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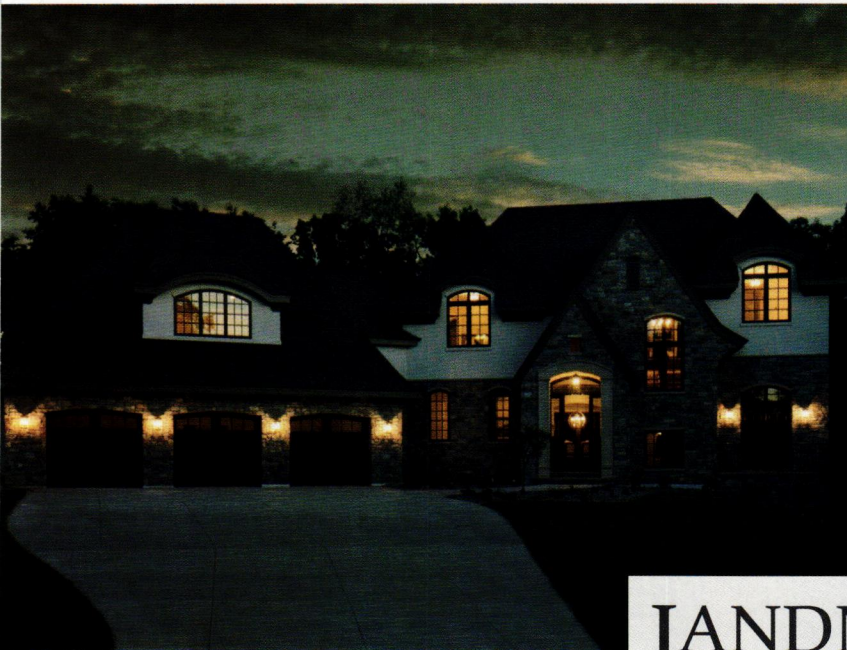
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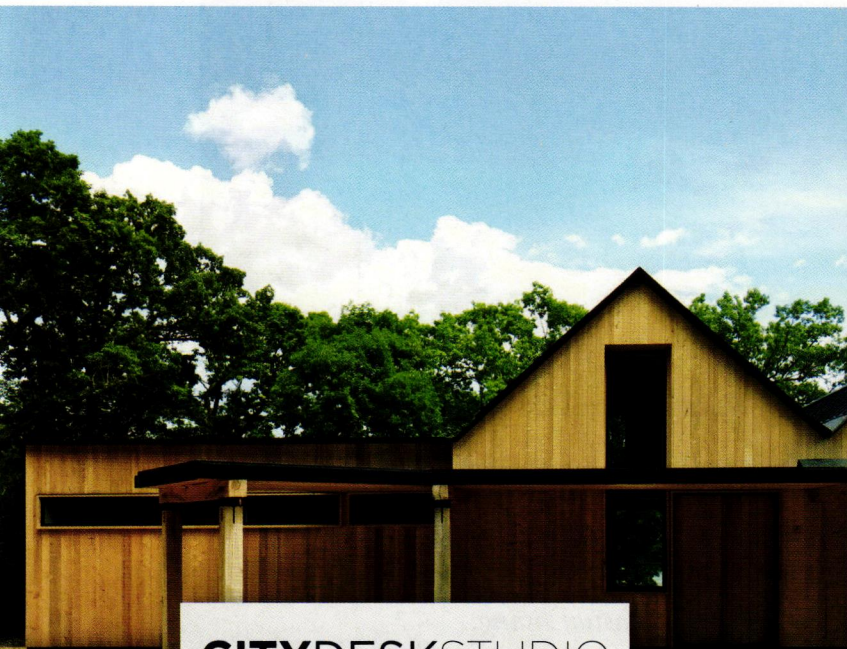
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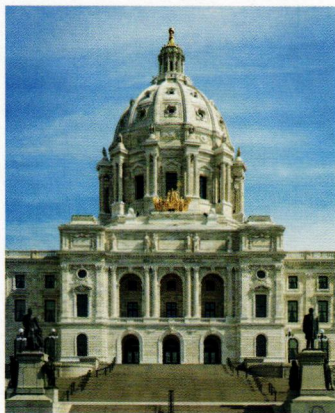
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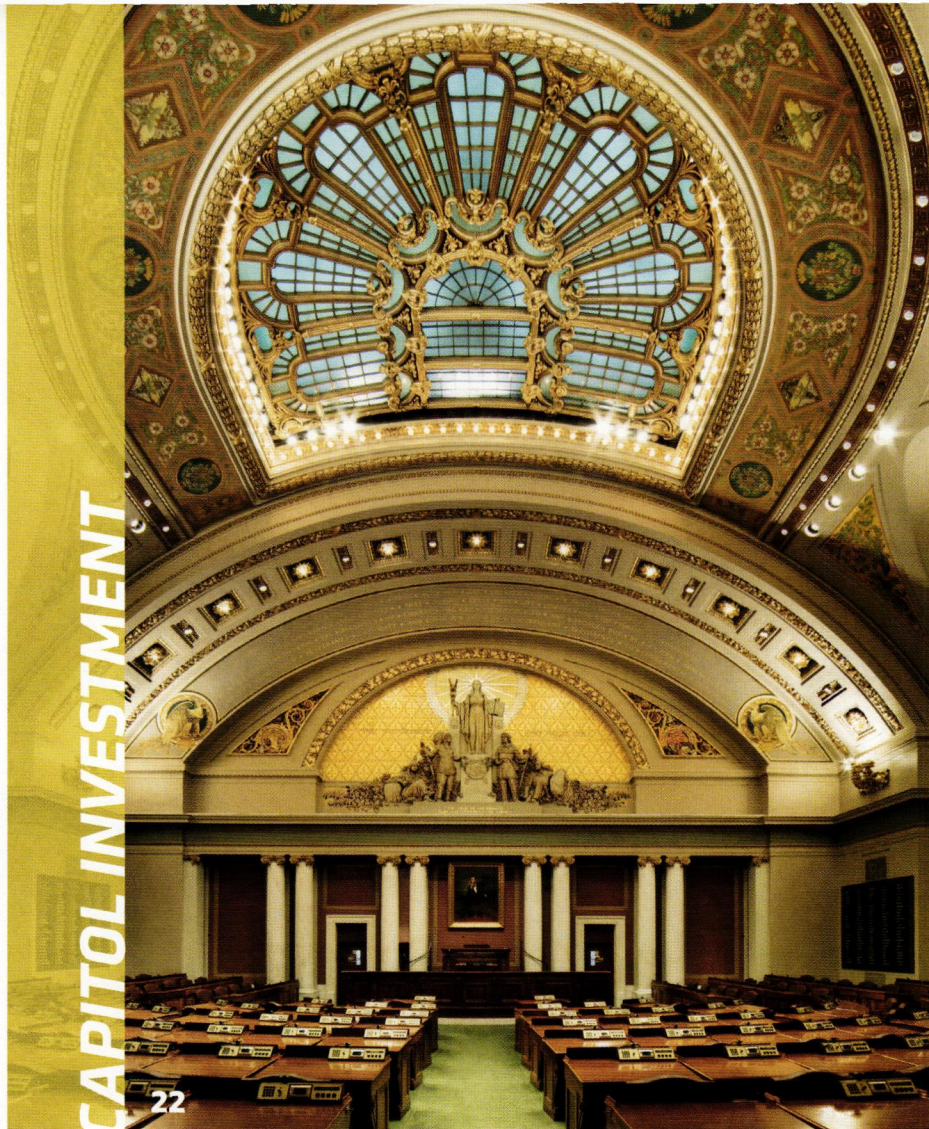
Architecture MN, the primary public outreach tool of the American Institute of Architects Minnesota, is published to inform the public about architecture designed by AIA Minnesota members and to communicate the spirit and value of quality architecture to both the public and the membership.



ON THE COVER

Minnesota State Capitol
St. Paul, Minnesota

"‘Awe-inspiring’ is an overused term, but I can’t think of a more appropriate expression to describe the experience of entering the Minnesota State Capitol’s impressive rotunda," says photographer **Paul Crosby**. "This architectural gem shines with new brilliance."



CAPITOL INVESTMENT

Features

22 Capitol Investment

By Linda Mack

The story of the extraordinary restoration of the Cass Gilbert-designed Minnesota State Capitol. "Architects, engineers, contractors, and subcontractors—none of us had ever seen such a complex, high-end, and fast-moving project," says HGA Architects and Engineers' Ginny Lackovic, AIA.

30 Flight Plan

By Joel Hoekstra

Over the next several years, renovations at MSP International Airport's Terminal 1 campus by Alliaance and Miller Dunwiddie will dramatically enhance the flow and comfort of the air-travel experience.

38 The Jet Age

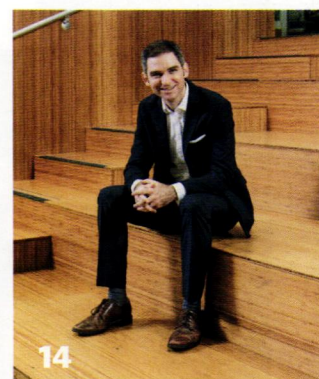
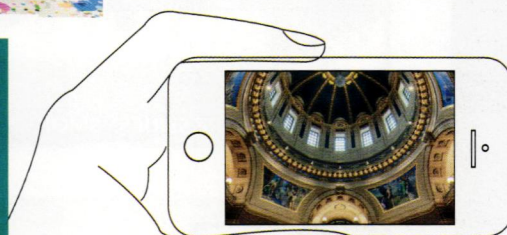
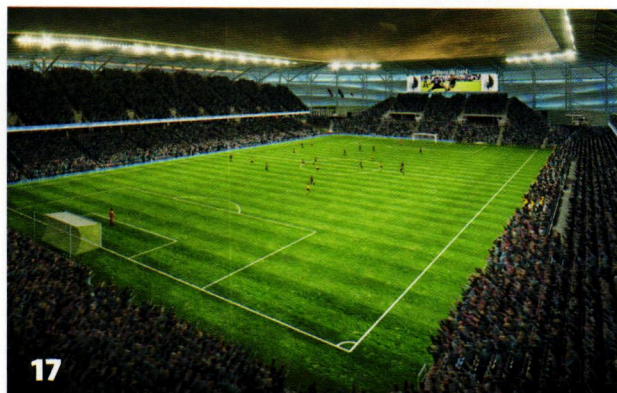
By Frank Edgerton Martin

"Early photos show the terminal and its scalloped roofline beneath a broad arc of sky and changing weather," writes Frank Edgerton Martin about the 1962 Lindbergh Terminal. "At night, the long, transparent building glowed with an atmosphere of welcome and adventure."

42 Designs on Higher Office

Interview by Meredith Hayes Gordon, AIA

For the first time, two architecturally trained individuals—State Rep. Matt Dean and State Rep. Ray Dehn—are running for top positions in Minnesota government. We spoke with the two legislators about the unique skill set they bring to elected office.



Departments & Directories

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11 CULTURE CRAWL

BY AMY GOETZMAN

After you page through our cover feature, stop by the Minnesota State Capitol and experience the restoration firsthand.

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A visit to BWBR's downtown St. Paul office brings to light all the design ingredients in a great collaboration space.

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BY AMY GOETZMAN

St. Paul Public Schools works with students, parents, educators, and architects to shape a flexible new facilities master plan.

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BY CHRISTOPHER HUDSON

Soccer fans are sure to get a kick out of Allianz Field when it opens in St. Paul's Midway neighborhood in spring 2019.

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INTERVIEW BY JOEL HOEKSTRA

The Minnesota Children's Museum's Barbara Hahn highlights a colorful renovation designed to enhance learning through play.

68 PLACE

PHOTOGRAPH BY

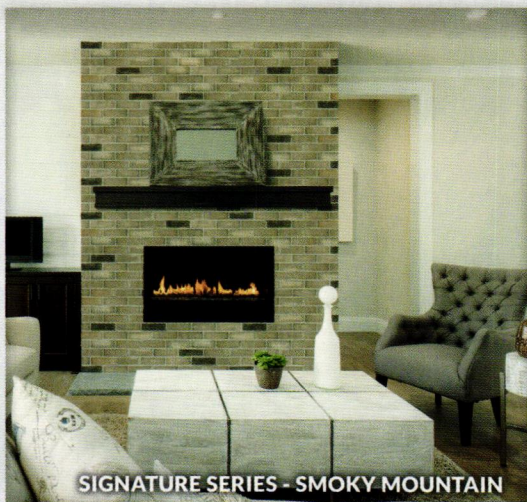
BRANDON STENGEL, ASSOC. AIA

If you're a kid, there's no better architectural interior than the Scramble at the Minnesota Children's Museum.

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ERIC MUELLER



Beyond the Blueprint

I'VE BEEN WRITING ABOUT THE WORK THAT ARCHITECTS do for the better part of my professional life, and you know what stands out, after all these years? The reach of their design-thinking skills. Yes, architects design new schools, office towers, and hospitals—buildings that aim for high measures of functionality, sustainability, and beauty. But designers are uniquely equipped to do even more.

This issue is packed with stories of architects navigating incredibly complex challenges. The four-year restoration of the Minnesota State Capitol (page 22), for example, was arguably the most complicated renovation in the history of the Upper Midwest. A large team led by HGA Architects and Engineers had to repair and modernize the crumbling icon “with an eye toward the aesthetics of a building with a decorative palette worthy of a Renaissance palace,” writes Linda Mack. Similarly, architecture firms Alliance and Miller Dunwiddie are working with the Metropolitan Airports Commission to dramatically upgrade all facets of the air-travel experience at MSP International Airport’s heavily trafficked Terminal 1 (30).

In its efforts to better support its extraordinarily diverse student population, St. Paul Public Schools harnessed the design thinking of not one or two but six architecture firms. The result is a flexible new facilities master plan that prioritizes equity and inclusion (14). “This was our chance to address problems that have stymied us for decades, problems that extended beyond things like roofs and mechanical systems,” says St. Paul Public Schools facilities director Tom Parent, AIA. “We needed to make changes that will significantly impact the day-to-day experience of students, parents, and educators.”

And widening the design-thinking lens even further are two architecture-trained state lawmakers who are aiming to bring their problem-solving approaches to higher office (42). “Getting a wide range of stakeholders involved is a fascinating process, both in architecture and in making policy,” State Rep. Ray Dehn explains to interviewer Meredith Hayes Gordon, AIA. “When I think about being mayor of Minneapolis, that’s what I think about—getting people in a place where they might see something that they didn’t see before. Ultimately, the issues we’re addressing are really complex.”

“The nature and rigor of our training has probably served both of us pretty well,” adds State Rep. Matt Dean, who’s running for governor.

Heritage preservation. Transportation. Education. Public service. Few other professions can say they’ve played a part in shaping such a wide range of endeavors. Architects have a skill set that can help their clients (or constituents!) unlock new solutions, and I never get tired of writing about it.

Christopher Hudson
hudson@aia-mn.org

INTERACT & CONNECT



The evolution of the Walker Art Center

architecturemn.com/videos



A conversation with top young architects

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Architecture MN Staff

Editor:
Christopher Hudson
hudson@aia-mn.org

Advertising Sales:
Pam Nelson
nelson@aia-mn.org

Circulation:
PaviElle French
subscriptions@aia-mn.org

Art Direction and Design:
LN Design Co.
klarson@lndesignco.com

Publisher:
Mary-Margaret Zindren
zindren@aia-mn.org

Architecture MN Committee

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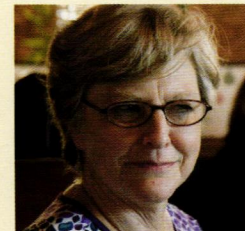
Mary-Margaret Zindren
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CONTRIBUTORS

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interesting bunch.



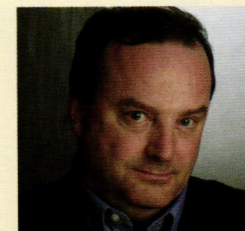
AMY GOETZMAN is a
Minneapolis freelance writer.
She writes about the arts and
culture and other inspiring things
that happen in inspiring spaces.



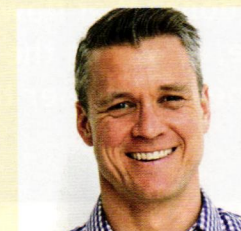
Minneapolis-based **LINDA MACK**,
author of *Madeline Island Summer
Houses: An Intimate Journey*
(2013), writes on architecture
and design for local and national
publications.



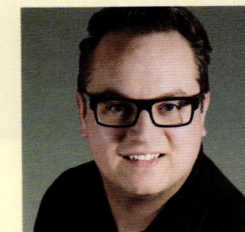
**MEREDITH HAYES
GORDON, AIA**, an architect in
HGA Architects and Engineers'
Arts, Community and Education
practice, is an avid explorer
of the intersection between
architecture and politics.



FRANK EDGERTON MARTIN
is a veteran contributor to
Architecture MN, *LAM*, and other
design journals. He specializes in
historic landscape preservation
and recently taught in the
Publications Design program
at the University of Baltimore.



Minneapolis writer **JOEL
HOEKSTRA** contributes
frequently to *Architecture MN*.



**BRANDON STENGEL,
ASSOC. AIA**, is an architectural
photographer based in Northeast
Minneapolis. He heads Farm Kid
Studios, shooting projects for
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RESTORATION SENSATION

#MNCapitol #architecture #wow



There's never been a better time to tour the **State Capitol**, Minnesota's preeminent architectural treasure

If you're the kind of person who loves to find the Stan Lee cameos in all the Marvel movies, you'll have to take a closer look at the Edwin Blashfield painting *Minnesota: Granary to the World* when you tour the newly restored Minnesota State Capitol. At the left edge of the lunette, hidden near the leg of the figure that represents Agriculture, are two tiny likenesses: Cass Gilbert, the St. Paul architect behind this spectacular public building, and Channing Seabury, the chairman of the Capitol Commission who broke ground on the project in 1896.

"Cass Gilbert's vision is a perfect marriage of art and architecture, and I absolutely love that they acquired the money to restore the art along with the rest of the building," says Denis Gardner, Minnesota's National Register historian and the author of *Our Minnesota State Capitol: From Groundbreaking through Restoration* (2017). "That wasn't part of the original plan, but it makes all the difference."

Gardner says the first major restoration to the 1905 landmark, recently completed by HGA Architects and Engineers and JE Dunn Construction (page 22), amplifies the considerable thought that Gilbert put into his design. Removing more than a century of grime has

brought colors, textures, and lines back into sharp focus and revealed a wealth of tiny details that make the Beaux Arts building a national treasure.

Stop by the capitol and see for yourself. Guided tours explore the building's materials and artwork and important chapters in its history, including the four-year renovation, during which time the state's business carried on amid scaffolding and tarps. You can also take a self-guided tour and wander through the rotunda, the house and senate chambers, the supreme-court courtroom, and the Rathskeller, a German-style dining hall in the basement. Be sure to look up to admire the elaborately painted ceilings. Don't worry, nothing is going to fall down on you—an assurance that couldn't have been made five years ago.

"The building was crumbling," says Gardner. "The restoration saved it in the nick of time." He explains that the campaign succeeded on two tracks: It stabilized the structure and updated its systems, and it also restored the building's original beauty. "I'd never noticed before how very beautiful the stone is, for example," he adds. "The stone itself is part of the decoration. It has an amazingly creamy, polychromatic swirl, and that had been lost. Now it's back."

—Amy Goetzman

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By Amy Goetzman

Imagine you have 58 schools whose 72 buildings all need major renovations because their function has changed so significantly since they were built. You're on a tight budget, and you have large advisory groups that include members who act like children (because they are children). Oh, and you expect the way that schools are used to continue to rapidly change.

That's exactly the scenario that St. Paul Public Schools (SPPS) faced as it set out to create a new facilities master plan for the largest school district in Minnesota. "This was our chance to address problems that have stymied us for decades, problems that extended beyond things like roofs and mechanical systems," says SPPS facilities director Tom Parent, AIA. "We needed to make changes that will significantly impact the day-to-day experience of students, parents, and educators."

To help it develop new environmental principles and standards for all the K-12 pathways students take through the system, SPPS engaged DLR Group, LSE Architects, Miller Dunwiddie, U+B Architecture and Design, and Wold Architects and Engineers. And it tasked Cuningham Group Architecture with the larger district-wide vision.

Cuningham principal Margaret Parsons, AIA, embraced the challenge. She's worked with SPPS since the mid-1990s and knows its 72 buildings well. She knew that the schools, which serve more than 39,000 students, faced structural, design, and accessibility issues, and that in recent years technology has dramatically transformed education. But her larger mission was to help the district achieve its district-wide vision.

SPPS is urgently trying to close the achievement gap between its white students and its students of color, who constitute 78 percent of the population. Additionally, 100 different languages are spoken in the district, and 72 percent of the students live in poverty.

"This was our chance to address problems that have stymied us for decades, problems that extended beyond things like roofs and mechanical systems."

— Tom Parent, AIA,
Director of Facilities at SPPS

"The facilities master plan is about the students more than it's about the buildings," says Parsons. "The district wants the buildings to be warm, safe, and dry—that's a given. But they also want to be proactive about connecting the physical learning environment with district goals. That means solving facility problems that are barriers to teaching and learning."

The district's oldest buildings date back to the 1890s and serve what Parsons calls a "cells and bells" school model that no longer works. "A 21st-century learning environment must accommodate a wide range of teaching styles, with an emphasis on collaborative, hands-on learning and technology," she says. "The tech piece is crucial and unpredictable. A decade ago, when the district underwent its last facilities assessment, we didn't know that today every student would have an iPad at their desk. That's transformational."

"We wanted a 10-year plan that reflects our vision of what a flexible learning environment can be," says Parent. "We might not know what, for example, a media center will need to look like in five years, so we focused on meeting today's needs and creating adaptability for those inevitable future changes."

The challenges are not unique to St. Paul, he adds: "Across the nation, school districts are

having difficulties keeping up with the pace of changes in the way kids learn today. There are seismic shifts going on that mean that, in many ways, our facilities are not appropriate anymore."

>> continued on page 51

St. Paul Public Schools at a Glance

100

Languages

Students speak more than 100 languages and dialects

39,086

Students

St. Paul Public Schools is Minnesota's largest school district, with more than 39,000 students

16%

Special Education

Percentage of students who require special-education services

58

Total Schools

PreK-5 Schools: 31
Dual Campus Schools: 6
Grade 6-8 Schools: 5
Grade 6-12 Schools: 4
Grade 9-12 Schools: 5
K-8 Schools: 7

PHOTO BY BRANDON STENGEL, ASSOC. AIA/FARMKIDSTUDIOS.COM

Architect Tom Parent, AIA, in a fun multipurpose space in the recently renovated Galtier Magnet Elementary School.

Better

Schools

Facilities director
Tom Parent, AIA,
discusses St. Paul Public
Schools' efforts to build
equity and inclusion into
the school system's flexible
new facilities master plan

New in Town

PAID ADVERTISEMENT

Matt Dekkers returns to the Midwest to lead Graham Construction's Minneapolis team. Learn more about Matt in this candid interview.

You took a 3,000 mile detour between Iowa and Minnesota. Tell us about that journey.

It was a bit of a detour, but an exciting one! I grew up on a farm in Northwest Iowa and was involved in construction on and off the farm growing up. I married a Canadian and we set off. In 2007 we landed in Calgary and in 2013 I joined Graham, after being a lead project director in developing and delivering public-private partnership (P3) projects. I eventually moved into a Vice President role overseeing a \$4 billion portfolio of P3 developments that we originated. We grew the team significantly and I was looking for my next opportunity with Graham when our executive team was reviewing our growth in other markets. I loved living in the west – mountains, horses, skiing – but landing a little closer to my roots in the Midwest again sounded like a great opportunity for me to come home.

What makes you passionate about construction and the people involved in it?

My passion for construction comes from what it provides the communities and clients we serve. Early in my career I was involved in developing healthcare projects and really enjoyed working with clinicians and building owners to plan and build facilities that functioned well for patient care while optimizing whole-life building performance. My experience at Graham has also given me the opportunity to work on civil infrastructure projects – light rail, bridges, roads – and I've grown to appreciate that, like hospitals, they're huge contributors to enabling movement and access in a community. That was a long way of saying: "My passion for construction comes from seeing our work enable people and communities to grow and thrive."

You've demonstrated team leadership with the teams you've been involved with, what are some of the traits you believe are part of your leadership style?

I'd say humility and collaboration are key to effective team leadership for me. I find if you're humble enough to recognize your limits and identify people on your team who excel where you don't, they'll happily fill the gap. In my experience, enabling my employees and removing their roadblocks empowers them to do their best. I want to see them succeed, learn, enjoy their work and build their careers. It's important for leaders to celebrate their team's successes but also to stand with them in their struggles and failures. Our projects are not built by one person; but each individual is important to the team's success.

GRAHAM



Allianz Field

PROJECT COMPLETION: MARCH 2019

Construction of the new home for the Minnesota United FC—a \$150 million, 19,400-seat stadium in the bustling Midway neighborhood of St. Paul—kicks into high gear

At 78 feet tall and 660 feet long, the stadium will have a dramatically long, low profile. The other wow factor? **Translucent polytetrafluoroethylene (PTFE) laminate mesh skin**, which, combined with state-of-the-art LED lighting, will allow the structure to change colors.



The **fan experience** will be shaped by seating that puts every spectator within 125 feet of the playing field, and group accommodations will include 22 suites and four hospitality clubs. Allianz Field will also host global exhibition matches, youth soccer events, and other community gatherings.



The **siting of the stadium** at the intersection of Interstate 94 and Snelling Avenue in St. Paul gives Allianz Field both high visibility and ready-made connections to numerous public-transportation options.



Project team: Populous, architect;
Mortenson Construction, construction manager

VP

of

CHILD'S

PLAY

INTERVIEW BY JOEL HOEKSTRA

Little hands can take a toll. After more than two decades of use, the Minnesota Children's Museum—where touching is encouraged and hands-on learning is expected—needed renovation. The 65,000-square-foot facility, located in downtown St. Paul, had seen visitor traffic grow significantly since its opening in 1995. So, earlier this year, with guidance from the Minneapolis architecture firm MSR Design, the museum closed and underwent a \$30 million overhaul that moved administrative offices, added a café, installed an additional elevator, and reconfigured exhibit space to expand and enhance the museum's mission to spark learning through play.

Architecture MN recently talked with Barbara Hahn, the Minnesota Children's Museum's vice president of learning innovation, about museum design, early childhood education, and how exhibits and architecture interact in the revamped facility.


What drove the renovation?

The building was more than 20 years old, so things were getting a little tired. When we opened in 1995, we had about 300,000 visitors annually, and now we average about 450,000 a year. We were already feeling kind of cramped, and we knew that things were only going to get busier. It was time for a refresh.

What kinds of updates were needed?

We felt that the flow of the museum needed to be adjusted. The box office was on the first floor, but we discovered that 80 percent of our visitors entered through the skyway on the second floor. (It connects to parking ramps and other downtown buildings.) They had to go downstairs to check in—and then back upstairs

>> continued on page 52

A woman with short brown hair, wearing a black sleeveless top and a light-colored skirt, is sitting on a bright green ottoman. She is smiling and looking towards the camera. The room is decorated with white walls and floor covered in colorful polka dots. To her left is a small white table with a colorful lamp. In the background, there are large colorful circles and a window with a blue frame.

THE MINNESOTA
CHILDREN'S MUSEUM'S
BARBARA HAHN TALKS
ABOUT A \$30 MILLION
MAKEOVER THAT BEGS
TO BE TOUCHED

PHOTO BY SCOTT AMUNDSON



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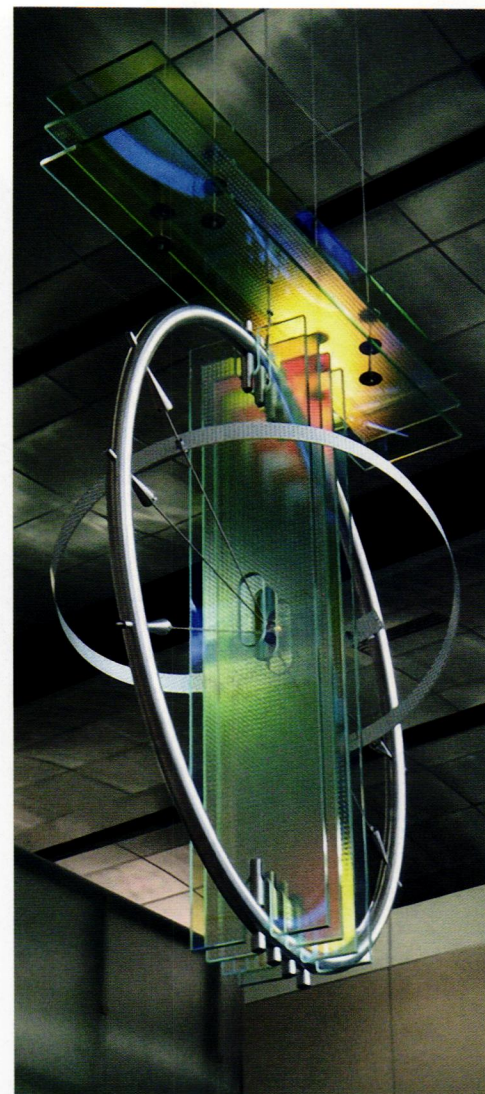
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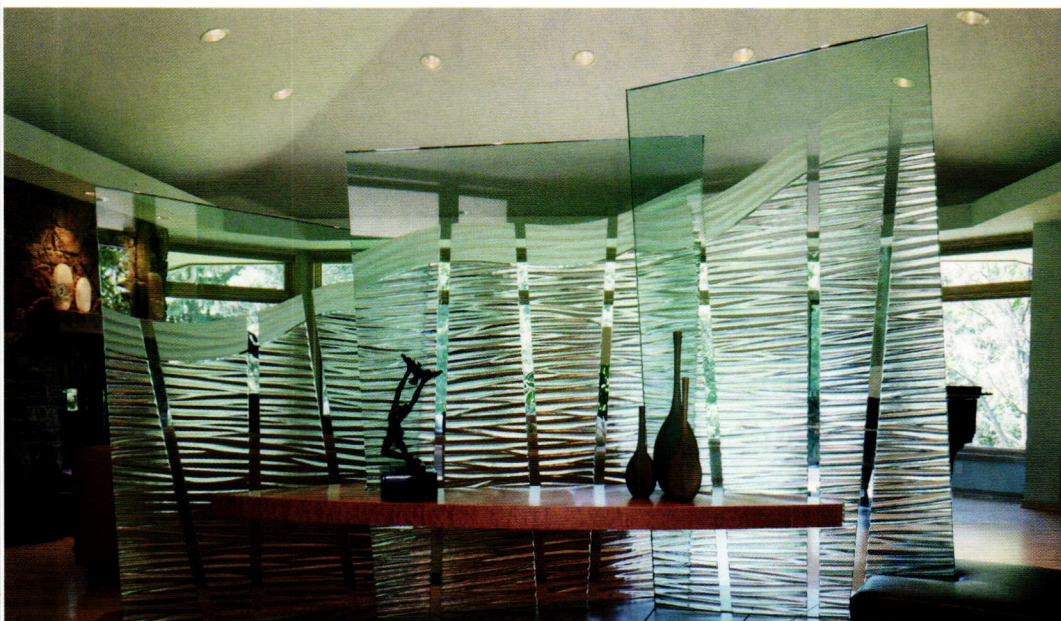
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CAPITOL INVESTMENT

BY LINDA MACK

The Minnesota State Capitol undergoes a comprehensive, \$310 million restoration designed to keep the landmark humming with civic life and history for another century

Minnesota's white-marble wonder has been renewed from its limestone and granite foundations to the gold-leaf finial atop its massive dome.

Cass Gilbert's State Capitol is Minnesota's iconic building.

So it's not surprising that its renovation was extensive, expensive, and thorough. What *is* surprising is that, in an era of partisan strife and government gridlock, the political support for a renovation worthy of the building's history endured over time, even as the work increased in scope. When the grand reopening of the 112-year-old building was celebrated in August, politicians and the public were equally delighted.



All the complex renovations had to be done with an eye toward the aesthetics of a building with a decorative palette worthy of a Renaissance palace.



MINNESOTA HISTORICAL SOCIETY

Cass Gilbert 1859–1934

The Minnesota architect, shown here on the capitol roof, enjoyed a highly successful St. Paul practice designing churches, houses, and commercial buildings. He later moved to New York, where he designed the world-famous Woolworth Building and the U.S. Supreme Court Building.

STEERING THE \$310 MILLION PROJECT

was HGA Architects and Engineers. The Minneapolis firm was initially selected, along with a team of consultants, to do an interior renovation in 2005. That project stalled due to lack of consensus on its scope—and a space crunch in the building that had not been resolved.

When the design effort was restarted in 2012—after a master plan for the restoration was approved by the newly formed Capitol Preservation Commission (see “It Takes a State” on page 29)—HGA and their consulting team were again tapped. For five years, they led an immense project that upgraded the 378,000-square-foot building’s aged mechanical, electrical, plumbing, and life-safety systems; restored its decaying art, stained glass, and decorative plasterwork; and ultimately touched every interior surface and every piece of exterior stone.

“Architects, engineers, contractors, and subcontractors—none of us had ever seen such a complex, high-end, and fast-moving project,” says HGA’s Ginny Lackovic, AIA, the project architect for the exterior renovation. Senior project manager Debra Young, AIA, says more than half of HGA’s 300 Minneapolis staff members did work on the capitol restoration.

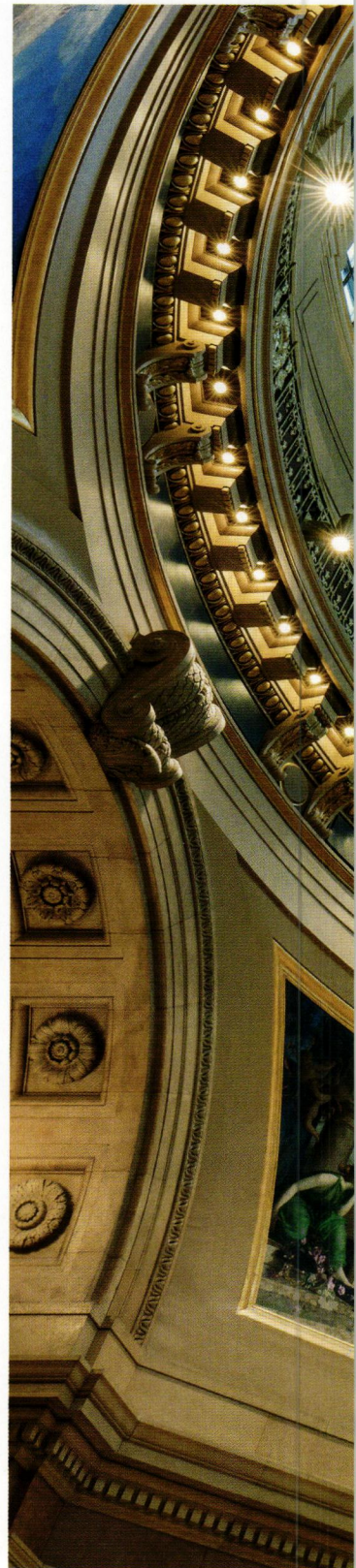
The challenges were myriad, from finding experts to rebuild sagging skylights to working around occupants running the state’s business. To manage the project, HGA worked with the Preservation Commission, the Minnesota Historical Society, and other project partners to identify four zones in the building—areas ranging from a preservation zone, where the original ornate material was largely intact, to the basement and back of house, where intrusions could be more easily accommodated.

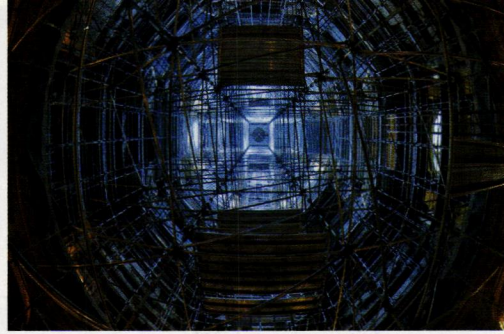
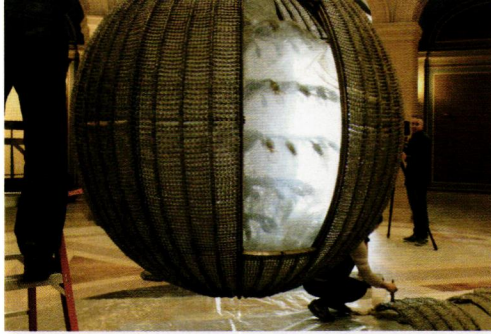
The biggest challenge was threading new mechanical systems through the masonry and clay-tile-arch structure, says HGA’s Kimberly Sandbulte, AIA, the project architect for the interior restoration. The air intakes were in the parking lot, where exhaust from running cars could be sucked in. The whole system had to be reversed, with air intake coming in from the roof. To meet building codes, stairs were added to make continuous egress paths, but that was an invasive process, says Sandbulte. The renovation included life-safety enhancements, new lighting (95 percent is now LED), accessible restrooms on every floor, window replacement, and a new roof.

And all had to be done with an eye toward the aesthetics of a building with a decorative palette worthy of a Renaissance palace. “Before, there were places where you went from 1905 to the 1970s when you stepped through a door,” says Sandbulte. “We wanted to put the whole building back to 1905.” Carpet was stripped from corridors to reveal the original mosaic tile. Darkened murals and water-damaged murals and plasterwork were restored. Skylights were uncovered and rebuilt. New leaded-glass elevator doors were designed based on Gilbert’s drawings and one grainy photo of an original design.

Sandbulte says the supreme-court chambers saw the biggest transformation. The John LaFarge murals depicting four moments in legal history were almost illegible, and the entire room was dark. Now cove lights and restored lighting stanchions brighten the room, while acoustic panels and mechanical grills make it functional. But it would take an architectural detective to see the additions.

Scaffolding 117 feet high was installed in the rotunda so craftspeople could repair water damage, refurbish the chandelier, and clean the 16 murals.





ROTUNDA

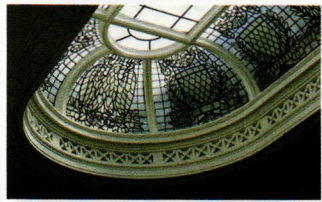
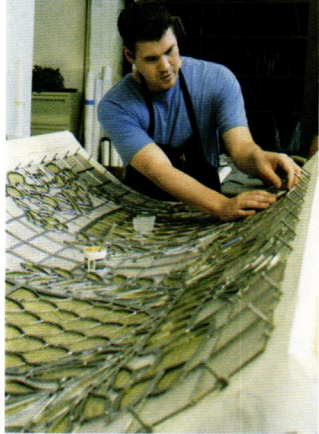
To restore the grandeur of the capitol's central space, architects and artisans repaired plasterwork and murals damaged by leaking water, re-gilded ornament, and upgraded lighting.



**EAST
GRAND STAIR**

Outside the supreme-court courtroom, the skylight and murals were restored, stone was cleaned, and historic light fixtures were rewired for greater efficiency and better lighting.





Local artisans from Gaytee-Palmer Stained Glass Studio replaced brittle leading in the curved laylight over the Oval Stair.

The immense project restored the capitol's decaying art, stained glass, and decorative plasterwork and ultimately touched every interior surface and every piece of exterior stone.

"The greatest compliment we get is when someone asks, 'What did you do?'" says Young.

Other highlights of the four-year project: new public spaces, including an assembly room and exhibit space in the basement, where the floor was excavated to create enough ceiling height; new caucus spaces closer to the legislative chambers; additional dining space near the Rathskeller (the capitol's German-themed basement café); and more public seating throughout the building.

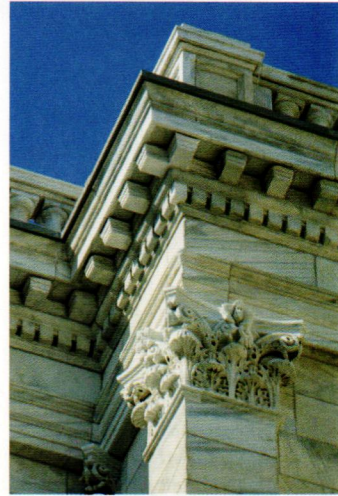
Face-Lift

Prior to the 2012 comprehensive master plan, HGA led asset-preservation projects that attacked specific problems—foremost among them the leaking dome. "The seven-foot-thick walls were saturated with water, and extensive water infiltration was affecting the zodiac murals and interior finishes of the drum," says Lackovic. "After we stopped the water infiltration, it took a year and a half to completely dry out the masonry. And then interior finishes had shrunk during the drying process and needed extensive repairs."

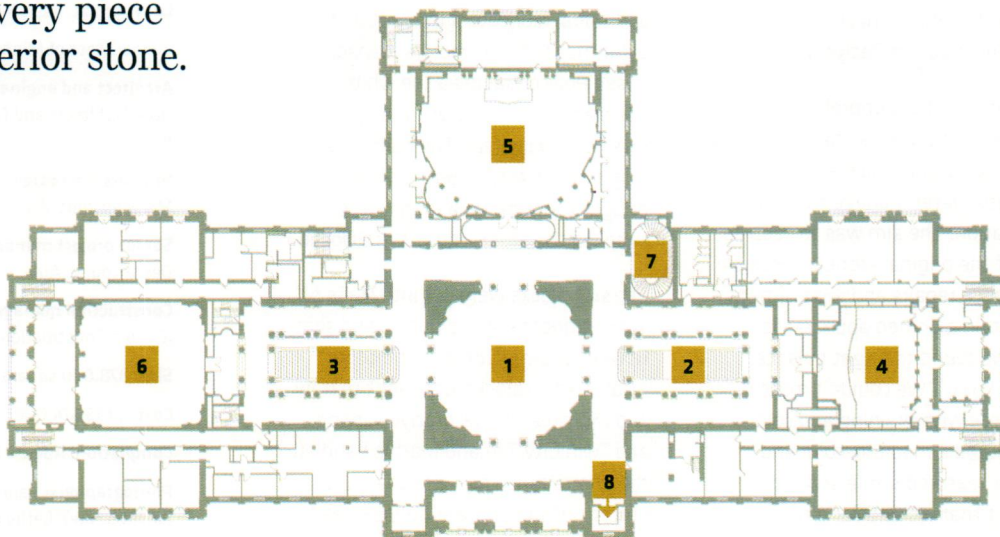
Repairing the stone wasn't part of that project, but while the scaffolding was up, investigators could see that there were bigger issues, including severely damaged stone.

The exterior restoration was "a real hard sell," says Lackovic. "There's a perception that stone is durable." But white Georgia marble, which Gilbert chose for its gleaming purity, is sensitive to temperature swings and thus moves a lot, creating instability. Right before the January 2011 inauguration of Governor Mark Dayton, HGA recommended that the terraces be barricaded and the entries be protected from potential hazards until a comprehensive evaluation was done.

"During that first emergency investigation, we collected 12 to 15 five-gallon pails of loose stone by just lightly tapping the stone. We could pull acanthus leaves off the columns by hand," says Lackovic. "And the damage wasn't isolated to one feature or side of the building; it was everywhere." One 300-pound stone fragment looming over the accessible drive was temporarily secured.



One of the many stonemasons on the project blends a Dutchman replacement into one of the building's many capitals.



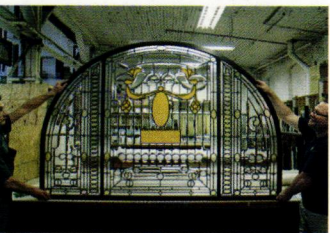
KEY

- 1 Rotunda
- 2 East Grand Stair
- 3 West Grand Stair
- 4 Supreme-Court Courtroom
- 5 House Chamber
- 6 Senate Chamber
- 7 Oval Stair
- 8 Elevator



PHOTO BY JE DUNN CONSTRUCTION

In the 1970s, stainless-steel elevators replaced the original leaded-glass fronts. A Cass Gilbert sketch and a single historic photo guided the restoration effort.



HOUSE CHAMBER

Every surface was touched, new HVAC and lighting were installed, and desks were rewired for new technology, but the historic fabric was preserved.

"When parts of the building were falling, that got everyone's attention," says Michael Bjornberg, FAIA, a project manager for HGA until 2015, when he joined Preservation Design Works.

The capitol's 2012 Comprehensive Master Plan included a "tier three" stone restoration, which addressed life safety, water management, and preservation. The aim was to keep as much of the original stone as possible and balance repairs and replacement to maintain a unified appearance. "I think we found the right balance," says Lackovic. "We couldn't match every piece with graining and color, so we picked a medium-color and medium-textured stone and did a cross-cut that worked for most of the replacements."

The project was massive. Starting with one off-site stone fabricator, the team expanded to include four additional fabricators for a total of eight masonry contractors. Canada-based Polycor supplied the white marble from the Georgia quarry that was its only source. (The building's original contractors, Butler-Ryan, bought the Amicalola Quarry that supplied the stone. It has since closed.)

Car-size blocks were cut into slabs of varying depths at the quarry and sent to fabricators in Toronto and other locales; mini-blocks were sent to Italy and Montreal for decorative carving; and Twin City Tile and Marble handled the onsite finishing. Less than one percent of the stone supplied—nearly 4,000 pieces—was rejected.

MINNESOTA STATE CAPITOL RESTORATION AND RENOVATION

Location: St. Paul, Minnesota

Client: State of Minnesota

Architect and engineer: HGA Architects and Engineers hga.com

Principal-in-charge: Mia Blanchett, AIA

Senior project manager: Debra Young, AIA

Construction manager: JE Dunn Construction

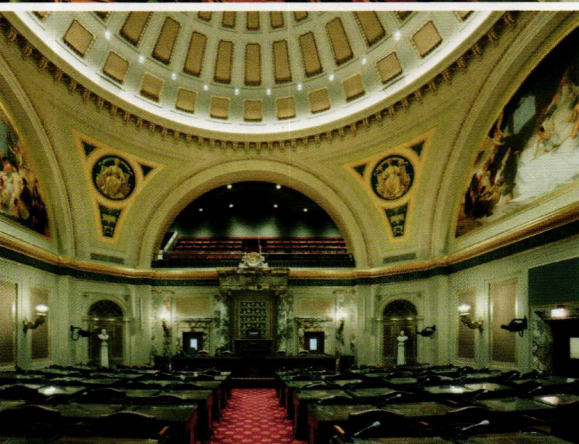
Size: 378,000 square feet

Cost: \$309,674,000

Completion: August 2017

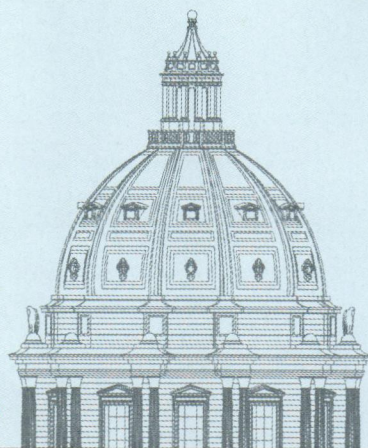
Photographers: Paul Crosby (architecture); Cathy Klima (restoration process)

>> continued on page 56



The senate chamber (above) received the same enhancements as the house chamber. Most of the restoration was done while the building was occupied, but the senate did move out for one legislative session.

It Takes a State



IT TOOK A CAMPAIGN TO muster political support for the uncompromised renovation of the Minnesota State Capitol. It wasn't a campaign to elect particular candidates; it was a concerted, long-term effort to communicate the importance of a thorough approach to Minnesota's iconic building after a century of Band-Aids. "We took legislators on tours, met one-on-one with every legislator," says former HGA project manager Michael Bjornberg, FAIA.

Renovation discussions began as early as 1973, when a design competition called for an underground office building to alleviate space constraints in Cass Gilbert's historic building. That idea died on the vine, and after several more unsuccessful efforts over the ensuing decades, the State of Minnesota issued a request for proposals for an interior renovation in 2005. The team led by HGA Architects and Engineers won that bid.

But the space question had not been resolved. Legislators had moved to having private offices in the 1970s, and new caucus and hearing rooms were needed; there simply wasn't enough room for everyone. The hard-fought decision to build a new Senate Office Building in 2013 finally resolved the space issue—and created room for new public spaces in the renovated capitol.

When Governor Mark Dayton took office in January 2011, he took on several big, stalled projects, including U.S. Bank Stadium and the capitol. Other champions included the Department of Administration (the official client), Nancy Stark and Paul Mandel of the Capitol Area Architectural and Planning Board, Senator Ann Rest, and supreme court Chief Justice Russell Anderson and Justice Paul Anderson.

In 2011, a 22-member Capitol Preservation Commission chaired by the governor and including top leadership from across state government was formed to guide the renovation. Wayne

Waslaski, senior director at the Department of Administration, helped oversee the project. "When I took this job 10 years ago, I knew the work would be challenging," he says. "We looked to other states, including Utah, to see how they had succeeded, and the preservation commission was a key factor."

Design-scoping workshops were another key to building consensus. "We broke the project down, had open workshops on various aspects of the effort, and brought that input back to the Preservation Commission," says Waslaski.

In 2012, the scope and budget for the renovation were approved, and the 2013 legislature passed a law that authorized and funded it. And it wasn't the only legislation. Additional laws outlined the scope of masonry restoration; the use of particular spaces; where there would be operable windows; and the numbering of rooms. All occupants had to sign off on finishes and furnishings for their space, Bjornberg adds.

"This gift was handed down to us by past generations," says Waslaski. "It's our responsibility to be good stewards. The Preservation Commission maintained that position throughout the project."

That commitment to stewardship continues. "Part of the master plan was recognizing that maintenance will be necessary," says Waslaski. "The stonework is a perfect example." The plan

calls for assessment of the stone every five years. And the Preservation Commission is scheduled to continue to meet annually.

In the meantime, all involved can pause and share a moment of pride. "Now the capitol is doing exactly what the original building was meant to do—to inspire Minnesotans, especially kids, with art and architecture," says Waslaski. **AMN**

"This gift was handed down to us by past generations. It is our responsibility to be good stewards."

DRAWING BY MN DEPARTMENT OF ADMINISTRATION

FLIGHT

BY JOEL HOEKSTRA



COREY GAFFER

PLAN

*Seeking to alleviate congestion and boost the passenger experience at **MSP International Airport's Terminal 1**, the Metropolitan Airports Commission turns to architecture firms Alliaance and Miller Dunwiddie*

Every day, roughly 70,000 people pass through Terminal 1-Lindbergh at Minneapolis-St. Paul International Airport. That figure would astound the designers of the original terminal building (page 38), opened in 1962. At that time, the facility was expected to accommodate 4.1 million passengers annually. In 2016, more than 35 million travelers passed through Terminal 1. By 2030, the total number of passengers at Terminal 1 and Terminal 2 is expected to surpass 54 million.

Passenger volume isn't the only change the airport has experienced over the past six decades. Security screenings were introduced in the 1980s and enhanced significantly after



Recent renovations pushed Terminal 1's facade out 15 feet at the north (shown here) and south security checkpoints. Soon, the long section in between will see the same expansion.

the events of 9/11. Upscale shops and eateries—many with a local flavor—were added in the 1990s, with help from Minneapolis architecture firm Alliiance. Today, factors such as plane size are reshaping operations: Airlines have swapped smaller planes for larger aircraft and reduced the number of flights. The net result is a concentration of passengers at peak travel times.

“We currently have five major peaks in traffic each day,” says Alan Howell, AIA, senior airport architect with the Metropolitan Airports Commission (MAC), which operates the facility. “Those peaks will continue to get bigger as demand for air service increases.”

The challenge for the MAC and its design partners is to accommodate the growing passenger volume efficiently and economically while enhancing the overall traveler experience.

After the decision was made in 1996 to keep the airport in its current location rather than build from scratch on a different site, the MAC set a course for optimizing its existing real estate. The first big buildout—between 1998 and 2005—included an extension of Terminal 1’s Concourse C, a brand-new Terminal 2, and a fourth runway. After economic downturns in the 2000s, passenger numbers began to grow again, prompting the MAC to begin planning for the next 20 years.

Airport visitors will witness numerous changes in and around the airport over the next several years, including consolidated checkpoints, the expansion of Terminal 1’s ticketing and baggage-claim spaces, a new parking facility, and more public art.

These efforts to expand terminal capacity and elevate comfort and aesthetics throughout the facility are being guided by Alliiance and Miller Dunwiddie. Both firms have a long history at MSP. “Our firm has done business at MSP for more than 50 years—every kind of project imaginable,” notes Miller Dunwiddie principal Monica Hartberg, AIA. “There’s a whole city out there that supports the passenger experience.”

CAPACITY

The easiest way to increase the capacity of a building is, of course, to add more space. The next-best approach is to maximize existing square footage. The MAC’s approach, mapped out by Alliiance, does a little of both, says Alliiance principal Eric Peterson, AIA.

Departures—drop-off



RENDERINGS BY ALLIANCE



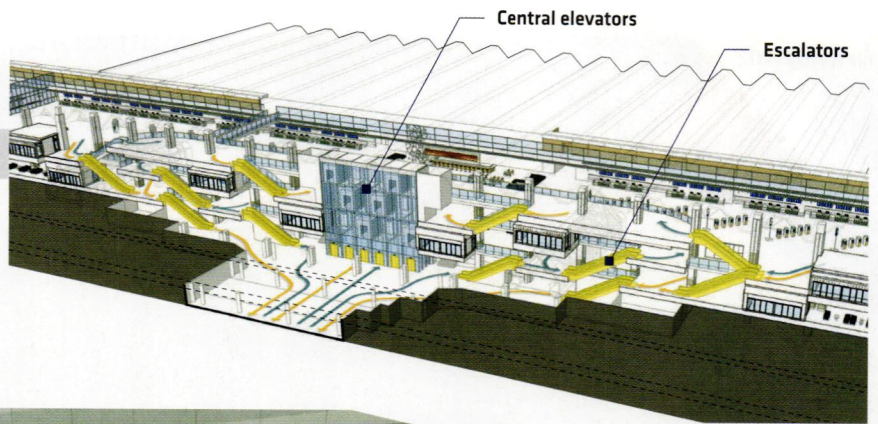
Departures—central view looking south

The patterns in the new terrazzo floors will evoke the cool blue waters of the Land of 10,000 Lakes. “In general, the overall feeling is meant to be lighter, brighter, and more open,” says Alliiance’s Eric Peterson.



VERTICAL CIRCULATION

A system of escalators and newly centralized elevators will make vertical movement between the mezzanine, ticketing, baggage-claim, and tram levels more intuitive and efficient.



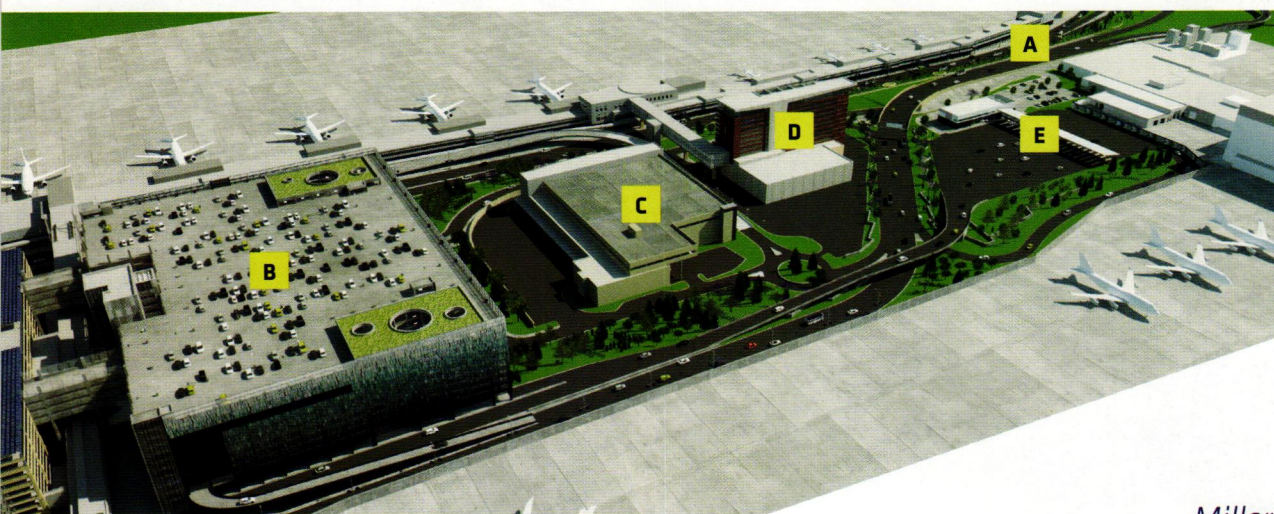
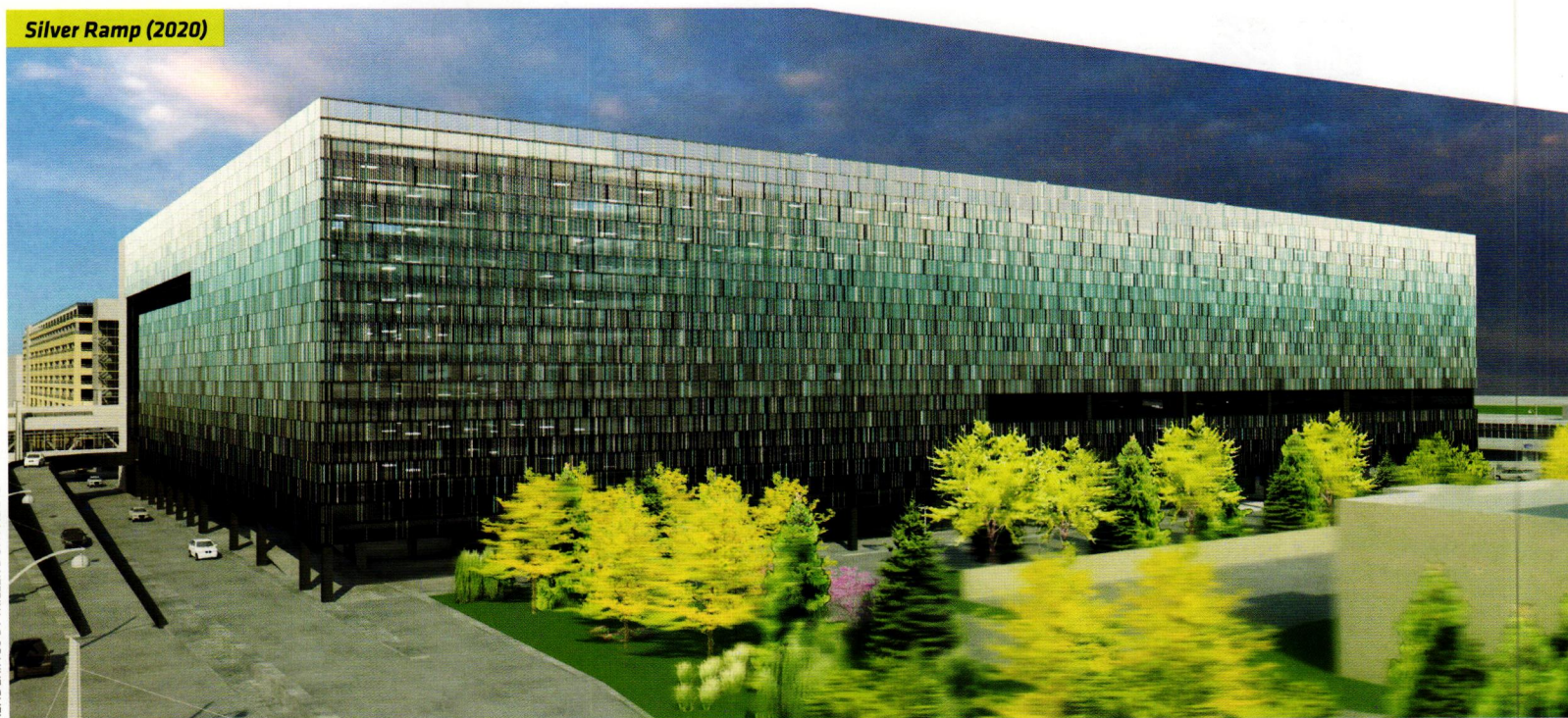
Tram level

Above: Renovations will make the ticketing level more open, comfortable, and adaptable. A central artwork will lend additional dimension to the space. Left: A digital display with wait times on the tram level.



Silver Ramp (2020)

RENDERINGS BY MILLER DUNWIDDIE



RECONFIGURED ROADWAY

- A Airport Entrance and Exit
- B New Parking Structure: Silver Ramp (2020)
- C Existing Post Office
- D InterContinental Hotel (2018)
- E New Parking Exit Plaza



Miller Dunwiddie wrapped the new ramp in a screen of terra-cotta baguettes glazed in white, black, gray, and sky blue. The pattern will create a stirring visual effect from every perspective.



Above and right: The clean-lined car-rental facility on the ground floor of the Silver Ramp will feature a loose checkerboard pattern of gray terrazzo flooring.

Car-rental counters



Opposite: The east-southeast side of the Silver Ramp. Miller Dunwiddie designed cutouts in the shimmering facade to create additional visual interest and bring more light into targeted spaces.

Over the next few years, Terminal 1's crenellated facade will be flattened and pushed out 15 feet. Passenger check-in space will be consolidated and made more flexible, reducing the number of unused check-in counters throughout the day as traffic ebbs and flows. Restrooms and elevators will be centered in the building's core rather than scattered throughout the building. The changes will yield a 10 percent increase in public space on the ticketing and baggage-claim levels. "With modest expansion and smart design, we'll sizably increase the building's lobby space," notes Peterson.

In many ways, the improvements planned for Terminal 1 reflect lessons learned from Terminal 2, designed by Miller Dunwiddie and completed in 2001. The open areas at Terminal 2 are adaptable: Spaces can be easily modified to handle new technologies, enhanced security protocols, and unforeseen operational changes. When automated baggage check becomes the norm, Howell notes, space will be required in Terminal 1 to house the kiosks. If check-in services or other operations require less room or are automated in the future, the necessary changes will be easier to make—thanks to a more open, flexible design.

Capacity is also an issue for MSP's parking facilities. Parking at Terminal 1 is currently limited to 12,000 spaces. During busy times, drivers can be diverted to ramps at Terminal 2, which can delay their arrival by a half hour or more. The new Silver Ramp, designed by Miller Dunwiddie, will provide an additional 5,000 parking spaces when it opens in 2020. Clad in an aesthetically pleasing screen of glazed terra-cotta tubes, the structure will also house the new Terminal 1 rental-car facility.

FLOW

During peak travel times, the key to maintaining order is keeping people moving. Long lines, crowded escalators, confusing signage—all these have the potential to frustrate travelers. Many of the changes being introduced at MSP are aimed at enhancing the flow of car and pedestrian traffic.

Motorists arriving at and departing from Terminal 1 will be routed along a reconfigured roadway. Curbside baggage-check services will be available on the parking-ramp side of the



Restrooms



For restroom walls, the MAC commissioned artists to create colorful mosaics evoking farm fields, forests, and lakes, among other Minnesota landscapes.

AMERICA'S BEST BATHROOM



Terrazzo floors. Quartz countertops. Artist-designed tile mosaics.

Natural light. Travelers passing through MSP don't need access to a luxury airline club to enjoy such amenities. These lavish design elements come standard with the airport's new restroom prototype. Several renovated facilities—all with more space—are already open, complete with niches in stalls for stowing laptops, hooks near sinks for hanging purses, and hand dryers that hum rather than blast noise. The restrooms also feature baby-changing stations and automatic doors.

The result? A more spacious, easy, and restful experience. Airport managers elsewhere are taking notice—especially after the MSP facilities were voted "America's Best Bathroom" in 2016 in an online poll conducted by Cintas, a major restroom-products supplier.



PHOTOS ON THIS PAGE: TED SALZMAN

Right: Stretching nearly 300 feet, the angular canopy over the 18-lane parking exit features anodized perforated-aluminum panels on its underside and a translucent material on top.

Below: On the arrivals level, wood ceilings will add visual warmth, and live music and comfortable seating will create a more relaxed environment both for travelers and for the family and friends who are waiting for them.

departures (ticketing) level. (Currently, skycaps and baggage check are on the traffic-congested terminal side.) Inside the terminal, on all four levels, travelers will have quick and easy access to ticketing and security via six large elevators at the center of the building. Escalators, widely used in the original design, will become secondary options.

Signage will guide visitors, of course, but wayfinding will be enhanced by other visual cues: Displays updated in real time will show estimated waits at each of the security checkpoints; green lights projected onto the floor outside arriving elevators will guide passengers to their destination. "Where possible, we specified flow-through-style elevators to allow travelers to enter one side and exit the other, providing increased equity in access for those with limited mobility," notes Alliance principal Jeff Loeschen, AIA.

Some of the changes are already evident. In recent years, MAC officials, working in conjunction with the Transportation Security Administration (TSA), have reduced the number of security checkpoints. Howell says the TSA likes the efficiencies that come with having a supervisor manage a single checkpoint with multiple lanes rather than having multiple managers at multiple checkpoints.

Claiming baggage will also become easier. Today at MSP, carousel orientation forces crowds of travelers to cluster, bob, and weave around the carousels as they hunt for their suitcases and parcels. A 50-percent increase in the linear feet of the carousels will reduce congestion.

Another notable improvement is already complete: Parkers now pass through an 18-lane exit plaza with a gleaming canopy that resembles an airplane wing, all designed by Miller Dunwiddie. "The architecture of the new canopy and support buildings is mostly just an extension of the existing terminal—metal panels, dark masonry, and large areas of glass," explains project designer Phillip Koski, AIA. "But the bigger goal was to remove distractions and make the wayfinding experience as intuitive and natural as possible."

>> continued on page 59

Parking exit plaza



SCOTT GILBERTSON

Arrivals—baggage claim



RENDERINGS BY ALLIANCE



Signage will guide visitors, of course, but wayfinding will be enhanced by other visual cues, including green lights projected onto the floor outside arriving elevators.

Arrivals—walkway looking north



MSP INTERNATIONAL AIRPORT TERMINAL 1 RENOVATIONS

Operational Improvements

Client: Metropolitan Airports Commission

Architect: Alliance
www.alliance.us

Construction coordinator:
Kraus Anderson

Size: Approximately
470,000 square feet

Cost: Approximately
\$300 million

Completion: 2015–23

Parking Expansion

Client: Metropolitan Airports Commission

Program manager:
Kimley-Horn

Architect: Miller Dunwiddie
www.millerdunwiddie.com

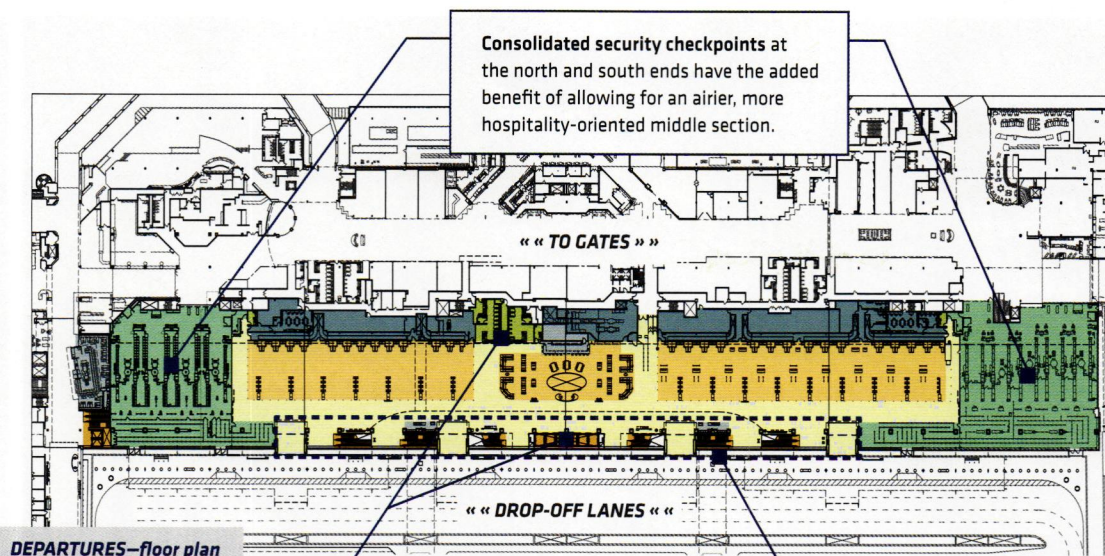
Energy modeling:
The Weidt Group; Michaud
Cooley Erickson

Construction coordinator:
Kraus Anderson

Size: Approximately
2.5 million square feet
(excluding site work and
replacement structures)

Cost: \$443 million

Completion: Spring 2020



DEPARTURES—floor plan

Consolidated security checkpoints at the north and south ends have the added benefit of allowing for an airier, more hospitality-oriented middle section.

Centralized elevators and restrooms step out to an inviting seating area complete with a suspended artwork that drops down through an opening to the arrivals level.

Additional square footage is achieved by pushing the facade out 15 feet. Alliance principal Eric Peterson credits “the power of 15 feet” for the roomier environment.

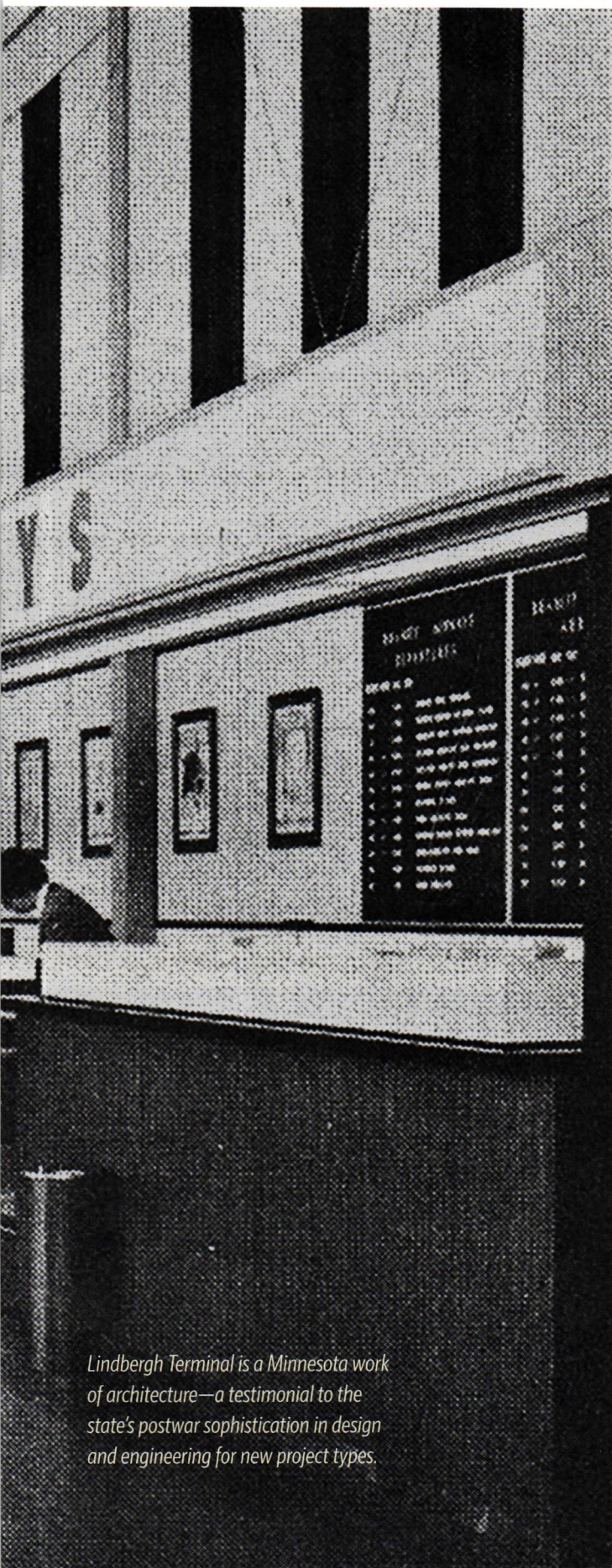
Baggage-claim carousels on the arrivals level are 50-percent longer, making it easier for travelers to grab their luggage and be on their way.





By Frank Edgerton Martin

THE JET AGE



A look back at the original Lindbergh Terminal, a building that captured the spirit of its forward-looking era

Long before it accrued the long concourse extensions and massive parking structures we know today, Lindbergh Terminal at Wold-Chamberlain Field was one of the largest and most dramatically sited buildings in Minnesota.

Early photos show the terminal and its scalloped roofline beneath a broad arc of sky and changing weather. At night, the long, transparent building glowed with an atmosphere of welcome and adventure. There was nothing like it in Minnesota—because the region had not yet seen commercial jet travel. The postwar boom in aviation technology and jet capacity sparked an urgent need to create a new building type to serve it.

Opened in 1962, the Lindbergh Terminal put the Twin Cities at the cutting edge of Jet Age airport design with drop-off and pickup separated on two levels and light-filled concourses offering dynamic views of the surrounding planes. More than a half-century later, Lindbergh's soaring curtain walls and folded-plate concrete roof are still iconic.

HENNEPIN HISTORY MUSEUM



LOCAL TALENT

In 1956, Minneapolis-based Cerny & Associates teamed with airport architects Leigh Fisher from San Francisco to design a new terminal complex on the vast Wold-Chamberlain site at the edge of farm fields. In being selected by the Metropolitan

Airports Commission, Cerny stood in good company: In 1956, Minoru Yamasaki completed the elegantly arched Lambert Terminal in St. Louis, and, four years later, Eero Saarinen debuted the sweeping Dulles Terminal outside of Washington, DC.

Young architects at Cerny, including future luminaries James Stageberg and Milo Thompson, designed many important churches, academic buildings, and hotels. But the Lindbergh Terminal would be their largest and most visible project of all.

Frederick Benz, FAIA, who was chief draftsman at Cerny in those years, says that lead designer John Rauma almost certainly gave shape to the hyperbolic paraboloid canopies over the drop-off area; the concrete canopies resembled the vaulted ceiling Rauma designed for the University of Minnesota Architecture Building (1960). Benz also recalls that Stageberg made the first sketches for Lindbergh's folded-plate concrete roof, which ultimately became the building's signature element. Much credit for the roof also goes to the celebrated New York structural engineers Weidlinger Associates, who were experts in folded-plate concrete and thin concrete shells.

Lindbergh Terminal is a Minnesota work of architecture—a testimonial to the state's postwar sophistication in design and engineering for new project types.

CREATIVE COMMONS



MODULAR THINKING

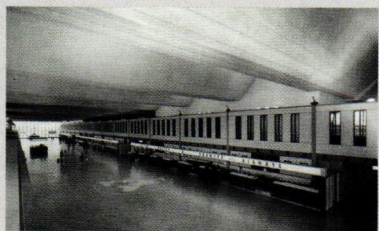
In its airport-themed April 1963 issue, *Progressive Architecture* praised Lindbergh for its modular flexibility and capacity to double in size by 1972, when more than 3.2 million travelers were projected to pass through

its gates. Cerny & Associates designed the 420-foot-long main terminal to expand in 30-foot bays, as expressed in the roofline.

Inside, Cerny designed second-level offices as metal boxes over loadbearing piers between the two concourses. This innovation effectively created a building within a building. New units could be added as needed, and the independent structure provided occupants with a measure of insulation from airport noise and vibration from takeoffs and landings. With their narrow gun-slit windows—a Cerny trademark—these modular units remain largely unchanged today.

More than a half-century later, Lindbergh's soaring curtain walls and folded-plate concrete roof are still iconic.

Greater Minneapolis magazine went even further, touting Lindbergh as a new kind of building with “a unique structure—one designed with the adaptability of change found in factories combined with the permanent features of public buildings.” The article also extolled the use of modern colors in the concourses (brick walls were glazed in gold, red, tangerine, and blue) and the “subtle new look of the north woods” (walnut paneling and sculptural rods designed to evoke trees) in two restaurants that cantilevered out on the tarmac side of the terminal. Unfortunately, the Nordic restaurant interiors are gone.



NORTHWEST ARCHITECTURAL ARCHIVES

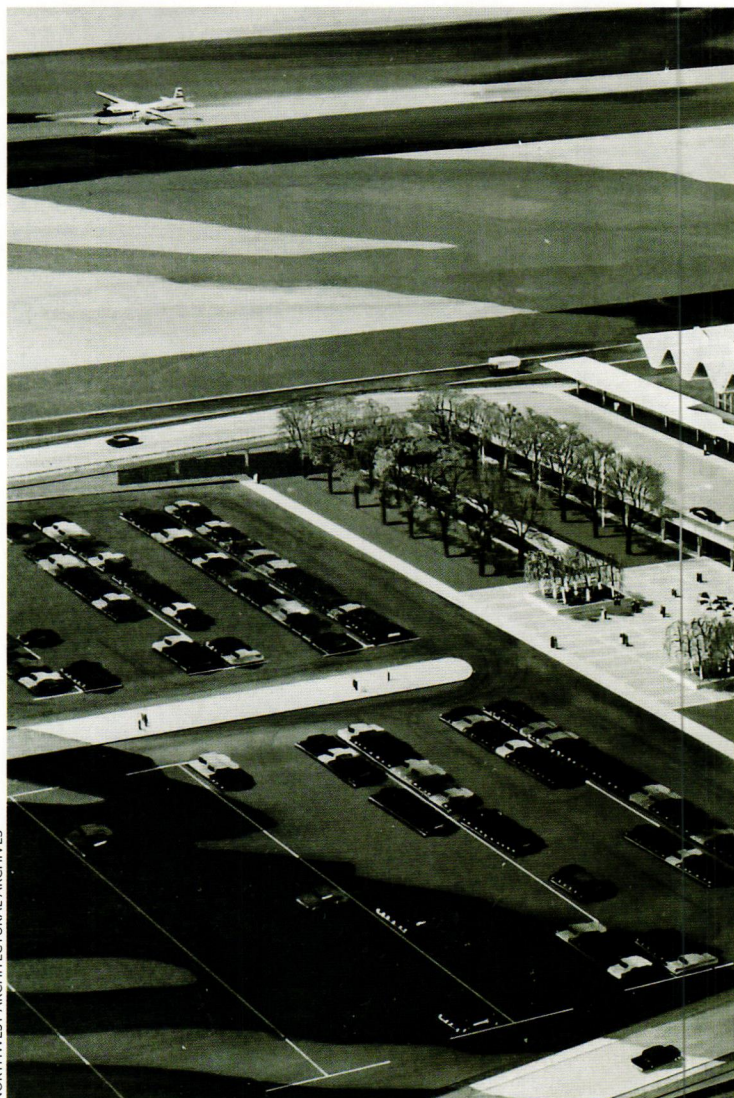
shuttle travelers to and from their planes (thus allowing passengers to avoid long walks through inclement weather and fumes on the tarmac). But the development of the jet bridge and other airport enhancements nullified the advantages of that system.

>> continued on page 61

ENDURING CHARACTER

While Saarinen's Dulles Terminal became the more celebrated midcentury airport, Lindbergh proved to be more functional over time. One of Saarinen's innovations at Dulles was the use of bus-like “mobile lounges” to

NORTHWEST ARCHITECTURAL ARCHIVES



MINNESOTA HISTORICAL SOCIETY

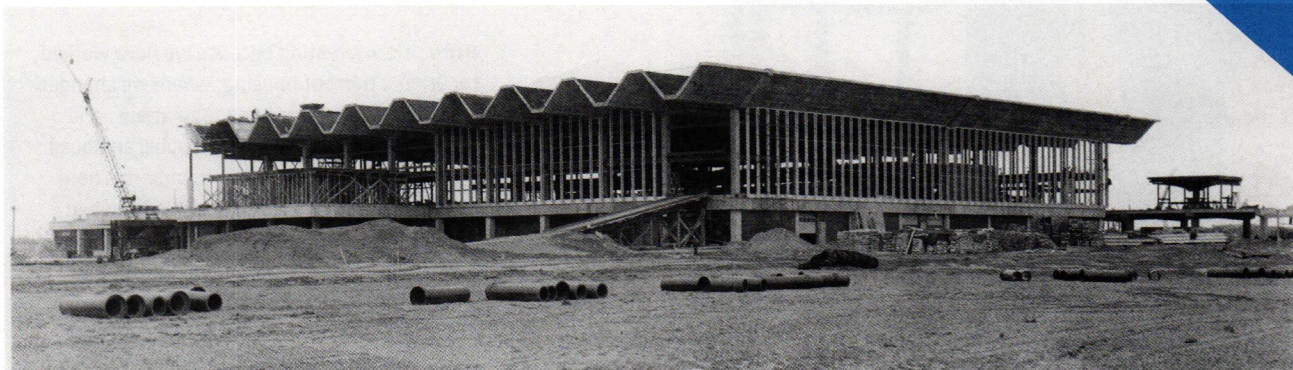


A visionary gas station

Likely designed by the Cerny team, this glowing SuperAmerica stood roughly where the parking pay booths are today. Like Frank Lloyd Wright's modern service station in Cloquet, Minnesota, the design anticipated a bright future with cars as a mainstay in American life.



Greater Minneapolis, the magazine of the Minneapolis Chamber of Commerce, gushed over Lindbergh's promise, proclaiming that a "look at the building is a look at the future: A streamlined, folded-plate concrete roof structure caps the gleaming white, basic reinforced-concrete structure." Cerny & Associates' aerial drawing (above) is a masterpiece of rendering before computers and animation. Early promotion for Lindbergh boasted of ample airport parking, with 300 indoor spaces and 1,200 on the lot outside—numbers that seem almost quaint today.



MINNESOTA HISTORICAL SOCIETY

State Rep. Ray Dehn (DFL) is a front-runner in this November's election for mayor of Minneapolis. State Rep. Matt Dean (R) is a top candidate for Minnesota governor in 2018.

DESIGNS ON

State Rep. Ray Dehn (DFL)



AIA Minnesota president Meredith Hayes Gordon leads a conversation with the two legislators on the unique design-thinking and problem-solving skills they bring to elected office.

Hayes Gordon: It's really exciting that, for the first time in history, there are two architecturally trained individuals running for the most prominent positions in Minnesota government: governor and mayor of Minneapolis. I want to thank you both for stepping up. How might you work together come 2019—if Ray were mayor and Matt were governor?

Dean: Well, if it doesn't work out for me, maybe you could appoint me to your administration, Ray. We could work together, right?

Dehn: It's interesting because we *have* worked together. I think of housing, where we changed some of the standards and regulations, and my biggest obstacle wasn't Republican house members; it was DFL house members. There are opportunities. The relationship between the governor's office and the mayor's office in Minneapolis is critical for our state. Rural Minnesota won't do well if Minneapolis isn't doing well, and Minneapolis won't do well if greater Minnesota isn't doing well.

While their liberal and conservative views may be widely divergent, they share more than similar-sounding names—their training and experience in architecture unites them, and it also sets them apart. PHOTOGRAPHY BY SCOTT AMUNDSON

HIGHER OFFICE

If Matt becomes governor and I become mayor, we're not going to agree on everything because we haven't at the state capitol. But I believe that we'll be able to have important conversations—to figure things out where others may not be able to.

Dean: We've got a very good relationship. We can give each other a hard time, and we can work together. We disagree agreeably. You can get around some thorny areas if you've got a relationship to lean on.

And I agree that our state is not going to be strong unless we have a strong Minneapolis and a strong St. Paul. We cannot pit the Twin Cities against greater Minnesota or regional centers.

Dehn: In many ways, politics does come down to relationships. It's understanding who people are, what their stories are, what motivates them to run for public office and to choose public service. Nearly everybody is there because they feel a need to make a difference. And that's true whether you're a Democrat, a Republican, or an Independent. I mean, running for office isn't easy. It can be really, really hard.

Hayes Gordon: Architecture school kind of trains you for that, right? Architecture school's not easy.

Dehn: You know, architecture school trains you to separate yourself—you, the person—from what your product is. When you're doing a project for studio, you pour your heart and soul and all your passion into it, but at some point you have to step back and say, "Now it's no longer mine. It belongs to others." And I think that's one of the reasons why education and training to be an architect prepares you well for public office.

Dean: And you burn the midnight oil. You've got to do that. If you're just getting warmed up at about 1:30 A.M. and everybody else is dropping off. . . . It's amazing how much you can get done if everyone else is asleep.

State Rep. Matt Dean (R)



Dehn: Absolutely.

Dean: I think there's a lot of crossover. Back in my second year of architecture school, I was working on a project and I just couldn't get the scheme to work out. I trashed it and started over. I was a little bit behind for a while, and my professor said, "I'm going to raise your grade on this because you did the right thing—you threw it away." And I've thought of that as a legislator. There are times when you realize it's just not gonna work and you have to start over.

Dehn: Matt's right—it really does transfer. Because in politics and policy you have to try new things. Sometimes those new things aren't successful, and you need to be able to recognize it and say, "OK, I think we're done with that. Let's try something different."

Dean: I've found that it's a very smooth transition from the practice of architecture to legislating. We define our profession by problem solving. We describe a "program" [the statement of a client's project requirements] as a problem, and we apply solutions to that problem—which is what you do in the legislature. It's a problem set.

When you're designing and constructing a building, you have to get a bunch of people who don't agree with each other, who have conflicting agendas, to get something done—and by a particular date, for a specific amount of money. That's exactly what we do.

Dehn: With architecture, you start with a blank slate. Then you have some ideas and you have some parameters within which you have to work. Then you move forward and you get input. Other people say, "This is working," or "This isn't working," and they make suggestions for what you might change.

I've yet to see a bill or a piece of policy that's been perfect when it's introduced. Usually it changes along the way. So being flexible to that change but at the same time considering the original intent of what it is you're trying to do...

Hayes Gordon: Holding to the concept, the original diagram.

Dehn: Right—that stays there so that what you started off trying to accomplish is actually what happens in the end. And getting a wide range of stakeholders involved is a fascinating process, both in architecture and in making policy. When I think about being mayor of Minneapolis, that's what I think about—getting people in a place

where they might see something that they didn't see before. Ultimately, the issues we're addressing are really complex.

Dean: So it's very transferable—a lot more transferable, in my view, than the legal profession, for example. The nature and rigor of our training has probably served both of us pretty well.

Hayes Gordon: When did you hear the call of public service, and what really sparked that drive to get into politics?

Dehn: In 2001, I moved to North Minneapolis and got engaged in the community. I worked on the late Paul Wellstone's last campaign, and over the years I continued to be active as a volunteer on campaigns.

But that call really came in 2009 when I was at a convention and the keynote speaker was Angela Davis. She asked everybody in the auditorium

who had a felony record to stand up, and I stood up. Then I went to a session where they talked about the difficulty that people with criminal records have getting jobs—what an impediment it was to them succeeding in life. Afterward, I came to grips with the pardon I had received in 1982.

It was time to talk about my past, and to talk about a new context for criminal justice. We have to create pathways for people who are convicted of crimes to succeed.

So that was when running for public office was something that came to the forefront for me. Probably very different from what Matt would say.

Dean: For me, I got involved with the St. Paul Chamber of Commerce. They have a program for young professionals called Leadership St. Paul, which weaves together public policy and business. I had never really had a lot of experience with that kind of thing. I had worked for a small firm in



"Getting a wide range of stakeholders involved is a fascinating process, both in architecture and in making policy. When I think about being mayor of Minneapolis, that's what I think about—getting people in a place where they might see something that they didn't see before. Ultimately, the issues we're addressing are really complex." —Ray Dehn

The two candidates participated in an hour-long interview at the Ford Center in Minneapolis' North Loop—in the studio of HGA Architects and Engineers—in early September. Both were making campaign-related visits to the Minnesota State Fair on the same day.

"I've found that it's a very smooth transition from the practice of architecture to legislating. When you're designing and building a building, you have to get a bunch of people who don't agree with each other, who have conflicting agendas, to get something done—and by a particular date, for a specific amount of money. That's exactly what we do [as legislators]." —Matt Dean

college, and for a small firm after graduating, and then I started a small firm. Representing clients to city councils and planning boards, I got a little bit more experience with government. And then I got involved with helping candidates, and that's kind of where I started down that path.

I did think that if I juggled stuff I could do all of it—and I was completely wrong.

Hayes Gordon: Do you still practice architecture?

Dean: I don't. When I started the firm, I worked with another architect, Greg Carroll. When I ran for the legislature and won, he took over my projects. I billed time as I could. But, tragically, Greg passed away when he was still very young. After that, I got involved in leadership at the legislature, and it became more of a full-time position. So I'm no longer practicing. I miss it. I do want to get back to it someday.

Hayes Gordon: Apparently, it's a profession you can do until you die, yes?

Dean: Yeah, that's my goal.

Dehn: That's happened for a lot of architects.

Hayes Gordon: We just can't quit for some reason; architecture becomes part of who we are. I like what you said, Ray, about helping people uncover things that they wouldn't have seen as solutions; about having an open mind when it comes to new ideas. Architects are also trained to be systems thinkers. We're constantly jumping back and forth between the tiny detail and the overall vision for the project.

Dehn: You're right—and it's not just thinking about the systems as they exist; it's the systems and how they intersect, how they overlap. This is critical when I think about the issues around housing. Employment is important to housing, because if people don't have jobs to afford

housing, it doesn't work. And transportation comes into play for people to get to and from their jobs. And for people to do well, their homes need to be in a safe environment. So it's all those systems—not in isolation, but in how they overlap. It's just like in a building, where you have the structural system, the building envelope, the mechanical and electrical systems—they all have to work in order for the building to work. You know that if one system is failing it hurts the whole building. With housing and transportation, it hurts the whole city.

Looking for those areas where synergies exist, you get a much larger impact.

Dean: I think from an overall systems standpoint, the political process itself is very broken. It has degraded into dividing into two groups and seeing what happens. If turns out well, you take credit for it, and if it doesn't, you blame the other side and use it to run against them. And boy are people tired of that. Having an authentic vision and being able to get people behind you outside of a political process is really important right now.

People are hungry for anybody who will get out in front of an idea. Take, for example, health care or education—areas where we really need some reform and vision. These issues are too big to be solved by one party or the other, or in a partisan way. You have to get people behind you that don't agree with you. To do that, you have to step out in front and be willing to take some risk. If everybody behind you looks like you, you ain't going very far. So you better be able to lead people who don't necessarily agree with you 100 percent but are willing to get behind a vision of change.

Hayes Gordon: So finding those commonalities that everybody can relate to and bringing people together.

Dehn: What Matt's talking about makes some sense. I think that when you're in public office and running for office, you have to be willing to go out on that branch.

We're dealing with an increased rate of change in our society in many different areas, and it's

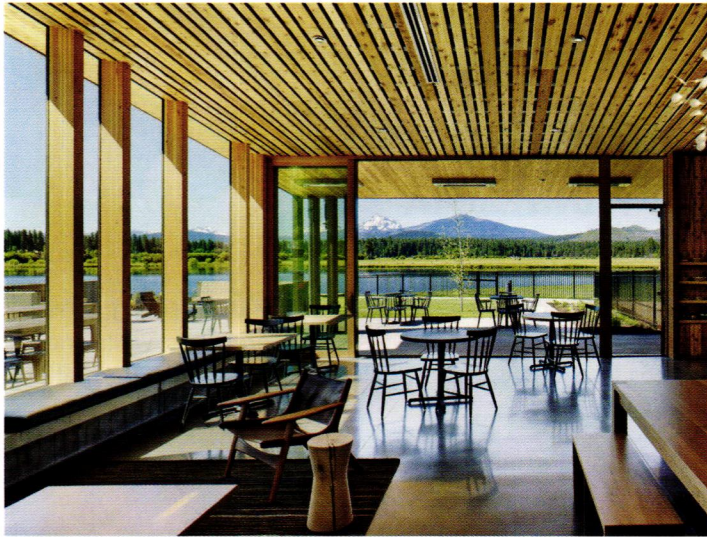
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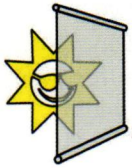


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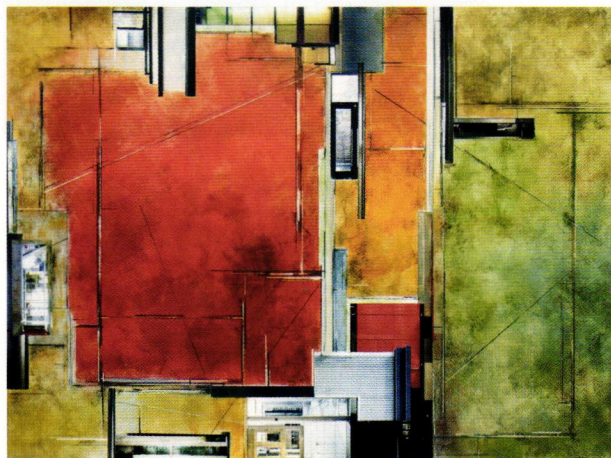
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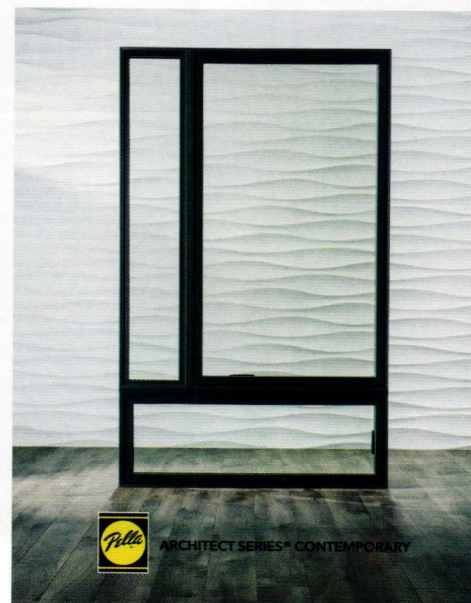
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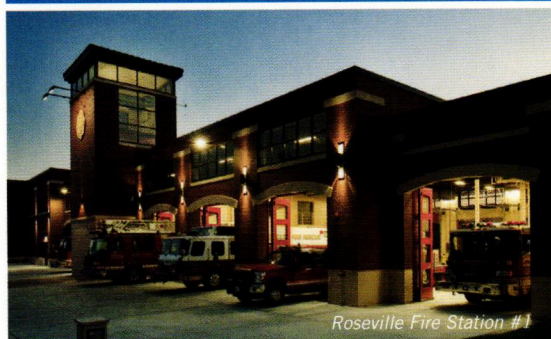
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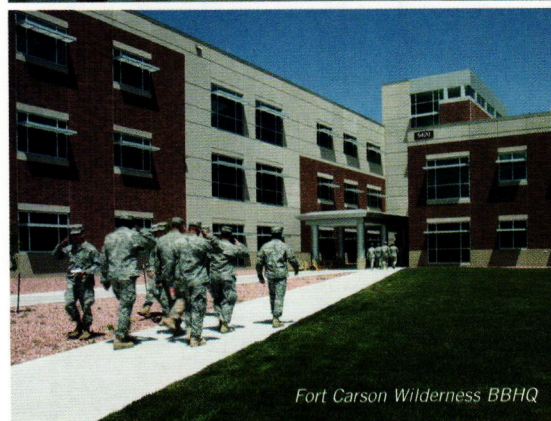
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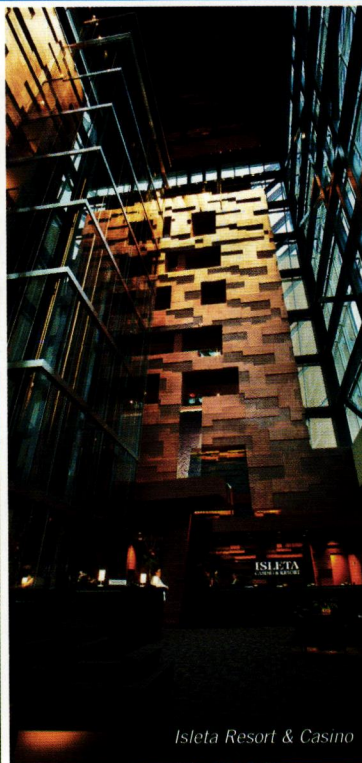
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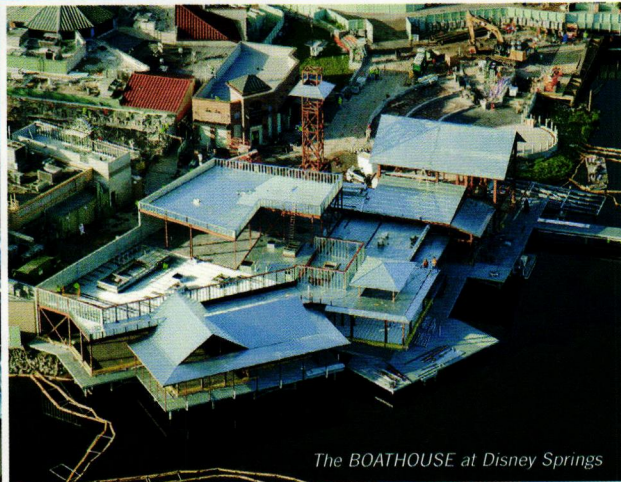
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Better Schools

<< continued from page 14

Parent, an architect who transitioned to SPSS after working extensively on learning spaces at DJR Architecture, appreciates how an architecture background gives him a problem-solving mindset that has served the process well. In spring 2015, he brought hundreds of students, parents, teachers, administrators, and community members into design meetings with teams from the six partnering architecture firms to learn how the school environments have shaped student and educator experiences.

"There's a huge sense of responsibility in making these spaces work," he says. "By creating connections across all the groups involved, we could better prioritize solutions that would have the most impact, efficiency, equity, and meaning to the people who would use the spaces."

The result is a plan that touches every school in the district. A few examples:

- At Humboldt High School, renovations will add a lobby to a building that lacked a clear entryway. The space will double as a Digital Commons, and new student gathering areas throughout the building will double as informal learning spaces.
- RiverEast School will move into a new building in 2018, which will enable the special-education program to provide targeted instruction and therapy to its population of high-needs students.
- St. Anthony Park Elementary, Highland Park Elementary, Como Park Senior High, and Adams Spanish Immersion will be remodeled to create clear entry points that serve as gathering spaces and information hubs. "If you can't find the front entry—if there's no person to welcome you into the building and create a personal connection—it's a problem," says Parent.
- Several district pre-K programs are housed in spaces that were designed for older students. Renovations will right-size the spaces to serve the needs of these younger learners. "All the research tells us that pre-K is a critical time for future success. We can support these developmental needs by designing appropriate spaces," says Parent.

Over the coming decade, other schools will modernize their learning environments, receiving new or updated media centers, cafeterias, playgrounds, performance spaces, daylighting

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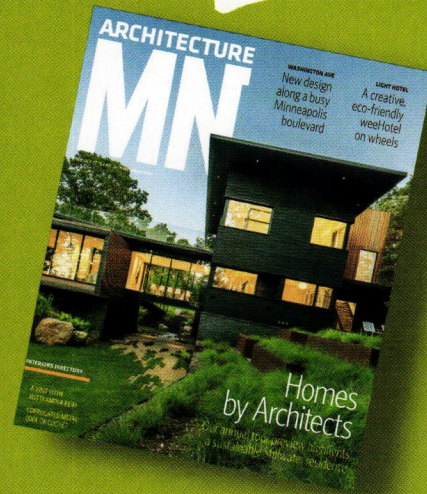
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VP of Child's Play

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because there were no galleries or exhibits on the first floor. We also needed more bathrooms and places for people to sit. We didn't have a café. There were numerous logistical issues we wanted to address.

Talk about the design process for the renovation.

Ultimately, the building needs to enhance the core mission of the museum, which is sparking children's learning through play. How does the design provide for that or support that goal? The addition and expansion was an opportunity to rethink everything, so we not only rethought the really practical considerations, like flow and access and all that; we also thought about how we can best support the open-ended play experiences that we want for our visitors.

What changes were made to the facade?

Originally, the first floor was filled with administrative offices. If you looked in the windows, you didn't see exhibits; you saw museum staff in their cubes. It didn't look very fun for visitors. Plus, the outside of the building wasn't really integrated with street activity.

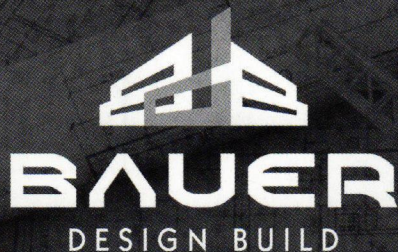
We moved administration to the back of the building, and now we're pretty much invisible. And we've added this beautiful, white, glass-walled structure to the front of the building that serves as a kind of four-story display case. Now when you're on the street, you look in and see all kinds of activity, including kids scaling a climbing tower and coming down slides. The design allows us to showcase the play and learning that's happening inside.

How did MSR's approach to the architecture align with the exhibit design?

Our exhibit fabrication teams worked very closely with MSR and the building contractor to integrate and coordinate the infrastructure for the exhibits. Take the car wash, for example, where kids can play with soap, bubbles, water, and sponges. The architects had to think about moisture, vapor barriers, and drainage, because water's flowing through it every day. Similarly, with our laser maze, certain technical elements had to be in place. Very few of the galleries are just a white box like you'd find in an art museum.

We also wanted to plan for flexibility. In the Our World exhibit, for example, the architects

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AIA Contract Documents

VP of Child's Play

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designed the neighborhood the kids explore with simple scaffolding so that things can change: Maybe the fire truck becomes something else someday, or maybe the hardware store becomes a dentist's office where kids can play. We designed for change within the galleries themselves, and there was an infrastructure layer to that thinking.

How did child learning principles inform the architecture?


Hmmm, in small ways. The design is as much about accommodating families as it is about child learning. We have double railings—a lower railing for children, a higher one for adults—because that's something that says, "Hey, we're thinking of you." We have stroller parking, comfort rooms, and areas of calm and quiet where individuals can retreat to when they need a break. Not every museum has to think about these things; we do, because that's who our visitors are. The architecture is a response.

You added more gallery space without expanding the footprint. How?

We used to have a rooftop gallery—a seasonal space, obviously, given our Minnesota winters. Because most of our visitors come in the winter and spring, when it's difficult to be outside with kids, we ended up taking back some of that area and creating the Landing, an indoor space that has some flexibility built into it. When the remaining outdoor space—Tip Top Terrace—is open in the spring, summer, and fall, the Landing becomes more of a pass-through area. We have these great chairs that spin—adults and kids love them. In winter, when Tip Top Terrace is closed, we activate the Landing and create more of a learning experience there.

Do you have a favorite spot?

My favorite is Sprouts, our space for the littlest people. It's got this beautiful natural wood—a lot of apple ply and birch ply—and this simple, almost Scandinavian feeling. The dichroic film on the windows softens the light but also casts patches of colors across the floor and on the kids and on the water tables. Even with a lot of kids in the space, there's something about it that makes you go "ahhhhh." You pause and relax a little bit, because it's just beautiful. **AMN**



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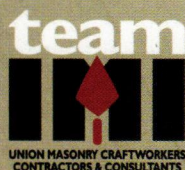
ALLEGION

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Custom-made shadow gray Camara slate tiles wrap the exterior and interior surfaces of a dramatic vertical column that greets customers at White Bear Subaru. Throughout the facility, 14 different ceramic products provide a functional and customer-friendly feel to floors, walls, counters and convenience areas.



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Louisville Tile, Pantheon Tile,
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Tile X Design

Capitol Investment

<< continued from page 28

Four master carvers worked on site for four years trying to keep up with the fabricators. "The project was driven by the cost of the scaffolding," says Lackovic. "We had to keep it moving."

Step by Step

A third part of the renovation—tearing up the stairs and terraces fronting the capitol—was not planned. The south stairs had been repaired in the 1990s, so there was an assumption that they were sound. But shifting treads led to further investigations, which found that the limestone foundations had lost bearing capacity. "The extent of decay was not anticipated," says Lackovic. So the south and east stairs were rebuilt and the original treads reinstalled.

At long last, in December 2016, with most of the work completed, the capitol was ready for the legislature to convene in January. Was there a sense of accomplishment? "Being aware of what the building means to the state elevates everyone's commitment—from the top to the workers on site," says Sandbulte. "It's a once-in-a-lifetime project."

"A renovation this extensive and this expensive is a rarity," says Lackovic. "There are only 50 of these buildings." **AMN**

Better Schools

<< continued from page 51

schemes, technology systems, security programs, and individual gender-neutral bathrooms. The buildings will become more flexible so they can adapt to whatever comes next, because change is inevitable. In the meantime, students will have more welcoming, more effective environments in which to learn.

"Kids only go through school once," says Parsons. "We understood very clearly that everything we would do in this process would have an impact on people's lives. Ultimately, that's what guided us." **AMN**

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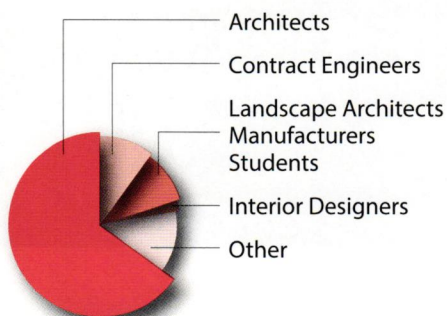
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Flight Plan

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BEAUTY AND COMFORT

In an ideal world, none of these changes would be remarkable. Lack of congestion? Easy flow? Travelers tend not to notice such things until they get stopped in their tracks.

But aesthetics is another matter, and MSP aims to impress. The patterns in Terminal 1's new terrazzo floors will evoke the cool blue waters of the Land of 10,000 Lakes. Alliance's ongoing work to redesign the airport's restrooms with nature-themed mosaic tilework (see sidebar on page 35) has made headlines around the country. "In general, the overall feeling is meant to be lighter, brighter, and more open," says Peterson.

Physical comfort will also be prioritized: Alliance's plans add a variety of seating areas with rugs, floor lamps, and coffee tables, where travelers can relax before or between their flights. "It'll be a more hospitality-driven experience," says Peterson.

Attention to aesthetics continues outside the terminal. As noted earlier, Miller Dunwiddie wrapped the exterior of the new parking ramp in a screen of terra-cotta baguettes glazed in white, black, gray, and sky blue. (A metal exterior would interfere with MSP's radar systems.) The pattern will create a stirring visual effect from every distance and perspective. Inside, finishes will include dark-gray burnished block, porcelain tile, rift-sawn white-oak panels, and exposed architectural concrete.

"Airport architects are lucky in that we only really consider high-quality materials that can stand up to crowds of people 24 hours a day," says Koski. "The challenge is to use the materials to shape spaces people want to spend time in, not just walk through."

All these changes are scheduled to be completed between 2020 and 2023. But even as the finishing touches are being made, new renovations will be starting elsewhere, and plans will evolve in accordance with new forecasts for changes in traffic and operations at MSP. MAC's Howell says he's confident that the current construction will position MSP for the next decade or two. Beyond that, he admits, the airport's design needs are anyone's guess.

"I don't know what kind of aircraft we'll be flying in 2050," he says. "Will MSP be the Minnesota Space Port? Nobody knows." **AMN**



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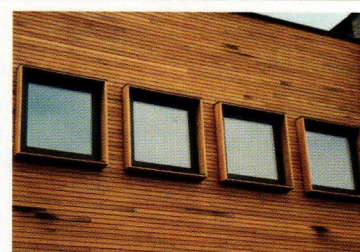
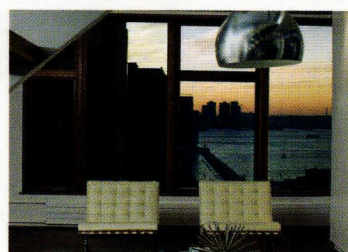
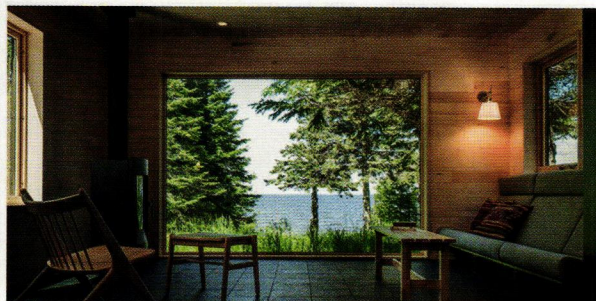
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The Jet Age

<< continued from page 40

Lindbergh's linear, terminal-connected concourses, on the other hand, were easily replicated as the airport expanded. Lindbergh's clear separation of ticketing and service areas also fared better over time; it better accommodated security screening and new retail services than did Dulles, Saarinen's TWA Terminal in New York, and many other airports of the era.

Although the original terrazzo floors on the ticketing and baggage levels have been replaced with modern tile, many of Lindbergh's original character-defining features endure, including the roofline and the facade's serif metal lettering. The adventure and romance of air travel is mostly gone now, but Cerny's vision still inspires. The Lindbergh Terminal embodied its moment in time—the moment when Minnesota suddenly became more modern and connected to the world. **AMN**

Designs on Higher Office

<< continued from page 45

fearful to some people because they don't know exactly how it's going to impact their lives.

Hayes Gordon: Big issues, big change. Agreed. It reminds me of how Minnesota Design Center director Tom Fisher says that architecture is the best profession out there because we're constantly trying to anticipate what's coming, what's changing.

Dean: I do think our profession is one that people can look to. We need people who can think in terms of process and product at the same time. I think we need to do a better job of encouraging architects to engage and to run for elected office.

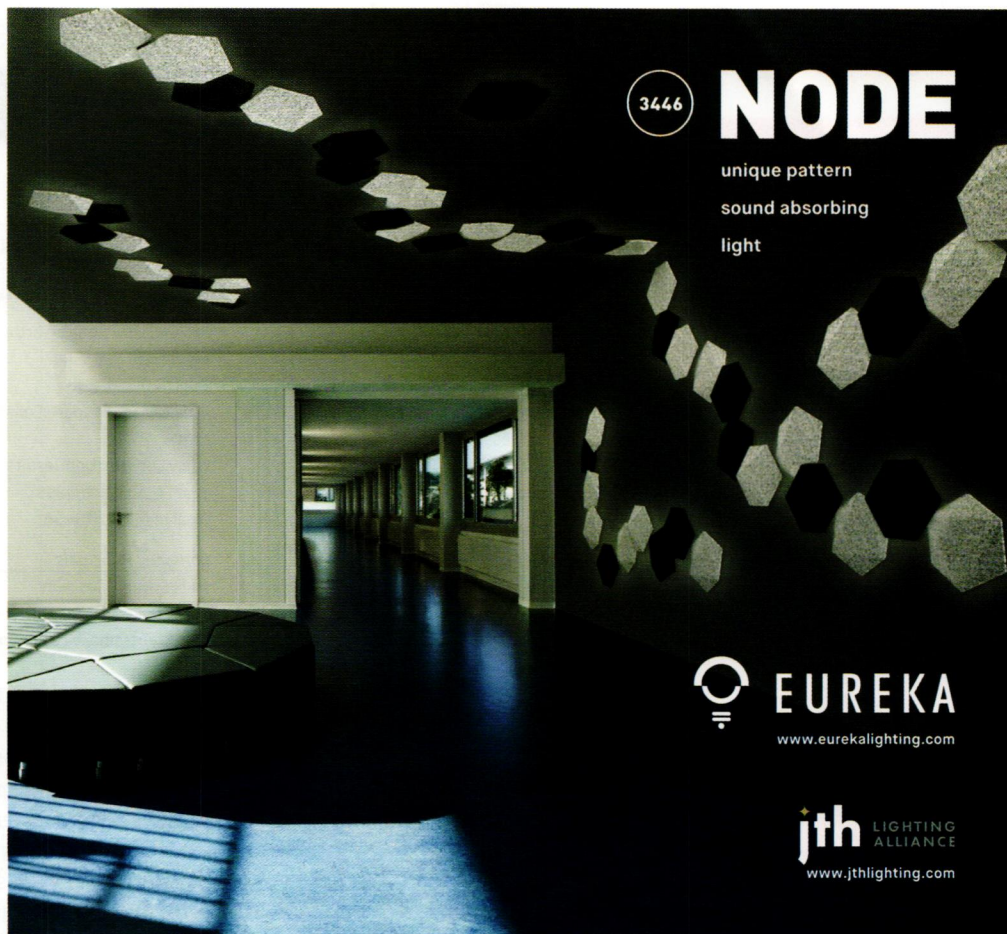
Dehn: And not just elected office but appointed offices too.

Hayes Gordon: I like that idea, Ray—that I could get into politics without having to run and ask for money.

Dean: I think you could get a lot of people to vote for you.

Dehn: She could get Women Winning behind her, right?

Dean: Let's start working on your campaign sign. **AMN**



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300 in the field
Other Offices: Rochester and Grand Rapids,
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15 other offices in WI, IL, CA, OK, and MI.
Contact: Kirk Illenda, BD Manager, Cloquet;
John Eckerman, BD Manager, Rochester

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Year Established: 1972
Total in MN Office: 125
Other Offices: St. Cloud, MN
Contact: Jon Kainz

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In Other Offices 1,300
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Total in MN Office 35
Contact: Dale Forsberg

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Minnesota State Capitol Restoration and Renovation

Page 22

Location: St. Paul, Minnesota

Client: State of Minnesota

Architect: HGA Architects and Engineers

Principal-in-charge: Mia Blanchett, AIA

Principal-in-charge: Rebecca Greco, AIA

Senior project manager: Debra Young, AIA

Architecture team: Kimberly Sandbulte, AIA; Virginia Lackovic, AIA; Angela Bateson, Assoc. AIA; Stephen Peper; Ben Walters; Dustin Hartford, Assoc. AIA; Michael Bjornberg, FAIA; Tim Carlson, AIA; Kelly Casey, AIA

Interior designer: Doris Rolfshus

Senior lighting designer: Tao Ham

Lighting designer: Caitlin Poynter

Senior structural engineer: Sean Cotton

Project structural engineer: Andrew Atkins

Mechanical engineer: Sarah Berseth

Mechanical engineer of record: Jeff Harris

Electrical engineer: Zachary Poynter

Electrical engineer of record: Leigh Harrison

Plumbing engineer: Julie Hagstrom

Civil engineer: Bradley Roath

Communications engineer: Jeff Lee

AV and security: Brad Kult

Landscape architect: Theodore Lee

Technology systems: Jeff Kokaisel

Hardware specialist: Melissa Cady

Construction manager at risk: JE Dunn Construction

Owner's project representative: CPMI

Owner's program representative: MOCA

Historic design and planning: Schooley Caldwell Associates

Stone and copper technical: Wiss, Janney, Elstner Associates

Roof consultant: RoofSpec

HSR support and historic hardware: Luken Architecture

Elevators: VDA

Chamber lighting designer: Schuler Shook

Fire sprinkler and code review support: Summit Fire Protection

Security evaluation and report: Rozin Security

BIM and architectural support: GA Design

DAS system: Elert & Associates

Acoustics: ESI Engineering

Historian: William Seale

Signage consultant: Salmi Wayfinding

Schematic plumbing designer: LV Engineering

Masonry restoration: Advanced Masonry Restoration

Leaded glass restoration: Gaytee-Palmer Stained Glass Studio

Decorative paint restoration: Conrad Schmitt Studios

Wood windows and French doors: Re-View

Access flooring: Tate

Acoustic wall panel fabric: DesignTex

Carpet: Bentley Mills; Milliken Carpet; Langhorne

Basement flooring: Nora Systems

Resilient flooring: Johnsonite

Ceiling panels: Gridstone

Caulking elevator frames: NovaFlex

Recessed downlights: Gotham & Rambusch

Strip lighting: Lithonia Lighting

Custom lighting shrouds: Povolny Specialities

Light fixtures: Winona Lighting

ML3 fixtures: Elliptipar

Roll call display: Hall Research

Glazing: Oldcastle BuildingEnvelope

Historic lighting restoration: Crenshaw Lighting

Brick: Belden & Bramton

CMU: Anchor Block Company

Diffusers, registers, and grilles: Titus; Raymon

Basement doors: Woodmax

New interior doors: Eggers Industries

Wood finish: M.L. Campbell

Paint: Hirshfield's

Plumbing fixtures: Ferguson

Stone patch: Edison Coatings

Tile floor: Daltile; Summitville; Mapei

Marble tile: Tennessee Marble Company

Photographer: Paul Crosby

MSP International Airport Terminal 1 Renovations

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Operational Improvements

Client: Metropolitan Airports Commission

Architect: Allliance

Principal-in-charge: Cliff Dunham, AIA

Principal project manager: Jeff Loeschen, AIA

Senior terminal designer—architecture: Ashley Ilvonen, AIA

Senior terminal designer—interiors: April Meyer

Aviation studio director: Eric Peterson, AIA

Senior terminal planner: Shane Wirth

Senior project architect: Greg Maxam, AIA

Terminal designers: Scott Sorenson; Michael McClimon, AIA

Additional team members (alphabetical): Joe Allen, AIA; Greg Frenzel, Assoc. AIA; Evan Hall, Assoc. AIA; Bill Michler; Lauren Perich, AIA; Amy Sonbuchner, AIA; Steve Wohlford, AIA

Associate DBE architect: 4RM+ULA

Structural engineer: Meyer Borgman Johnson

Specialty structural consultant: Thornton Tomasetti

Mechanical, electrical, and plumbing engineer: Michaud Cooley Erickson

Security, A/V, and telecom: Faith Group

Airside civil engineer: TKDA

Landside civil engineer: Kimley-Horn

Aviation demand forecasting: Ricondo & Associates

Baggage-handling-systems designer: BNP Associates

Specialty lighting designer: Schuler Shook

Acoustician: Idibri

Wayfinding: Entro

Roofing and waterproofing consultant: Inspec

Energy conservation analyst: The Weidt Group

Vertical transportation: Van Deusen & Associates

Public art consultant: Via Partnership

Construction coordinator: Kraus Anderson

Advertising consultant: SNC Lavalin

Hazardous material abatement: Field Environmental

Parking Expansion

Client: Metropolitan Airports Commission

Program manager: Kimley-Horn

Architect: Miller Dunwiddie

Principal-in-charge: Craig Lau, AIA

Project lead designer: Phillip Koski, AIA

Project manager: Monica Bettendorf Hartberg, AIA

Project architects: Dione DeMartelaere, AIA; David McWilliams, AIA; Brent Visser

Project team: David Kulich, AIA; Jack Romsaas, AIA; Alicia Skow, AIA; Jennifer Nowacki, AIA; Michael Refsland, AIA; Lauren Fleming, AIA; Marc Headrick, AIA; John Steingraeber, Assoc. AIA; Erik Sundbo, Assoc. AIA; Jodi Zoerb, Assoc. AIA; Nicholas Strombeck, Assoc. AIA; Jennifer Watters, Assoc. AIA; Sam Clausen, Assoc. AIA; Graham Ryan; Kathryn Hunsley (interior design); Megan Miller (interior design)

Energy modeling: The Weidt Group; Michaud Cooley Erickson

Structural engineers: Kimley-Horn (ramp/overall program); Meyer Borgman Johnson (PMB)

Mechanical and electrical engineer: Michaud Cooley Erickson

Civil engineer: Kimley-Horn

Lighting designer: Michaud Cooley Erickson

Interior designer: Miller Dunwiddie

Construction coordinator: Kraus Anderson

Landscape architect: Kimley-Horn

Vertical transportation consultant: VDA



CORRECTION In our profile of SALA Architects' Shadow Box residence in the September/October issue, we listed LHB, Inc., as the project's landscape architect. Jason Aune launched the project while he worked at LHB, but he completed most of the work at Aune Fernandez Landscape Architects. Our apologies to Aune and his partner, C.J. Fernandez.

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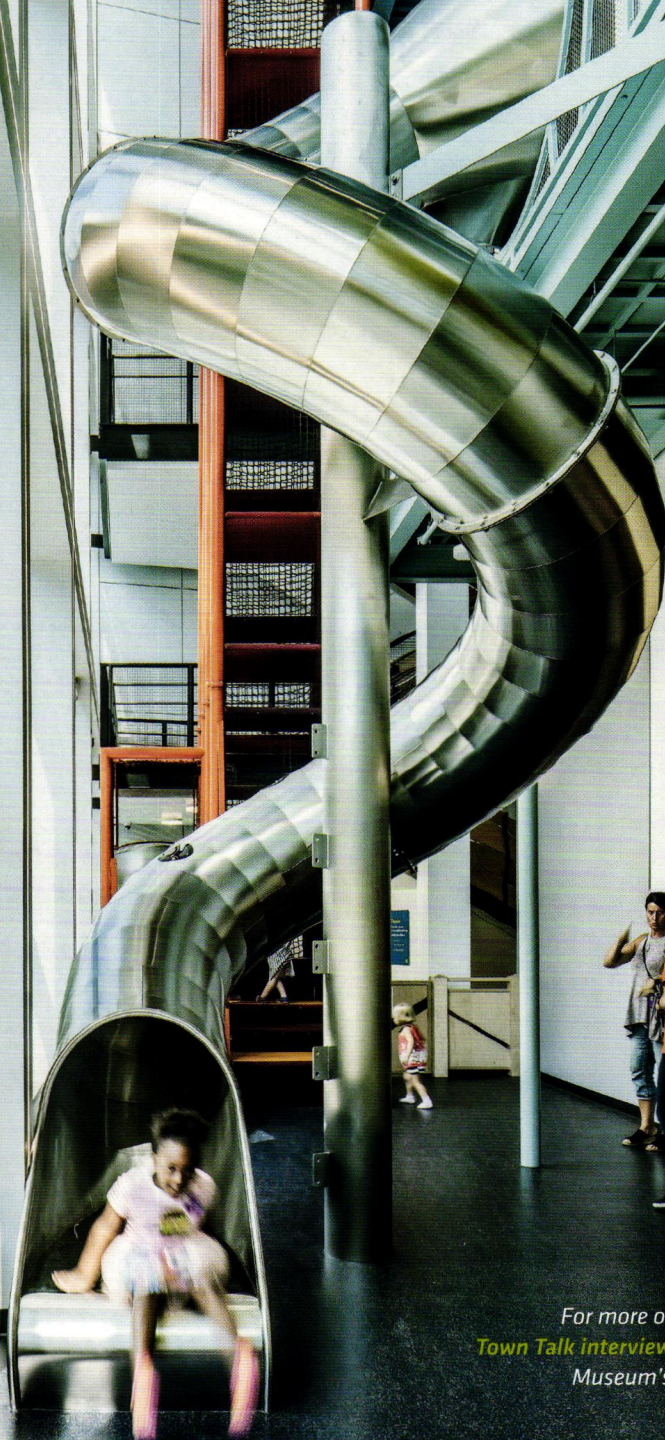
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"One of the things I love most about MSR Design's renovation of the **Minnesota Children's Museum** in St. Paul is how it makes full use of the building's height with the addition of the Scramble—four stories of climbable chaos along West Seventh Street. I took a lot of photos from this street-level landing pad, and I think the sheer number of outtakes with MSR designers flying out of the slide proves it's a winner with kids of all ages."

—Photographer Brandon Stengel, Assoc. AIA



For more on the renovation, check out our **Town Talk interview** with the Minnesota Children's Museum's Barbara Hahn on pages 18–19.