



EGAN COMPASS NEWSLETTER

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BRINGING FANS TO THEIR FEET

Contributing to the largest public works project in Minnesota's history

Towering nearly 30 stories high and covering about 200,000 square feet of the stadium's exterior, the reflective glass and curtainwall of U.S. Bank Stadium is hard to miss. The interior boasts a flood of purple and gold, lush green turf, and multiple LED video boards. Football fans will be able to experience this all firsthand during the Minnesota Vikings' first season at the new stadium.

The 1.75 million square foot facility will serve as the Minnesota Vikings' official home, and also stands as a testament to the hard work of thousands of people, including Egan employees, who worked on site and behind the scenes to install the stadium's curtainwall, glass/glazing, pivoting glass doors, and numerous LED displays inside and out.

Reflection of Our Work

The curtainwall boasts five operable walls/pivot doors spanning up to 95 feet high and controlled by hydraulic levers. These doors are able to shield spectators from harsh Minnesota weather when closed, while providing fresh air and exposure to the outdoors when open. Built into these doors are smaller storefronts – 10 for every larger door – which allow entry in all seasons.

In addition to installing 200,000 square feet of curtainwall, more than 5,000 pieces of glass were installed, some spanning over 200 feet tall and inverted at a 24 degree angle.

On sunny days, a distinct reflection of the Minneapolis skyline can be seen on the glass' surface. Not only does the stadium show a mirror image of one of Minnesota's most iconic cities, its unique architecture and design also serves as a reflection of the personality and identity of the community that surrounds it.

Engineering challenges related to the unique geometry of the curtainwall required careful consideration and planning throughout the project; scheduling and jobsite limitations made the role of prefabrication and coordination even more critical.



U.S. Bank Stadium boasts the tenth largest scoreboard in the NFL.



Wells Fargo Towers in "East Town"

FUTURE OF BUILDINGS HAS ARRIVED

Much of pop culture's imagination of the future includes homes and buildings that perform tasks automatically, often without having to lift a finger. Lights that can sense occupancy, temperatures that are always just right, and building security without having to turn a key in a lock – these all sound like something from *The Jetsons*. But this is the reality in the newly developed "East Town" area of Minneapolis.

The arrival of U.S. Bank Stadium brought with it the opportunity to enhance the surrounding blocks with a common green space, multi-family housing, light rail transit service, and a 1.1 million square foot blend of beauty and brains: sleek architecture run by a cutting edge Intelligent Building Network – the Wells Fargo Towers.

With an intelligent system architecture provided by Egan Company as an automation backbone, the two buildings are connected by a network platform that controls building automation, lighting control, sound masking, and all mechanical systems.

"Egan's prowess in systems integration has added much-needed confidence and expertise to a complicated project. The project team has exceeded expectations in design, coordination, and field operations alike," said Mike Beadle, Ryan Companies Project Manager. "Egan has been, and will continue to be, my first choice in the industry to deliver reliable, intuitive building management and intelligent building solutions."

Wells Fargo employees now have an intuitive comfort control system that monitors security and adjusts lighting and temperature as a room becomes occupied. Behind the scenes, building operators have access to extensive real-time analytics for all systems, providing an immediate way to evaluate performance and efficiency and make adjustments if needed. This keeps the energy usage on track, provides high indoor air quality, and efficiency of water.

These things, along with the design, location, and access to public transportation, helped earn the project a LEED Platinum Certification.

"This project has raised the bar company-wide for future builds," said Jeff Sowden, Egan Company Senior Account Manager. "Intelligent buildings are the future and we couldn't be more excited to do the next one."

Project Team: Wells Fargo, Ryan Companies, EDS

Services Provided: Intelligent Building Network architecture, building automation system. ■



NEW COMMUNITY PARTNERSHIP

From the very first day Egan & Sons opened their doors, Egan Company has been dedicated to actively supporting causes and local organizations that help those in need. This value is driven from all areas of the company, and continually brings employees together to reach local families in need of our support.

This summer, Egan formed an exciting new partnership with the Brooklyn Park Police Department (BPPD). Employees came together and raised \$5,000 to buy K-9 officers, Kilo and Bongo, stab- and bullet-resistant vests.



“We have been beyond impressed with Egan’s quick action to get the employee giving campaign rolling and get money raised for the K-9’s vests,” said BPPD Officer Tom Dunnwald. “Without Egan’s help, it would have taken a very long time to raise the funds needed and the dogs would be working the streets unprotected.”

These custom-made vests will protect Kilo and Bongo for the next several years on the force, and ensure their safety as they work to protect the community where we work and live.

We see the need in our backyard and beyond, and are dedicated to help in any way possible – as employees and individuals – for many years to come. ■

EGAN’S ADDITIONAL SUMMER OUTREACH EVENTS

Hearts & Hammers: Egan employees banded together with paintbrushes, hammers, rakes, and shovels to repair a 90-year-old veteran’s home in St. Paul, Minn.

MATTER: Employees competed to pack 2,650 meals for local children and families in need of nutritious meals.

PROMISES KEPT

“We would like to recognize and express our gratitude to Brian Stensrud for his recent efforts at U.S. Bank Stadium. We worked closely with Brian to troubleshoot and maximize the operation of the provided door controllers. Brian was instrumental during this effort.

Brian should be commended for his proactive problem solving and diligent work efforts. These efforts were a critical component in obtaining our certificate of occupancy from the City of Minneapolis.”

– Craig Sharpe, Mortenson Construction

(Brian Stensrud is a Glazier Field Leader.)

“I am sending a note of thanks and appreciation for the work Jamey Tompkins did to replace a bulb at the Golden Valley Little League field. Jamey was very helpful over the phone, he has a great memory, he completed the project without issue, and he provided excellent customer service from start to finish.”

– Patrick Dale, Golden Valley Little League

(Jamey Tompkins is an Electrical Field Leader.)



IMPROVING THE TRAVEL EXPERIENCE

Have the ultimate travel experience – in the airport. Many airports are focusing on traveler satisfaction and adding new features to their facilities to improve the overall experience. Minneapolis-St. Paul International Airport (MSP) is doing this by taking building automation system integration to the next level.

Previously, MSP had disparate systems that functioned separately and required a lot of maintenance. For the past few years, Egan Company has helped merge these systems into one open architecture platform so various divisions within the Metropolitan Airports Commission (MAC) can operate more efficiently.

In addition to centralizing disparate systems, Egan is working to install a new Wastewater Information Display System (WIDS) in select Terminal 1 restrooms. This system enables MAC to automate many processes and eliminates the need for unnecessary walkabouts.

The new system includes thermal people counters in doorways to keep track of the number of people who enter the bathroom. After a certain number of people have entered the bathroom, the display outside the bathroom switches into “clean mode” and it alerts MAC Facilities to assign an employee to clean it.

While the bathroom is in clean mode, the display tells travelers that it is closed for cleaning and where the next closest bathroom is located. The WIDS interfaces to the

security system so card swipes by MAC Facilities places the restroom into clean or normal mode.

Advanced mechanical systems were also installed that adjust delivered and exhausted air depending on what mode they are on – unoccupied, occupied, or cleaning. Motion sensors are used to increase the ventilation rates when the restrooms are in use and to reduce ventilation when vacant. During cleaning mode, the ventilation rates are set even higher to diffuse the odor of cleaning products. This results in energy savings for the airport.

“The ventilation system and thermal people counters are newer technologies that improve the traveler experience,” said Ryan Haller, Egan Company Engineering Manager. “If you go to an airport and the bathroom is smelly, that’s all you’re going to remember. The WIDS helps alleviate some of those issues.”

Egan also monitors other components of the restrooms and provides alarms to the appropriate MAC department when the system requires, including the hot water system and lighting loads when lamps or ballasts need replacing.

In total, Egan has installed the WIDS in three newly renovated bathrooms and retrofitted the system in two additional bathrooms, located in Concourses C, E, and F. A sixth one located in the main terminal will be completed later in 2016.



The new displays outside of bathrooms in Terminal 1 offer travelers information about the cleaning history of the bathroom and notify them of any closures.

Core Project Team: Metropolitan Airports Commission, Michaud-Cooley Erickson, Morcon Construction, Kraus-Anderson

Egan Services Provided: Retrofit and new installation of building automation system, Wastewater Information Display System, thermal people counters, advanced ventilation systems. ■

RECOGNIZED FOR OUR EFFORTS

Most Innovative Curtainwall Project of 2016 - Egan's InterClad team was recognized by Glass Magazine for the work on U.S. Bank Stadium.

Sielox Business Partner Award - Longtime security and access control business partner, Sielox LLC, named Egan a Gold top-recognized partner.

Spirit of Excellence Supplier Award - Kestner Electric, Egan's Southern Minnesota electrical team, was awarded this prestigious award from Hormel Foods Corporation. This award recognizes our commitment to quality, service, innovation, and customer satisfaction. ■

PROMISES KEPT

“The Department of Corrections Facility in Moose Lake, MN experienced an electrical black out, due to a failed medium-voltage line, in the early morning hours. As you can imagine, a prison without power is not only stressful, but potentially unsafe. We are grateful for the quick response and professional approach from Dave Horazuk, Jim Egge, and Andy Hosch. All three employees are excellent representatives of Egan Company. Please extend our thanks and gratitude for their hard work.”

– Keith Beal, Minnesota Department of Corrections - Moose Lake

(Dave Horazuk, Jim Egge, and Andy Hosch are Electrical Field Leaders.)

“I would like to thank Egan and the employees who installed underground cable for the Greenway project. The crew did an excellent job keeping the equipment on the bike paths well marked and off to the side at night. They also kept the paths swept and clean. Thank you for your hard work and for keeping safety a priority. Your employees are a class act!”

– Dan Forster, McLean Medical and Scientific

(The Egan team mentioned here includes: Electrical Field Leaders Dan Bachler & Andrew Kuntz; Electrical Apprentice Jared Bachler; Electrical Journeyman Theun Keosaksith; Operating Engineers Dan Wurm, Keith Maas, Bryant Maciej & Brian Kenmir; Equipment Operator Tom Higgins.)

DELIVERING A CONSTRUCTION ADVANTAGE

Efficiency. Collaboration. Simplification. These are all advantages experienced with Egan's Construction team. With multiple, in-house trades, Egan provides an opportunity to work cohesively with a single contact for a job that could require five or more different trades. This is accomplished with streamlined planning, prefabrication, and collaborative jobsite and project management.



“The success of any job is dependent on finding the right team. With our collaborative mechanical, electrical, and systems approach, we have positioned ourselves to be the best possible partner for any construction project.”

– Bret Young, Egan Company
Vice President

In August 2016, the Construction team evolved under the single leadership of Bret Young, Egan Company Vice President. With over 28 years of experience in the construction industry, Bret will be managing all aspects of construction – from project planning and estimating to design, engineering, and field services – ensuring we continue to keep our promises and create one construction customer experience. ■



BRINGING FANS TO THEIR FEET

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“The Vikings stadium has more unique geometry than we’d seen on past projects, and to a larger scale,” said Deb Linquist, Egan Company Senior Project Manager. “Through our quality control process, and our upfront work in the office, it was very critical that we provided proper fabrication packages with dimensions and details to the shop.”

The hard work paid off – Egan's InterClad team won Glass Magazine's Most Innovative Curtainwall Project for the stadium in July 2016.

Display of Collaboration

Inside the stadium, fans can watch 60-foot tall football players bound across an enormous video board more than 8,100 square feet in size. The display is the stadium's largest, and the tenth largest scoreboard in the NFL. At 68 feet high and 120 feet wide that's enough space to park about one-and-a-half F-22 fighter jets.

Unlike other stadiums around the country, U.S. Bank Stadium does not have video boards hanging from the ceiling. Doing so would have compromised the amount of natural light and the indoor-outdoor feel the stadium provides.

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The stadium has many stand-out features, including its unique shape and a sail-shaped video display.

Instead, they are installed significantly lower than most video boards in the NFL in order to allow fans to easily look from the field to the board, regardless of where they are sitting.

Partnering with South Dakota-based Daktronics, Egan installed more than 25,000 square feet of LED displays, including 19 LED video displays with 13HD technology that provides crisper and more vibrant images to the fans. The total square footage of LED displays is the most in the NFL.

In addition to the interior displays, Egan installed an outdoor marquee display, and a first-of-its-kind sail-shaped exterior video display that tops what the Minnesota Vikings call the “Legacy Ship.”

Our Stadium

The largest public works project in Minnesota history, U.S. Bank Stadium took 3.5 million man hours to complete – a massive undertaking equivalent to 1,700 years of full time work for one person. Throughout its construction, the

project sustained the families of thousands of workers – and will help define the Minneapolis skyline for years to come.

It has helped bring major events to our state, including superstar concerts, charitable events, and Super Bowl LII in 2018. And many local restaurants and businesses now have the opportunity to provide their goods to a new audience base.

Take the “bank” out of U.S. Bank Stadium and you get a building named for us – not just the Vikings, or even the workforce that came together to turn the stadium into a reality, but all Minnesotans – and you don’t have to be a football fan to appreciate that.

Project Team: Minnesota Sports Facilities Authority, M.A. Mortenson Construction, Daktronics

Services Provided: Curtainwall, glass/glazing, and communication and electrical systems for electronic video displays. ■





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On a Wednesday morning, Egan received a call that there was an emergency at the Northern Star Company with their steam boiler. By the following Monday morning, With careful trade coordination and collaboration, Egan pipefitters and electricians completed the work by switching over a 900 HP high pressure steam boiler to a mobile boiler (provided by Northern Star Company) while the existing boiler was being serviced. The Northern Star Company is a potato processing plant in Chaska, Minn.



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Egan Company is a fully integrated, specialty contractor that delivers attention, commitment, and craftsmanship to every project. Egan serves every stage of a building's life, providing in-house expertise in planning, design, building, and maintenance. Core services include: mechanical, electrical, engineering & design, curtainwall/glazing/panel systems (InterClad), millwrights, fabrication, building systems, controls & system integration, and 24/7/365 maintenance. Egan has also been recognized as one of America's Safest Companies by *EHS Today*.