1937-1939, Liebenberg and Kaplan.



COURTESY RALPH RAPSON

St. Paul Arts and Science Center (above), unbuilt, St. Paul, 1958, Ralph Rapson; James J. Hill residence (right), unbuilt, St. Paul, 1886, Henry Ogden Avery.



EVERY ARCHITECTURAL AND FINE ARTS LIBRARY, COLUMBIA U.



intersection of place and policy—extracting from the energy and creativity of a community key planning and design principles, and finding in them the key implications for public policy.”

In the first-ring northern suburbs, the Design Center’s Community Connections project is helping several communities tie together a sense of place with issues related to housing, transit corridors, creek reclamation and river-front development. In southeast Minneapolis, landscape architect and former CUE cochair Peggy Sands is working with a consortium of neighborhoods on the reclamation of Bridal Veil Creek, while creating connections between basic design principles, landscape work, and public and community planning.

These large policy strokes, via articulations of community vision, are usually not the bread and butter of architectural practice. But, Rapson says, “they represent a vitally important contribution to the commonwealth of the community. That the design profession is more and more comfortable moving into the realm of strategic planning is a watershed. I can’t think of any time in the last decade when we’ve had this kind of energy emerging from architects and landscape architects.”

Traditionally, Rapson continues, architects have had a project mentality that precludes understanding how to do paying work that connects the design community with neighborhoods. That mentality has also been site oriented, Wende adds, and hasn’t taken into account aspects of the greater social, natural and economic environment. “Do we really have an awareness of what we are building?” Wende asks rhetorically. “Is what we’re building contributing to those elements that enhance community, or not? These are the responsibilities that architects have let go.”

“When we talk about building community—from an architectural sense, from an urban-design sense—what we’re talking about is building towns, and towns that reflect the civic nature of our culture,” Wende continues. “With the single-goal model of development there is no layering of the cultural,

civic and social issues that bring vitality to communities. If we don’t pay attention to how the project connects and contributes to the quality of the place, we’re missing several layers of meaning a built project can offer. Building good, strong communities is complex. It doesn’t lend itself to easy, quick solutions. We need to recognize that and be willing to take the time and energy to deal with the complexity.”

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**As architects have  
stepped forward,  
residents have come  
to a more complete  
understanding of how  
the profession can  
help in a variety of  
community-building  
activities**

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— Ralph Rapson

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The combination of individuals committed to working with communities, increasingly savvy neighborhoods and funds to bring them together has generated an agenda worth watching in metro neighborhoods. “Consider that the first step in all NRP plans was to create a community vision,” Rapson says. “The fact that the design community stepped forward to serve as a resource to these communities is a very powerful contribution the design community has made.”

The public’s image of architect as untouchable artist is changing as well. “As architects have stepped forward, residents have come to a more complete understanding of how the profession can help in a variety of community-building activities,” Rapson says. “Architects can not only create objects, but pose a set of questions that have enormous impact on the daily routines of neighborhood life. How can streets in-

vite activity? How can historic fabric be preserved? How can natural systems be integrated into public-works projects? These questions can be powerful tools in helping a neighborhood build a sense of identity and cohesion.”

Large projects, from new commercial centers to residential renovations, are critically important to architects. “But as we think about community leadership,” Rapson says, “the design of large projects is only one slice of the pie. Civic responsibility is also served by helping the community articulate a vision of its future. It is served by working in partnership with neighborhood residents and businesses in meeting day-to-day needs. It’s a dual role. And a fascinating opportunity for the profession.”

In universities, however, the upcoming generation of architects is still largely taught that “architects may be artists in one sense and architecture a business in the other,” says Dennis Grebner, an architect and professor of architecture at the University of Minnesota. “I’d be surprised if many professors responded with a concern of public service. But architects do serve clients. And we do have concerns overriding even the clients’ concerns in terms of how a project benefits society, or may hurt society—or at least we should have. Because of the gifts we’ve been given, we’ve got to have some ethical standards that speak about more than just satisfying ourselves or our clients.”

In the past five years, however, Grebner adds, “I’ve noticed a number of students beginning to do things that set an example, selecting projects for their theses that are less glamorous, but have to do with the public good and civic responsibility. They weren’t being coerced into this. It was tapping an inner need of their own.”

“Architects have a commitment to improving built environments,” Kodet says. “It’s part of our training and ideology to want to make life better for people. Architects can work with clients, work with the public, work with whatever realm, but we’re compelled to bring something to people that is uplifting and enriching. Art and design are as important to being human as eating and sleeping. As architects, that’s what we studied. And that’s what we expect of ourselves.” **AM**





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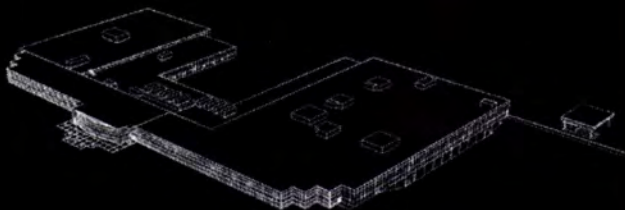
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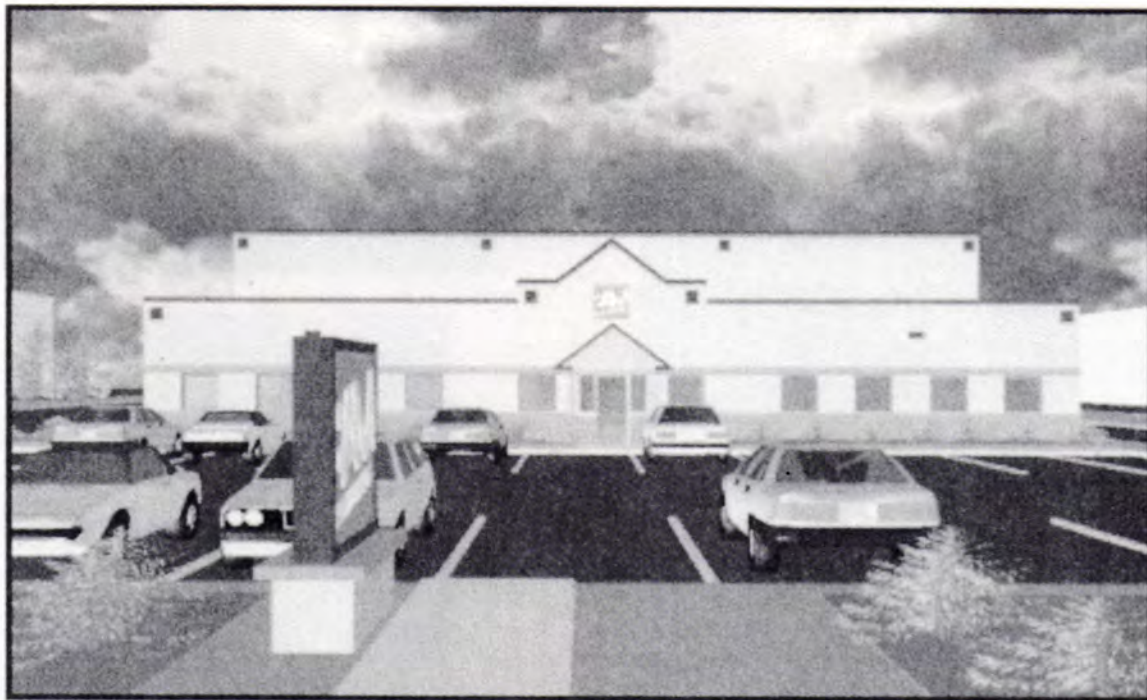
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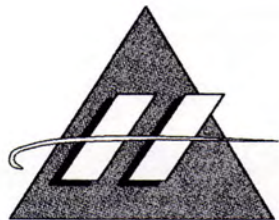
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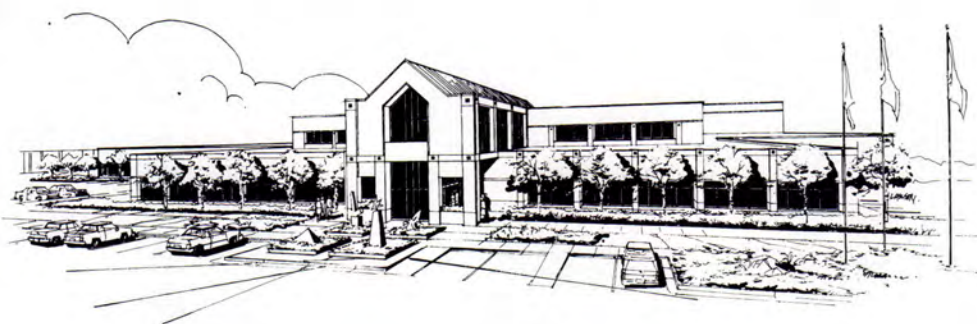


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city. The exposition was conceived in 1927, before the onset of the Great Depression, and was to be forward looking, despite the title's historical connotation. "There were exhibition halls constructed by the giants of American industry, eager to show their latest, most up-to-date products, and even a complete automobile assembly plant that could be toured by a thousand people at a time... For many, the Century of Progress Exposition represented their first exposure to modern design and technology," according to historian H. Ward Jandel.

Out of that great exhibition came a second generation of industrial designers primed to give service to industry. Like the first generation, nearly all of the new recruits had roots in advertising and promotion, or were exhibition designers, many with major commissions at the fair. They included David Chapman, Jim Barnes and Jean O. Reinecke, Jack Little and Peter Müller-Munk, all of whom went on to become top industrial designers.

#### Peter Müller-Munk (1904–1967)

Born in Berlin, Germany at the turn of the century, Peter Müller-Munk studied humanities at the University of Berlin and learned silversmithing at a trade school. He immigrated to New York City in 1926 and began working for Tiffany & Co., as a silversmith until 1927, when he set up his own silver studio to produce commissioned pieces and production work (dishware) for a New York department store. His work at the Century of Progress Exhibition was primarily decorative place settings for the "House of Tomorrow," designed by architect George Fred Keck in 1933. The exposition must have impressed upon him the possibilities of design for industry, for in 1936 he established the first professional course in industrial design at Carnegie Institute of Technology, Pittsburgh (now Carnegie-Mellon University), where he was a faculty member. He resigned from teaching in 1944 to set up his own industrial-design practice in Pittsburgh, where he specialized in corporate and product

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design for Westinghouse, US Steel and Texaco, among other clients.

Müller-Munk's innovations in appliance design occurred in the 1940s after he was commissioned to work with Dow Chemical Company engineers in 1943 to develop original ideas using plastics for postwar production. He used his commission to explore the design of the entire kitchen, considering it a domestic production line that combined factory efficiency with aesthetic "charm" and "livability" as part of a total system. He said "Appliances would be part of the architecture of the kitchen rather than independent units—refrigeration, cooking, dish washing, and garbage-disposal units, as well as air conditioning and lighting, would disappear into walls, counters, and ceilings."

This marks the first time in American appliance-design history that designers expanded the scope of consideration beyond the individual appliance unit to encompass the entire kitchen—the logical end to a trend in overall house design promulgated by the modernist movement since the late 1920s. The consequences of

this approach were realized in designs by major appliance manufacturers after World War II and promoted through elaborate model kitchens with increasingly futuristic overtones.

Müller-Munk did other individual appliance designs, including a series of refrigerators and freezers (upright freezer 1953-'54, and refrigerator 1954-'55) for Westinghouse, but they were more typical of appliance design in the early 1950s—lots of chrome trim and an array of "features," such as an "interior organizational system" of shelves and drawers to store food, roll-out baskets, extra door-storage compartments and a built-in filing system for keeping track of frozen items.

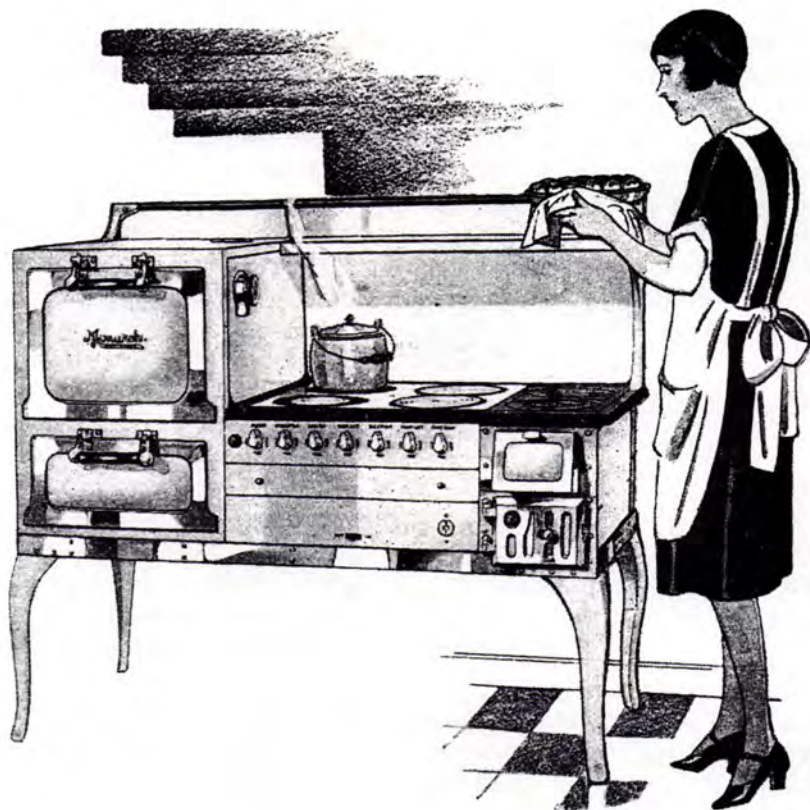
#### Jean Otis Reinecke (1909–1991)

In 1935, soon after the Chicago Century of Progress Exposition, J.O. Reinecke began his design office with partner Jim Barnes under the name General Displays. Reinecke had supervised the design and construction of up to 50 displays at the fair, and when the Chrysler Motor Corporation asked him to design a commemorative ashtray for the expo, he decided to open the office. Later, when the two designers found themselves doing more and more product design, the name was changed to Barnes & Reinecke. Product-design activity grew rapidly during the late 1930s and early '40s as more companies appreciated Barnes & Reinecke's flare for design, innovative use of new materials and sensitivity to manufacturing demands. Clients from this era included Toastmaster, Bell & Howell, Motorola, 3M and Chicago Molded Products.

Reinecke was an early proponent of the use of plastic for manufacturing. In the late 1930s, soon after starting his partnership with Barnes, Reinecke designed a number of commercial products using plastics. He won second and third prizes in the scientific category of *Modern Plastics*'s second annual design awards in 1937 for a thermostat for the White Manufacturing Company of St. Paul, and a dental operating light for the Burton Manufacturing Company of Chicago.

Around 1944, Reinecke contributed a design to the Owens-Illinois Glass Company promotion, "Kitchen Predictions." His design for a "kitchen of tomorrow" predicted that future kitchens that use





plastic would be "streamlined, sleek, precision-conscious and easy to clean." The design featured plastic-covered walls, cabinet doors and work surfaces, and appliances that were built into the cabinet-work or work top, or slid out (as in a refrigerator drawer). Along with the drawing of the kitchen, Reinecke presented a lightweight mixer that required "no hands" to use. These concepts were most likely developed for Durez Plastics & Chemicals, Inc. as part of a series of designs the company commissioned in the early 1940s. This design echoed the ideas pioneered by Müller-Munk for a totally integrated kitchen.

Reinecke quickly gained a reputation for forward-thinking design ideas, and was hired as a consulting designer by many appliance-manufacturing companies before the Second World War, including Toastmaster. (His 1938 redesign of an earlier model set the form type for all other toasters.)

During the Second World War, the firm grew to 375 employees primarily as an engineering service to the defense effort. Because of this unwieldy size, Reinecke broke off from Barnes & Reinecke in 1948 to form his own firm, Jean Reinecke & Associates, in order to get back to design.

#### From design of form to design of "features"

With the arrival of the 1950s, appliance design took a detour from being concerned with basic product improvement and shifted to offering "features," ushering in the advent of the "push-button" society. This was the time of America's fascination with gadgets and extra functions on every machine from radios to kitchen appliances. It was a logical outgrowth of the auto industry with its marketing gurus who pushed styling and the expansion of features—further proof of the link between household appliances and automobiles. The connection is a historical one: Many of the largest refrigerator manufacturers began as subsidiaries of automobile companies. Kelvinator was a division of the Nash automobile company; Norge a division of Borg-Warner, and Frigidaire was a division of General Motors. The styling departments of the refrigerator companies were often the same as the sponsoring auto company's. Kitchen appliances began sprouting chrome grills, phalanxes of temperature buttons, and extra built-in gadgets like deep-fat fryers, plate warmers, timers, lights, extra appliance outlets, and so on.

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forging this era. Olivetti, founded in 1908 by Camillo Olivetti, engaged such acclaimed industrial designers as Marcello Nizzoli, Mario Bellini and Ettore Sottsass to give the typewriter both portability and style.

Olivetti's design innovation pushed IBM president Thomas Watson to hire Bauhaus-inspired American designer Eliot Noyes to shape the company's corporate identity in the 1950s. The IBM 72 Golfball electric typewriter, design by Noyes in 1961, represents a triumph of midcentury modern industrial design.

By the mid 1980s, however, the personal computer had usurped the typewriter's hegemony. Apple Computer liberated professionals with the introduction of the Macintosh. Formerly huge and unwieldy, computers now are both compact and essential. Portable laptop computers, in fact, are as discreet as an attaché case. The typewriter is obsolete. Nowadays, Ettore Sottsass's portable Valentine typewriter for Olivetti is heralded as an icon of 1960s design, fetching a price of \$250 at swank boutiques in Soho.

Photocopiers have also undergone relentless development. Xerox debuted its first photocopier in 1959, but today's smaller, more efficient versions by Toshiba and Canon, among others, are less intrusive. The first cordless photocopier was launched in 1989, but didn't strike a cord with consumers largely because many fax machines now incorporate photocopying capabilities.

When the first international patent for the fax was taken out in 1968 it took six minutes to transmit a single page. Ten years later, the year of the second international patent, that time had been cut in half. Today, the fax offers almost instant communication and is viewed as essential for people who opt to work at home.

Industrial design is not without mystery. Why the fax has become so ubiquitous in business life and other technologies, such as the video telephone, have languished in the patent office, remain intriguing questions. No doubt, the home office is in a period of transition. Some home-based workers still plunk away on manual type-

writers, while others surf the Internet on their computers. Many enjoy walking to the post office for stamps, others communicate exclusively by fax or E-mail.

This duality between the past and the present isn't likely to vanish. My up-to-the-minute personal computer rests on a George Nelson desk from 1949. The pedestal telephone stand is by Eero Saarinen. Even though technology is forever altering the details of the home office, some certainties remain. The days of work being conducted exclusively in corporate-owned offices is yesterday. **AM**

## **cycle**

*Continued from page 41*

Ortonville. From its broad expanse at Shakopee we followed the river's origins to the marshland of west-central Minnesota, home to many of our waterfowl. En route we explored Kasota stone near Mankato, a baseball game in New Ulm and memorials to the Native American wars at Fort Ridgely. On a motorcycle your mind has time to amble backward through history, and I considered the days when the river was a highway for goods and people.

Beyond Ortonville, the Great Plains begin. I went out for a sunrise ride just to feel the power of this landscape beyond Big Stone Lake. Later, we sauntered back toward the Twin Cities, stopping at Gracie's family church near Kerkhoven in Kandiyohi County. Depopulation of this rural land has left a ghost of a building.

One of the most visually moving cycle runs I've taken was to the northwest corner of Minnesota and beyond with architectural photographer Peter Kerze. He rode my old 900 Custom 10-speed Honda, which he bought from me. I had upped to an 800 twin Pacific Coast, a gem of a touring bike, a cross between a Vespa, Gold Wing and BMW. Peter had recommended our sojourn up the Red River Valley. I had always preferred hill country over prairie and agreed to go on blind faith. I started with a quick photo shoot at a cabin I had remodeled on Iowa

Beach at Big Sand Lake and then continued on to meet Peter in Bagley. While still thinking about the cabinetmaker's fine craftsmanship, I passed the last lakes and forest country. The farm-implement dealers in Bagley clued us into what was ahead as we turned west in search of the Red River.

Matisse had apparently known we were coming, having seemingly arrived in advance to plant blooming crops for our approval. The fields were brilliant yellow set against purple-blue flax. An alfalfa field provided a splash of green and the smell of fresh-cut grass. As the colors intensified in twilight, we realized the new hues were due, in part, to the ominous clouds looming ahead. An evening prairie storm was building and we dove for cover in a roadside motel just as hail, wind, rain and lightning erupted around us. A half hour later, breathing in the fragrance of cleansed earth, we strolled to the local cafe for dinner.

A fresh, cool morning studded with sunflowers greeted us the next day. Sunflowers track the sun's daily movement, and we were cycling with the sun over our eastern shoulders. Like 20 million happy faces, the sunflowers smiled at our passage. I smiled back and we rode on into Winnipeg in search of espresso. Our brief taste of urbanity behind us, we made Kenora by nightfall atop Lake of the Woods. We were now back into lake country. The rocks are too close to the ground's surface here to warrant cultivating this land. On the eastern side of the lake, we turned south as the road cuts through outcroppings. For several miles we pondered the man-made rock formations along the roadway. After an hour of sightings, we stopped to add our own creations to this roadside gallery. I said good-bye to Peter in Eveleth and rolled on south to the Twin Cities.

Eventually, these weekend jaunts were just a tease. I longed for the real thing. I accepted a guest teaching appointment at the University of Oregon in Eugene, and in the early fall of 1995 I rode across the prairie, through the Rocky Mountains and along the Pacific Rim. After all, I owned a bike called Pacific Coast and it needed to see home.

**AM**



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### Project: Graco Technical Center

Location: Minneapolis  
 Architects: Setter, Leach & Lindstrom  
 Principal-in-charge: Basil Filonowich  
 Project manager: Walter Daniels  
 Project architect: Dan Larson  
 Project designer: Dan Larson  
 Project team: Ron Ehresman, Ole Meerwald,  
 Byron Byraiah  
 Structural engineers: Setter, Leach & Lindstrom  
 Mechanical engineers: Setter, Leach & Lindstrom  
 Electrical engineers: Setter, Leach & Lindstrom  
 Contractor: M.A. Mortenson  
 Interior design: Dayton's  
 Landscape architect: Ron Melchert  
 Acoustical consultant: Rick Van Doeren  
 Photographer: Philip Prowse

### Project: Integrated Waste Management Facility

Location: Minneapolis  
 Client: University of Minnesota  
 Architects: Toltz, King, Duvall, Anderson & Associates  
 Principal-in-charge: Westly Hendrickson  
 Project manager: William J. Armstrong  
 Project architect: William J. Armstrong  
 Project designer: Karen Eid Rodricks  
 Project team: Arnold Hedberg, Philip Vogel,  
 John Foell  
 Structural engineers: TKDA, John Wadden  
 Mechanical engineers: TKDA, Lynn Enalehom  
 Electrical engineers: TKDA, Jim Budke  
 Contractor: Sheehy Construction  
 Interior design: TKDA, Karen Eid Rodricks  
 Landscape architect: TKDA, Rick Gray

### Project: Paddock Laboratories, Inc., Headquarters & Manufacturing Facility

Location: New Hope, Minn.  
 Client: Paddock Laboratories, Inc.  
 Architects: SKD Architects, Inc.  
 Principal-in-charge: Steve Kleineman  
 Project manager: Mark Longworth  
 Project architect/designer: Joseph Mayhew  
 Structural engineers: Opus Corp.  
 Mechanical engineers: Orr-Schelen Mayeron & Associates  
 Electrical engineers: Orr-Schelen Mayeron & Associates  
 Contractor: Opus Corp.  
 Interior design: Steven Heil/Joseph Mayhew  
 Photographer: Saari & Forrai Photography

### Project: QMR Plastics Division

Location: River Falls, Wis.  
 Client: Quadion Minnesota Rubber  
 Architects: James/Snow Architects, Inc.  
 Principal-in-charge: Julie Snow  
 Project architect: Grant Reiling  
 Project team: James R. Larson, Krista Scheib,  
 Nancy Blankford, Craig Roberts, Vincent James  
 Structural engineers: Meyer, Borgman and Johnson  
 Mechanical engineers: Jack Snow Engineering  
 Electrical engineers: Kaeding and Associates  
 Civil engineers: Cedar Corporation  
 Contractor: PCL Construction  
 Landscape architect: Coen + Stumpf + Associates  
 Acoustical consultant: Kevernstoen, Kehl & Associates  
 Photographer: Don F. Wong

### Project: Winona Technical College Aviation Training Center

Location: Winona, Minn.  
 Client: Minnesota State Colleges and Universities  
 Architects: Architectural Alliance  
 Design principal: Dennis W. LaFrance  
 Managing principal: Mark Merrill  
 Project architect: Michael Buettner  
 Project designer: Michael DeVetter  
 Project team: Darcy Femill, Coco Dugan  
 Structural engineers: Dunham Associates  
 Mechanical engineers: Dunham Associates  
 Electrical engineers: Dunham Associates  
 Contractor: Mortenson Company  
 Interior design: Architectural Alliance  
 Landscape architect: Damon Farber Associates  
 telecommunications: Ed Lethert & Associates  
 Sculptor/artist: Alexander Tylivech  
 Photographer: Koyama Photography

## Correction

In the May/June 1996 issue, we neglected to fully credit Architectural Alliance as one of the architects of the Minnesota Children's Museum ("St. Paul by design"). The Museum was designed by James/Snow Architects and Architectural Alliance. We regret the oversight.

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## Contributors

**David Anger** is a Twin Cities-based writer.

**Jack El-Hai**, who writes our Lost Minnesota column, is a Minneapolis writer whose books include *Minnesota Collects* and *The Insider's Guide to the Twin Cities*.

**Camille LeFevre**, a regular contributor of *Architecture Minnesota* and assistant editor of *100 places plus 1*, writes about architecture, dance and environmental issues for various publications.

**Dale Mulfinger** is a principal with Mulfinger, Susanka, Mahady & Partners and is author of *The Architecture of Edwin Lundie*.

**Janet Whitmore** is a Twin Cities-based writer.

**Bruce N. Wright** is a frequent contributor of *Architecture Minnesota*. "Designed for the home" (page 32) was adapted in part from his master's thesis on the design history of electrical kitchen appliances. He is working on a biography of Minnesota architect Ralph Rapson.





Washburn "A" Mill, Minneapolis milling district, 1874-1878.

In 1878, the Washburn "A" Mill on Minneapolis's east bank of the Mississippi River put the city in the headlines of the nation's newspapers—not because of its advanced machinery or high flour output, but because of the spectacular way in which it self-destructed.

The mill was built in 1874 by Cadwallader Washburn, a Minnesota milling magnate who wanted to tap the rushing waters of the Mississippi to power the largest flour-making facility in the country. It covered 13,800 square feet of land on the river's bank, and its limestone walls rose 7 1/2 stories. Washburn placed its water wheels 45 feet below the ground and imported milling equipment from Austria.

For four years, the mill produced flour that was impressive for both its quality and quantity. Then, at 7:10 p.m. on May 2, 1878, an immense blast rocked the building. University of Minnesota scientists later determined that sparks from the grinding stones had ignited particles of flour suspended in the air. The resulting explosion lifted the roof (which weighed hundreds of tons) 500 feet into the air, killed 18 people, started a fire and other explosions that destroyed or damaged six other mills, hurled hunks of stone eight blocks away and shattered windows as far away as St. Paul's Summit Avenue.

The next day, a reporter described the scene, where the ruins would smol-

der for another month: "Scarcely one stone stands upon another, as it was laid, in the big Washburn mill, and the chaotic pile of huge limestone rocks is interwoven with slivered timbers, shafts and broken machinery from which pours forth steam and water."

Cadwallader Washburn responded to the disaster by building an even larger replacement mill, completed two years later. This new mill, Washburn made sure, included dust-removal equipment, and ceramic and metal grinding machines that would not cause sparks. It operated until 1965. It still stands, although a fire seriously damaged it in 1991. **Jack El-Hai**



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